
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of Report (Date of earliest event reported): **August 13, 2003**

Aspen Technology, Inc.

(Exact name of registrant as specified in charter)

Delaware
(State or other jurisdiction
of incorporation)

0-24786
(Commission
File Number)

04-2739697
(IRS Employer
Identification No.)

Ten Canal Park, Cambridge, Massachusetts
(Address of principal executive offices)

02141
(Zip Code)

Registrant's telephone number, including area code: **(617) 949-1000**

(Former name or former address, if changed since last report)

Item 5. Other Events

A. ISSUANCE OF PREFERRED STOCK AND WARRANTS

On August 14, 2003, we issued and sold 300,300 shares of Series D-1 convertible preferred stock, or Series D-1 preferred. We also delivered cash and 63,064 shares of Series D-2 convertible preferred stock, or Series D-2 preferred, in consideration for the surrender of all of our outstanding Series B-I convertible preferred stock and Series B-II convertible preferred stock, or collectively Series B preferred. In addition, we issued warrants to purchase up to 7,267,286 shares of common stock, or Series WD warrants, and exchanged existing warrants to purchase 791,044 shares of common stock for new warrants to purchase 791,044 shares of common stock, or WB warrants. The Series D-1 preferred and Series D-2 preferred, or collectively Series D preferred, together with the WD warrants and WB warrants, were issued in a private placement to several investment partnerships managed by Advent International Corporation, or the Advent investors, and to holders of Series B preferred. These issuances were the subject of (1) Current Reports on Form 8-K filed with the SEC on June 6, 2003 and July 11, 2003, (2) preliminary proxy materials filed with the SEC on June 2, 2003 and June 20, 2003, and (3) definitive proxy materials filed with the SEC on July 11, 2003, July 16, 2003, August 8, 2003 and August 11, 2003.

On June 1, 2003, we entered into a securities purchase agreement, or the purchase agreement, providing for the private placement of shares of the Series D preferred. Pursuant to the purchase agreement, on August 14, 2003 we issued:

- 300,300 shares of Series D-1 preferred to the Advent investors for a purchase price of \$333.00 per share, or \$99,999,900 in total;
- 63,064 shares of Series D-2 preferred to the holders of Series B preferred in exchange for 16,918 outstanding shares of Series B-I convertible preferred stock and 7,788 outstanding shares of Series B-II convertible preferred stock; and
- WD warrants to the Advent investors and the holders of Series B preferred to purchase up to 7,267,286 shares of common stock.

Also on June 1, 2003, we entered into a repurchase and exchange agreement, or the exchange agreement, with the holders of Series B preferred. Pursuant to the terms of the exchange agreement, on August 14, 2003 we:

- repurchased 23,082 outstanding shares of Series B-I convertible preferred stock and 12,212 outstanding shares of Series B-II convertible preferred stock, which constituted all of the outstanding shares of Series B preferred not proposed to be exchanged for Series D-2 preferred, for \$29,999,900 in cash; and
- issued WB warrants to the holders of Series B preferred to purchase 791,044 shares of common stock in exchange for outstanding warrants currently held by such holders exercisable to purchase the same number of shares of common stock but having other terms, including exercise price and antidilution protection, differing materially from the WB warrants.

The terms of the Series D preferred are set forth in a certificate of designations that forms part of our charters are summarized below under "Description of Capital Stock."

In addition, some of our obligations to the holders of Series D preferred, WD warrants and WB warrants are contained in the following documents:

- the purchase agreement;
- the exchange agreement;
- the WD warrants;
- the WB warrants;
- an investor rights agreement entered into on August 14, 2003; and
- a management rights letter agreement entered into on August 14, 2003.

The purchase agreement and the exchange agreement are included as exhibits to our Current Report on Form 8-K filed with the SEC on June 2, 2003. The certificate of designations of the Series D preferred forms a part of our charter filed as exhibit 4 to this report. The investor rights agreement, the management rights letter agreement and the forms of the WD warrants and the WB warrants are included as exhibits 99.1 through 99.4 to this report.

B. DESCRIPTION OF CAPITAL STOCK

The purpose of Section B of this report is to update the description of our capital stock. We anticipate incorporating this description by reference into filings that we make with the SEC from time to time, including any registration statements on Form S-3 or Form S-8. The following information constitutes the "Description of Securities" required by Item 202 of Regulation S-K.

Description of Capital Stock

The following description summarizes the material terms of our common and preferred stock, as well as relevant provisions of our charter, which includes certificates of designations relating to each series of our preferred stock, and bylaws and the Delaware General Corporation Law. For a complete description of the terms of our common and preferred stock, please refer to our charter and bylaws. While the terms summarized below will apply generally to any shares of common or preferred stock that we may offer in the future, we will describe the particular terms of any series of these securities in more detail in the applicable prospectus relating to the offering of these securities. The terms of any common or preferred stock that we offer pursuant to a prospectus may differ from the terms described below, and any such additional or different terms will be set forth in that prospectus.

Our authorized capital stock consists of 220,000,000 shares. These shares consist of 210,000,000 shares of common stock, \$0.10 par value per share, and 10,000,000 shares of preferred stock, \$0.10 par value per share, of which 400,000 shares have been designated as Series A participating cumulative preferred stock, or Series A preferred, 40,000 shares have been designated as Series B-I convertible preferred stock, 20,000 shares have been designated as Series B-II convertible preferred stock, 60,000 shares have been designated as Series C preferred stock, 302,000 shares have been designated as Series D-1 convertible preferred stock, or Series D-1 preferred, and 65,000 shares have been designated as Series D-2 convertible preferred stock, or Series D-2 preferred.

Common Stock

Voting. Each holder of common stock is entitled to one vote on all matters to be voted upon by stockholders for each share held on the record date for such vote.

Dividends. Subject to any preference rights of holders of preferred stock, holders of common stock are entitled to receive dividends, when, as and if declared by the board of directors, out of funds legally available for dividends.

Liquidation. Upon liquidation, dissolution or winding up, holders of common stock are entitled to share ratably in all of our assets available for distribution to stockholders in proportion to the amount of common stock they own. The amount available for common stockholders is calculated after our payment of liabilities. Holders of preferred stock will receive their preferential share of our assets before the holders of common stock receive any assets.

Other Rights. Holders of common stock have no right to:

- convert the common stock into any other security,
- have the common stock redeemed or
- purchase additional shares of common stock to maintain their proportionate ownership interest.

The common stock does not have any cumulative voting rights, which means that the holders of a majority of the shares can elect all the directors to be elected by common stockholders and that the holders of the remaining shares will not be able to elect any of those directors. All outstanding shares of common stock are validly issued, fully paid and non-assessable. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we have designated and issued or may designate and issue in the future.

Preferred Stock

Our charter authorizes the board of directors to issue, without any further action by the stockholders, preferred stock in one or more series, to establish from time to time the number of shares to be included in each series, and to fix the designation, powers, preferences and rights of the shares of each series and the qualifications, limitations or restrictions thereof, including voting rights, dividend rights, conversion rights, liquidation preferences, redemption privileges and sinking fund terms. The rights, preferences and restrictions of the preferred stock of each series are or will be fixed by the certificate of designations relating to that series. Any or all of the rights of a series of preferred stock may be greater than the rights of the common stock. In addition, a series of preferred stock may have other rights, including economic rights senior to our common stock, so that the issuance of such preferred stock would adversely affect the market value of our common stock. The issuance of preferred stock may also have the effect of delaying, deferring or preventing a change in control of our company without any action by the stockholders.

In February and March 2002, we issued an aggregate of 40,000 shares of Series B-I convertible preferred stock and an aggregate of 20,000 shares of Series B-II convertible preferred stock, which we collectively refer to as the Series B preferred. The certificate of designations for the Series B preferred contemplates circumstances under which Series C preferred stock could be issued. No Series C preferred stock was ever issued. As part of our recent financing transaction described above under "Issuance of

4

Preferred Stock and Warrants," we redeemed all shares of the Series B preferred. We intend to file in the near future a certificate of elimination to eliminate the Series B preferred and the Series C preferred stock from our charter.

Series D Preferred

Our charter authorizes two series of Series D preferred: Series D-1 convertible preferred stock and Series D-2 preferred, which we collectively refer to as the Series D preferred.

General Voting Rights. Except as described below under "Voting for Directors" or as otherwise provided by law, each holder of Series D preferred is entitled to vote on all matters to be voted upon by stockholders and is entitled to a number of votes equal to the number of shares of common stock into which such holder's shares of Series D preferred are convertible as of the record date for such vote. Our charter also provides that the approval of the holders of a majority of the outstanding shares of Series D-1 preferred and the holders of a majority of the outstanding shares of Series D-2 preferred, each voting separately as a class, is required to approve certain corporate actions, including any amendment of our charter or by-laws that is inconsistent with the certificate of designations of the Series D preferred or that adversely affects the holders of Series D preferred and any authorization of a class of capital stock ranking senior to, or on parity with, the Series D preferred. In addition, the approval of the holders of a majority of the outstanding shares of Series D-1 preferred, voting separately as a class, is required to approve certain redemptions or repurchases of capital stock, acquisitions of capital stock or assets from other entities and the incurrence of certain amounts of debt for borrowed money by us. Except as otherwise provided by Delaware law, the holders of Series D preferred vote with the holders of common stock as a single class on all other matters to be voted upon by stockholders.

Voting for Directors. Holders of Series D-1 preferred, exclusively and as a single class, are entitled to elect a number of directors determined by a formula set forth in our charter that is calculated as a ratio of the voting power of the Series D-1 preferred to the total voting power of all of our voting stock. The formula generally provides that the number of directors the holders of Series D-1 preferred is entitled to designate to the board of directors is equal to the product (rounded to the nearest whole number) of:

- the total number of directorships (whether filled or vacant); and
- a fraction, the numerator of which is the total number of votes accruing to holders of Series D-1 preferred (equal to the number of shares of common stock into which the Series D-1 preferred is convertible as of the relevant record date, subject to certain limitations set forth in the certificate of designations), and the denominator of which generally is the number of shares of outstanding voting stock.

Holders of Series D-2 preferred will not have a separate class right to elect any directors, but will instead vote for the election of directors on an as-converted or economic equivalent basis with holders of common stock.

Dividends. Each share of Series D preferred is entitled to a cumulative dividend of 8% of the stated value per share of such Series D preferred per year, payable at the discretion of the board of directors. Accumulated dividends, when and if declared by the board, could be paid in cash or, subject to specified conditions, common stock. If we elect to pay dividends in shares of common stock, we will issue a number of shares of common stock equal to the quotient obtained by dividing the dividend payment by the volume weighted average of the sale prices of the common stock on the Nasdaq National Market for 20 consecutive trading days, ending on the fourth trading day prior to the required dividend payment date.

5

Our ability to elect to pay dividends on the Series D preferred in shares of common stock is subject to certain conditions, including:

- we must provide appropriate notice to the holders of Series D preferred of our election to pay the dividend in shares of common stock;
- the common stock must be listed on the Nasdaq National Market or another market or stock exchange specified in the purchase agreement, without interruption, between the date on which we provide the notice described above and the date on which certificates representing the shares of common stock being issued in payment of the dividend are delivered to the holders of Series D preferred;
- as of the delivery date of the certificates representing the common stock dividend, we have not received any written notice or warning from the Nasdaq National Market or another market or stock exchange with respect to the potential delisting of the common stock;
- the shares of common stock issued in payment of the dividend are registered pursuant to an effective registration statement filed under the Securities Act or such shares may be sold without volume restrictions pursuant to Rule 144(k) of the Securities Act; and

- neither we nor any of our material subsidiaries (1) has commenced (or has had commenced against it) a case under any bankruptcy, dissolution, liquidation or similar law, (2) has been adjudicated to be insolvent, (3) has made a general assignment for the benefit of creditors or (4) fails to pay, or stated in writing that it is unable to pay, its debts generally as they become due.

Conversion. Each share of Series D preferred is convertible at any time at the option of the holder into a number of shares of common stock equal to its stated value divided by the then-effective conversion price of the Series D preferred. The stated value of the Series D shares is subject to adjustment in the event of any stock dividend, stock split, reverse stock split, combination, split up, recapitalization and like occurrence affecting such shares. The conversion price of the Series D preferred is subject to adjustment if certain events occur. The Series D preferred has antidilution protection that adjusts the conversion price downwards using a weighted-average calculation in the event we issue certain additional securities at a price per share less than the Series D conversion price then in effect.

The number of shares of common stock that may be acquired upon conversion of the Series D-2 preferred is limited to the extent necessary to ensure that, following such conversion, the common stock beneficially owned by a holder and its affiliates, and any other person that might be aggregated with such holder under Rule 13(d) of the Securities Exchange Act of 1934, does not exceed 4.999% of the outstanding common stock, including common stock issuable upon conversion of the Series D-2 preferred. A holder of Series D-2 preferred may, upon 61 days' written notice to us, waive this 4.999% conversion limitation or increase or decrease the percent at which such limitation is triggered with respect to such holder.

Redemption. We will be entitled to redeem the Series D preferred for \$416.25 per share, plus any accumulated but unpaid dividends, at any time on or after August 14, 2006 if, among other things, the daily volume-weighted average trading price of the common stock on the Nasdaq National Market exceeds \$7.60 per share (subject to appropriate adjustment) on each trading day for 45 consecutive trading days. In lieu of mandatory redemption at our option, holders of the Series D-1 preferred could elect to convert their Series D-1 preferred into common stock as described above under "Conversion," rather than having them redeemed.

6

At the request of holders holding a majority of the outstanding Series D-1 preferred on or after August 14, 2009 but prior to August 14, 2010, we will be required to redeem up to 50% of the shares of Series D-1 preferred in cash at a price per share equal to \$333.00 plus accumulated but unpaid dividends. After August 14, 2010, such holders may require us to redeem all of their shares at such price per share. At the request of holders holding Series D-2 preferred with a stated value in excess of \$3,000,000 on or after August 14, 2009, we will be required to redeem up to 50% of the Series D-2 preferred in cash at a price per share equal to \$333.00 plus accumulated but unpaid dividends. After August 14, 2010, such holders may require us to redeem all of their shares at such price per share.

Liquidation. Upon liquidation, dissolution or winding up, the holders of Series D preferred are entitled to be paid a liquidation preference out of assets legally available for distribution to the stockholders before any payment may be made to the holders of common stock or any other holders of preferred stock. The liquidation preference is equal to the greater of (1) the stated value of the Series D preferred plus any accumulated but unpaid dividends, and (2) the amount such holders would be entitled to if the Series D preferred was converted into common stock immediately prior to the liquidation. Mergers and certain other similar transactions may be deemed to be liquidation events for these purposes.

Preemptive Rights. The certificate of designations for the Series D preferred provides that the Series D preferred shall have the preemptive rights specified in the investor rights agreement. Under that agreement, each holder of Series D preferred generally has a right to purchase its pro rata portion of certain future issuances of our equity securities until such time that the initial holders of Series D preferred or their permitted transferees, in the aggregate, hold less than 10% of the Series D preferred issued in the financing transaction described above under "Issuance of Preferred Stock and Warrants." These preemptive rights do not apply to, among other things, stock issued solely as consideration for mergers and acquisitions, in payment of dividends, in strategic transactions, under employee stock option and purchase plans, and in firm commitment underwritings.

Certain Effects of Authorized but Unissued Stock

We have granted our board of directors the authority to issue preferred stock and to determine its rights and preferences in order to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from acquiring, a majority of our outstanding voting stock. We have designated and reserved an aggregate of 400,000 shares of authorized but unissued preferred stock for issuance as Series A participating cumulative preferred stock pursuant to our stockholder rights agreement described below.

Certain Provisions of Our Charter and By-Laws

We must comply with Section 203 of the Delaware General Corporation Law, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Generally, a "business combination" includes mergers, asset sales and other transactions resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" includes a person who, together with affiliates and associates, owns, or within three years did own, 15% or more of the corporation's outstanding voting stock. The existence of this provision generally will have an anti-takeover effect for transaction not approved in advance by the board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

7

Our charter provides for the division of the board of directors into three classes as nearly equal in size as possible with staggered three-year terms. In addition, our charter provides that directors may be removed only for cause by the affirmative vote of the holders of two-thirds of the shares of capital stock of the corporation entitled to vote. Under our charter, any vacancy on the board of directors, however occurring, including a vacancy resulting from an enlargement of the board, may only be filled by vote of a majority of the directors then in office. The classification of the board and the limitations on the removal of directors and filling of vacancies could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from acquiring, control of us.

Our charter also provides that any action required or permitted to be taken by our stockholders at any annual meeting or special meeting of stockholders may only be taken if it is properly brought before such meeting and may not be taken by written consent in lieu of a meeting. Our charter further provides that special meetings of the stockholders may only be called by our chairman of the board of directors, our chief executive officer or, if none, our president, or by the board of directors. Under our bylaws, in order for any matter to be considered properly brought before a meeting, a stockholder must comply with certain requirements regarding advance notice to us. The foregoing provisions could have the effect of delaying until the next stockholders' meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage another person from making a tender offer for our common stock, because such person, even if it acquired a majority of our outstanding voting securities, would be able to take action as a stockholder (such as electing new directors or approving a merger) only at a duly called stockholders' meeting, and not by written consent.

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's charter or by-laws, unless a corporation's charter or bylaws, as the case may be, requires a greater percentage. Our charter and bylaws require the affirmative vote of the holders of at least 75% of the voting power of all the shares of our capital stock issued, outstanding and entitled to vote to amend or repeal any of the provisions described in the prior two paragraphs.

Our charter contains certain provisions permitted under the Delaware General Corporation Law relating to the liability of directors. The provisions eliminate a director's liability for monetary damages for a breach of fiduciary duty, except in certain circumstances involving wrongful acts, such as the breach of a director's duty of loyalty or acts or omissions that involve intentional misconduct or a knowing violation of law. Further, our charter contains provisions to indemnify our directors and officers to the fullest extent permitted by the Delaware General Corporation Law.

Rights Plan and Series A Preferred

On March 12, 1998, our board of directors adopted a stockholder rights agreement and distributed one right for each then-outstanding share of common stock. The rights were issued to holders of record of common stock outstanding on March 12, 1998. Each share of common stock issued after March 12, 1998 will also include one right, subject to certain limitations. Each right, when it becomes exercisable, will initially entitle the registered holder to purchase from us one one-hundredth (1/100th) of a share of Series A preferred at a purchase price of \$175.00.

Currently the rights are attached to our outstanding shares of common stock. The rights are not now exercisable and cannot be transferred separately. The rights will become exercisable and separately transferable when we learn that any person or group, other than an exempt person, has acquired beneficial ownership of 20% or more of the outstanding common stock or on such other date as may be designated by the board of directors following the commencement of, or first public disclosure of an intent to commence, a tender or exchange offer for our outstanding common stock that could result in the offeror becoming the beneficial owner of 15% or more of our outstanding common stock. In such circumstances,

holders of the rights will be entitled to purchase, at the purchase price, a number of hundredths of a share of Series A preferred equivalent to the number of shares of common stock (or, in certain circumstances, other equity securities) having a market value of twice the purchase price. Beneficial holders of 15% or more of the outstanding common stock, however, would not be entitled to exercise their rights in such circumstances. As a result, their voting and equity interests in us would be substantially diluted if the rights were to be exercised.

The rights expire in March 2008, but we may redeem them earlier at a price of \$.01 per right, in accordance with the stockholder rights agreement.

Transfer Agent and Registrar

The transfer agent and registrar for the common stock is American Stock Transfer & Trust Company.

Nasdaq National Market Listing

The common stock has been approved for trading and quotation on the Nasdaq National Market under the symbol "AZPN."

Item 7. Financial Statements, Pro Forma Financial Information and Exhibits

- (a) Financial Statements of Businesses Acquired.

Not applicable.

- (b) Pro Forma Financial Information.

Not applicable.

- (c) Exhibits

<u>Exhibit No.</u>	<u>Description</u>
4	Certificate of Incorporation of Aspen Technology, Inc., as amended
99.1	Investor Rights Agreement dated August 14, 2003 by and among Aspen Technology, Inc. and the stockholders named therein
99.2	Management Rights Letter Agreement dated August 14, 2003 by and among Aspen Technology, Inc. and the entities named therein
99.3	Form of WD Common Stock Purchase Warrant of Aspen Technology, Inc., issued on August 14, 2003
99.4	Form of WB Common Stock Purchase Warrant of Aspen Technology, Inc., issued on August 14, 2003

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: August 21, 2003

ASPEN TECHNOLOGY, INC.

By: /s/ Charles F. Kane
Charles F. Kane
Senior Vice President and
Chief Financial Officer

10

EXHIBIT INDEX

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11

**CERTIFICATE OF INCORPORATION
OF
ASPEN TECHNOLOGY, INC.**

FIRST: The name of this corporation (the "Corporation") is Aspen Technology, Inc.

SECOND: The address of the registered office of the Corporation in the State of Delaware is 1209 Orange Street, Wilmington, Delaware 19801, County of New Castle, and the name of its registered agent at such address is The Corporation Trust Company.

THIRD: The purpose for which the Corporation is organized is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The Corporation is authorized to issue two classes of capital stock, one of which is designated as common stock, \$.10 par value per share ("Common Stock"), and the other of which is designated as preferred stock, \$.10 par value per share ("Preferred Stock"). The total number of shares of both classes of capital stock that the Corporation shall have authority to issue is 50,000,000 shares, consisting of 40,000,000 shares of Common Stock and 10,000,000 shares of Preferred Stock. The Preferred Stock may be issued from time to time in one or more series as set forth in Section (b) of this Article FOURTH. The following is a statement of the designations and the powers, preferences and rights of, and the qualifications, limitations or restrictions applicable to, each class of capital stock of the Corporation.

(a) Common Stock

(1) *General.* The voting, dividend and liquidation rights of holders of Common Stock are subject to and qualified by the rights of holders of Preferred Stock of any series as may be designated in any resolution or resolutions providing for the issue of such series as may be adopted by the board of directors as hereinafter provided.

(2) *Voting.* Holders of Common Stock are entitled to one vote for each share held at all meetings of stockholders. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

(3) *Dividends.* Dividends may be declared and paid on Common Stock from funds lawfully available therefor, as and when determined by the board of directors and subject to any preferential dividend rights of any series of Preferred Stock then outstanding.

(4) *Liquidation.* Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to stockholders of the Corporation, subject to any preferential rights of any series of Preferred Stock then outstanding.

(b) Preferred Stock

(1) *Issuance.* Preferred Stock may be issued from time to time in one or more series, each of which series shall have such terms as are set forth herein and in any resolution or resolutions providing

for the issue of such series as may be adopted by the board of directors as hereinafter provided. Any shares of Preferred Stock that may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise expressly provided in this Certificate of Incorporation or provided by law.

(2) *Single Class.* Different series of Preferred Stock shall not be construed to constitute different classes of capital stock for the purposes of voting by classes unless expressly provided.

(3) *Authority of Board.* Authority is hereby expressly granted to the board of directors to provide for the issuance of Preferred Stock from time to time in one or more series, and in connection with the creation of any such series, to determine and fix such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights thereof, and qualifications, limitations or restrictions applicable thereto, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law of the State of Delaware. Without limiting the generality of the foregoing, a resolution or resolutions providing for issuance of any series of Preferred Stock may provide for dividend rights, conversion rights, redemption privileges and liquidation preferences applicable to such series and may provide that such series shall rank superior, equal or junior to the Preferred Stock of any other series, in each case except as otherwise expressly provided in this Certificate of Incorporation or as provided by law. Except as otherwise provided in this Certificate of Incorporation, no vote of holders of Common Stock or holders of Preferred Stock shall be a prerequisite to the designation or issuance of any shares of any series of Preferred Stock authorized by and complying with the conditions of this Certificate of Incorporation.

FIFTH: Stockholders of the Corporation may not take any action by written consent in lieu of a meeting. Special meetings of stockholders may be called at any time by the Chairman of the Board, the Chief Executive Officer (or if there is no Chief Executive Officer, the President) or the board of directors. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of the general meeting.

SIXTH: The following provisions shall apply with respect to the board of directors of the Corporation:

(a) Number of Directors

The number of directors shall be fixed from time to time by, or in the manner provided in, the by-laws of the Corporation, the Series A Certificate or any other certificate of designation with respect to a series of Preferred Stock, *provided* that in no event shall the number of directors be

less than three.

(b) Election of Directors

Elections of directors need not be by written ballot unless otherwise provided in the by-laws of the Corporation.

(c) Classes of Directors

The board of directors shall be divided into three classes, consisting of Class I, Class II and Class III. No class of directors shall have more than one director more than any other class. If a fraction is contained in the quotient arrived at by dividing the designated number of directors by three, then, if such fraction is one-third, the extra director shall be a member of Class I, and if such fraction

2

is two-thirds, one of the extra directors shall be a member of Class I and one of the extra directors shall be a member of Class II, except as otherwise may be provided from time to time by the board of directors.

(d) Terms of Office

Each director shall serve for a term ending on the date of the third annual meeting following the annual meeting at which such director was elected; *provided* that each initial director in Class I shall serve for a term ending on the date of the annual meeting of stockholders in 2000, each initial director in Class II shall serve for a term ending on the date of the annual meeting of stockholders in 1998 and each initial director in Class III shall serve for a term ending on the date of the annual meeting of stockholders in 1999 and *provided further* that the term of each director shall be subject to the election and qualification of a successor to such director and to the earlier death, resignation or removal of such director.

(e) Allocation of Directors Among Classes Upon Changes in Authorized Number of Directors

In the event of any increase or decrease in the authorized number of directors, (1) each director then serving shall continue as a director of the class of which such director is a member and (2) the newly created or eliminated directorships resulting from such increase or decrease shall be apportioned by the board of directors among the three classes of directors so as to ensure that no one class has more than one director more than any other class. To the extent possible, consistent with the foregoing, any newly created directorships shall be added to those classes whose terms of office are to expire at the latest dates following such allocation and any newly eliminated directorships shall be subtracted from those classes whose terms of offices are to expire at the earliest dates following such allocation, except as otherwise may be provided from time to time by the board of directors.

(f) Removal

Directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of the shares of capital stock of the Corporation issued and outstanding and entitled to vote.

SEVENTH: No director shall be personally liable to the Corporation or to any of its stockholders for monetary damages arising out of such director's breach of fiduciary duty as a director of the Corporation, except to the extent that the elimination or limitation of such liability is not permitted by the General Corporation Law of the State of Delaware, as the same exists or may hereafter be amended. No amendment to or repeal of the provisions of this Article SEVENTH shall deprive any director of the Corporation of the benefit of the provisions of this Article SEVENTH with respect to any act or failure to act of any director occurring prior to such amendment or repeal.

EIGHTH: The following provisions shall apply with respect to the indemnification of, and advancement of expenses to, certain parties as set forth below:

(a) Indemnification

(1) *Proceedings Other than by or in the Right of the Corporation.* The Corporation shall indemnify each person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation), by reason of the fact that such person is or

3

was, or has agreed to become, a director or officer of the Corporation, or is or was serving or has agreed to serve, at the request of the Corporation, as a director, officer or trustee of, or in a similar capacity with, another corporation (including any partially or wholly owned subsidiary of the Corporation), partnership, joint venture, trust or other enterprise (including any employee benefit plan) (each of such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the Indemnitee or on the Indemnitee's behalf in connection with such action, suit or proceeding and any appeal therefrom, if (A) the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation and (B) with respect to any criminal action or proceeding, the Indemnitee had no reasonable cause to believe the Indemnitee's conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that the Indemnitee did not act in good faith, did not act in a manner that the Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation or, with respect to any criminal action or proceeding, did not have reasonable cause to believe that the Indemnitee's conduct was unlawful. Notwithstanding anything to the contrary in this Article EIGHTH, except as set forth in Section (c)(2) of this Article EIGHTH, the Corporation shall not indemnify an Indemnitee seeking indemnification in connection with the proceeding (or part thereof) initiated by the Indemnitee unless the initiation thereof was approved by the board of directors of the Corporation.

(2) *Proceedings by or in the Right of the Corporation.* The Corporation shall indemnify any Indemnitee who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in the Corporation's favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving as a director, officer or trustee of, or in a similar capacity with, another corporation (including any partially or wholly owned subsidiary of the Corporation), partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and amounts paid in settlement actually and reasonably incurred by the Indemnitee or on the Indemnitee's behalf in connection with such action, suit or proceeding and any appeal therefrom, if the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which the Indemnitee shall have been adjudged to be liable to the Corporation unless and only to the extent that the Court of Chancery of Delaware shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, the Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) that the Court of Chancery of the State of Delaware shall deem proper.

(3) *Expenses of Successful Indemnitee.* Notwithstanding any other provision of this Article EIGHTH, to the extent that an Indemnitee has been successful, on the merits or otherwise (including a disposition without prejudice), in defense of any action, suit or proceeding referred to in Section (a)(1) or (2) of this Article EIGHTH, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, the Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by the Indemnitee or on the Indemnitee's behalf in connection therewith. Without limiting the foregoing, if any action, suit or proceeding is disposed of, on the merits or otherwise (including a disposition without prejudice), without (A) the disposition being adverse to the Indemnitee, (B) an adjudication that the Indemnitee was liable to the Corporation, (C) a plea of guilty or *nolo contendere* by the Indemnitee, (D) an

4

adjudication that the Indemnitee did not act in good faith and in a manner the Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and (E) with respect to any criminal proceeding, an adjudication that the Indemnitee had reasonable cause to believe the Indemnitee's conduct was unlawful, the Indemnitee shall be considered for the purposes hereof to have been wholly successful with respect thereto.

(4) *Partial Indemnification.* If any Indemnitee is entitled under any provision of this Section (a) to indemnification by the Corporation for a portion, but not all, of the expenses (including attorneys' fees), judgments, fines or amounts paid in settlement actually and reasonably incurred by the Indemnitee or on the Indemnitee's behalf in any appeal therefrom, the Corporation shall indemnify the Indemnitee for the portion of such expenses (including attorneys' fees), judgments, fines or amounts paid in settlement to which the Indemnitee is entitled.

(b) Advancement of Expenses

Subject to Section (c)(2) of this Article EIGHTH, in the event that the Corporation does not assume a defense pursuant to Section (c)(1) of this Article EIGHTH of any action, suit, proceeding or investigation of which the Corporation receives notice under this Article EIGHTH, any expenses (including attorneys' fees) incurred by an Indemnitee in defending a civil or criminal action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter; *provided, however*, that the payment of such expenses incurred by an Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of the Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined that the Indemnitee is not entitled to be indemnified by the Corporation as authorized in this Article EIGHTH. Any such undertaking by an Indemnitee shall be accepted without reference to the financial ability of the Indemnitee to make such repayment.

(c) Procedures

(1) *Notification and Defense of Claim.* As a condition precedent to any Indemnitee's right to be indemnified, the Indemnitee must promptly notify the Corporation in writing of any action, suit, proceeding or investigation involving the Indemnitee for which indemnity will or may be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to the Indemnitee; *provided* that the Corporation shall not be entitled, without the consent of the Indemnitee, to assume the defense of any claim brought by or in the right of the Corporation or as to which counsel for the Indemnitee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and the Indemnitee in the conduct of the defense of such claim. After notice from the Corporation to the Indemnitee of its election so to assume such defense, the Corporation shall not be liable to the Indemnitee for any legal or other expenses subsequently incurred by the Indemnitee in connection with such claim, other than as provided in this Paragraph (1). The Indemnitee shall have the right to employ the Indemnitee's own counsel in connection with such claim, but the fees and expenses of such counsel incurred after notice from the Corporation of its assumption of the defense thereof shall be at the expense of the Indemnitee unless (A) the employment of counsel by the Indemnitee has been authorized by the Corporation, (B) counsel to the Indemnitee has reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and the Indemnitee in the conduct of the defense of such action or (C) the Corporation has not in fact employed counsel to assume the defense of such action, in each of which cases the fees and

5

expenses of counsel for the Indemnitee shall be at the expense of the Corporation except as otherwise expressly provided by this Article EIGHTH.

(2) *Requests and Payment.* In order to obtain indemnification or advancement of expenses pursuant to this Article EIGHTH, an Indemnitee shall submit to the Corporation a written request therefor, which request shall include documentation and information as is reasonably available to the Indemnitee and is reasonably necessary to determine whether and to what extent the Indemnitee is entitled to indemnification or advancement of expenses. Any such indemnification or advancement of expenses shall be made promptly, and in any event within sixty days after receipt by the Corporation of the written request of the Indemnitee, unless with respect to requests under Section (a)(1), (a)(2) or (b) of this Article EIGHTH, the Corporation determines, by clear and convincing evidence, within such sixty-day period, that any Indemnitee did not meet the applicable standard of conduct set forth in Section (a)(1) or (a)(2) of this Article EIGHTH. Such determination shall be made in each instance by (A) a majority vote of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question ("disinterested

directors”), even though less than a quorum, (B) a majority vote of a quorum of the outstanding shares of capital stock of all classes entitled to vote for directors, which quorum shall consist of stockholders who are not at that time parties to the action, suit, proceeding or investigation in question, (C) independent legal counsel (who may be regular legal counsel to the Corporation), or (D) a court of competent jurisdiction.

(3) *Remedies.* The right of an Indemnitee to indemnification or advancement of expenses pursuant to this Article EIGHTH shall be enforceable by the Indemnitee in any court of competent jurisdiction if the Corporation denies, in whole or in part, a request of an Indemnitee in accordance with the preceding Paragraph (2) or if no disposition thereof is made within the sixty-day period referred to in the preceding Paragraph (2). Unless otherwise provided by law, the burden of proving that an Indemnitee is not entitled to indemnification or advancement of expenses pursuant to this Article EIGHTH shall be on the Corporation. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because the Indemnitee has met any applicable standard of conduct, nor an actual determination by the Corporation pursuant to the preceding Section (c)(2) that the Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that the Indemnitee has not met the applicable standard of conduct. The Indemnitee’s expenses (including attorneys’ fees) incurred in connection with successfully establishing the Indemnitee’s right to indemnification, in whole or in part, in any such proceeding shall also be indemnified by the Corporation.

(d) Rights Not Exclusive

The right of an Indemnitee to indemnification and advancement of expenses pursuant to this Article EIGHTH shall not be deemed exclusive of any other rights to which the Indemnitee may be entitled under any law (common or statutory), agreement, vote of stockholders or disinterested directors, or otherwise, both as to action in the Indemnitee’s official capacity and as to action in any other capacity while holding office for the Corporation, and shall continue as to an Indemnitee who has ceased to serve in the capacity with respect to which the Indemnitee’s right to indemnification or advancement of expenses accrued, and shall inure to the benefit of the estate, heirs, executors and administrators of the Indemnitee. Nothing contained in this Article EIGHTH shall be deemed to prohibit, and the Corporation is specifically authorized to enter into, agreements with officers and directors providing indemnification rights and procedures supplemental to those set forth in this Article EIGHTH. The Corporation may, to the extent authorized from time to time by its board of

directors, grant indemnification rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article EIGHTH. In addition, the Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation (including any partially or wholly owned subsidiary of the Corporation), partnership, joint venture, trust or other enterprise (including any employee benefit plan) against any expense, liability or loss incurred by such a person in any such capacity, or arising out of such person’s status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation Law of the State of Delaware.

(e) Subsequent Events

(1) *Amendments of Article or Law.* No amendment, termination or repeal of this Article EIGHTH or of any relevant provisions of the General Corporation Law of the State of Delaware or any other applicable law shall affect or diminish in any way the rights of any Indemnitee to indemnification under the provisions of this Article EIGHTH with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the effective date of such amendment, termination or repeal. If the General Corporation Law of the State of Delaware is amended after adoption of this Article EIGHTH to expand further the indemnification permitted to any Indemnitee, then the Corporation shall indemnify the Indemnitee to the fullest extent permitted by the General Corporation Law of the State of Delaware, as so amended, without the need for any further action with respect to this Article EIGHTH.

(2) *Merger or Consolidation.* If the Corporation is merged into or consolidated with another corporation and the Corporation is not the surviving corporation, the surviving corporation shall assume the obligations of the Corporation under this Article EIGHTH with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or factors occurring prior to the date of such merger or consolidation.

(f) Invalidation

If any or all of the provisions of this Article EIGHTH shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the Corporation, to the fullest extent permitted by any applicable provision of this Article EIGHTH that shall not have been invalidated and to the fullest extent permitted by the General Corporation Law of the State of Delaware or any other applicable law.

(g) Definitions

Unless defined elsewhere in this Certificate of Incorporation, any term used in this Article EIGHTH and defined in Section 145(h) or (i) of the General Corporation Law of the State of Delaware shall have the meaning ascribed to such term in such Section.

NINTH: In furtherance of and not in limitation of powers conferred by statute, it is further provided that:

(a) Amendment of By-Laws

Subject to the limitations and exceptions, if any, contained in the by-laws of the Corporation, the by-laws may be adopted, amended or repealed by the board of directors.

(b) Location of Corporate Books

Subject to any applicable requirements of the General Corporation Law of the State of Delaware, the books of the Corporation may be kept outside the State of Delaware at such location or locations as may be designated from time to time by the board of directors or in the by-laws of the Corporation.

TENTH: Whenever a compromise or arrangement is proposed between the Corporation and its creditors or any class of them or between the Corporation and its stockholders or any class of them, any court of equitable jurisdiction within the State of Delaware may, on the application in a summary way of the Corporation or of any creditor or stockholder thereof or on the application of any receiver or receivers appointed for the Corporation under Section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for the Corporation under Section 279 of Title 8 of the Delaware Code, order a meeting of the creditors or class of creditors, and/or of the stockholders or class of stockholders of the Corporation, as the case may be, to be summoned in such manner as the said court directs. If a majority in number representing three-fourths in value of the creditors or class of creditors, and/or of the stockholders or class of stockholders of the Corporation, as the case may be, agree to any compromise or arrangement and to any reorganization of the Corporation as a consequence of such compromise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the stockholders or class of stockholders, of the Corporation, as the case may be, and also on the Corporation.

ELEVENTH: The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation in the manner now or hereafter prescribed by the General Corporation Law of the State of Delaware and this Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation. Notwithstanding any provision of law, any other provision of this Certificate of Incorporation or any provision of the by-laws of the Corporation, the affirmative vote of the holders of at least seventy-five percent of the shares of capital stock of the Corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with, any provision of Article FIFTH, Article SIXTH or this Article ELEVENTH.

TWELFTH: The name of the sole incorporator of the Corporation is Stephen J. Doyle and his mailing address is Aspen Technology, Inc., Ten Canal Park, Cambridge, Massachusetts 02141.

IN WITNESS WHEREOF, I have hereunto set my hand as of March 10, 1998.

/s/ Stephen J. Doyle

Stephen J. Doyle

Sole Incorporator

**CERTIFICATE OF MERGER
OF
ASPEN TECHNOLOGY, INC., A MASSACHUSETTS CORPORATION,
WITH AND INTO
ASPEN TECHNOLOGY, INC., A DELAWARE CORPORATION**

The undersigned corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware DOES HEREBY CERTIFY:

FIRST: The name and state of incorporation of each of the constituent corporations of the merger are as follows:

<u>Name</u>	<u>State of Incorporation</u>
Aspen Technology, Inc.	Delaware
Aspen Technology, Inc.	Massachusetts

SECOND: An agreement and plan of merger (the "Plan of Merger") has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations in accordance with the requirements of Section 252 of the General Corporation Law of the State of Delaware.

THIRD: The name of the surviving corporation is "Aspen Technology, Inc."

FOURTH: The certificate of incorporation of Aspen Technology, Inc., a Delaware corporation, as in effect immediately prior to the merger, shall be the certificate of incorporation of the surviving corporation.

FIFTH: An executed copy of the Plan of Merger is on file at the principal place of business of the surviving corporation, which is located at Ten Canal Park, Cambridge, Massachusetts 02141.

SIXTH: A copy of the Plan of Merger will be furnished by the surviving corporation, on request and without cost, to any stockholder of either constituent corporation.

SEVENTH: The authorized capital stock of Aspen Technology, Inc., a Massachusetts corporation, consists of (i) 40,000,000 shares of common stock, \$.10 par value per share, of which 21,441,366 shares have been issued and are outstanding, (ii) 400,000 shares of Series A participating cumulative preferred stock, \$.10 par value per share, of which no shares are outstanding, and (iii) 9,600,000 shares of undesignated preferred stock. The authorized capital stock of Aspen Technology, Inc., a Delaware corporation, consists of (i) 40,000,000 shares of common stock, \$.10 par value per share, of which 100 shares have been issued, are outstanding and are owned by Aspen Technology, Inc., a Massachusetts corporation and (ii) 10,000,000 shares of undesignated preferred stock.

Dated: March 12, 1998

[SEAL]

By: /s/ Joseph F. Boston
President
Joseph F. Boston

Attest:

By: /s/ Stephen J. Doyle
Secretary
Stephen J. Doyle

ASPEN TECHNOLOGY, INC.

CERTIFICATE OF DESIGNATION
OF
SERIES A PARTICIPATING CUMULATIVE PREFERRED STOCK

SECTION 1. Designation and Number of Shares

The shares of this series of Preferred Stock shall be designated as Series A participating cumulative preferred stock, \$.10 par value per share ("Series A Preferred Stock"). The number of shares initially constituting the Series A Preferred Stock shall be 400,000; *provided, however*, that, if more than a total of 400,000 shares of Series A Preferred Stock shall be issuable upon the exercise of Rights (the "Rights") issued pursuant to the Rights Agreement dated as of March 11, 1998, between the Corporation and American Stock Transfer and Trust Company, a limited power banking trust company licensed by the New York State Banking Authority, as Rights Agent (the "Rights Agreement"), the board of directors, pursuant to Section 151(g) of the General Corporation Law of the State of Delaware, shall direct by resolution or resolutions that a certificate be properly executed, acknowledged, filed and recorded, in accordance with the provisions of Section 103 thereof, providing for the total number of shares of Series A Preferred Stock authorized to be issued to be increased (to the extent that the Certificate of Incorporation then permits) to the largest number of whole shares (rounded up to the nearest whole number) issuable upon exercise of such Rights.

SECTION 2. Dividends or Distributions

(a) Subject to the prior and superior rights of holders of shares of any other series of Preferred Stock or other class of capital stock of the Corporation ranking prior and superior to the shares of Series A Preferred Stock with respect to dividends, holders of Series A Preferred Stock shall be entitled to receive, when, as and if declared by the board of directors, out of the assets of the Corporation legally available therefor, (i) quarterly dividends payable in cash on the last day of each fiscal quarter in each year, or such other dates as the board of directors of the Corporation shall approve (each such date being referred to herein as a "Quarterly Dividend Payment Date"), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or a fraction of a share of Series A Preferred Stock, in the amount of \$1.00 per whole share (rounded to the nearest cent) less the amount of all cash dividends declared on the Series A Preferred Stock pursuant to the following clause (ii) since the immediately preceding Quarterly Dividend Payment Date or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series A Preferred Stock (the total of which shall not, in any event, be less than zero) and (ii) dividends payable in cash on the payment date for each cash dividend declared on the Corporation's common stock, \$.10 par value per share ("Common Stock"), in an amount per whole share (rounded to the nearest cent) equal to the Formula Number (as hereinafter defined) then in effect times the cash dividends then to be paid on each share of Common Stock. In addition, if the Corporation shall pay any dividend or make any distribution on the Common Stock payable in assets, securities or other forms of noncash consideration (other than dividends or distributions solely in shares of Common Stock, then, in each such case, the Corporation shall simultaneously pay or make on each outstanding whole share of Series A Preferred Stock a dividend or distribution in like kind equal to the Formula Number then in effect times such dividend or distribution on each share of the Common Stock. As used herein, the "Formula Number" shall be 100; *provided, however*, that if at any time on or after March 13, 1998, the Corporation shall (i) declare or pay any dividend on the Common Stock payable in shares of Common Stock or make any

distribution on the Common Stock in shares of Common Stock, (ii) subdivide (by a stock split or otherwise) the outstanding shares of Common Stock into a larger number of shares of Common Stock or (iii) combine (by a reverse stock split or otherwise) the outstanding shares of Common Stock into a smaller number of shares of Common Stock, then in each such event the Formula Number shall be adjusted to a number determined by multiplying the Formula Number in effect immediately prior to such event by a fraction, the numerator of which is the number of shares of Common Stock that are outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that are outstanding immediately prior to such event (and rounding the result to the nearest whole number); and *provided further* that, if at any time on or after March 13, 1998, the Corporation shall issue any shares of its capital stock in a merger, reclassification, or change of the outstanding shares of Common Stock then in each such event the Formula Number shall be appropriately adjusted to reflect such merger, reclassification or change so that each share of Series A Preferred Stock continues to be the economic equivalent of a Formula Number of shares of Common Stock prior to such merger, reclassification or change.

(b) The Corporation shall declare a dividend or distribution on the Series A Preferred Stock as provided in Section 2(a) immediately prior to or at the same time it declares a dividend or distribution on the Common Stock (other than a dividend or distribution solely in shares of Common Stock); *provided, however*, that, in the event no dividend or distribution (other than a dividend or distribution in shares of Common Stock) shall have been declared on the Common Stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of \$1.00 per share on the Series A Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date. The board of directors may fix a record date for the determination of holders of Series A Preferred Stock entitled to receive a dividend or distribution declared thereon, which record date shall be the same as the record date for any corresponding dividend or distribution on Common Stock.

(c) Dividends shall begin to accrue and be cumulative on outstanding shares of Series A Preferred Stock from and after the Quarterly Dividend Payment Date next preceding the date of original issue of such shares of Series A Preferred Stock; *provided, however*, that dividends on such shares which are

originally issued after the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend and on or prior to the next succeeding Quarterly Dividend Payment Date shall begin to accrue and be cumulative from and after such Quarterly Dividend Payment Date. Notwithstanding the foregoing, dividends on shares of Series A Preferred Stock that are originally issued prior to the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend on the first Quarterly Dividend Payment Date shall be calculated as if cumulative from and after the last day of the fiscal quarter next preceding the date of original issuance of such shares. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series A Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding.

(d) So long as any shares of Series A Preferred Stock are outstanding, no dividends or other distributions shall be declared, paid or distributed, or set aside for payment or distribution, on Common Stock unless, in each case, the dividend required by this Section 2 to be declared on Series A Preferred Stock shall have been declared.

(e) Holders of Series A Preferred Stock shall not be entitled to receive any dividends or other distributions except as provided herein.

2

SECTION 3. Voting Rights

Holders of Series A Preferred Stock shall have the following voting rights:

(a) Each holder of Series A Preferred Stock shall be entitled to a number of votes equal to the Formula Number then in effect, for each share of Series A Preferred Stock held of record on each matter on which holders of Common Stock or stockholders generally are entitled to vote, multiplied by the maximum number of votes per share which any holder of Common Stock or stockholders generally then have with respect to such matter (assuming any holding period or other requirement to vote a greater number of shares is satisfied).

(b) Except as otherwise provided herein or by applicable law, holders of Series A Preferred Stock and holders of Common Stock shall vote together as one class for the election of directors and on all other matters submitted to a vote of stockholders of the Corporation.

(c) If, at the time of any annual meeting of stockholders for the election of directors, the equivalent of six quarterly dividends (whether or not consecutive) payable on any share or shares of Series A Preferred Stock are in default, the number of directors constituting the board of directors of the Corporation shall be increased by two. In addition to voting together with holders of Common Stock for the election of other directors of the Corporation, holders of Series A Preferred Stock, voting separately as a class, shall be entitled at said meeting of stockholders (and at each subsequent annual meeting of stockholders), unless all dividends in arrears have been paid or declared and set apart for payment prior thereto, to vote for the election of two directors, the holders of Series A Preferred Stock being entitled to cast a number of votes per share of Series A Preferred Stock equal to the Formula Number. Until the default in payments of all dividends which permitted the election of said directors shall cease to exist, any director who shall have been so elected pursuant to the next preceding sentence may be removed at any time, either with or without cause, only by the affirmative vote of holders of Series A Preferred Stock at the time entitled to cast a majority of the votes entitled to be cast for the election of any such director at a special meeting of such holders called for that purpose, and any vacancy thereby created may be filled by the vote of such holders. If and when such default shall cease to exist, holders of Series A Preferred Stock shall be divested of the foregoing special voting rights, subject to re-vesting in the event of each and every subsequent like default in payments of dividends. Upon the termination of the foregoing special voting rights, the terms of office of all persons who may have been elected directors pursuant to said special voting rights shall forthwith terminate, and the number of directors constituting the board of directors shall be reduced by two. The voting rights granted by this Section 3(c) shall be in addition to any other voting rights granted to holders of Series A Preferred Stock in this Section 3.

(d) Except as provided herein, in Section 11 or by applicable law, holders of Series A Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of Common Stock as set forth herein) for authorizing or taking any corporate action.

SECTION 4. Certain Restrictions

(a) Whenever quarterly dividends or other dividends or distributions payable on the Series A Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series A Preferred Stock outstanding shall have been paid in full, the Corporation shall not

3

(i) declare or pay dividends on, make any other distributions on, or redeem or purchase or otherwise acquire for consideration any shares of capital stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock;

(ii) declare or pay dividends on or make any other distributions on any shares of capital stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except dividends paid ratably on the Series A Preferred Stock and all such parity capital stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) redeem or purchase or otherwise acquire for consideration shares of any capital stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock; *provided* that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such parity capital stock in exchange for shares of any capital stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series A Preferred Stock; or

(iv) purchase or otherwise acquire for consideration any shares of Series A Preferred Stock, or any shares of capital stock ranking on a parity with the Series A Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the board of directors) to all holders of such shares upon such terms as the board of directors, after consideration of the respective annual dividend rates and

other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(b) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of capital stock of the Corporation unless the Corporation could, under paragraph (a) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

SECTION 5. Liquidation Rights

Upon the liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, no distribution shall be made (a) to holders of shares of capital stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock unless, prior thereto, the holders of Series A Preferred Stock shall have received an amount equal to the accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, plus an amount equal to the greater of (i) \$10.00 per whole share and (ii) an aggregate amount per share equal to the Formula Number then in effect multiplied by the aggregate amount to be distributed per share to holders of Common Stock or (ii) to the holders of capital stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except distributions made ratably on the Series A Preferred Stock and all other such parity capital stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up.

SECTION 6. Consolidation, Merger, etc.

In case the Corporation shall enter into any consolidation, merger, combination or other transaction in which shares of Common Stock are exchanged for or changed into other capital stock or securities, cash or any other property, then in any such case the then-outstanding shares of Series A Preferred Stock shall at the same time be similarly exchanged or changed into an amount per share equal to the Formula Number then in effect multiplied by the aggregate amount of capital stock, securities, cash or any other property (payable

4

in kind), as the case may be, into which or for which each share of Common Stock is exchanged or changed. In the event both Section 2 and this Section 6 would apply to a transaction, this Section 6 shall control.

SECTION 7. No Redemption; No Sinking Fund

(a) Series A Preferred Stock shall not be subject to redemption by the Corporation or at the option of any holder of Series A Preferred Stock; *provided, however*, that the Corporation may purchase or otherwise acquire outstanding shares of Series A Preferred Stock in the open market or by offer to any holder or holders of Series A Preferred Stock.

(b) Series A Preferred Stock shall not be subject to or entitled to the operation of a retirement or sinking fund.

SECTION 8. Ranking

Series A Preferred Stock shall rank junior to all other series of Preferred Stock of the Corporation, unless the board of directors shall specifically determine otherwise in fixing the powers, preferences and relative, participating, optional and other special rights of the shares of such series and the qualifications, limitations and restrictions thereof.

SECTION 9. Fractional Shares

Series A Preferred Stock shall be issuable upon exercise of the Rights issued pursuant to the Rights Agreement in whole shares or in any fraction of a share that is one one-hundredth (1/100th) of a share or any integral multiple of such fraction that shall entitle the holder, in proportion to such holder's fractional shares, to receive dividends, exercise voting rights, participate in distributions and to have the benefit of all other rights of holders of Series A Preferred Stock. In lieu of fractional shares, the Corporation, prior to the first issuance of a share or a fraction of a share of Series A Preferred Stock, may elect (a) to make a cash payment as provided in the Rights Agreement for fractions of a share other than one one-hundredth(1/100th) of a share or any integral multiple thereof or (b) to issue depository receipts evidencing such authorized fraction of a share of Series A Preferred Stock pursuant to an appropriate agreement between the Corporation and a depository selected by the Corporation; *provided* that such agreement shall provide that the holders of such depository receipts shall have all the rights, privileges and preferences to which they are entitled as holders of the Series A Preferred Stock.

SECTION 10. Reacquired Shares

Any shares of Series A Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and canceled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of Preferred Stock, without designation as to series until such shares are once more designated as part of a particular series by the board of directors pursuant to the provisions of Section (b) of Article FOURTH of the Certificate of Incorporation.

SECTION 11. Amendment

None of the powers, preferences and relative, participating, optional and other special rights of the Series A Preferred Stock as provided herein or otherwise in the Certificate of Incorporation shall be amended in any manner that would alter or change the powers, preferences, rights or privileges of the holders of Series A Preferred Stock so as to affect them adversely without the affirmative vote of the holders of at least

5

66 ²/₃% of the outstanding shares of Series A Preferred Stock, voting as a separate class; *provided, however*, that no such amendment approved by the holders of at least 66 ²/₃% of the outstanding shares of Series A Preferred Stock shall be deemed to apply to the powers, preferences, rights or privileges of any holder

of Series A Preferred Stock originally issued upon exercise of the Rights after the time of such approval without the approval of such holder.

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this Certificate of Designation of Series A Participating Cumulative Preferred Stock to be executed on its behalf by its President and its Secretary as of March 12, 1998.

ASPEN TECHNOLOGY, INC.

By: /s/ J.F. Boston
President – J.F. BOSTON

Attest:

By: /s/ Stephen J. Doyle
Stephen J. Doyle
Secretary

6

**CERTIFICATE OF CORRECTION
FILED TO CORRECT A CERTAIN ERROR IN
THE CERTIFICATE OF DESIGNATION
OF
ASPEN TECHNOLOGY, INC.
FILED IN THE OFFICE OF
THE SECRETARY OF STATE OF DELAWARE
ON MARCH 12, 1998**

Aspen Technology, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware.

DOES HEREBY CERTIFY:

1. The name of the corporation is Aspen Technology, Inc.
2. That a Certificate of Designation was filed by the Secretary of State of Delaware on March 12, 1998, and that said Certificate requires correction as permitted by Section 103 of the General Corporation Law of the State of Delaware.
3. The inaccuracy or defect of said Certificate to be corrected is as follows:

“SECTION 1. Designation and Number of Shares

The shares of this series of Preferred Stock shall be designated as Series A participating cumulative preferred stock, \$.10 par value per share (“Series A Preferred Stock”). The number of shares initially constituting the Series A Preferred Stock shall be 400,000; *provided, however,* that, if more than a total of 400,000 shares of Series A Preferred Stock shall be issuable upon the exercise of Rights (the “Rights”) issued pursuant to the Rights Agreement dated as of March 11, 1998, between the Corporation and American Stock Transfer and Trust Company, a limited power banking trust company licensed by the New York State Banking Authority, as Rights Agent (the “Rights Agreement”), the board of directors, pursuant to Section 151(g) of the General Corporation Law of the State of Delaware, shall direct by resolution or resolutions that a certificate be properly executed, acknowledged, filed and recorded, in accordance with the provisions of Section 103 thereof, providing for the total number of shares of Series A Preferred Stock authorized to be issued to be increased (to the extent that the Certificate of Incorporation then permits) to the largest number of whole shares (rounded up to the nearest whole number) issuable upon exercise of such Rights.”

4. The corrected SECTION 1 should read as follows:

“SECTION 1. Designation and Number of Shares

The shares of this series of Preferred Stock shall be designated as Series A participating cumulative preferred stock, \$.10 par value per share (“Series A Preferred Stock”). The number of shares initially constituting the Series A Preferred Stock shall be 400,000 *provided, however,* that, if more than a total of 400,000 shares of Series A Preferred Stock shall be issuable upon the exercise of Rights (the “Rights”) issued pursuant to the Rights Agreement dated as of March 12, 1998, between the Corporation and American Stock Transfer and Trust Company, a limited power banking trust company licensed by the New York State

Banking Authority, as Rights Agent (the “Rights Agreement”), the board of directors, pursuant to Section 151(g) of the General Corporation Law of the State of Delaware, shall direct by resolution or resolutions that a certificate be properly executed, acknowledged, filed and recorded, in accordance with the provisions of Section 103 thereof, providing for the total number of shares of Series A Preferred Stock authorized to be issued to be increased (to the extent that the Certificate of Incorporation then permits) to the largest number of whole shares (rounded up to the nearest whole number) issuable upon exercise of such Rights.”

IN WITNESS WHEREOF, said Aspen Technology, Inc. has caused this Certificate to be signed by Stephen J. Doyle, its Secretary, this first day of June, 1998.

ASPEN TECHNOLOGY, INC.

By: /s/ Stephen J. Doyle
Secretary

2

**CERTIFICATE OF MERGER
OF
B-JAC INTERNATIONAL, INC., A VIRGINIA CORPORATION,
WITH AND INTO
ASPEN TECHNOLOGY, INC., A DELAWARE CORPORATION**

The undersigned corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware DOES HEREBY CERTIFY:

FIRST: The name and state of incorporation of each of the constituent corporations of the merger are as follows:

<u>Name</u>	<u>State of Incorporation</u>
Aspen Technology, Inc.	Delaware
B-JAC International, Inc.	Virginia

SECOND: An agreement and plan of merger (the "Plan of Merger") has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations in accordance with the requirements of Section 252 of the General Corporation Law of the State of Delaware.

THIRD: The name of the surviving corporation is "Aspen Technology, Inc."

FOURTH: The certificate of incorporation of Aspen Technology, Inc., as in effect immediately prior to the merger, shall be the certificate of incorporation of the surviving corporation.

FIFTH: An executed copy of the Plan of Merger is on file at the principal place of business of the surviving corporation, which is located at Ten Canal Park, Cambridge, Massachusetts 02141.

SIXTH: A copy of the Plan of Merger will be furnished by the surviving corporation, on request and without cost, to any stockholder of either constituent corporation.

SEVENTH: The authorized capital stock of Aspen Technology, Inc. consists of (i) 40,000,000 shares of common stock, \$.10 par value per share, of which 24,491,695 shares have been issued and are outstanding, (ii) 400,000 shares of Series A participating cumulative preferred stock, \$.10 par value per share, of which no shares are outstanding, and (iii) 9,600,000 shares of undesignated preferred stock. The authorized capital stock of B-JAC International, Inc. consists of 25,000 shares of common stock, \$.01 par value per share, of which 10,000 shares are issued and outstanding.

Dated: June 30, 1998

ASPEN TECHNOLOGY, INC.

[SEAL]

By: /s/ Joseph F. Boston
Joseph F. Boston
President

Attest:

By: /s/ Stephen J. Doyle
Stephen J. Doyle
Secretary

**CERTIFICATE OF CHANGE OF LOCATION OF REGISTERED
OFFICE AND REGISTERED AGENT
OF
ASPEN TECHNOLOGY, INC.**

The Board of Directors of:

ASPEN TECHNOLOGY, INC.,

a Corporation of the State of Delaware, on this 10th day of May, A.D. 1999, does hereby resolve and order that the location of the Registered Office of this Corporation within this State be, and the same hereby is:

1013 Centre Road, in the City of Wilmington, in the County of New Castle, Delaware, 19805.

The name of the Registered Agent therein and in charge thereof upon whom process against the Corporation may be served, is:

CORPORATION SERVICE COMPANY.

ASPEN TECHNOLOGY, INC.,

a Corporation of the State of Delaware, does hereby certify that the foregoing is a true copy of a resolution adopted by the Board of Directors at a meeting held as herein stated.

IN WITNESS WHEREOF, said corporation has caused this Certificate to be signed by Stephen J. Doyle, Senior V.P., this 10th day of May A.D. 1999.

/s/ Stephen J. Doyle

Authorized Officer

**CERTIFICATE OF CHANGE OF REGISTERED AGENT
AND
REGISTERED OFFICE**

Aspen Technology, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

The present registered agent of the corporation is Corporation Service Company and the present registered office of the corporation is in the county of New Castle.

The Board of Directors of Aspen Technology, Inc. adopted the following resolution on the 1st day of May, 2001.

Resolved, that the registered office of Aspen Technology, Inc. in the state of Delaware be and it hereby is changed to Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, and the authorization of the present registered agent of this corporation be and the same is hereby withdrawn, and THE CORPORATION TRUST COMPANY, shall be and is hereby constituted and appointed the registered agent of this corporation at the address of its registered office.

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this statement to be signed by Michael J. Muscatello, Its Secretary, this 22nd day of May, 2001.

/s/ Michael J. Muscatello

Michael J. Muscatello

Title: Secretary

ASPEN TECHNOLOGY, INC.

**CERTIFICATE OF DESIGNATIONS
OF
SERIES B-1 CONVERTIBLE
PREFERRED STOCK
AND
SERIES B-2 CONVERTIBLE
PREFERRED STOCK**

(Pursuant to Section 151 of the Delaware General
Corporation Law)

Aspen Technology, Inc., a Delaware corporation (the "Corporation"), in accordance with the provisions of Section 103 of the Delaware General Corporation Law (the "DGCL") does hereby certify that, in accordance with Section 141(c) of the DGCL, the following resolution was duly adopted by the Board of Directors of the Corporation as of February 4, 2002:

RESOLVED, that two series of Preferred Stock, Series B-1 Convertible Preferred Stock, par value \$0.10 per share and Series B-2 Convertible Preferred Stock, par value \$0.10 per share, of the Corporation are hereby created and the designation, number of shares, powers, preferences, rights, qualifications, limitations and restrictions thereof (in addition to any provisions set forth in the Certificate of Incorporation of the Corporation which are applicable to the Preferred Stock of all classes and series) are as follows:

**SERIES B-1 CONVERTIBLE PREFERRED STOCK
AND**

SERIES B-2 CONVERTIBLE PREFERRED STOCK

1. Designation, Amount, Par Value and Stated Value. The following two (2) series of preferred stock shall be designated as (i) the Corporation's Series B-1 Convertible Preferred Stock (the "**Series B-1 Preferred Stock**"), and the number of shares so designated shall be 30,000 and (ii) the Corporation's Series B-2 Convertible Preferred Stock (the "**Series B-2 Preferred Stock**"), and the number of shares so designated shall be 20,000. The Series B-1 Preferred Stock and Series B-2 Preferred Stock are sometimes collectively referred to as the "**Series B Preferred Stock.**" Each share of Series B Preferred Stock shall have a par value of \$0.10 per share and a stated value equal to \$1,000 plus any amount added to the Stated Value pursuant to Section 3(c) hereof or Section 2(c) of the Registration Rights Agreement (the "**Stated Value**").

2. Definitions. In addition to the terms defined elsewhere in this Certificate of Designations, (a) the terms set forth in Exhibit A hereto have the meanings indicated therein, and (b) the following terms have the meanings indicated:

"Conversion Price" means the Initial Conversion Price as of the applicable Original Issue Date, as adjusted pursuant to Section 15 below.

"Equity Conditions" means, with respect to a specified issuance of Common Stock, that each of the following conditions is satisfied: (i) the number of authorized but unissued and otherwise unreserved shares of Common Stock is sufficient for such issuance; (ii) such shares of Common Stock are registered for resale by the Holders and may be sold by the Holders pursuant to an effective Underlying Shares Registration Statement, all such shares may be sold without volume restrictions pursuant to Rule 144(k) under the Securities Act or all Underlying Shares owned by each Holder may be sold without volume restrictions pursuant to Rule 144 under the Securities Act; (iii) the Common Stock is listed or quoted (and is not suspended from trading) on an Eligible Market and such shares of Common Stock are approved for listing upon issuance; (iv) such issuance would be permitted in full without violating Section 16 hereof or the rules or regulations of any Trading Market; (v) no Bankruptcy Event has occurred; (vi) the Corporation is not in default with respect to any material obligation hereunder or under any other Transaction Document; and (vii) none of the following events have occurred and are continuing (A) an event constituting a Triggering Event or (B) an event that with the passage of time and without being cured would constitute a Triggering Event other than a pending, proposed or intended Change of Control.

"Holder" means any holder of Series B Preferred Stock.

"Initial Conversion Price" means (i) in the case of Series B-1 Preferred Stock, \$19.9703, and (ii) in the case of Series B-2 Preferred Stock, the greater of (x) the lesser of (a) 117.5% of the average of the daily Volume Weighted Average Prices over the twenty (20) consecutive Trading Day period ending on February 27, 2002 (including such date) or (b) 112.5% of the average of the daily Volume Weighted Average Prices over the three (3) consecutive Trading Day period ending on February 27, 2002 (including such date), or (y) \$15.00 (as adjusted for any stock splits, stock dividends, stock combinations or similar events occurring after the Original Issue Date of the Series B-1 Preferred Stock and prior to the Original Issue Date of the Series B-2 Preferred Stock).

"Initial Purchase Price" means (i) in the case of Series B-1 Preferred Stock, \$1,000, and (ii) in the case of Series B-2 Preferred Stock, the greater of (x) the lesser of (a) the average of the daily Volume Weighted Average Prices over the twenty (20) consecutive Trading Day period ending on February 27, 2002 (including such date) or (b) the average of the daily Volume Weighted Average Prices over the three (3) consecutive Trading Day period ending on February 27, 2002 (including such date), or (y) \$15.00 (as adjusted for any stock splits, stock dividends, stock combinations or similar events occurring after the Original Issue Date of the Series B-1 Preferred Stock and prior to the Original Issue Date of the Series B-2 Preferred Stock).

2

"Junior Securities" means the Common Stock and all other equity or equity equivalent securities of the Corporation.

"Original Issue Date" means the date of the first issuance of any shares of the Series B-1 Preferred Stock or Series B-2 Preferred Stock, as applicable, regardless of the number of transfers of any particular shares of such Series B Preferred Stock and regardless of the number of certificates that may be issued to evidence such Series B Preferred Stock.

"Purchase Agreement" means the Securities Purchase Agreement, dated February 6, 2002, among the Corporation and the original purchasers of the Series B Preferred Stock.

3. Dividends.

(a) Holders shall be entitled to receive, out of funds legally available therefor, and the Corporation shall pay, cumulative dividends on the Series B Preferred Stock at the rate per share (as a percentage of the Stated Value per share) of 4% per annum, payable quarterly in arrears commencing on June 30, 2002 and thereafter on each March 31, June 30, September 30 and December 31, except if such date is not a Trading Day, in which case such dividend shall be payable on the next succeeding Trading Day (each, a "**Dividend Payment Date**"). Dividends on the Series B Preferred Stock shall be calculated on the basis of a 365-day year, shall accrue daily commencing on the Original Issue Date for the applicable series of Series B Preferred Stock, and shall be deemed to accrue from such date whether or not earned or declared and whether or not there are profits, surplus or other funds of the Corporation legally available for the payment of dividends.

(b) Subject to the conditions and limitations set forth below, the Corporation may pay required dividends (i) in cash or (ii) in Common Stock. The Corporation must deliver written notice (the "**Dividend Notice**") to the Holders indicating the manner in which it intends to pay dividends at least ten Trading Days prior to each Dividend Payment Date, but the Corporation may indicate in any such notice that the election contained therein shall continue for subsequent Dividend Payment Dates until revised. Failure to timely provide such written notice shall be deemed an election by the Corporation to pay the dividend in Common Stock, unless payment of dividends in such manner is not permitted at the time of a dividend, in which case such dividend shall be payable in cash. All dividends payable in respect of the Series B Preferred Stock on any Dividend Payment Date must be paid in the same manner.

(c) Notwithstanding the foregoing, the Corporation may not pay dividends by issuing Common Stock unless, at such time, the Equity Conditions are satisfied with respect to such Common Stock dividend shares and all of the Underlying Shares then issuable upon conversion in full of all

outstanding Series B Preferred Stock. If the Corporation is required to pay dividends in cash on any Dividend Payment Date and does not timely make such payment, any Holder may (but shall not be required to) treat such cash amount as if it had been added to the Stated Value as of such Dividend Payment Date. If the Corporation may not legally pay dividends on any Dividend Payment Date, such amount shall be added to the Stated Value as of such Dividend Payment Date.

3

(d) So long as any Series B Preferred Stock is outstanding, (i) neither the Corporation nor any Subsidiary shall, directly or indirectly, redeem, purchase or otherwise acquire any Junior Securities or set aside any monies for such a redemption, purchase or other acquisition in excess of \$10,000,000 per calendar year, provided that the Corporation shall be entitled to carry forward any amount not used in any calendar year to subsequent calendar years, and (ii) the Corporation shall not pay or declare any dividend or make any distribution on any Junior Securities, except pro rata stock dividends on the Common Stock payable in additional shares of Common Stock and dividends due and paid in the ordinary course on preferred stock of the Corporation, in each case only at such times as the Corporation is in compliance with its payment and other obligations hereunder.

(e) In the event that the Corporation elects to pay dividends in shares of Common Stock, the number of shares of Common Stock to be issued to each Holder as such dividend shall be (i) determined by dividing the total dividend then payable to such Holder by the Dividend Market Price (as defined below) as of the applicable Dividend Payment Date, and rounding up to the nearest whole share, and (ii) paid to such Holder in accordance with Section 3(f) below. The term **“Dividend Market Price”** shall mean the average of the Volume Weighted Average Prices of Common Stock for the five (5) consecutive Trading Days prior to the applicable Dividend Payment Date (not including such date).

(f) In the event that any dividends are paid in Common Stock the Corporation shall, on or before the third (3rd) Trading Day following the payment date of such dividend, (i) issue and deliver to such Holder a certificate, registered in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder shall be entitled or (ii) if and when the applicable shares of Common Stock may be held in a balance account with The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System and after the Holder has notified the Corporation that this clause (ii) shall apply, credit the number of shares of Common Stock to which the Holder shall be entitled to the Holder’s or its designee’s balance account with The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System.

4. **Registration of Series B Preferred Stock.** The Corporation shall register shares of the Series B Preferred Stock, upon records to be maintained by the Corporation for that purpose (the **“Series B Preferred Stock Register”**), in the name of the record Holders thereof from time to time. The Corporation may deem and treat the registered Holder of shares of Series B Preferred Stock as the absolute owner thereof for the purpose of any conversion hereof or any distribution to such Holder, and for all other purposes, absent actual notice to the contrary.

5. **Registration of Transfers.** The Corporation shall register the transfer of any shares of Series B Preferred Stock in the Series B Preferred Stock Register, upon surrender of certificates evidencing such Shares to the Corporation at its address specified herein. Upon any such registration or transfer, a new certificate evidencing the shares of Series B Preferred Stock so transferred shall be issued to the transferee and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring Holder.

4

6. **Liquidation.**

(a) In the event of any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary (a **“Liquidation Event”**), the Holders of Series B Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of Junior Securities by reason of their ownership thereof, an amount per share in cash equal to the Stated Value for each share of Series B Preferred Stock then held by them (as adjusted for any stock splits, stock dividends, stock combinations and similar transactions with respect to the Series B Preferred Stock), plus all accrued but unpaid dividends on such Series B Preferred Stock as of the date of such event (the **“Series B Stock Liquidation Preference”**). If, upon the occurrence of a Liquidation Event, the assets and funds thus distributed among the holders of the Series B Preferred Stock shall be insufficient to permit the payment to such Holders of the full Series B Stock Liquidation Preference, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the Holders of the Series B Preferred Stock in proportion to the aggregate Series B Stock Liquidation Preference that would otherwise be payable to each of such Holders.

(b) In the event of a Liquidation Event, following completion of the distributions required by the first sentence of paragraph (a) of this Section 6, if assets or surplus funds remain in the Corporation, the holders of the Common Stock shall share ratably in all remaining assets of the Corporation, based on the number of shares of Common Stock then outstanding.

(c) The Corporation shall mail written notice of any Liquidation Event to each record Holder not less than 20 Trading Days prior to the payment date or effective date thereof.

7. **Conversion.**

(a) **Conversion at Option of Holder.** At the option of any Holder, any Series B Preferred Stock held by such Holder may be converted into Common Stock based on the applicable Conversion Price then in effect for such series of Series B Preferred Stock. A Holder may convert Series B Preferred Stock into Common Stock pursuant to this paragraph at any time and from time to time after the applicable Original Issue Date, by delivering to the Corporation a Conversion Notice, in the form attached hereto as Exhibit B, appropriately completed and duly signed, and the date any such Conversion Notice is delivered to the Corporation (as determined in accordance with the notice provisions hereof) is a **“Conversion Date.”**

(b) **Conversion at Option of Corporation.** If, at any time after the Effective Date, the Closing Price on each of twenty (20) consecutive Trading Days (a **“Qualifying Period”**) exceeds 135% of the applicable Conversion Price for a series of Series B Preferred Stock (each, a **“Threshold Price”**), the Corporation may require the Holders to convert the shares of such series into Common Stock based on the applicable Conversion Price. The Corporation may require a conversion pursuant to this paragraph by delivering irrevocable

5

written notice of such election to the Holders, and the fifth Trading Day after the date any such notice is delivered to the Holders (as determined in accordance with the notice provisions hereof) will be the “**Conversion Date**” for such required conversion. Notwithstanding the foregoing, (i) if the Corporation has publicly announced a pending, proposed or intended Change of Control and the Qualifying Period includes any Trading Days on or after the date of such public announcement, then to the extent that a Holder has not had the ability to sell all or a portion of the Underlying Shares pursuant to Rule 144 under the Securities Act or an effective Underlying Share Registration Statement for at least 20 Trading Days after the date of the public announcement of such Change of Control, the Conversion Date with respect to those shares of Series B Preferred Stock that are convertible into the portion of the Underlying Shares that are not so saleable shall be deferred until the date on which such Underlying Shares shall have been so saleable for a period of 20 Trading Days from the date of such public announcement (and if no such period of 20 Trading Days occurs prior to the Change of Control with respect to any such Underlying Shares then the notice of conversion applicable to those shares of Series B Preferred Stock convertible into such Underlying Shares shall be void) and (ii) the Corporation may not require any conversion under this paragraph (and any notice thereof will be void), unless from the beginning of such period of 20 consecutive Trading Days through the Conversion Date, (A) the Equity Conditions are satisfied with respect to all of the Underlying Shares then issuable upon conversion in full of all outstanding Series B Preferred Stock, and (B) the Closing Price equals or exceeds the applicable Threshold Price.

8. Mechanics of Conversion.

(a) The number of Underlying Shares issuable upon any conversion of shares of either series of Series B Preferred Stock hereunder shall equal (i) the Stated Value of such share of Series B Preferred Stock to be converted, divided by the applicable Conversion Price on the Conversion Date, plus (ii) the amount of any accrued but unpaid dividends on such share of Series B Preferred Stock through the Conversion Date, divided by the applicable Conversion Price on the Conversion Date.

(b) Upon conversion of any Series B Preferred Stock, the Corporation shall promptly (but in no event later than three Trading Days after the Conversion Date) issue or cause to be issued and cause to be delivered to or upon the written order of the Holder and in such name or names as the Holder may designate a certificate for the Underlying Shares issuable upon such conversion, free of restrictive legends unless such Underlying Shares are not then freely transferable without volume restrictions pursuant to Rule 144(k) under the Securities Act. The Holder, or any Person so designated by the Holder to receive Underlying Shares, shall be deemed to have become holder of record of such Underlying Shares as of the Conversion Date. If and when such Underlying Shares may be freely transferred pursuant to Rule 144 under the Securities Act or pursuant to an effective Underlying Shares Registration Statement, the Corporation shall use its best efforts to deliver Underlying Shares hereunder electronically through the Depository Trust Corporation or another established clearing corporation performing similar functions, and shall issue such Underlying Shares in the same manner as dividend payment shares are issued pursuant to Section 3(f) above.

(c) A Holder shall not be required to deliver the original certificate(s) evidencing the Series B Preferred Stock being converted in order to effect a conversion of such

6

Series B Preferred Stock. Execution and delivery of the Conversion Notice shall have the same effect as cancellation of the original certificate(s) and issuance of a new certificate evidencing the remaining shares of Series B Preferred Stock. Upon surrender of a certificate following one or more partial conversions, the Corporation shall promptly deliver to the Holder a new certificate representing the remaining shares of Series B Preferred Stock.

(d) The Corporation’s obligations to issue and deliver Underlying Shares upon conversion of Series B Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by any Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by any Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by any Holder or any other Person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to any Holder in connection with the issuance of such Underlying Shares.

9. Redemption Rights.

(a) Holders Redemption Rights.

(i) Subject to the provisions of Section 9(a)(iii) below, if, at any time on or after the eighteen (18) month anniversary of the applicable Original Issue Date of a Series B Preferred Stock, the average of the Closing Prices for twenty (20) consecutive Trading Days immediately preceding such eighteen (18) month anniversary or any date thereafter is below the applicable Conversion Price of such series of Series B Preferred Stock, the Holder of such Series B Preferred Stock, upon 15 Trading Days advance notice (the “**Redemption Notice**”) to the Corporation, shall have the right to request the Corporation to redeem that number of shares of Series B Preferred Stock held by such Holders as is set forth in the Redemption Notice at a per share price (the “**Redemption Price**”) equal to the Stated Value of such shares of Series B Preferred Stock to be redeemed plus all accrued but unpaid dividends thereon to the date of payment.

(ii) Notwithstanding anything to the contrary in Section 9(a)(i), the Holders of the Series B Preferred Stock (x) may not deliver a Redemption Notice with respect to a particular series of Series B Preferred Stock until after the date that is eighteen (18) months after the Original Issue Date of such series of Series B Preferred Stock, (y) may not deliver a Redemption Notice covering in aggregate more than \$15,000,000 of Stated Value, with respect to the Series B-1 Preferred Stock, and \$10,000,000 of Stated Value, with respect to the Series B-2 Preferred Stock, until after the date that is twenty-four (24) months after the Original Issue Date of such series of Series B Preferred Stock, and (z) may deliver a Redemption Notice with respect to a particular series of Series B Preferred Stock after the date that is twenty-four (24) months after the Original Issue Date of such series of Series B Preferred Stock, irrespective of whether the average of

7

the Closing Prices for the twenty (20) consecutive Trading Days is below the applicable Conversion Price of such series of Series B Preferred Stock and without limit as to Stated Value.

(iii) Within three (3) Trading Days of receipt of a Redemption Notice, the Corporation will deliver written notice to each Holder of the applicable series of Series B Preferred Stock (the “**Corporation Notice**”), confirming pursuant to the Redemption Notice the aggregate amount of such Series B Preferred Stock being redeemed, the Redemption Date and the applicable Redemption Prices. Notwithstanding the aggregate shares set forth in the Redemption Notice, each Holder of such series of Series B Preferred Stock shall have the right to elect to have all or any number of shares of the applicable series of Series B Preferred Stock held by such Holder redeemed on the Redemption Date at the applicable Redemption Price by notifying the Corporation within five (5) Trading Days of receipt of the Corporation Notice of its election to do so, and specifying the number of shares as to which such election is made. In the event that the aggregate number of shares of Series B Preferred Stock to be redeemed on such Redemption Date exceeds the aggregate limitations set forth in Section 9(a)(ii), the number of shares to be redeemed from each Holder shall be reduced pro rata based upon the aggregate number of shares of the applicable series of Series B Preferred Stock held by each Holder requesting redemption.

(iv) The Redemption Notice will specify the effective date of the redemption, which must be a Trading Day at least 15 Trading Days after the date such notice is delivered (the “**Redemption Date**”), and the entire Redemption Price may be paid at the Corporation’s option in cash or in Common Stock. The Corporation must deliver written notice to the Holders indicating the manner in which it intends to pay the Redemption Price at least three (3) Trading Days after receipt of the Redemption Notice. Failure to timely provide such written notice shall be deemed an election by the Corporation to make the payment in Common Stock. Notwithstanding the foregoing, the Corporation may not pay the Redemption Price by issuing Common Stock unless, at such time, the Equity Conditions are satisfied with respect to such Common Stock.

(v) Upon receipt of payment of the Redemption Price, each Holder will deliver the original certificate(s) evidencing the Series B Preferred Stock so redeemed to the Corporation, unless such Holder is awaiting receipt of a new certificate evidencing such shares from the Corporation pursuant to another provision hereof. At any time on or prior to the Corporation Redemption Date, the Holders may convert any or all of the shares of Series B Preferred Stock, and the Corporation shall honor any such conversions in accordance with the terms hereof.

(vi) In the event that the Corporation elects to pay the Redemption Price in shares of Common Stock, the number of shares of Common Stock to be issued to each Holder as payment of the Redemption Price shall be determined by dividing the total Redemption Price then payable to such Holder by

8

the Redemption Market Price (as defined below) as of the applicable Redemption Date, and rounding up to the nearest whole share. Such shares shall be issued to such Holder in the same manner as dividend payment shares are issued pursuant to Section 3(f) above. The term “**Redemption Market Price**” shall mean the average of the Volume Weighted Average Prices of Common Stock for the ten(10) consecutive Trading Days prior to the applicable Redemption Date (not including such date).

(b) **Mandatory Redemption.** On the seven year anniversary of the Original Issue Date of the Series B-1 Preferred Stock (the “**Mandatory Redemption Date**”), the Corporation shall redeem all of the then outstanding Series B Preferred Stock at a price equal to 100% of the Stated Value of such shares of Series B Preferred Stock plus all accrued but unpaid dividends thereon to the date of payment in cash or Common Stock (or a combination thereof) at the election of the Corporation. The Corporation must deliver written notice to the Holders indicating the manner in which it intends to pay the Redemption Price at least twenty (20) Trading Days prior to the Mandatory Redemption Date. Failure to timely provide such written notice shall be deemed an election by the Corporation to make the payment in Common Stock. Notwithstanding the foregoing, the Corporation may not pay the Redemption Price by issuing Common Stock except to the extent the Equity Conditions are satisfied with respect to such Common Stock. Upon receipt of payment of the Redemption Price, each Holder will deliver the original certificate(s) evidencing the Series B Preferred Stock so redeemed to the Corporation, unless such Holder is awaiting receipt of a new certificate evidencing such shares from the Corporation pursuant to another provision hereof. At any time on or prior to the Mandatory Redemption Date, the Holders may convert any or all of the shares of Series B Preferred Stock, and the Corporation shall honor any such conversions in accordance with the terms hereof.

10. **Triggering Events.** At any time or times following the occurrence of a Triggering Event (other than a Change of Control), each Holder shall have the option to elect, by notice to the Corporation (an “**Event Notice**”), to require the Corporation to repurchase all or any portion of (i) the Series B Preferred Stock then held by such Holder, at a price per share equal to the greater of (A) 115% of the Stated Value plus all accrued but unpaid dividends thereon through the date of payment, or (B) the Event Equity Value of the Underlying Shares issuable upon conversion of such Series B Preferred Stock (including such accrued but unpaid dividends thereon), and (ii) any Underlying Shares issued to such Holder upon conversion of Series B Preferred Stock, at a price per share equal to the Event Equity Value of such Underlying Shares. The aggregate amount payable pursuant to the preceding sentence is referred to as the “**Event Price.**” The Corporation shall pay the aggregate Event Price to each Holder no later than the third Trading Day following the date of delivery of the Event Notice, and upon receipt thereof such Holder shall deliver original certificates evidencing the shares of Series B Preferred Stock and Underlying Shares so repurchased to the Corporation (to the extent such certificates have been delivered to the Holder).

11. **Voting Rights.** Except as otherwise provided herein or as required by applicable law, the Holders of the Series B Preferred Stock shall be entitled to vote on all matters on which holders of Common Stock are entitled to vote, including, without limitation, the election of directors. For such purposes, each Holder shall be entitled to a number of votes in respect of the shares of Series B Preferred Stock owned by it equal to the number of shares of Common Stock

9

into which such shares of Series B Preferred Stock are convertible as of the record date for the determination of stockholders entitled to vote on such matter, or if no record date is established, at the date such vote is taken or any written consent of stockholders is solicited. Except as otherwise provided herein, in any relevant agreement or as required by applicable law, the holders of the Series B Preferred Stock and Common Stock, respectively, shall vote together as a single class on all matters submitted to a vote or consent of stockholders; provided that so long as any shares of Series B Preferred Stock are outstanding, the

Corporation shall not, without the affirmative vote of the Holders of a majority of the shares of Series B Preferred Stock then outstanding, (a) alter or change adversely the powers, preferences or rights given to the Series B Preferred Stock or alter or amend this Certificate of Designations (whether by merger, reorganization, consolidation or otherwise), (b) authorize or create any class of stock ranking as to dividends or distribution of assets upon a Liquidation Event or Change of Control senior to the Series B Preferred Stock, (c) amend its certificate of incorporation or bylaws so as to affect adversely any rights of the Holders (whether by merger, reorganization, consolidation or otherwise), (d) increase the authorized number of shares of Series B Preferred Stock, or (e) enter into any agreement with respect to the foregoing.

12. Charges, Taxes and Expenses. Issuance of certificates for shares of Series B Preferred Stock and for Underlying Shares issued on conversion of (or otherwise in respect of) the Series B Preferred Stock shall be made without charge to the Holders for any issue or transfer tax, withholding tax, transfer agent fee or other incidental tax or expense in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Corporation; provided, however, that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any certificates for Common Stock or Series B Preferred Stock in a name other than that of the Holder. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring the Series B Preferred Stock or receiving Underlying Shares in respect of the Series B Preferred Stock.

13. Replacement Certificates. If any certificate evidencing Series B Preferred Stock or Underlying Shares is mutilated, lost, stolen or destroyed, the Corporation shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for such certificate, a new certificate, but only upon receipt of evidence reasonably satisfactory to the Corporation of such loss, theft or destruction and customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

14. Reservation of Underlying Shares. The Corporation covenants that it shall at all times reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue the Underlying Shares as required hereunder (i) a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock available to issue Underlying Shares upon any conversion of Shares or, if the number of shares so reserved is insufficient to make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock for such issuance within 60 days after the occurrence of such deficiency, and (ii) at least 5,825,000 authorized but unissued and otherwise unreserved shares of Common Stock (as

10

adjusted for any stock splits, stock combinations or similar events) less any shares of Common Stock issued upon conversion of the Shares, as dividends on the Shares, upon exercise of the Warrants or upon a redemption of the Shares. The Corporation covenants that all Underlying Shares so issuable and deliverable shall, upon issuance in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and nonassessable.

15. Certain Adjustments. The Conversion Price is subject to adjustment from time to time as set forth in this Section 15.

(a) Stock Dividends and Splits. If the Corporation, at any time while Series B Preferred Stock is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock that is payable in shares of Common Stock (other than regular dividends on the Series B Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, or (iii) combines outstanding shares of Common Stock into a smaller number of shares, then in each such case the applicable Conversion Price for each series of Series B Preferred Stock shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, and any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination.

(b) Pro Rata Distributions. If the Corporation, at any time while Series B Preferred Stock is outstanding, distributes to all holders of Common Stock (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph), (iii) rights or warrants to subscribe for or purchase any security, or (iv) any other asset other than cash paid as a dividend (in each case, "**Distributed Property**"), then, at the request of any Holder delivered before the 90th day after the record date fixed for determination of stockholders entitled to receive such distribution, the Corporation will deliver to such Holder, within five Trading Days after such request (or, if later, on the effective date of such distribution), the Distributed Property that such Holder would have been entitled to receive in respect of the Underlying Shares for which such Holder's Series B Preferred Stock could have been converted immediately prior to such record date. If such Distributed Property is not delivered to a Holder pursuant to the preceding sentence, then upon any conversion of Series B Preferred Stock that occurs after such record date, such Holder shall be entitled to receive, in addition to the Underlying Shares otherwise issuable upon such conversion, the Distributed Property that such Holder would have been entitled to receive in respect of such number of Underlying Shares had the Holder been the record holder of such Underlying Shares immediately prior to such record date.

(c) Change of Control Transactions. If, at any time while Series B Preferred Stock is outstanding, the Corporation proposes to enter into a transaction that would constitute a Change of Control, the Corporation shall mail written notice of the proposed Change of Control transaction to each record Holder not less than 20 Trading Days prior to the effective date thereof. Each Holder shall have the right to receive on the date of the consummation of such

11

Change of Control, at its option, either (i) for each Underlying Share that would have been issuable upon such conversion of the shares of Series B Preferred Stock upon the effective time of such Change of Control, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such Change of Control if it had been, immediately prior to such Change of Control, the holder of one share of Common Stock or (ii) for each share of Series B Preferred Stock, cash in an amount equal to 115% of the Stated Value plus all accrued but unpaid dividends thereon through the date of payment. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Change of Control transaction, then each Holder shall be given the same choice as to the consideration it receives pursuant to clause (i) above. Each Holder shall make the election of which consideration it has elected to receive at least three (3) Trading Days prior to the effective date of a Change of Control. Failure of any Holder to timely provide written notice of its election shall be deemed an election by such Holder to receive the consideration specified in clause (ii) above.

(d) Subsequent Equity Sales.

(i) If, at any time while any shares of either series of Series B Preferred Stock are outstanding, the Corporation or any Subsidiary issues additional shares of Common Stock or rights, warrants, options or other securities or debt convertible, exercisable or exchangeable for shares of Common Stock or otherwise entitling any Person to acquire shares of Common Stock (collectively, “**Common Stock Equivalents**”) at an effective net price to the Corporation per share of Common Stock (the “**Effective Price**”) less than the lesser of (A) the Initial Purchase Price for a series of Series B Preferred Stock or (B) then-applicable Conversion Price for a series of Series B Preferred Stock, then the applicable Conversion Price for such series of Series B Preferred Stock shall be reduced to equal the Effective Price. For purposes of this paragraph, in connection with any issuance of any Common Stock Equivalents, (A) the maximum number of shares of Common Stock potentially issuable at any time upon conversion, exercise or exchange of such Common Stock Equivalents (the “**Deemed Number**”) shall be deemed to be outstanding upon issuance of such Common Stock Equivalents, (B) the Effective Price applicable to such Common Stock shall equal the minimum dollar value of consideration payable to the Corporation to purchase such Common Stock Equivalents and to convert, exercise or exchange them into Common Stock (net of any discounts, fees, commissions and other expenses), divided by the Deemed Number, (C) no further adjustment shall be made to the Conversion Price upon the actual issuance of Common Stock upon conversion, exercise or exchange of such Common Stock Equivalents, and (D) upon the expiration or termination of any Common Stock Equivalent that does not result in the issuance of any Common Stock or additional Common Stock Equivalent, any adjustment that has been made under this paragraph (d) in respect of the issuance of such Common Stock Equivalent shall be readjusted as if such Common Stock Equivalent had not been issued (but shall in no event affect previously converted stock).

12

(ii) If, at any time while Series B Preferred Stock is outstanding, the Corporation or any Subsidiary issues Common Stock Equivalents with an Effective Price or a number of underlying shares that floats or resets or otherwise varies or is subject to adjustment based (directly or indirectly) on market prices of the Common Stock (a “**Floating Price Security**”), then for purposes of applying the preceding paragraph in connection with any subsequent conversion, the Effective Price will be determined separately on each Conversion Date and will be deemed to equal the lowest Effective Price at which any holder of such Floating Price Security is entitled to acquire Common Stock on such Conversion Date (regardless of whether any such holder actually acquires any shares on such date).

(iii) Notwithstanding the foregoing, no adjustment will be made under this paragraph (d) in respect of the issuance of Excluded Stock.

(e) Calculations. All calculations under this Section 15 shall be made to the nearest cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

(f) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 15, the Corporation at its expense will promptly compute such adjustment in accordance with the terms hereof and prepare a certificate describing in reasonable detail such adjustment and the transactions giving rise thereto, including all facts upon which such adjustment is based. Upon written request, the Corporation will promptly deliver a copy of each such certificate to each Holder and to the Corporation’s Transfer Agent.

(g) Notice of Corporate Events. If the Corporation (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including without limitation any granting of rights or warrants to subscribe for or purchase any capital stock of the Corporation or any Subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Corporation, then the Corporation shall deliver to each Holder a notice describing the material terms and conditions of such transaction, at least 20 calendar days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction, and the Corporation will take all steps reasonably necessary in order to insure that each Holder is given the practical opportunity to convert its Series B Preferred Stock prior to such time so as to participate in or vote with respect to such transaction; provided, however, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice.

16. Limitation on Conversion.

(a) Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by any Holder upon any conversion of Series B

13

Preferred Stock (or otherwise in respect of the Series B Preferred Stock) shall be limited to the extent necessary to insure that, following such conversion (or other issuance), the total number of shares of Common Stock then beneficially owned by such Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Exchange Act, does not exceed 4.999% (the “**Maximum Percentage**”) of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such conversion). For such purposes, beneficial ownership shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. Each delivery of a Conversion Notice by a Holder will constitute a representation by such Holder that it has evaluated the limitation set forth in this paragraph and determined that issuance of the full number of Underlying Shares requested in such Conversion Notice is permitted under this paragraph. By written notice to the Corporation, any Holder may waive the provisions of this Section or increase or decrease the Maximum Percentage to any other percentage specified in such notice, but (i) any such waiver or increase will not be effective until the 61st day after such notice is delivered to the Corporation, and (ii) any such waiver or increase or decrease will apply only to such Holder and not to any other Holder and (iii) any such waiver or increase shall not be effective to the extent such waiver or increase would cause the Corporation to violate the Nasdaq Stockholder Approval Rule.

(b) For purposes of this Section 16, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (1) the Corporation’s most recent Form 10-Q, Form 10-K or other public filing with the Commission, as the case may be, (2) a more recent public announcement by the Corporation, or (3) any other notice by the Corporation or its transfer agent setting forth the

number of shares of Common Stock outstanding. Upon the written request of any Holder, the Corporation shall promptly, but in no even later than one (1) Trading Day following the receipt of such notice, confirm in writing to any such Holder the number of shares of Common Stock then outstanding.

17. **Fractional Shares.** The Corporation shall not be required to issue or cause to be issued fractional Underlying Shares on conversion of Series B Preferred Stock. If any fraction of an Underlying Share would, except for the provisions of this Section, be issuable upon conversion of Series B Preferred Stock, the number of Underlying Shares to be issued will be rounded up to the nearest whole share.

18. **Notices.** Any and all notices or other communications or deliveries hereunder (including without limitation any Conversion Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section prior to 5:30 p.m. (New York City time) on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. The addresses for such communications shall be: (i) if to the Corporation, to 10 Canal Park, Cambridge, Massachusetts 02141, facsimile: (617) 949-1722,

14

attention: Chief Executive Officer and General Counsel, or (ii) if to a Holder, to the address or facsimile number appearing on the Corporation's stockholder records or such other address or facsimile number as such Holder may provide to the Corporation in accordance with this Section.

19. **Miscellaneous.**

(a) The headings herein are for convenience only, do not constitute a part of this Certificate of Designations and shall not be deemed to limit or affect any of the provisions hereof.

(b) Any of the rights of the Holders of Series B Preferred Stock set forth herein may be waived by the affirmative vote of the holders of a majority of the shares of Series B Preferred Stock then outstanding. No waiver of any default with respect to any provision, condition or requirement of this Certificate of Designations shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right.

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this Certificate of Designations to be duly executed as of this 6th day of February, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala

Name: _____ Lisa W.
Zappala
Title: Senior
Vice
President,
Finance
and Chief
Financial
Officer

15

EXHIBIT A

ADDITIONAL DEFINITIONS

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 144. With respect to a Purchaser, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Purchaser will be deemed to be an Affiliate of such Purchaser.

"Bankruptcy Event" means any of the following events: (a) the Corporation or any Material Subsidiary commences a case or other proceeding under any bankruptcy, reorganization, arrangement, adjustment of debt, relief of debtors, dissolution, insolvency or liquidation or similar law of any jurisdiction relating to the Corporation or any Material Subsidiary thereof; (b) there is commenced against the Corporation or any Material Subsidiary any such case or proceeding that is not dismissed within 60 days after commencement; (c) the Corporation or any Material Subsidiary is adjudicated insolvent or bankrupt or any order of relief or other order approving any such case or proceeding is entered; (d) the Corporation or any Material Subsidiary suffers any appointment of any custodian or the like for it or any substantial part of its property that is not discharged or stayed within 60 days; (e) the Corporation or any Material Subsidiary makes a general assignment for the benefit of creditors; (f) the Corporation or any Material Subsidiary fails to pay, or states in writing that it is unable to pay or is unable to pay, its debts generally as they become due; or (g) the Corporation or any Subsidiary, by any act or failure to act, expressly indicates its consent to, approval of or acquiescence in any of the foregoing or takes any corporate or other action that effects any of the foregoing.

"Change of Control" means the occurrence of any of the following in one or a series of related transactions: (i) an acquisition after the date hereof by an individual or legal entity or "group" (as described in Rule 13d-5(b)(1) under the Exchange Act) of a majority of the voting rights or equity interests in

the Corporation; (ii) a replacement of more than one-half of the members of the Corporation's Board of Directors that is not approved by those individuals who are members of the Board of Directors on the date hereof (or other directors previously approved by such individuals); (iii) a merger or consolidation of the Corporation or a sale of all or substantially all of the assets of the Corporation in one or a series of related transactions, unless following such transaction or series of transactions, the holders of the Corporation's securities prior to the first such transaction continue to hold, directly or indirectly, at least a majority of the voting rights and equity interests in the surviving entity or acquirer of such assets; (iv) a recapitalization, reorganization or other transaction involving the Corporation that constitutes or results in a transfer of a majority of the voting rights or equity interests in the Corporation to Persons other than holders of the Corporation's voting equity securities prior to such transaction; or (v) consummation of a "Rule 13e-3 transaction" as defined in Rule 13e-3 under the Exchange Act with respect to the Corporation other than a Rule 13e-3 transaction in which no Purchaser's interest in the Corporation has been adversely changed or diluted in any material manner.

16

"Closing Price" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on an Eligible Market or any other national securities exchange, the last closing price per share of the Common Stock for such date (or the nearest preceding date) on the primary Eligible Market or exchange on which the Common Stock is then listed or quoted; (b) if prices for the Common Stock are then quoted on the OTC Bulletin Board, the average of the highest closing bid price and the lowest closing ask price per share of the Common Stock for such date (or the nearest preceding date) so quoted; (c) if prices for the Common Stock are then reported in the "Pink Sheets" published by the National Quotation Bureau Incorporated (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported; or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by a majority-in-interest of the Purchasers and the Corporation.

"Commission" means the Securities and Exchange Commission.

"Common Stock" means the common stock of the Corporation, par value \$0.10 per share.

"Effective Date" means the date that an Underlying Shares Registration Statement is declared effective by the Commission.

"Eligible Market" means the New York Stock Exchange, the American Stock Exchange, the Nasdaq National Market or the Nasdaq SmallCap Market.

"Event Equity Value" means 115% of the average of the Closing Prices for the five Trading Days preceding the date of delivery of the notice requiring payment of the Event Equity Value, provided that if the Corporation does not make such required payment (together with any other payments, expenses and liquidated damages then due and payable under the Transaction Documents) when due or, in the event the Corporation disputes in good faith the occurrence of the Triggering Event pursuant to which such notice relates, does not instead deposit such required payment (together with such other payments, expenses and liquidated damages then due) in escrow with an independent third-party escrow agent within five Trading Days of the date such required payment is due, then the Event Equity Value shall be 115% of the greater of (a) the average of the Closing Prices for the five Trading Days preceding the date of delivery of the notice requiring payment of the Event Equity Value and (b) the average of the Closing Prices for the five Trading Days preceding the date on which such required payment (together with such other payments, expenses and liquidated damages) is paid in full.

"Exchange Act" means the Securities Exchange Act of 1934, as amended.

"Excluded Stock" means any shares of Common Stock issued or issuable (A) upon exercise, conversion or exchange of any Common Stock Equivalents described in Schedule 3.1(g) to the Purchase Agreement (provided that such exercise or conversion occurs in accordance with the terms thereof, without amendment or modification, and that the applicable exercise or conversion price or ratio is described in such schedule); (B) to officers, directors, employees or consultants of the Corporation pursuant to a stock option plan, employee stock

17

purchase plan or other equity incentive plan approved by the Board of Directors of the Corporation; (C) pursuant to as part of a bona fide firm commitment underwritten public offering with a nationally recognized underwriter (including any "at the market offering," as defined in Rule 415(a)(4) under the Securities Act, only if such offering does not constitute an "equity line" and generates aggregate gross proceeds of at least \$50 million); (D) in connection with any transaction with a strategic investor, vendor, lessor, customer, supplier, marketing partner, developer or integrator or any similar arrangement, in each case the primary purpose of which is not to raise equity capital; (E) in connection with a transaction involving a merger or acquisition of an entity, business or assets (not principally for the purpose of obtaining cash); or (F) in connection with any other transaction for consideration other than cash up to 108,166 shares of Common Stock in the aggregate (as adjusted for stock splits, stock combinations and similar events).

"Material Subsidiary" means any significant subsidiary, as defined in Rule 1-02(w) of Regulation S-X promulgated by the Commission, of the Corporation.

"Person" means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability Corporation, joint stock Corporation, government (or an agency or subdivision thereof) or other entity of any kind.

"Purchaser" has the meaning set forth in the Purchase Agreement.

"Registration Rights Agreement" means the Registration Rights Agreement, dated as of February 6, 2002 among the Corporation and the Purchasers.

"Required Effectiveness Date" means the date on which an Underlying Shares Registration Statement is required to become effective pursuant to the Registration Rights Agreement.

"Rule 144" means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“**Securities**” means the Shares, the Warrants and the Underlying Shares.

“**Securities Act**” means the Securities Act of 1933, as amended.

“**Shares**” means, collectively, the shares of Series B-1 Preferred Stock and Series B-2 Preferred Stock.

“**Subsidiary**” means any subsidiary, as defined in Rule 1-02(x) of Regulation S-X promulgated by the Commission, of the Corporation.

“**Trading Day**” means (a) any day on which the Common Stock is traded on its primary Trading Market, or (b) if the Common Stock is not then listed or quoted on any national securities exchange, market or trading or quotation facility, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto).

18

“**Trading Market**” means the Nasdaq National Market or any other Eligible Market on which the Common Stock is then listed or quoted.

“**Transaction Documents**” means the Purchase Agreement, the Registration Rights Agreement, this Certificate of Designations and the Warrants.

“**Triggering Event**” means any of the following events: (a) immediately prior to any Bankruptcy Event; (b) the Common Stock is not listed or quoted, or is suspended from trading, on an Eligible Market for a period of five consecutive Trading Days or ten aggregate Trading Days in any 365 day period; (c) the Corporation fails for any reason to deliver a certificate evidencing any Securities to a Purchaser within ten Trading Days after delivery of such certificate is required pursuant to any Transaction Document or the exercise or conversion rights of the Holders pursuant to the Transaction Documents are otherwise suspended for any reason; (d) the Corporation fails to have available both (i) a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock available to issue Underlying Shares upon any exercise of the Warrants or any conversion of Shares and does not make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock for such issuance within 60 days after the occurrence of such deficiency and (ii) at least 5,825,000 authorized but unissued and otherwise unreserved shares of Common Stock (as adjusted for any stock splits, stock combinations or similar events), less reductions reasonably agreed to by the Purchasers to reflect shares of Common Stock issued upon conversion of the Shares (and, therefore, reduced aggregate dividend payments), as dividends on the Shares, upon exercise of the Warrants or upon a redemption of the Shares; (e) at any time after the Required Effectiveness Date, any Common Stock issuable pursuant to the Transaction Documents is not listed on an Eligible Market; (f) any other Event (as defined in the Registration Rights Agreement) occurs and remains uncured for 60 days; (g) the Corporation fails to make any cash payment required under the Transaction Documents and such failure is not cured within five days after notice of such default is first given to the Corporation by a Purchaser; (h) the Corporation defaults in the timely performance of any other obligation under the Transaction Documents and such default continues uncured for a period of 20 days after the date on which notice of such default is first given to the Corporation by a Purchaser (it being understood that no prior notice need be given in the case of a default that cannot reasonably be cured within 20 days), or (i) any Change of Control event.

“**Underlying Shares**” means the shares of Common Stock issuable upon conversion of, or in redemption of, the Shares, as payment of dividends on the Shares and upon exercise of the Warrants, and any securities issued in exchange for, or upon conversion or in respect of, such shares.

“**Underlying Shares Registration Statement**” means a registration statement meeting the requirements set forth in the Registration Rights Agreement and covering the resale of the Underlying Shares by the Purchasers.

“**Volume Weighted Average Price**” means, with respect to a Trading Day, the average of the daily volume weighted average trading price (the total dollar amount traded on each day divided by trading volume for such day) of the Common Stock for the regular Trading Day

19

session as reported at 4:15 (New York time) as reported by Bloomberg, LP function key HP by using W to calculate the daily weighted average.

“**Warrants**” means the Common Stock purchase warrants issued pursuant to the Purchase Agreement.

20

EXHIBIT B

FORM OF CONVERSION NOTICE

(To be executed by the registered Holder
in order to convert shares of Series B Preferred Stock)

The undersigned hereby elects to convert the number of shares of Series B Convertible Preferred Stock indicated below into shares of common stock, par value \$0.10 per share (the “**Common Stock**”), of Aspen Technology, Inc., a Delaware corporation (the “**Corporation**”), according to the conditions hereof, as of the date written below.

Date to Effect Conversion

Number and series of shares of Series B Preferred Stock owned prior to Conversion

Number and series of shares of Series B Preferred Stock to be Converted

Stated Value of shares of Series B Preferred Stock to be Converted (including _____ of dividends added under Section 2(b) of the Registration Rights Agreement)

Number of shares of Common Stock to be Issued

Applicable Conversion Price

Number and series of shares of Series B Preferred Stock subsequent to Conversion

Name of Holder

By: _____

Name: _____

Title: _____

21

**CERTIFICATE OF CORRECTION
FILED TO CORRECT A CERTAIN ERROR IN THE
CERTIFICATE OF DESIGNATIONS OF
SERIES B-1 CONVERTIBLE PREFERRED STOCK AND
SERIES B-2 CONVERTIBLE PREFERRED STOCK OF
ASPEN TECHNOLOGY, INC.**

Aspen Technology Inc., a corporation organized and existing under the by virtue of the General Corporation Law of the State of Delaware DOES HEREBY CERTIFY:

1. The name of the corporation is Aspen Technology, Inc.
2. That a Certificate of Designations of Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock was filed with the Secretary of State of the State of Delaware on February 6, 2002, and that said Certificate requires correction as permitted by Section 103 of the General Corporation Law of the State of Delaware.
3. The inaccuracy or defect of said Certificate to be corrected is set forth in Section 2 of the Certificate as follows:

“**Initial Purchase Price**” means (i) in the case of Series B-1 Preferred Stock, \$1,000, and (ii) in the case of Series B-2 Preferred Stock, the greater of (x) the lesser of (a) the average of the daily Volume Weighted Average Prices over the twenty (20) consecutive Trading Day period ending on February 27, 2002 (including such date) or (b) the average of the daily Volume Weighted Average Prices over the three (3) consecutive Trading Day period ending on February 27, 2002 (including such date), or (y) \$15.00 (as adjusted for any stock splits, stock dividends, stock combinations or similar events occurring after the Original Issue Date of the Series B-1 Preferred Stock and prior to the Original Issue Date of the Series B-2 Preferred Stock).”

4. The corrected portion of Section 2 should read as follows:

“**Initial Purchase Price**” means (i) in the case of Series B-1 Preferred Stock, \$17.75, and (ii) in the case of Series B-2 Preferred Stock, the greater of (x) the lesser of (a) the average of the daily Volume Weighted Average Prices over the twenty (20) consecutive Trading Day period ending on February 27, 2002 (including such date) or (b) the average of the daily Volume Weighted Average Prices over the three (3) consecutive Trading Day period ending on February 27, 2002 (including such date), or (y) \$15.00 (as adjusted for any stock splits, stock dividends, stock combinations or similar events occurring after the Original Issue Date of the Series B-1 Preferred Stock and prior to the Original Issue Date of the Series B-2 Preferred Stock).”

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this Certificate to be signed by its Chief Financial Officer this 12th day of February, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala

Lisa W. Zappala
Chief Financial Officer

ASPEN TECHNOLOGY, INC.

**CERTIFICATE OF DESIGNATIONS
OF
SERIES B-I CONVERTIBLE PREFERRED STOCK
AND
SERIES B-II CONVERTIBLE PREFERRED STOCK**

(Pursuant to Section 151 of the Delaware General Corporation Law)

Aspen Technology, Inc., a Delaware corporation (the "Corporation"), in accordance with the provisions of Section 103 of the Delaware General Corporation Law (the "DGCL") does hereby certify that, in accordance with Section 141(c) of the DGCL, the following resolution was duly adopted by the Board of Directors of the Corporation as of March 14, 2002:

RESOLVED, that two series of Preferred Stock, Series B-I Convertible Preferred Stock, par value \$0.10 per share, and Series B-II Convertible Preferred Stock, par value \$0.10 per share, of the Corporation are hereby created and the designation, number of shares, powers, preferences, rights, qualifications, limitations and restrictions thereof (in addition to any provisions set forth in the Certificate of Incorporation of the Corporation which are applicable to the Preferred Stock of all classes and series) are as follows:

**SERIES B-I CONVERTIBLE PREFERRED STOCK
AND
SERIES B-II CONVERTIBLE PREFERRED STOCK**

1. Designation, Amount, Par Value and Stated Value. The following two series of preferred stock shall be designated as (i) the Corporation's Series B-I Convertible Preferred Stock (the "**Series B-I Preferred Stock**"), and the number of shares so designated shall be 40,000, and (ii) the Corporation's Series B-II Convertible Preferred Stock (the "**Series B-II Preferred Stock**"), and the number of shares so designated shall be 20,000. The Series B-I Preferred Stock and Series B-II Preferred Stock are sometimes collectively referred to as the "**Series B Preferred Stock.**" Each share of Series B Preferred Stock shall have a par value of \$0.10 per share and a stated value equal to \$1,000 plus any amount added to the Stated Value pursuant to Section 3(c) hereof or Section 2(f) of the Registration Rights Agreement (the "**Stated Value**").

2. Definitions. In addition to the terms defined elsewhere in this Certificate of Designations, (a) the terms set forth in Exhibit A hereto have the meanings indicated therein and (b) the following terms have the meanings indicated:

"**Conversion Price**" means the Initial Conversion Price as of the applicable Deemed Issue Date, as adjusted pursuant to Section 15 below.

"**Deemed Issue Date**" means (i) February 6, 2002, with respect to the 30,000 shares of Series B-I Preferred Stock originally issued on March 19, 2002 in exchange for shares of the Series B-I Convertible Preferred Stock of the Corporation, (ii) March 19, 2002, with respect to the 10,000 shares of Series B-I originally issued on such date, and (iii) February 28, 2002, with respect to the Series B-II Preferred Stock, in each case regardless of the number of transfers of any particular shares of such Series B Preferred Stock and regardless of the number of certificates that may be issued to evidence such Series B Preferred Stock.

"**Equity Conditions**" means, with respect to a specified issuance of shares of Common Stock, that each of the following conditions is satisfied: (i) the number of authorized but unissued and otherwise unreserved shares of Common Stock is sufficient for such issuance; (ii) such shares of Common Stock are registered for resale by the Holders and may be sold by the Holders pursuant to an effective Underlying Shares Registration Statement, such shares may be sold without volume restrictions pursuant to Rule 144(k) under the Securities Act or all Underlying Shares owned by each Holder may be sold without volume restrictions pursuant to Rule 144 under the Securities Act; (iii) the Common Stock is listed or quoted (and is not suspended from trading) on an Eligible Market and such shares of Common Stock are approved for listing upon issuance; (iv) such issuance would be permitted in full without violating Section 16 hereof or the rules or regulations of any Trading Market; (v) no Bankruptcy Event has occurred; (vi) the Corporation is not in default with respect to any material obligation hereunder or under any other Transaction Document; and (vii) none of the following events have occurred and are continuing (A) an event constituting a Triggering Event or (B) an event that with the passage of time and without being cured would constitute a Triggering Event other than a pending, proposed or intended Change of Control.

"**Holder**" means any holder of Series B Preferred Stock.

"**Initial Conversion Price**" means (i) in the case of Series B-I Preferred Stock, \$19.9703, and (ii) in the case of Series B-II Preferred Stock, \$17.66.

"**Initial Purchase Price**" means (i) in the case of Series B-I Preferred Stock, \$17.75, and (ii) in the case of Series B-II Preferred Stock, \$15.69.

"**Junior Securities**" means the Common Stock and all other equity or equity equivalent securities of the Corporation, other than Series C Preferred Stock.

"**Purchase Agreement**" means the Amended and Restated Securities Purchase Agreement, dated March 19, 2002, among the Corporation and the original purchasers of the Series B Preferred Stock, as amended from time to time.

"**Series C Preferred Stock**" means the Series C preferred stock of the Corporation to be authorized and issued as contemplated by the Purchase Agreement.

3. Dividends.

(a) Holders shall be entitled to receive, out of funds legally available therefor, and the Corporation shall pay, cumulative dividends on the Series B Preferred Stock at the rate per share (as a percentage of the Stated Value per share) of 4% per annum, payable quarterly in arrears commencing on June 30, 2002 and thereafter on each March 31, June 30, September 30 and December 31, except if such date is not a Trading Day, in which case such dividend shall

be payable on the next succeeding Trading Day (each, a **“Dividend Payment Date”**). Dividends on the Series B Preferred Stock shall be calculated on the basis of a 365-day year, shall accrue daily commencing on the Deemed Issue Date for the applicable shares of Series B Preferred Stock, and shall be deemed to accrue from such date whether or not earned or declared and whether or not there are profits, surplus or other funds of the Corporation legally available for the payment of dividends.

(b) Subject to the conditions and limitations set forth below, the Corporation may pay required dividends (i) in cash or (ii) in Common Stock. The Corporation must deliver written notice (the **“Dividend Notice”**) to the Holders indicating the manner in which it intends to pay dividends at least ten Trading Days prior to each Dividend Payment Date, but the Corporation may indicate in any such notice that the election contained therein shall continue for subsequent Dividend Payment Dates until revised.

2

Failure to timely provide such written notice shall be deemed an election by the Corporation to pay the dividend in Common Stock, unless payment of dividends in such manner is not permitted at the time of a dividend, in which case such dividend shall be payable in cash. All dividends payable in respect of the Series B Preferred Stock on any Dividend Payment Date must be paid in the same manner.

(c) Notwithstanding the foregoing the Corporation may not pay dividends by issuing Common Stock unless, at such time, the Equity Conditions are satisfied with respect to such Common Stock dividend shares and all of the Underlying Shares then issuable upon conversion in full of all outstanding Series B Preferred Stock. If the Corporation is required to pay dividends in cash on any Dividend Payment Date and does not timely make such payment, any Holder may (but shall not be required to) treat such cash amount as if it had been added to the Stated Value as of such Dividend Payment Date. If the Corporation may not legally pay dividends on any Dividend Payment Date, such amount shall be added to the Stated Value as of such Dividend Payment Date.

(d) So long as any Series B Preferred Stock is outstanding, (i) neither the Corporation nor any Subsidiary shall, directly or indirectly, redeem, purchase or otherwise acquire any Junior Securities or set aside any monies for such a redemption, purchase or other acquisition in excess of \$10,000,000 per calendar year, provided that the Corporation shall be entitled to carry forward any amount not used in any calendar year to subsequent calendar years, and (ii) the Corporation shall not pay or declare any dividend or make any distribution on any Junior Securities, except pro rata stock dividends on the Common Stock payable in additional shares of Common Stock and dividends due and paid in the ordinary course on preferred stock of the Corporation, in each case only at such times as the Corporation is in compliance with its payment and other obligations hereunder.

(e) In the event that the Corporation elects to pay dividends in shares of Common Stock, the number of shares of Common Stock to be issued to each Holder as such dividend shall be (i) determined by dividing the total dividend then payable to such Holder by the Dividend Market Price (as defined below) as of the applicable Dividend Payment Date, and rounding up to the nearest whole share, and (ii) paid to such Holder in accordance with Section 3(f) below. The term **“Dividend Market Price”** shall mean the average of the Volume Weighted Average Prices of Common Stock for the five consecutive Trading Days prior to the applicable Dividend Payment Date (not including such date).

(f) In the event that any dividends are paid in Common Stock the Corporation shall, on or before the third Trading Day following the payment date of such dividend, (i) issue and deliver to such Holder a certificate, registered in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder shall be entitled or (ii) if and when the applicable shares of Common Stock may be held in a balance account with The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System and after the Holder has notified the Corporation that this clause (ii) shall apply, credit the number of shares of Common Stock to which the Holder shall be entitled to the Holder’s or its designee’s balance account with The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System.

4. Registration of Series B Preferred Stock. The Corporation shall register shares of the Series B Preferred Stock, upon records to be maintained by the Corporation for that purpose (the **“Series B Preferred Stock Register”**), in the name of the record Holders thereof from time to time. The Corporation may deem and treat the registered Holder of shares of Series B Preferred Stock as the absolute owner thereof for the purpose of any conversion hereof or any distribution to such Holder, and for all other purposes, absent actual notice to the contrary.

5. Registration of Transfers. The Corporation shall register the transfer of any shares of Series B Preferred Stock in the Series B Preferred Stock Register, upon surrender of certificates evidencing such shares to the Corporation at its address specified herein. Upon any such registration or transfer, a new

3

certificate evidencing the shares of Series B Preferred Stock so transferred shall be issued to the transferee and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring Holder.

6. Liquidation.

(a) In the event of any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary (a **“Liquidation Event”**), the Holders of Series B Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of Junior Securities by reason of their ownership thereof, an amount per share in cash equal to the Stated Value for each share of Series B Preferred Stock then held by them (as adjusted for any stock splits, stock dividends, stock combinations and similar transactions with respect to the Series B Preferred Stock), plus all accrued but unpaid dividends on such Series B Preferred Stock as of the date of such event (the **“Series B Stock Liquidation Preference”**). If, upon the occurrence of a Liquidation Event, the assets and funds thus distributed among the Holders of the full Series B Preferred Stock shall be insufficient to permit the payment to such Holders of the Series B Stock Liquidation Preference, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the Holders of the Series B Preferred Stock in proportion to the aggregate Series B Stock Liquidation Preference that would otherwise be payable to each of such Holders.

(b) In the event of a Liquidation Event, following completion of the distributions required by the first sentence of paragraph (a) of this Section 6, if assets or surplus funds remain in the Corporation, the holders of the Common Stock shall share ratably in all remaining assets of the Corporation, based on the number of shares of Common Stock then outstanding.

(c) The Corporation shall mail written notice of any Liquidation Event to each record Holder not less than 20 Trading Days prior to the payment date or effective date thereof.

7. Conversion.

(a) Conversion at Option of Holder. At the option of any Holder, any Series B Preferred Stock held by such Holder may be converted into Common Stock based on the applicable Conversion Price then in effect for such series of Series B Preferred Stock. A Holder may convert Series B Preferred Stock into Common Stock pursuant to this paragraph at any time and from time to time after the applicable Deemed Issue Date, by delivering to the Corporation a Conversion Notice, in the form attached hereto as Exhibit B, appropriately completed and duly signed, and the date any such Conversion Notice is delivered to the Corporation (as determined in accordance with the notice provisions hereof) is a “**Conversion Date.**”

(b) Conversion at Option of Corporation. If, at any time after the Effective Date, the Closing Price on each of 20 consecutive Trading Days (a “**Qualifying Period**”) exceeds 135% of the applicable Conversion Price for a series of Series B Preferred Stock (each, a “**Threshold Price**”), the Corporation may require the Holders to convert the shares of such series into Common Stock based on the applicable Conversion Price. The Corporation may require a conversion pursuant to this paragraph by delivering irrevocable written notice of such election to the Holders, and the fifth Trading Day after the date any such notice is delivered to the Holders (as determined in accordance with the notice provisions hereof) will be the “**Conversion Date**” for such required conversion. Notwithstanding the foregoing, (i) if the Corporation has publicly announced a pending, proposed or intended Change of Control and the Qualifying Period includes any Trading Days on or after the date of such public announcement, then to the extent that a Holder has not had the ability to sell all or a portion of the Underlying Shares pursuant to Rule 144 under the Securities Act or an effective Underlying Share Registration Statement for at least 20 Trading Days after the date of the public announcement of such Change of Control, the Conversion Date

4

with respect to those shares of Series B Preferred Stock that are convertible into the portion of the Underlying Shares that are not so saleable shall be deferred until the date on which such Underlying Shares shall have been so saleable for a period of 20 Trading Days from the date of such public announcement (and if no such period of 20 Trading Days occurs prior to the Change of Control with respect to any such Underlying Shares then the notice of conversion applicable to those shares of Series B Preferred Stock convertible into such Underlying Shares shall be void) and (ii) the Corporation may not require any conversion under this paragraph (and any notice thereof will be void), unless from the beginning of such period of 20 consecutive Trading Days through the Conversion Date, (A) the Equity Conditions are satisfied with respect to all of the Underlying Shares then issuable upon conversion in full of all outstanding Series B Preferred Stock, and (B) the Closing Price equals or exceeds the applicable Threshold Price.

8. Mechanics of Conversion.

(a) The number of Underlying Shares issuable upon any conversion of shares of either series of Series B Preferred Stock hereunder shall equal (i) the Stated Value of such share of Series B Preferred Stock to be converted, divided by the applicable Conversion Price on the Conversion Date, plus (ii) the amount of any accrued but unpaid dividends on such share of Series B Preferred Stock through the Conversion Date, divided by the applicable Conversion Price on the Conversion Date.

(b) Upon conversion of any Series B Preferred Stock, the Corporation shall promptly (but in no event later than three Trading Days after the Conversion Date) issue or cause to be issued and cause to be delivered to or upon the written order of the Holder and in such name or names as the Holder may designate a certificate for the Underlying Shares issuable upon such conversion, free of restrictive legends unless such Underlying Shares are not then freely transferable without volume restrictions pursuant to Rule 144(k) under the Securities Act. The Holder, or any Person so designated by the Holder to receive Underlying Shares, shall be deemed to have become holder of record of such Underlying Shares as of the Conversion Date. If and when such Underlying Shares may be freely transferred pursuant to Rule 144 under the Securities Act or pursuant to an effective Underlying Shares Registration Statement, the Corporation shall use its best efforts to deliver Underlying Shares hereunder electronically through the Depository Trust Corporation or another established clearing corporation performing similar functions, and shall issue such Underlying Shares in the same manner as dividend payment shares are issued pursuant to Section 3(f) above.

(c) A Holder shall not be required to deliver the original certificate(s) evidencing the Series B Preferred Stock being converted in order to effect a conversion of such Series B Preferred Stock. Execution and delivery of the Conversion Notice shall have the same effect as cancellation of the original certificate(s) and issuance of a new certificate evidencing the remaining shares of Series B Preferred Stock. Upon surrender of a certificate following one or more partial conversions, the Corporation shall promptly deliver to the Holder a new certificate representing the remaining shares of Series B Preferred Stock.

(d) The Corporation’s obligations to issue and deliver Underlying Shares upon conversion of Series B Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by any Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by any Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by any Holder or any other Person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to any Holder in connection with the issuance of such Underlying Shares.

5

9. Redemption Rights.

(a) Holdings’ Redemption Rights.

(i) Subject to the provisions of Section 9(a)(iii) below, if, at any time on or after August 7, 2003, in the case of the Series B-I Preferred Stock, and August 28, 2003, in the case of the Series B-II Preferred Stock (either such date being referred to as an “Initial Redemption Date”), the average of the Closing Prices for 20 consecutive Trading Days immediately preceding the applicable Initial Redemption Date or any date thereafter is below the applicable Conversion Price of such series of Series B Preferred Stock, the Holder of such Series B Preferred Stock, upon 15 Trading Days’ advance notice (the “**Redemption Notice**”) to the Corporation, shall have the right to request the Corporation to redeem that number of shares of Series B Preferred Stock held by such Holders as is set forth in the Redemption Notice at a per share price (the “**Redemption Price**”)

equal to the Stated Value of such shares of Series B Preferred Stock to be redeemed plus all accrued but unpaid dividends thereon to the date of payment.

(ii) Notwithstanding anything to the contrary in Section 9(a)(i), the Holders of the Series B Preferred Stock (x) may not deliver a Redemption Notice with respect to a particular series of Series B Preferred Stock until after the applicable Initial Redemption Date, (y) may not deliver a Redemption Notice covering in aggregate more than \$20,000,000 of Stated Value, with respect to the Series B-I Preferred Stock, until after February 7, 2004, and \$10,000,000 of Stated Value, with respect to the Series B-II Preferred Stock, until after February 28, 2004, and (z) may deliver a Redemption Notice with respect to a particular series of Series B Preferred Stock after February 7, 2004 or February 28, 2004, as applicable, irrespective of whether the average of the Closing Prices for the 20 consecutive Trading Days is below the applicable Conversion Price of such series of Series B Preferred Stock and without limit as to Stated Value.

(iii) Within three Trading Days of receipt of a Redemption Notice, the Corporation will deliver written notice to each Holder of the applicable series of Series B Preferred Stock (the “**Corporation Notice**”), confirming pursuant to the Redemption Notice the aggregate amount of such Series B Preferred Stock being redeemed, the Redemption Date (as defined below) and the applicable Redemption Prices. Notwithstanding the aggregate shares set forth in the Redemption Notice, each Holder of such series of Series B Preferred Stock shall have the right to elect to have all or any number of shares of the applicable series of Series B Preferred Stock held by such Holder redeemed on the Redemption Date at the applicable Redemption Price by notifying the Corporation within five Trading Days of receipt of the Corporation Notice of its election to do so, and specifying the number of shares as to which such election is made. In the event that the aggregate number of shares of Series B Preferred Stock to be redeemed on such Redemption Date exceeds the aggregate limitations set forth in Section 9(a)(ii), the number of shares to be redeemed from each Holder shall be reduced pro rata based upon the aggregate number of shares of the applicable series of Series B Preferred Stock held by each Holder requesting redemption.

(iv) The Redemption Notice will specify the effective date of the redemption, which must be a Trading Day at least 15 Trading Days after the date such notice is delivered (the “**Redemption Date**”), and the entire Redemption Price may be paid at the Corporation’s option in cash, in Common Stock or in Series C Preferred Stock. The Corporation must deliver written notice to the Holders indicating the manner in which it intends to pay the Redemption Price at least three Trading Days after receipt of the Redemption Notice. Failure to timely provide such written notice shall be deemed an election by the Corporation to make the payment in Common Stock. Notwithstanding the foregoing, the Corporation (a) may not pay the Redemption Price by issuing Common Stock unless, at such time, the Equity Conditions are satisfied with respect to such

6

Common Stock and (b) may not pay the Redemption Price by issuing Series C Preferred Stock unless, at such time, the Equity Conditions are not satisfied.

(v) Upon receipt of payment of the Redemption Price, each Holder will deliver the original certificate(s) evidencing the Series B Preferred Stock so redeemed to the Corporation, unless such Holder is awaiting receipt of a new certificate evidencing such shares from the Corporation pursuant to another provision hereof. At any time on or prior to the Redemption Date, the Holders may convert any or all of the shares of Series B Preferred Stock, and the Corporation shall honor any such conversions in accordance with the terms hereof.

(vi) In the event the Corporation elects to pay the Redemption Price in shares of Common Stock, the number of shares of Common Stock to be issued to each Holder as payment of the Redemption Price shall be determined by dividing the total Redemption Price then payable to such Holder by the Redemption Market Price (as defined below) as of the applicable Redemption Date, and rounding up to the nearest whole share. Such shares shall be issued to such Holder in the same manner as dividend payment shares are issued pursuant to Section 3(f) above. The term “**Redemption Market Price**” shall mean the average of the Volume Weighted Average Prices of Common Stock for the ten consecutive Trading Days prior to the applicable Redemption Date (not including such date).

(vii) In the event that the Corporation elects to pay the Redemption Price in shares of Series C Preferred Stock, the number of shares of Series C Preferred Stock to be issued to each Holder in payment of the Redemption Price shall be determined by dividing the total Redemption Price then payable to such Holder with respect to all of such Holder’s shares of Series B Preferred Stock by \$10,000 (the initial stated value per share of the Series C Preferred Stock) and rounding downward to the nearest whole number of shares of Series C Preferred Stock. In addition, the Corporation shall pay to Holder in cash the amount, if any, by which the Redemption Price payable to such Holder exceeds the aggregate stated value of the Series C Preferred Stock issued pursuant to the preceding sentence. If the total Redemption Price payable to a Holder is less than \$10,000, then the Corporation shall pay such amount to such Holder entirely in cash.

(b) Mandatory Redemption. On February 7, 2009 (the “**Mandatory Redemption Date**”), the Corporation shall redeem all of the then outstanding Series B Preferred Stock at a price equal to 100% of the Stated Value of such shares of Series B Preferred Stock plus all accrued but unpaid dividends thereon to the date of payment in cash, Common Stock or Series C Preferred Stock (or a combination thereof) at the election of the Corporation. The Corporation must deliver written notice to the Holders indicating the manner in which it intends to pay the Redemption Price at least 20 Trading Days prior to the Mandatory Redemption Date. Failure to timely provide such written notice shall be deemed an election by the Corporation to make the payment in Common Stock. Notwithstanding the foregoing, the Corporation (i) may not pay the Redemption Price by issuing Common Stock unless, at such time, the Equity Conditions are satisfied with respect to such Common Stock and (ii) may not pay the Redemption Price by issuing Series C Preferred Stock unless, at such time, the Equity Conditions are not satisfied. Upon receipt of payment of the Redemption Price, each Holder will deliver the original certificate(s) evidencing the Series B Preferred Stock so redeemed to the Corporation, unless such Holder is awaiting receipt of a new certificate evidencing such shares from the Corporation pursuant to another provision hereof. In the event that the Corporation elects to pay the Redemption Price in shares of Common Stock or Series C Preferred Stock, the number of such shares shall be determined in the manner described in Section 9(a)(vi) or (vii), as the case may be. At any time on or prior to the Mandatory Redemption Date, the Holders may convert any or all of the shares of Series B Preferred Stock, and the Corporation shall honor any such conversions in accordance with the terms hereof.

7

10. Triggering Events. At any time or times following the occurrence of a Triggering Event (other than a Change of Control), each Holder shall have the option to elect, by notice to the Corporation (an “**Event Notice**”), to require the Corporation to repurchase all or any portion of (i) the Series B Preferred Stock then held by such Holder, at a price per share equal to the greater of (A) 115% of the Stated Value plus all accrued but unpaid dividends thereon through the date of payment, or (B) the Event Equity Value of the Underlying Shares issuable upon conversion of such Series B Preferred Stock (including such accrued but unpaid dividends thereon), and (ii) any Underlying Shares issued to such Holder upon conversion of Series B Preferred Stock, at a price per share equal to the Event Equity Value of such Underlying Shares. The aggregate amount payable pursuant to the preceding sentence is referred to as the “**Event Price**.” The Corporation shall pay the aggregate Event Price to each Holder in cash or Series C Preferred Stock (or a combination thereof), at the election of the Corporation, by no later than the third Trading Day following the date of delivery of the Event Notice, and upon receipt thereof such Holder shall deliver original certificates evidencing the shares of Series B Preferred Stock and Underlying Shares so repurchased to the Corporation (to the extent such certificates have been delivered to the Holder). In the event that the Corporation elects to pay the Redemption Price in shares of Series C Preferred Stock, the number of such shares shall be determined in the manner described in Section 9(a)(vii).

11. Voting Rights. Except as otherwise provided herein or as required by applicable law, the Holders of the Series B Preferred Stock shall be entitled to vote on all matters on which holders of Common Stock are entitled to vote, including, without limitation, the election of directors. For such purposes, each Holder shall be entitled to a number of votes in respect of the shares of Series B Preferred Stock owned by it equal to the number of shares of Common Stock into which such shares of Series B Preferred Stock are convertible as of the record date for the determination of stockholders entitled to vote on such matter, or if no record date is established, at the date such vote is taken or any written consent of stockholders is solicited. Except as otherwise provided herein, in any relevant agreement or as required by applicable law, the holders of the Series B Preferred Stock and Common Stock, respectively, shall vote together as a single class on all matters submitted to a vote or consent of stockholders; provided that so long as any shares of Series B Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the shares of Series B Preferred Stock then outstanding, (a) alter or change adversely the powers, preferences or rights given to the Series B Preferred Stock or alter or amend this Certificate of Designations (whether by merger, reorganization, consolidation or otherwise), (b) authorize or create any class of stock ranking as to dividends or distribution of assets upon a Liquidation Event or Change of Control senior to the Series B Preferred Stock, (c) amend its certificate of incorporation or bylaws so as to affect adversely any rights of the Holders (whether by merger, reorganization, consolidation or otherwise), (d) increase the authorized number of shares of Series B Preferred Stock, or (e) enter into any agreement with respect to the foregoing.

12. Charges, Taxes and Expenses. Issuance of certificates for shares of Series B Preferred Stock and for Underlying Shares issued on conversion of (or otherwise in respect of) the Series B Preferred Stock shall be made without charge to the Holders for any issue or transfer tax, withholding tax, transfer agent fee or other incidental tax or expense in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Corporation; provided, however, that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any certificates for Common Stock or Series B Preferred Stock in a name other than that of the Holder. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring the Series B Preferred Stock or receiving Underlying Shares in respect of the Series B Preferred Stock.

13. Replacement Certificates. If any certificate evidencing Series B Preferred Stock or Underlying Shares is mutilated, lost, stolen or destroyed, the Corporation shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for such

certificate, a new certificate, but only upon receipt of evidence reasonably satisfactory to the Corporation of such loss, theft or destruction and customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

14. Reservation of Underlying Shares. The Corporation covenants that it shall at all times reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue the Underlying Shares as required hereunder (i) a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock available to issue Underlying Shares upon any conversion of Shares or, if the number of shares so reserved is insufficient to make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock for such issuance within 60 days after the occurrence of such deficiency, and (ii) at least 6,401,394 authorized but unissued and otherwise unreserved shares of Common Stock (as adjusted for any stock splits, stock combinations or similar events) less any shares of Common Stock issued upon conversion of the Shares, as dividends on the Shares, upon exercise of the Warrants or upon a redemption of the Shares. The Corporation covenants that all Underlying Shares so issuable and deliverable shall, upon issuance in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and nonassessable.

15. Certain Adjustments. The Conversion Price is subject to adjustment from time to time as set forth in this Section 15.

(a) Stock Dividends and Splits. If the Corporation, at any time while Series B Preferred Stock is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock that is payable in shares of Common Stock (other than regular dividends on the Series B Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, or (iii) combines outstanding shares of Common Stock into a smaller number of shares, then in each such case the applicable Conversion Price for each series of Series B Preferred Stock shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, and any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination.

(b) Pro Rata Distributions. If the Corporation, at any time while Series B Preferred Stock is outstanding, distributes to all holders of Common Stock (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph), (iii) rights or warrants to subscribe for or purchase any security, or (iv) any other asset other than cash paid as a dividend (in each case, “**Distributed Property**”), then, at the request of any Holder delivered before the ninetieth day after the record date fixed for determination of stockholders entitled to receive such distribution, the Corporation will deliver to such Holder, within five Trading Days after such request (or, if later, on the effective date of such distribution), the Distributed Property that such Holder would have been entitled to receive in respect of the Underlying Shares for which such Holder’s Series B Preferred Stock could have been converted immediately prior to such record date. If such Distributed Property is not delivered to a Holder pursuant to the preceding sentence, then upon any conversion of Series B Preferred Stock that occurs after such record date, such Holder shall be entitled to receive, in addition to the Underlying Shares otherwise issuable upon such conversion, the Distributed Property that such Holder would have been entitled to receive in respect of such number of Underlying Shares had the Holder been the record holder of such Underlying Shares immediately prior to such record date.

(c) Certain Transactions.

(i) If, at any time while Series B Preferred Stock is outstanding, the Corporation proposes to enter into a transaction that would constitute a Change of Control, the Corporation shall mail written notice of the proposed Change of Control transaction to each record Holder not less than 20 Trading Days prior to the effective date thereof. Each Holder shall have the right to receive on the date of the consummation of such Change of Control, at its option, either (A) for each Underlying Share that would have been issuable upon such conversion of the shares of Series B Preferred Stock upon the effective time of such Change of Control, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such Change of Control if it had been, immediately prior to such Change of Control, the holder of one share of Common Stock or (B) for each share of Series B Preferred Stock, cash in an amount equal to 115% of the Stated Value plus all accrued but unpaid dividends thereon through the date of payment. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Change of Control transaction, then each Holder shall be given the same choice as to the consideration it receives pursuant to clause (A) above. Each Holder shall make the election of which consideration it has elected to receive at least three Trading Days prior to the effective date of a Change of Control. Failure of any Holder to timely provide written notice of its election shall be deemed an election by such Holder to receive the consideration specified in clause (B) above. Notwithstanding the foregoing, if a Holder elects to receive cash pursuant to clause (B) of the preceding sentence or is deemed to have so elected, the Corporation may elect instead to have such successor to the Corporation or surviving entity in the Change of Control issue to the Holder a new series of Preferred Stock with a stated value equal to 115% of the Stated Value of Series B Preferred Stock, plus all accrued but unpaid dividends thereon, and consistent with terms substantially equivalent to the terms of the Series B-I Preferred Stock or Series B-II Preferred Stock, as the case may be, held by such Holder and evidencing the Holder's right to convert such Preferred Stock into the consideration described in clause (A) of this subparagraph (i). To the extent the Corporation elects to have the successor to the Corporation or the surviving entity issue a new series of Preferred Stock, the terms of any agreement pursuant to which a Change of Control is effected shall include terms requiring any such successor or surviving entity to comply with the provisions substantially equivalent to the provisions of this paragraph (c) and providing that the Series B Preferred Stock (or any such replacement security) will be similarly adjusted upon any subsequent transaction analogous to a Change of Control.

(ii) Any recapitalization, reorganization, reclassification, consolidation, merger, sale of all or substantially all of the Corporation's assets to another Person or other transaction which is effected in such a way that holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock, securities or assets with respect to or in exchange for Common Stock is referred to herein as "**Organic Change.**" Prior to the consummation of any (A) sale of all or substantially all of the Corporation's assets to an acquiring Person or (B) other Organic Change following which the Corporation is not a surviving entity, other than in each case an Organic Change that is a Change of Control (which shall be subject to Section 15(c)(i)), the Corporation will secure from the Person purchasing such assets or the successor, or, if applicable, the parent of the successor, resulting from such Organic Change (in each case, the "**Acquiring Entity**") a written agreement (in form and substance reasonably satisfactory to the holders of at least a majority of the shares of Series B Preferred Stock then outstanding) to deliver to each holder of Series B Preferred Stock in exchange for such shares, a security of the Acquiring Entity evidenced by a written instrument substantially similar in form and substance to such Series B Preferred Stock, including, without limitation, having a stated value and liquidation preference equal to the Stated Value and the Series B Stock Liquidation Preference of the Series B Preferred Stock held by such holder, and

10

reasonably satisfactory to the holders of at least a majority of the Series B Preferred Stock then outstanding.

(d) Subsequent Equity Sales.

(i) If, at any time while any shares of either series of Series B Preferred Stock are outstanding, the Corporation or any Subsidiary issues additional shares of Common Stock or rights, warrants, options or other securities or debt convertible, exercisable or exchangeable for shares of Common Stock or otherwise entitling any Person to acquire shares of Common Stock (collectively, "**Common Stock Equivalents**") at an effective net price to the Corporation per share of Common Stock (the "**Effective Price**") less than the lesser of (A) the Initial Purchase Price for a series of Series B Preferred Stock or (B) then-applicable Conversion Price for a series of Series B Preferred Stock, then the applicable Conversion Price for such series of Series B Preferred Stock shall be reduced to equal the Effective Price. For purposes of this paragraph, in connection with any issuance of any Common Stock Equivalents, (A) the maximum number of shares of Common Stock potentially issuable at any time upon conversion, exercise or exchange of such Common Stock Equivalents (the "**Deemed Number**") shall be deemed to be outstanding upon issuance of such Common Stock Equivalents, (B) the Effective Price applicable to such Common Stock shall equal the minimum dollar value of consideration payable to the Corporation to purchase such Common Stock Equivalents and to convert, exercise or exchange them into Common Stock (net of any discounts, fees, commissions and other expenses), divided by the Deemed Number, (C) no further adjustment shall be made to the Conversion Price upon the actual issuance of Common Stock upon conversion, exercise or exchange of such Common Stock Equivalents, and (D) upon the expiration or termination of any Common Stock Equivalent that does not result in the issuance of any Common Stock or additional Common Stock Equivalent, any adjustment that has been made under this paragraph (d) in respect of the issuance of such Common Stock Equivalent shall be readjusted as if such Common Stock Equivalent had not been issued (but shall in no event affect previously converted stock).

(ii) If, at any time while Series B Preferred Stock is outstanding, the Corporation or any Subsidiary issues Common Stock Equivalents with an Effective Price or a number of underlying shares that floats or resets or otherwise varies or is subject to adjustment based (directly or indirectly) on market prices of the Common Stock (a "**Floating Price Security**"), then for purposes of applying the preceding paragraph in connection with any subsequent conversion, the Effective Price will be determined separately on each Conversion Date and will be deemed to equal the lowest Effective Price at which any holder of such Floating Price Security is entitled to acquire Common Stock on such Conversion Date (regardless of whether any such holder actually acquires any shares on such date).

(iii) Notwithstanding the foregoing, no adjustment will be made under this paragraph (d) in respect of the issuance of Excluded Stock.

(e) Calculations. All calculations under this Section 15 shall be made to the nearest cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the

disposition of any such shares shall be considered an issue or sale of Common Stock.

(f) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 15, the Corporation at its expense will promptly compute such adjustment in accordance with the terms hereof and prepare a certificate describing in reasonable detail such adjustment and the transactions giving rise thereto, including all facts upon which such adjustment is based. Upon written request, the

Corporation will promptly deliver a copy of each such certificate to each Holder and to the Corporation's Transfer Agent.

(g) Notice of Corporate Events. If the Corporation (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including without limitation any granting of rights or warrants to subscribe for or purchase any capital stock of the Corporation or any Subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Corporation, then the Corporation shall deliver to each Holder a notice describing the material terms and conditions of such transaction, at least 20 calendar days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction, and the Corporation will take all steps reasonably necessary in order to insure that each Holder is given the practical opportunity to convert its Series B Preferred Stock prior to such time so as to participate in or vote with respect to such transaction; provided, however, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice.

16. Limitation on Conversion.

(a) Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by any Holder upon any conversion of Series B Preferred Stock (or otherwise in respect of the Series B Preferred Stock) shall be limited to the extent necessary to insure that, following such conversion (or other issuance), the total number of shares of Common Stock then beneficially owned by such Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act, does not exceed 4.999% (the "**Maximum Percentage**") of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such conversion). For such purposes, beneficial ownership shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. Each delivery of a Conversion Notice by a Holder will constitute a representation by such Holder that it has evaluated the limitation set forth in this paragraph and determined that issuance of the full number of Underlying Shares requested in such Conversion Notice is permitted under this paragraph. By written notice to the Corporation, any Holder may waive the provisions of this Section or increase or decrease the Maximum Percentage to any other percentage specified in such notice, but (i) any such waiver or increase will not be effective until the 61st day after such notice is delivered to the Corporation, and (ii) any such waiver or increase or decrease will apply only to such Holder and not to any other Holder and (iii) any such waiver or increase shall not be effective to the extent such waiver or increase would cause the Corporation to violate the Nasdaq Stockholder Approval Rule.

(b) For purposes of this Section 16, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (1) the Corporation's most recent Form 10-Q, Form 10-K or other public filing with the Commission, as the case may be, (2) a more recent public announcement by the Corporation, or (3) any other notice by the Corporation or its transfer agent setting forth the number of shares of Common Stock outstanding. Upon the written request of any Holder, the Corporation shall promptly, but in no event later than one Trading Day following the receipt of such notice, confirm in writing to any such Holder the number of shares of Common Stock then outstanding.

17. Fractional Shares. The Corporation shall not be required to issue or cause to be issued fractional Underlying Shares on conversion of Series B Preferred Stock. If any fraction of an Underlying

Share would, except for the provisions of this Section, be issuable upon conversion of Series B Preferred Stock, the number of Underlying Shares to be issued will be rounded up to the nearest whole share.

18. Notices. Any and all notices or other communications or deliveries hereunder (including without limitation any Conversion Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section prior to 5:30 p.m. (New York City time) on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. The addresses for such communications shall be (i) if to the Corporation, to Ten Canal Park, Cambridge, Massachusetts 02141, facsimile: (617) 949-1722, Attention: Chief Executive Officer and General Counsel, or (ii) if to a Holder, to the address or facsimile number appearing on the Corporation's stockholder records or such other address or facsimile number as such Holder may provide to the Corporation in accordance with this Section.

19. Miscellaneous.

(a) The headings herein are for convenience only, do not constitute a part of this Certificate of Designations and shall not be deemed to limit or affect any of the provisions hereof.

(b) Any of the rights of the Holders of Series B Preferred Stock set forth herein may be waived by the affirmative vote of the Holders of a majority of the shares of Series B Preferred Stock then outstanding. No waiver of any default with respect to any provision, condition or requirement of this Certificate of Designations shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right.

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this Certificate of Designations to be duly executed as of March 19, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala
 Lisa W. Zappala
 Senior Vice President and
 Chief Financial Officer

EXHIBIT A

ADDITIONAL DEFINITIONS

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 144. With respect to a Purchaser, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Purchaser will be deemed to be an Affiliate of such Purchaser.

“Bankruptcy Event” means any of the following events: (a) the Corporation or any Material Subsidiary commences a case or other proceeding under any bankruptcy, reorganization, arrangement, adjustment of debt, relief of debtors, dissolution, insolvency or liquidation or similar law of any jurisdiction relating to the Corporation or any Material Subsidiary thereof; (b) there is commenced against the Corporation or any Material Subsidiary any such case or proceeding that is not dismissed within 60 days after commencement; (c) the Corporation or any Material Subsidiary is adjudicated insolvent or bankrupt or any order of relief or other order approving any such case or proceeding is entered; (d) the Corporation or any Material Subsidiary suffers any appointment of any custodian or the like for it or any substantial part of its property that is not discharged or stayed within 60 days; (e) the Corporation or any Material Subsidiary makes a general assignment for the benefit of creditors; (f) the Corporation or any Material Subsidiary fails to pay, or states in writing that it is unable to pay or is unable to pay, its debts generally as they become due; or (g) the Corporation or any Subsidiary, by any act or failure to act, expressly indicates its consent to, approval of or acquiescence in any of the foregoing or takes any corporate or other action that effects any of the foregoing.

“Change of Control” means the occurrence of any of the following in one or a series of related transactions: (i) an acquisition after the date hereof by an individual or legal entity or “group” (as described in Rule 13d-5(b)(1) under the Exchange Act) of a majority of the voting rights or equity interests in the Corporation; (ii) a replacement of more than one-half of the members of the Corporation’s Board of Directors that is not approved by those individuals who are members of the Board of Directors on the Deemed Issue Date (or other directors previously approved by such individuals); (iii) a merger or consolidation of the Corporation or a sale of all or substantially all of the assets of the Corporation in one or a series of related transactions, unless following such transaction or series of transactions, the holders of the Corporation’s securities prior to the first such transaction continue to hold, directly or indirectly, at least a majority of the voting rights and equity interests in the surviving entity or acquirer of such assets; (iv) a recapitalization, reorganization or other transaction involving the Corporation that constitutes or results in a transfer of a majority of the voting rights or equity interests in the Corporation to Persons other than holders of the Corporation’s voting equity securities prior to such transaction; or (v) consummation of a “Rule 13e-3 transaction” as defined in Rule 13e-3 under the Exchange Act with respect to the Corporation other than a Rule 13e-3 transaction in which no Holder’s interest in the Corporation has been adversely changed or diluted in any material manner.

“Closing Price” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on an Eligible Market or any other national securities exchange, the last closing price per share of the Common Stock for such date (or the nearest preceding date) on the primary Eligible Market or exchange on which the Common Stock is then listed or quoted; (b) if prices for the Common Stock are then quoted on the OTC Bulletin Board, the average of the highest closing bid price and the lowest closing ask price per share of the Common Stock for such date (or the nearest preceding date) so quoted; (c) if prices for the Common Stock are then reported in the “Pink Sheets” published by the National Quotation Bureau Incorporated (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common

Stock so reported; or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by a majority-in-interest of the Purchasers and the Corporation.

“Commission” means the Securities and Exchange Commission.

“Common Stock” means the common stock of the Corporation, par value \$0.10 per share.

“Effective Date” means the date that an Underlying Shares Registration Statement is declared effective by the Commission.

“Eligible Market” means the New York Stock Exchange, the American Stock Exchange, the Nasdaq National Market or the Nasdaq SmallCap Market.

“Event Equity Value” means 115% of the average of the Closing Prices for the five Trading Days preceding the date of delivery of the notice requiring payment of the Event Equity Value, provided that if the Corporation does not make such required payment (together with any other payments, expenses and liquidated damages then due and payable under the Transaction Documents) when due or, in the event the Corporation disputes in good faith the occurrence of the Triggering Event pursuant to which such notice relates, does not instead deposit such required payment (together with such other payments,

expenses and liquidated damages then due) in escrow with an independent third-party escrow agent within five Trading Days of the date such required payment is due, then the Event Equity Value shall be 115% of the greater of (a) the average of the Closing Prices for the five Trading Days preceding the date of delivery of the notice requiring payment of the Event Equity Value and (b) the average of the Closing Prices for the five Trading Days preceding the date on which such required payment (together with such other payments, expenses and liquidated damages) is paid in full.

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“Excluded Stock” means any shares of Common Stock issued or issuable: (A) upon exercise, conversion or exchange of any Common Stock Equivalents described in Schedule 3.1(g) to the Purchase Agreement (provided that such exercise or conversion occurs in accordance with the terms thereof, without amendment or modification, and that the applicable exercise or conversion price or ratio is described in such schedule); (B) to officers, directors, employees or consultants of the Corporation pursuant to a stock option plan, employee stock purchase plan or other equity incentive plan approved by the Board of Directors of the Corporation; (C) pursuant to as part of a bona fide firm commitment underwritten public offering with a nationally recognized underwriter (including any “at the market offering,” as defined in Rule 415(a)(4) under the Securities Act, only if such offering does not constitute an “equity line” and generates aggregate gross proceeds of at least \$50 million); (D) in connection with any transaction with a strategic investor, vendor, lessor, customer, supplier, marketing partner, developer or integrator or any similar arrangement, in each case the primary purpose of which is not to raise equity capital; (E) in connection with a transaction involving a merger or acquisition of an entity, business or assets (not principally for the purpose of obtaining cash); or (F) in connection with any other transaction for consideration other than cash up to 108,166 shares of Common Stock in the aggregate (as adjusted for stock splits, stock combinations and similar events).

“Material Subsidiary” means any significant subsidiary, as defined in Rule 1-02(w) of Regulation S-X promulgated by the Commission, of the Corporation.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability Corporation, joint stock Corporation, government (or an agency or subdivision thereof) or other entity of any kind.

16

“Purchaser” has the meaning set forth in the Purchase Agreement.

“Registration Rights Agreement” means the Amended and Restated Registration Rights Agreement, dated as of March 19, 2002 among the Corporation and the Purchasers, as amended from time to time.

“Required Effectiveness Date” means the date on which an Underlying Shares Registration Statement is required to become effective pursuant to the Registration Rights Agreement.

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“Securities” means the Shares, the Warrants and the Underlying Shares.

“Securities Act” means the Securities Act of 1933, as amended.

“Shares” means, collectively, the shares of Series B-I Preferred Stock and Series B-II Preferred Stock.

“Subsidiary” means any subsidiary, as defined in Rule 1-02(x) of Regulation S-X promulgated by the Commission, of the Corporation.

“Trading Day” means (a) any day on which the Common Stock is listed or quoted and traded on its primary Trading Market or (b) if the Common Stock is not then listed or quoted and traded on any Eligible Market, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto).

“Trading Market” means the Nasdaq National Market or any other Eligible Market on which the Common Stock is then listed or quoted.

“Transaction Documents” means the Purchase Agreement, the Registration Rights Agreement, this Certificate of Designations and the Warrants.

“Triggering Event” means any of the following events: (a) immediately prior to any Bankruptcy Event; (b) the Common Stock is not listed or quoted, or is suspended from trading, on an Eligible Market for a period of five consecutive Trading Days or ten aggregate Trading Days in any 365-day period; (c) the Corporation fails for any reason to deliver a certificate evidencing any Securities to a Purchaser within ten Trading Days after delivery of such certificate is required pursuant to any Transaction Document or the exercise or conversion rights of the Holders pursuant to the Transaction Documents are otherwise suspended for any reason; (d) the Corporation fails to have available both (i) a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock available to issue Underlying Shares upon any exercise of the Warrants or any conversion of Shares and does not make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock for such issuance within 60 days after the occurrence of such deficiency and (ii) at least 6,401,394 authorized but unissued and otherwise unreserved shares of Common Stock (as adjusted for any stock splits, stock combinations or similar events), less reductions reasonably agreed to by the Purchasers to reflect shares of Common Stock issued upon conversion of the Shares (and, therefore, reduced aggregate dividend payments), as dividends on the Shares, upon exercise of the Warrants or upon a redemption of the Shares; (e) at any time after the Required Effectiveness Date, any Common Stock issuable pursuant to the Transaction Documents is not listed on an Eligible Market; (f) any other Event (as defined in the Registration Rights Agreement) occurs and remains uncured for 60 days; (g) the Corporation fails to

17

make any cash payment required under the Transaction Documents and such failure is not cured within five days after notice of such default is first given to the Corporation by a Purchaser; (h) the Corporation defaults in the timely performance of any other obligation under the Transaction Documents and such

default continues uncured for a period of 20 days after the date on which notice of such default is first given to the Corporation by a Purchaser (it being understood that no prior notice need be given in the case of a default that cannot reasonably be cured within 20 days), or (i) any Change of Control event.

“**Underlying Shares**” means the shares of Common Stock issuable upon conversion of, or in redemption of, the Shares, as payment of dividends on the Shares and upon exercise of the Warrants, and any securities issued in exchange for, or upon conversion or in respect of, such shares.

“**Underlying Shares Registration Statement**” means a registration statement meeting the requirements set forth in the Registration Rights Agreement and covering the resale of the Underlying Shares by the Purchasers.

“**Volume Weighted Average Price**” means, with respect to a Trading Day, the average of the daily volume weighted average trading price (the total dollar amount traded on each day divided by trading volume for such day) of the Common Stock for the regular Trading Day session as reported at 4:15 p.m. (New York time) as reported by Bloomberg, LP function key HP by using W to calculate the daily weighted average.

“**Warrants**” means the Common Stock purchase warrants, as amended from time to time, issued pursuant to the Purchase Agreement.

EXHIBIT B

FORM OF CONVERSION NOTICE

(To be executed by the registered Holder
in order to convert shares of Series B Preferred Stock)

The undersigned hereby elects to convert the number of shares of Series B Preferred Stock indicated below into shares of Common Stock of Aspen Technology, Inc., a Delaware corporation, according to the conditions hereof, as of the date written below.

Series of Series B Preferred Stock to be converted (*check*): Series B-I
 Series B-II

Date to effect conversion

Number and series of shares of Series B Preferred Stock owned prior to conversion

Number and series of shares of Series B Preferred Stock to be converted

Stated Value of shares of Series B Preferred Stock to be converted (including \$ _____ of dividends added under Section 2(f) of the Registration Rights Agreement)

Number of shares of Common Stock to be issued

Applicable Conversion Price

Number and series of shares of Series B Preferred Stock subsequent to conversion

Name of Holder

By: _____

Name: _____

Title: _____

ASPEN TECHNOLOGY, INC.

**CERTIFICATE OF DESIGNATIONS
OF
SERIES C PREFERRED STOCK**

(Pursuant to Section 151 of the Delaware General Corporation Law)

Aspen Technology, Inc., a Delaware corporation (the “Corporation”), in accordance with the provisions of Section 103 of the Delaware General Corporation Law (the “DGCL”) does hereby certify that, in accordance with Section 141(c) of the DGCL, the following resolution was duly adopted by the Board of Directors of the Corporation as of March 14, 2002:

RESOLVED, that a series of Preferred Stock, Series C Preferred Stock, par value \$0.10 per share, of the Corporation is hereby created and the designation, number of shares, powers, preferences, rights, qualifications, limitations and restrictions thereof (in addition to any provisions set forth in the Certificate of Incorporation of the Corporation which are applicable to the Preferred Stock of all classes and series) are as follows:

SERIES C PREFERRED STOCK

1. Designation, Amount, Par Value and Stated Value. The following series of preferred stock shall be designated as the Corporation’s Series C Preferred Stock (the “**Series C Preferred Stock**”), and the number of shares so designated shall be 60,000. Each share of Series C Preferred Stock shall have a par value of \$0.10 per share and a stated value equal to \$10,000 plus any amount added to the Stated Value pursuant to Section 3(b) hereof (the “**Stated Value**”).

2. Definitions. In addition to the terms defined elsewhere in this Certificate of Designations, the following terms have the meanings indicated:

“**Change of Control**” means the occurrence of any of the following in one or a series of related transactions: (i) an acquisition after the date hereof by an individual or legal entity or “group” (as described in Rule 13d-5(b)(1) under the Exchange Act) of a majority of the voting rights or equity interests in the Corporation; (ii) a replacement of more than one-half of the members of the Corporation’s Board of Directors that is not approved by those individuals who are members of the Board of Directors as of March 19, 2002 (or other directors previously approved by such individuals); (iii) a merger or consolidation of the Corporation or a sale of all or substantially all of the assets of the Corporation in one or a series of related transactions, unless following such transaction or series of transactions, the holders of the Corporation’s securities prior to the first such transaction continue to hold, directly or indirectly, at least a majority of the voting rights and equity interests in the surviving entity or acquirer of such assets; (iv) a recapitalization, reorganization or other transaction involving the Corporation that constitutes or results in a transfer of a majority of the voting rights or equity interests in the Corporation to Persons other than holders of the Corporation’s voting equity securities prior to such transaction; or (v) consummation of a “Rule 13e-3 transaction” as defined in Rule 13e-3 under the Exchange Act with respect to the Corporation other than a Rule 13e-3 transaction in which no Holder’s interest in the Corporation has been adversely changed or diluted in any material manner.

“**Common Stock**” means the common stock of the Corporation, par value \$0.10 per share.

“**Eligible Market**” means the New York Stock Exchange, the American Stock Exchange, the Nasdaq National Market or the Nasdaq SmallCap Market.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended.

“**Holder**” means any holder of Series C Preferred Stock.

“**Junior Securities**” means the Common Stock and all other equity or equity equivalent securities of the Corporation.

“**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability corporation, joint stock corporation, government (or an agency or subdivision thereof) or other entity of any kind.

“**Trading Day**” means (a) any day on which the Common Stock is listed or quoted and traded on its primary Trading Market or (b) if the Common Stock is not then listed or quoted and traded on any Eligible Market, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto).

“**Trading Market**” means the Nasdaq National Market or any other Eligible Market on which the Common Stock is then listed or quoted.

3. Dividends.

(a) Holders shall be entitled to receive, out of funds legally available therefor, and the Corporation shall pay, cumulative dividends on the Series C Preferred Stock at the rate per share (as a percentage of the Stated Value per share) of 12% per annum, payable quarterly in arrears commencing on the last day of each month, except if such date is not a Trading Day, in which case such dividend shall be payable on the next succeeding Trading Day (each, a “**Dividend Payment Date**”). Dividends on a share of Series C Preferred Stock shall be calculated on the basis of a 365-day year, shall accrue daily commencing on the such share is initially issued by the Corporation for such share, and shall be deemed to accrue from such date whether or not earned or declared and whether or not there are profits, surplus or other funds of the Corporation legally available for the payment of dividends.

(b) Subject to the conditions and limitations set forth below, the Corporation may pay required dividends (i) in cash or (ii) by an addition to the Stated Value. The Corporation must deliver written notice (the “**Dividend Notice**”) to the Holders indicating the manner in which it intends to pay dividends at least ten Trading Days prior to each Dividend Payment Date, but the Corporation may indicate in any such notice that the election contained therein shall continue for subsequent Dividend Payment Dates until revised. Failure to timely provide such written notice shall be deemed an election by the Corporation to pay the dividend by addition to the Stated Value. All dividends payable in respect of the Series C Preferred Stock on any Dividend Payment Date must be paid in the same manner. If the Corporation may not legally pay dividends on any Dividend Payment Date, such amount shall be added to the Stated Value as of such Dividend Payment Date.

(c) So long as any Series C Preferred Stock is outstanding, (i) neither the Corporation nor any subsidiary (as defined in Rule 1-02(x) of Regulation S-X promulgated by the Securities and Exchange Commission) of the Corporation shall, directly or indirectly, redeem, purchase or otherwise acquire any Junior Securities or set aside any monies for such a redemption, purchase or other acquisition and (ii) the Corporation shall not pay or declare any dividend or make any distribution on any Junior Securities, except pro rata stock dividends on the Common Stock payable in additional shares of Common Stock and dividends due and paid in the ordinary course on preferred stock of the Corporation,

in each case only at such times as the Corporation is in compliance with its payment and other obligations hereunder.

4. Registration of Series C Preferred Stock. The Corporation shall register shares of the Series C Preferred Stock, upon records to be maintained by the Corporation for that purpose (the “**Series C Preferred Stock Register**”), in the name of the record Holders thereof from time to time. The Corporation may deem and treat the record Holder of shares of Series C Preferred Stock as the absolute owner thereof for the purpose of any conversion hereof or any distribution to such Holder, and for all other purposes, absent actual notice to the contrary.

5. Registration of Transfers. The Corporation shall register the transfer of any shares of Series C Preferred Stock in the Series C Preferred Stock Register, upon surrender of certificates evidencing such shares to the Corporation at its address specified herein. Upon any such registration or transfer, a new certificate evidencing the shares of Series C Preferred Stock so transferred shall be issued to the transferee and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring Holder.

6. Liquidation.

(a) In the event of any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary (a “**Liquidation Event**”), the Holders of Series C Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of Junior Securities by reason of their ownership thereof, an amount per share in cash equal to the Stated Value for each share of Series C Preferred Stock then held by them (as adjusted for any stock splits, stock dividends, stock combinations and similar transactions with respect to the Series C Preferred Stock), plus all accrued but unpaid dividends on such Series C Preferred Stock as of the date of such event (the “**Series C Stock Liquidation Preference**”). If, upon the occurrence of a Liquidation Event, the assets and funds thus distributed among the Holders of the Series C Preferred Stock shall be insufficient to permit the payment to such Holders of the full Series C Stock Liquidation Preference, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the Holders of the Series C Preferred Stock in proportion to the aggregate Series C Stock Liquidation Preference that would otherwise be payable to each of such Holders.

(b) In the event of a Liquidation Event, following completion of the distributions required by the first sentence of paragraph (a) of this Section 6, if assets or surplus funds remain in the Corporation, the holders of Junior Securities shall share ratably in all remaining assets of the Corporation.

(c) The Corporation shall mail written notice of any Liquidation Event to each record Holder not less than 20 Trading Days prior to the payment date or effective date thereof.

7. Redemption Rights.

(a) The Corporation may, at its option, redeem all or any number of the shares of Series C Preferred Stock then outstanding at any time or from time to time, upon at least 15 Trading Days’ advance notice to the Holders (the “**Redemption Notice**”), at a price per share (the “**Redemption Price**”) equal to the Stated Value of such share plus all accrued but unpaid dividends thereon to the date fixed for redemption. The Redemption Notice shall specify the date fixed for redemption, the aggregate Redemption Price for all of the shares to be redeemed, and the aggregate number of shares to be redeemed. The Redemption Price for any share of Series C Preferred Stock shall be paid entirely in cash.

(b) In case of any redemption of fewer than all of the then-outstanding shares of Series C Preferred Stock, the shares to be redeemed shall be selected, as nearly as practicable, as follows:

(i) The aggregate Redemption Price shall be prorated among the record Holders in proportion to the aggregate Stated Values (computed as of the date fixed for redemption) of the shares of Series C Preferred Stock registered in their respective names in the Series C Preferred Stock Register.

(ii) The Redemption Price so prorated to a record Holder shall be applied to redeem shares of Series C Preferred Stock in order of descending per share Stated Value, such that the Redemption Price prorated to such record Holder is first applied to the redemption of the record Holder’s shares having the highest per share Stated Value, any remaining prorated Redemption Price is then applied to the redemption of the record Holder’s shares having the next highest per share Stated Value, and so forth, until all the Redemption Price prorated to such record Holder has been applied to the redemption of whole shares of such record Holder’s Series C Preferred Stock. No share of Series C Preferred Stock shall be subject to redemption in part.

(iii) The Redemption Notice delivered to a Holder shall specify, in addition to the information specified in Section 7(a), the number of shares of such Holder to be redeemed and the certificate number(s) of the certificate(s) evidencing those shares.

(c) Upon receipt of payment of the Redemption Price, each Holder shall deliver the original certificate(s) evidencing the Series C Preferred Stock so redeemed to the Corporation, unless such Holder is awaiting receipt of a new certificate evidencing such shares from the Corporation pursuant to another provision hereof. Upon receipt of such a certificate from a Holder, the Corporation shall issue to such Holder a new certificate evidencing the remaining shares of Series C Preferred Stock, if any, represented by such certificate but not redeemed.

(d) Any shares of Series C Preferred Stock redeemed in accordance with this Section 7 shall be retired and cancelled and shall not be reissued, and the Corporation (without the need for stockholder action) may from time to time take such appropriate action as may be necessary to reduce the authorized number of shares of Series C Preferred Stock accordingly.

8. Voting Rights.

(a) Except as otherwise provided herein or as required by applicable law, the Holders of the Series C Preferred Stock shall not be entitled to vote on any matters on which holders of Common Stock are entitled to vote.

(b) So long as any shares of Series C Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the shares of Series C Preferred Stock then outstanding, (i) alter or change adversely the powers, preferences or rights given to the Series C Preferred Stock or alter or amend this Certificate of Designations (whether by merger, reorganization, consolidation or otherwise), (ii) authorize or create any class of stock ranking as to dividends or distribution of assets upon a Liquidation Event senior to the Series C Preferred Stock, (iii) amend its certificate of incorporation or bylaws so as to affect adversely any rights of the Holders (whether by merger, reorganization, consolidation or otherwise), (iv) increase the authorized number of shares of Series C Preferred Stock, or (v) enter into any agreement with respect to the foregoing.

So long as any shares of Series C Preferred Stock are outstanding, (i) the record Holders of Series C Preferred Stock, exclusively and as a separate class, shall be entitled to elect a number of directors equal to the greater of (A) two or (B) 20% of the total number of directors of the Corporation, rounded up to the nearest whole number, and (ii) the record holders of Common Stock, exclusively and as a separate class, shall, subject to the rights of any additional series of Preferred Stock that may be established from time to time, be entitled to elect the balance of the total number of directors of the Corporation. At any meeting

4

held for the purpose of electing directors, the presence in person or by proxy of the Holders of a majority of the shares of Series C Preferred Stock then outstanding shall constitute a quorum of the Series C Preferred Stock for the purpose of electing directors by Holders. A vacancy in any directorship filled by the Holders shall be filled only by vote or written consent in lieu of a meeting of the Holders or by any remaining director or directors elected by the Holders pursuant to this Section 8(c). To the extent all outstanding shares of Series C Preferred Stock are redeemed at any time in accordance with the provisions of Section 7 hereof, the rights of the Holders under this Section 8(c) shall terminate on the redemption date for those shares and any director previously elected by the Holders pursuant to this Section 8(c) resign as of such redemption date.

9. Certain Transactions.

(a) If, at any time while Series C Preferred Stock is outstanding, the Corporation proposes to enter into a transaction that would constitute a Change of Control, the Corporation shall mail written notice of the proposed Change of Control transaction to each record Holder not less than 20 Trading Days prior to the effective date thereof. Each Holder shall have the right to receive on the date of the consummation of such Change of Control, at the election of the Corporation, either (i) for each share of Series C Preferred Stock, cash in an amount equal to the Stated Value plus all accrued but unpaid dividends thereon through the date of payment, or (ii) a new series of preferred stock in the successor corporation or surviving entity in the Change of Control with a stated value equal to the Stated Value of the Series C Preferred Stock, plus all accrued but unpaid dividends thereon, and consistent with terms substantially equivalent to the terms of the Series C Preferred Stock held by such Holder and evidencing the Holder's right to convert such preferred stock into the consideration described in clause (i) of this Section 9. To the extent the Corporation elects to have the successor to the Corporation or the surviving entity issue a new series of preferred stock, the terms of any agreement pursuant to which a Change of Control is effected shall include terms requiring any such successor or surviving entity to comply with the provisions substantially equivalent to the provisions of this Section 9 and providing that the Series C Preferred Stock (or any such replacement security) will be similarly adjusted upon any subsequent transaction analogous to a Change of Control.

(b) Any recapitalization, reorganization, reclassification, consolidation, merger, sale of all or substantially all of the Corporation's assets to another Person or other transaction which is effected in such a way that holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock, securities or assets with respect to or in exchange for Common Stock is referred to herein as "**Organic Change.**" Prior to the consummation of any (i) sale of all or substantially all of the Corporation's assets to an acquiring Person or (ii) other Organic Change following which the Corporation is not a surviving entity, other than in each case an Organic Change that is a Change of Control (which shall be subject to Section 9(a), the Corporation will secure from the Person purchasing such assets or the successor, or, if applicable, the parent of the successor, resulting from such Organic Change (in each case, the "**Acquiring Entity**") a written agreement (in form and substance reasonably satisfactory to the holders of at least a majority of the shares of Series C Preferred Stock then outstanding) to deliver to each holder of Series C Preferred Stock in exchange for such shares, a security of the Acquiring Entity evidenced by a written instrument substantially similar in form and substance to the Series C Preferred Stock, including, without limitation, having a stated value and liquidation preference equal to the Stated Value and the Series C Stock Liquidation Preference of the Series C Preferred Stock held by such holder, and reasonably satisfactory to the holders of at least a majority of the Series C Preferred Stock then outstanding.

10. Charges, Taxes and Expenses. Issuance of certificates for shares of Series C Preferred Stock shall be made without charge to the Holders for any issue or transfer tax, withholding tax, transfer agent fee or other incidental tax or expense in respect of the issuance of such certificates, all of which taxes and

5

expenses shall be paid by the Corporation; provided, however, that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any certificates for Series C Preferred Stock in a name other than that of the Holder. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring the Series C Preferred Stock.

11. Replacement Certificates. If any certificate evidencing Series C Preferred Stock is mutilated, lost, stolen or destroyed, the Corporation shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for such certificate, a new certificate, but only upon receipt of evidence reasonably satisfactory to the Corporation of such loss, theft or destruction and customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

12. Notices. Any and all notices or other communications or deliveries hereunder shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section prior to 5:30 p.m. (New York City time) on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. The addresses for such communications shall be: (i) if to the Corporation, to Ten Canal Park, Cambridge, Massachusetts 02141, facsimile: (617) 949-1722, Attention: Chief Executive Officer and General Counsel, or (ii) if to a Holder, to the address or facsimile number

appearing on the Corporation's stockholder records or such other address or facsimile number as such Holder may provide to the Corporation in accordance with this Section 11.

13. Miscellaneous.

(a) The headings herein are for convenience only, do not constitute a part of this Certificate of Designations and shall not be deemed to limit or affect any of the provisions hereof.

(b) Any of the rights of the Holders of Series C Preferred Stock set forth herein may be waived by the affirmative vote of the Holders of a majority of the shares of Series C Preferred Stock then outstanding. No waiver of any default with respect to any provision, condition or requirement of this Certificate of Designations shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right.

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6

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this Certificate of Designations to be duly executed as of March 19, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala
Lisa W. Zappala
Senior Vice President and
Chief Financial Officer

7

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
ASPEN TECHNOLOGY, INC.

Aspen Technology, Inc., a corporation organized and existing under the Delaware General Corporation Law (the "Corporation"), does hereby certify:

FIRST: That, at a meeting of the Board of Directors of the Corporation held on October 10, 2001, the following resolution was duly adopted pursuant to Section 242 of the Delaware General Corporation Law proposing and declaring advisable the following amendment to the Certificate of Incorporation, as amended, of the Corporation:

RESOLVED: That the first paragraph of Article FOURTH of the Certificate of Incorporation, as amended, be amended to read in its entirety as follows:

"FOURTH: The Corporation is authorized to issue two classes of capital stock, one of which is designated as common stock, \$.10 par value per share ("Common Stock"), and the other of which is designated as preferred stock, \$.10 par value per share ("Preferred Stock"). The total number of shares of both classes of capital stock that the Corporation shall have authority to issue is 130,000,000 shares, consisting of 120,000,000 shares of Common Stock and 10,000,000 shares of Preferred Stock. The Preferred Stock may be issued from time to time in one or more series as set forth in Section (b) of this Article FOURTH. The following is a statement of the designations and the powers, preferences and rights of, and the qualifications, limitations or restrictions applicable to, each class of capital stock of the corporation."

SECOND: That the foregoing amendment to the Corporation's Certificate of Incorporation, as amended, was adopted by the holders of a majority of the outstanding shares of Common Stock at the Annual Meeting of Stockholders of the Corporation held on December 11, 2001 pursuant to notice duly given.

* * *

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this Certificate to be signed by its Senior Vice President and Chief Financial Officer on March 21, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala
Lisa W. Zappala
Senior Vice President and Chief Financial Officer

CERTIFICATE OF ELIMINATION

OF

ASPEN TECHNOLOGY, INC.

SERIES B-1 CONVERTIBLE PREFERRED STOCK AND

SERIES B-2 CONVERTIBLE PREFERRED STOCK

Aspen Technology, Inc., a corporation organized and existing under the Delaware General Corporation Law (the "Corporation"), does hereby certify:

FIRST: That at a meeting of the Board of Directors of the Corporation held on March 21, 2002, the following resolutions were duly adopted pursuant to Section 151 of the Delaware General Corporation Law proposing the elimination of the Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock of the Corporation:

RESOLVED: That no shares of the Corporation's Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock are outstanding and none will be issued subject to the Certificate of Designations of the Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock filed with the Secretary of State of the State of Delaware on February 6, 2002 (as corrected by the Certificate of Correction filed with the Secretary of State of the State of Delaware on February 12, 2002) with respect to such Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock.

RESOLVED: That a Certificate of Elimination be executed, which shall have the effect when filed with the Secretary of State of the State of Delaware of eliminating from the Certificate of Incorporation, as amended, of the Corporation all matters set forth in the Certificate of Designations with respect to such Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock.

SECOND: None of the authorized shares of the Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock of the Corporation are outstanding and none will be issued subject to the Certificate of Designations of the Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock filed with the Secretary of State of the State of Delaware on February 6, 2002 (as corrected by the Certificate of Correction filed with the Secretary of State of the State of Delaware on February 12, 2002).

THIRD: In accordance with the provisions of Section 151 of the Delaware General Corporation Law, the Certificate of Incorporation, as amended, of the Corporation is hereby amended to eliminate therefrom all matters set forth in the Certificate of Designations of the Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock with respect to such Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock.

* * *

IN WITNESS WHEREOF, Aspen Technology, Inc. has caused this certificate to be signed by its Senior Vice President and Chief Financial Officer on March 21, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala
Lisa W. Zappala
Senior Vice President and Chief Financial Officer

**STATE OF DELAWARE
CERTIFICATE OF MERGER OF
DOMESTIC CORPORATION AND
FOREIGN CORPORATION**

Pursuant to Title 8, Section 252) of the Delaware General Corporation Law, the undersigned corporation executed the following Certificate of Merger:

FIRST: The name of the surviving corporation is Aspen Technology, Inc., a Delaware corporation, and the name of the corporation being merged into this surviving corporation is Chesspeake Properties Inc., a New Jersey corporation.

SECOND: The Agreement of Merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations.

THIRD: The name of the surviving corporation is Aspen Technology, Inc., a Delaware corporation.

FOURTH: The Certificate of Incorporation of the surviving corporation shall be its Certificate of Incorporation.

FIFTH: The authorized stock and par value of the non-Delaware company is 100 shares – no par value.

SIXTH: The merger is to become effective on June 28, 2002, for accounting purposes only

SEVENTH: The Agreement of Merger will be furnished by the surviving corporation on request, without cost, to any stockholder of the constituent corporations.

EIGHTH: The Agreement of Merger is on file at the office of the surviving corporation, Aspen Technology, Inc., the address of which is 1293 Eldridge Parkway, Houston, Texas 77077.

IN WITNESS WHEREOF, said surviving corporation has caused this certificate to be signed by an authorized officer, the 24th day of June, 2002.

By: /s/ Lisa W. Zappala

Name: Lisa W. Zappala

Title: Sr. VP & CFO

**STATE OF DELAWARE
CERTIFICATE OF MERGER OF
DOMESTIC CORPORATION AND
FOREIGN CORPORATION**

Pursuant to Title 8, Section 252 of the Delaware General Corporation Law, the undersigned corporation executed the following Certificate of Merger:

FIRST: The name of the surviving corporation is Aspen Technology, Inc., a Delaware corporation, and the name of the corporation being merged into this surviving corporation is Neural-Ware, Inc., a Pennsylvania corporation.

SECOND: The Agreement of Merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations.

THIRD: The name of the surviving corporation is Aspen Technology, Inc., a Delaware corporation.

FOURTH: The Certificate of Incorporation of the surviving corporation shall be its Certificate of Incorporation.

FIFTH: The authorized stock and par value of the non-Delaware company is 1000 – no par value.

SIXTH: The merger is to become effective on June 28, 2002, for accounting purposes only.

SEVENTH: The Agreement of Merger will be furnished by the surviving corporation on request, without cost, to any stockholder of the constituent corporations.

EIGHTH: The Agreement of Merger is on file at the office of the surviving corporation, Aspen Technology, Inc., the address of which is 1293 Eldridge Parkway, Houston, Texas 77077.

IN WITNESS WHEREOF, said surviving corporation has caused this certificate to be signed by an authorized officer, the 24th day of June, 2002.

By: /s/ Lisa W. Zappala

Name: Lisa W. Zappala

Title: Sr. VP & CFO

CERTIFICATE OF OWNERSHIP AND MERGER

merging

PETROVANTAGE, INC., a Delaware corporation

into

ASPEN TECHNOLOGY, INC., a Delaware corporation

Aspen Technology, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "Corporation"), does hereby certify:

FIRST: That the Corporation was incorporated on March 11, 1998, pursuant to the General Corporation Law of the State of Delaware.

SECOND: That the Corporation owns all of the outstanding shares of common stock, \$0.0001 par value per share, of PetroVantage, Inc., a corporation incorporated on July 13, 2000, pursuant to the General Corporation Law of the State of Delaware.

THIRD: That the Board of Directors of the Corporation, at a meeting of the Board of Directors on November 6, 2002, duly adopted the following resolutions:

RESOLVED: That pursuant to Section 253 of the General Corporation Law of the State of Delaware, the Corporation is hereby authorized to effect a merger (the "Merger") of PetroVantage, Inc., a Delaware corporation and wholly owned subsidiary of the Corporation ("PetroVantage"), with and into the Corporation.

RESOLVED: That the Chief Executive Officer, the Chief Strategy Officer and Secretary, and the Chief Financial Officer of the Corporation are severally authorized to execute a Certificate of Ownership and Merger with respect to the Merger, to cause the same to be filed with the Secretary of State of the State of Delaware, and to take all such other actions and to execute all such other instruments and agreements as they or any of them may deem appropriate to effect such filing and the Merger.

RESOLVED: That the Merger shall be effective immediately upon filing of the Certificate of Ownership and Merger with the Secretary of State of the State of Delaware.

FOURTH: That this Certificate of Ownership and Merger shall be effective upon the filing of the Certificate of Ownership and Merger with the Secretary of State of the State of Delaware.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed by its Senior Vice President and Chief Financial Officer this 16th day of December, 2002.

ASPEN TECHNOLOGY, INC.

By: /s/ Lisa W. Zappala
Lisa W. Zappala
Senior Vice President and
Chief Financial Officer

**CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
ASPEN TECHNOLOGY, INC.**

**Pursuant to Section 242 of the General Corporation Law
of the State of Delaware**

Aspen Technology, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "Corporation"), does hereby certify as follows:

At a meeting of the Board of Directors of the Corporation a resolution was duly adopted, pursuant to Section 242 of the General Corporation Law of the State of Delaware, setting forth an amendment to the Certificate of Incorporation of the Corporation, as amended to date, and declaring said amendment to be advisable. The stockholders of the Corporation duly adopted said amendment at a special meeting of stockholders in accordance with Section 242 of the General Corporation Law of the State of Delaware. The resolution setting forth the amendment is as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Certificate of Incorporation of the Corporation, as amended, be amended to read in its entirety as follows:

"FOURTH: The Corporation is authorized to issue two classes of capital stock, one of which is designated as common stock, \$0.10 par value per share ("Common Stock"), and the other of which is designated as preferred stock, \$0.10 par value per share ("Preferred Stock"). The total number of shares of both classes of capital stock that the Corporation shall have authority to issue is 220,000,000 shares, consisting of 210,000,000 shares of Common Stock and 10,000,000 shares of Preferred Stock. The Preferred Stock may be issued from time to time in one or more series as set forth in Section (b) of this Article FOURTH. The following is a statement of the designations and the powers, preferences and rights of, and the qualifications, limitations or restrictions applicable to, each class of capital stock of the Corporation."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer as of August 13, 2003.

ASPEN TECHNOLOGY, INC.

By: /s/ David L. McQuillin
David L. McQuillin

ASPEN TECHNOLOGY, INC.

**CERTIFICATE OF DESIGNATIONS
OF
SERIES D-1 CONVERTIBLE PREFERRED STOCK
AND
SERIES D-2 CONVERTIBLE PREFERRED STOCK
(Pursuant to Section 151 of the Delaware General Corporation Law)**

Aspen Technology, Inc., a Delaware corporation (the "Corporation"), in accordance with the provisions of Section 103 of the Delaware General Corporation Law, does hereby certify that the following resolution was duly adopted by the Board of Directors of the Corporation as of June 1, 2003, in accordance with Section 141(c) of the Delaware General Corporation Law:

RESOLVED, that two series of Preferred Stock, Series D-1 Convertible Preferred Stock, par value \$0.10 per share, and Series D-2 Convertible Preferred Stock, par value \$0.10 per share, of the Corporation are hereby created and the designation, number of shares, powers, preferences, rights, qualifications, limitations and restrictions thereof (in addition to any provisions set forth in the Certificate of Incorporation of the Corporation that are applicable to the Preferred Stock of all classes and series) are as follows:

**SERIES D-1 CONVERTIBLE PREFERRED STOCK
AND
SERIES D-2 CONVERTIBLE PREFERRED STOCK**

A total of 302,000 shares of the authorized and unissued Preferred Stock of the Corporation are hereby designated "Series D-1 Convertible Preferred Stock" ("Series D-1 Preferred Stock") and a total of 65,000 shares of the authorized and unissued Preferred Stock of the Corporation are hereby designated "Series D-2 Convertible Preferred Stock" ("Series D-2 Preferred Stock," and together with the Series D-1 Preferred Stock, "Series D Preferred Stock"), with each series having the following rights, preferences, powers, privileges and restrictions, qualifications and limitations:

1. Dividends

(a) Dividend Rate. The holders of shares of Series D Preferred Stock shall be entitled, out of funds legally available therefor, to receive cumulative dividends at the rate per annum equal to 8% (subject to adjustment in accordance with Section 6(a) and 6(b) below) of \$333.00 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, reverse stock split, combination, split-up, recapitalization and like occurrences on or after the Series D Original Issue Date (as defined below) affecting such shares, the "Stated Value"), payable only when, as and if declared by the Board of Directors of the Corporation. Such dividends shall be calculated on the basis of a 365-day year, shall accumulate daily commencing on the Series D Original Issue Date, shall compound quarterly to the extent not previously paid, and shall accumulate from the date of issuance of a share of Series D Preferred Stock until such share is no longer outstanding. Furthermore, such dividends shall be deemed to accumulate from the Series D Original Issue Date whether or not earned or declared and whether or not there are profits, surplus or other funds of the Corporation legally available for the payment of dividends.

(b) Dividend Payments

(i) Dividends declared on Series D Preferred Stock by the Board of Directors of the Corporation pursuant to Subsection 1(a) above shall be payable in cash, except that, in the sole discretion of the Corporation (subject to Subsection 1(b)(ii) below), such dividends may be paid in Common Stock, par value \$0.10 per share, of the Corporation ("Common Stock") as follows: Following the end of any calendar quarter, commencing with the quarter ending March 31, 2004, if the Board elects to pay a dividend, then the Corporation shall deliver, by no later than the twentieth day following the end of such calendar quarter (such twentieth day after the calendar quarter being the "Quarterly Deadline"), a written notice to each of the holders of Series D Preferred Stock advising such holders that the Corporation has elected, pursuant to this paragraph (i), to pay all or any portion of the dividends accumulated on the Series D Preferred Stock through the final day of such calendar quarter (such final day of the calendar quarter being the "Record Date"). If the Corporation delivers such a notice, the Corporation shall pay such dividend on the twenty-fourth Trading Day following the applicable Quarterly Deadline. Any such dividend shall be payable in cash, except to the extent that the notice delivered with respect thereto specifies that an amount (which may be up to all) of such dividend shall be paid by the delivery of shares of Common Stock to holders of Series D Preferred Stock as of the Record Date (or, if such day is not a Trading Day, then the immediately preceding Trading Day, as defined below). If the Corporation elects to pay less than all of such accumulated dividends, an equal amount of the dividends declared shall be paid with respect to each share of Series D Preferred Stock and the form of payment (that is, cash, Common Stock or a combination thereof) shall be identical with respect to each share of Series D Preferred Stock. The number of shares of Common Stock issuable in payment of any such dividends to be paid in Common Stock shall be calculated as set forth in Subsection 1(b)(iii) below, and the shares shall be delivered as set forth in Subsection 1(b)(iv) below.

(ii) Notwithstanding any other provision hereof, the Corporation shall not be entitled to pay a dividend in Common Stock with respect to shares of Series D Preferred Stock pursuant to Subsection 1(b)(i) above or Section 4(b) below unless, with respect to such shares all of the following conditions are satisfied (with clause (E) only being applicable to Series D-1 Preferred Stock):

(A) the Common Stock is listed on the Nasdaq National Market, the American Stock Exchange or the New York Stock Exchange at all times, without interruption, between the date on which the Corporation gives notice under

Subsection 1(b)(i) through the date that the certificate representing the shares of Common Stock being issued in payment of such dividend is actually delivered to the applicable holder of Series D Preferred Stock;

- (B) as of such delivery date, the Corporation has not received any written notice or warning from such trading or quotation facility with respect to the potential delisting of the Common Stock, which notice or warning continues to be unresolved or otherwise in effect as of such delivery date such that the Common Stock could not be listed and sold within 90 days thereafter by reason of such notice or warning;
- (C) the shares of Common Stock issued in payment of such dividend shall be the subject of a registration statement filed under the Securities Act of 1933, as amended (the "Securities Act"), which registration statement shall be effective

2

as of the issue date, or all such shares may be sold pursuant to Rule 144(k) under the Securities Act;

- (D) none of the following have occurred on or prior to such the issue date (1) the Corporation or any significant subsidiary of the Corporation, as defined in Rule 1-02(w) of Regulation S-X, (a "Material Subsidiary") commences a case or other proceeding under any bankruptcy, reorganization, arrangement, adjustment of debt, relief of debtors, dissolution, insolvency or liquidation or similar law of any jurisdiction relating to the Corporation or any Material Subsidiary thereof; (2) there is commenced against the Corporation or any Material Subsidiary any such case or proceeding that is not dismissed within 60 days after commencement; (3) the Corporation or any Material Subsidiary is adjudicated insolvent or bankrupt or any order of relief or other order approving any such case or proceeding is entered; (4) the Corporation or any Material Subsidiary suffers any appointment of any custodian or the like for it or any substantial part of its property that is not discharged or stayed within 60 days; (5) the Corporation or any Material Subsidiary makes a general assignment for the benefit of creditors; (6) the Corporation or any Material Subsidiary fails to pay, or states in writing that it is unable to pay or is unable to pay, its debts generally as they become due; or (7) the Corporation or any subsidiary of the Corporation, by any act or failure to act, expressly indicates its consent to, approval of or acquiescence in any of the foregoing or takes any corporate or other action that effects any of the foregoing; and
- (E) solely with respect to the holders of Series D-1 Preferred Stock, the receipt of the Common Stock by such holders of Series D-1 Preferred Stock will be exempt from the provisions of Section 16(b) of the Securities Exchange Act of 1934, as amended (or any successor thereto) (the "Exchange Act").

(iii) If a dividend on the Series D Preferred Stock is paid in shares of Common Stock, the number of shares of Common Stock to be issued to a holder of Series D Preferred Stock shall equal the quotient of (A) the amount of the dividend payable to such holder divided by (B) the arithmetic average of the Average Daily Prices for twenty consecutive Trading Days commencing on the Trading Day immediately following the applicable Quarterly Deadline. The Corporation shall issue, as of such dividend payment date, a certificate, registered in the name of the holder or its nominee, for the number of shares of Common Stock to which the holder shall be entitled.

(iv) If any dividend on Series D Preferred Stock is paid in shares of Common Stock, the Corporation shall, on or before the twenty-fourth Trading Day following the applicable Quarterly Deadline, (A) issue and deliver to such holder a certificate, registered in the name of such holder, for the number of shares of Common Stock to which such holder shall be entitled or (B) if and when the applicable shares of Common Stock may be held in a balance account with The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System and after such holder has notified the Corporation that this clause (B) shall apply, credit the number of shares of Common Stock to which such holder shall be entitled to such holder's balance account with The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System.

(v) No fractional shares of Common Stock shall be issued in payment of dividends on the Series D Preferred Stock pursuant to this Section 1(b). In lieu of any fractional shares to

3

which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the then effective Series D Conversion Price.

(vi) For purposes hereof, the following definitions shall apply:

- (A) "Trading Day" shall mean (I) any day on which the Common Stock is traded on the Nasdaq National Market, (II) if the Common Stock is not then listed on the Nasdaq National Market, any day on which the Common Stock is traded on any other national securities exchange, market, or trading or quotation facility, or (III) if the Common Stock is not then listed or quoted on any national securities exchange, market, or trading or quotation facility, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto); and
- (B) "Average Daily Price" shall mean, with respect to a Trading Day, the daily volume weighted average trading price (the total dollar amount traded on that day divided by trading volume for that day) of the Common Stock on that Trading Day and for the regular Trading Day session as reported at 4:15 P.M., Eastern time, by Bloomberg, LP function key HP by using W to calculate the daily weighted average, or such other price as may be determined by an alternative methodology agreed upon from time to time by the Corporation and the holders of a majority of the outstanding shares of Series D-1 Preferred Stock and the holders of a majority of the outstanding shares of Series D-2 Preferred Stock.

(c) Prohibition on Other Dividends. So long as any of the shares of Series D Preferred Stock are outstanding, the Corporation shall not declare, pay or set aside any dividends (other than dividends payable in shares of Common Stock, and then only at such times as the Corporation is in compliance with its obligations hereunder) on shares of Common Stock or Junior Stock unless dividends equal to the full amount of accumulated and unpaid dividends on the Series D Preferred Stock have been declared and have been, or are then being simultaneously, paid. For purposes hereof, "Junior Stock" shall mean the Series A Preferred Stock and any other class or series of equity securities of the Corporation not expressly ranking senior to or on parity with the Series D Preferred Stock with respect to payment of dividends or rights upon liquidation, dissolution or winding up. "Parity Stock" shall mean any class or series of equity securities of the Corporation expressly on parity with the Series D Preferred Stock, as to the payment of dividends and as to distribution of assets upon liquidation, dissolution or winding up, whether the dividend rates, dividend payment dates or redemption or liquidation prices per share thereof be different from those of the Series D Preferred Stock, if the holders of such class of stock or series and the Series D Preferred Stock shall be entitled to the receipt of dividends and of amounts distributable upon liquidation, dissolution or winding up in proportion to their respective amounts of accumulated but unpaid dividends per share or liquidation preferences, without preference or priority one over the other. The Series D-1 Preferred Stock shall be Parity Stock with respect to the Series D-2 Preferred Stock, and the Series D-2 Preferred Stock shall be Parity Stock with respect to the Series D-1 Preferred Stock.

2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations and Asset Sales

(a) Payments to Holders of Series D Preferred Stock. In the event of any Liquidation (as hereinafter defined), the holders of shares of Series D Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders,

4

before any payment shall be made to the holders of Common Stock or Junior Stock by reason of their ownership thereof, an amount per share equal to the greater of (i) the Stated Value, plus any accumulated but unpaid dividends with respect thereto, and (ii) such amount per share as would have been payable had each such share been converted into Common Stock pursuant to Section 4 below immediately prior to such Liquidation (the amount payable pursuant to this sentence is hereinafter referred to as the "Series D Liquidation Amount"). If upon any such Liquidation the remaining assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series D Preferred Stock and any Parity Stock (as defined below) the full amount to which they shall be entitled, the holders of shares of Series D Preferred Stock and any Parity Stock shall share ratably in any distribution of the remaining assets and funds of the Corporation in proportion to the respective amounts that would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full. A "Liquidation" shall mean any of the following: (A) a liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or (B) a Deemed Liquidation Event (as defined below).

(b) Payments to Holders of Junior Stock. After the payment of all preferential amounts required to be paid to the holders of Series D Preferred Stock, any Parity Stock and any other class or series of stock of the Corporation ranking on liquidation senior to the Series D Preferred Stock, upon the dissolution, liquidation or winding up of the Corporation, the holders of shares of Junior Stock then outstanding shall be entitled to receive the remaining assets and funds of the Corporation available for distribution to its stockholders.

(c) Deemed Liquidation Events

(i) The following events shall be deemed to be a liquidation of the Corporation for purposes of this Section 2 (a "Deemed Liquidation Event"):

(A) a merger, consolidation, recapitalization, reorganization or other transaction in which:

(I) the Corporation is a constituent party or

(II) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation.

except any such merger, consolidation, recapitalization, reorganization or other transaction involving the Corporation or a subsidiary in which the holders of capital stock of the Corporation immediately prior to such merger or consolidation continue to hold immediately following such merger or consolidation, recapitalization, reorganization or other transaction, at least 51%, by voting power and economic interest, of the capital stock of (1) the surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or

(B) the sale, in a single transaction or series of related transactions, by the Corporation of all or substantially all the assets of the Corporation (except where such sale is to a wholly owned subsidiary of the Corporation).

5

(ii) The Corporation shall not effect any transaction constituting a Deemed Liquidation Event pursuant to Subsection 2(c)(i) (A) above unless (A) the agreement or plan of merger or consolidation provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2(a) and 2(b) above or (B) the holders of at least a majority of the then- outstanding shares of Series D-1 Preferred Stock and the then-outstanding shares of Series D-2 Preferred Stock specifically consent in writing to the allocation of such consideration in a manner different from that provided in Subsections 2(a) and 2(b) above.

(iii) In the event of a Deemed Liquidation Event pursuant to Subsection 2(c)(i)(B) above, the Corporation shall use its reasonable best efforts to distribute to each holder of Series D Preferred Stock, in respect of each share of Series D Preferred Stock held by such holder, the Series D Liquidation Amount within ten Trading Days of the consummation of such Deemed Liquidation Event. If such

distribution has not occurred, then (A) the Corporation shall deliver a written notice to each of the holders of Series D Preferred Stock no later than fifteen Trading Days after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (B) to require the redemption of such shares of Series D Preferred Stock, and (B) if the holders of at least a majority of the then-outstanding shares of Series D-1 Preferred Stock or Series D-2 Preferred Stock so request in a written instrument delivered to the Corporation (a "Required Distribution Notice") not later than thirty Trading Days after such Deemed Liquidation Event (which period shall be extended by any period of noncompliance of the Corporation with clause (A) above), the Corporation shall use the consideration received by the Corporation, directly or indirectly, as a result of such Deemed Liquidation Event (net of any liabilities associated with the assets sold or technology licensed, as determined in good faith by the members of the Board of Directors of the Corporation), to the extent legally available therefor (the "Net Proceeds"), to redeem, on a date not later than forty-five Trading Days after such Deemed Liquidation Event (the "Liquidation Redemption Date"), all outstanding shares of Series D-1 Preferred Stock and/or Series D-2 Preferred Stock, as applicable, at a price per share equal to the Series D Liquidation Amount. In the event of a redemption pursuant to the preceding sentence, if the Net Proceeds are not sufficient to redeem all outstanding shares of Series D-1 Preferred Stock and/or Series D-2 Preferred Stock, as applicable, the Corporation shall redeem a pro rata portion of each holder's shares of Series D-1 Preferred Stock or Series D-2 Preferred Stock, as applicable. In no event shall a holder of Series D Preferred Stock receive more than such holder would receive if all holders of Series D Preferred Stock gave a Required Distribution Notice. The provisions of Section 6 below shall apply, with such necessary changes in the details thereof as are necessitated by the context, to the redemption of the Series D Preferred Stock pursuant to this Subsection 2(c)(iii). Prior to the distribution or redemption provided for in this Subsection 2(c)(iii), the Corporation shall not expend or dissipate the consideration received for such Deemed Liquidation Event, except to discharge expenses incurred in the ordinary course of business.

(iv) The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale or redemption shall be the cash or the value of the property, rights or securities paid or distributed to such holders by the Corporation or the acquiring person, firm or other entity. The value of such property, rights or securities shall be determined in good faith by the Board of Directors of the Corporation.

(d) The Corporation shall mail written notice of any Liquidation to each holder of Series D Preferred Stock not less than twenty days prior to the payment date or effective date thereof.

6

3. Voting

(a) General Voting Rights. On any matter (other than, in the case of the Series D-1 Preferred Stock, the election of the directors) presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written action of stockholders in lieu of meeting), each holder of outstanding shares of Series D Preferred Stock shall be entitled to the number of votes equal to the number of whole shares of Common Stock into which the shares of Series D Preferred Stock held by such holder are convertible (subject to the limitations of Section 12 below) as of the record date for determining stockholders entitled to vote on such matter; *provided, however*, in no event shall any share of Series D Preferred Stock be entitled to more votes than the Maximum Per Share Preferred Vote (as defined below). Except as provided by law or by the provisions of Subsection 3(b) or 3(c) below, holders of Series D Preferred Stock shall vote together with the holders of Common Stock, and with the holders of any other series of Preferred Stock the terms of which so provide, as a single class.

As used herein, the "Maximum Per Share Preferred Vote" for each share of Series D-1 Preferred Stock shall be the lesser of (i) 125.66 or such greater number of votes as may be specifically permitted under then applicable rules or regulation of the Nasdaq National Market or other applicable market or exchange, and (ii) the number of shares of Common Stock into which each share of Series D-1 Preferred Stock is convertible as of 5:00 P.M. on the record date for the vote.

(b) Elections of Directors. Except as otherwise provided below in this Section 3(b), the holders of the shares of Series D-1 Preferred Stock, exclusively and as a separate class, shall be entitled to elect a number of directors of the Corporation as provided below, and the holders of the shares of Common Stock and of any other class or series of voting stock (but excluding the Series D-1 Preferred Stock), exclusively and as a separate class, shall, subject to the rights of any additional series of Preferred Stock that may be established from time to time, be entitled to elect the balance of the total number of directors of the Corporation. For so long as at least 60,060 shares of Series D-1 Preferred Stock are outstanding, the holders of Series D-1 Preferred Stock shall be entitled to elect a number of directors equal to, rounding to the closest whole number, with .5 being rounded up, (except that rounding shall be down to the closest whole number in the event that rounding up would permit the Series D-1 Preferred Stock, to elect fifty percent (50%) or more of the board of directors), the product of (i) the total number of directors to be on the Board of Directors immediately following an election of directors, multiplied by (ii) a fraction, of which (A) the numerator shall be the aggregate Maximum Per Share Preferred Votes for all shares of Series D-1 Preferred Stock outstanding at the time of the vote and (B) the denominator shall be the sum of (x) the total number of shares of Common Stock outstanding as of the record date for the vote, (y) the aggregate Maximum Per Share Preferred Votes for all shares of Series D-1 Preferred Stock outstanding as of 5:00 P.M. on the record date for the vote, and (z) for each other security of the Corporation, including the Series D-2 Preferred Stock, entitled to vote in an election for directors as of the record date for the vote, the least of (I) the maximum vote permitted under the Certificate of Incorporation, (II) the maximum vote permitted under any Certificate of Designation of this Corporation and (III) the maximum vote permitted under any applicable law, rule or regulation. At any meeting held for the purpose of electing directors, the presence in person or by proxy of the holders of a majority of the shares of Series D-1 Preferred Stock then outstanding shall constitute a quorum of the Series D-1 Preferred Stock for the purpose of electing directors by holders of the Series D-1 Preferred Stock. A vacancy in any directorship filled by the holders of Series D-1 Preferred Stock shall be filled only by vote or written consent in lieu of a meeting of the holders of the Series D-1 Preferred Stock or by any remaining director or directors elected by the holders of Series D-1 Preferred Stock pursuant to this Subsection 3(b).

7

(c) Series Voting Rights. The Corporation shall not, without the written consent or affirmative vote of the holders of a majority of the shares of (i) Series D-1 Preferred Stock then outstanding, and (ii) with respect to Subsection 3(c)(i) through Subsection 3(c)(v) (inclusive) below, Series D-2 Preferred Stock, in each case given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class:

- (i) amend the Certificate of Incorporation, including this Certificate of Designation, so as to amend, alter or repeal the powers, preferences or special rights of the Series D Preferred Stock in a manner that adversely affects the rights, preferences or privileges of the holders of Series D Preferred Stock, *provided* that nothing in this Subsection 3(c)(i) shall prohibit the Corporation from effecting a Deemed Liquidation Event so long as the Corporation complies with the provisions of Subsections 2(c)(ii) through (iv) (inclusive) above;
- (ii) authorize, designate or issue any Parity Stock or any class of stock of the Corporation ranking senior to the Series D Preferred Stock as to the payment of dividends and as to distribution of assets upon Liquidation (“Senior Stock”);
- (iii) amend the Certificate of Incorporation to authorize any additional shares of Series D Preferred Stock, Parity Stock or Senior Stock;
- (iv) amend, alter or repeal any provision of this Certificate of Designations, *provided* that nothing in this Subsection 3(c)(iv) shall prohibit the Corporation from effecting a Deemed Liquidation Event so long as the Corporation complies with the provisions of Subsections 2(c)(ii) through (iv) (inclusive) above;
- (v) amend, alter or repeal the Bylaws of the Corporation in any way that is inconsistent with this Certificate of Designations;
- (vi) take any action to decrease the number of directors of the Corporation to less than five;
- (vii) apply any of its assets in excess of \$7,500,000 in any 12-month period to the redemption, retirement, purchase or acquisition, directly or indirectly (including through a Corporation Subsidiary), of any shares of capital stock of the Corporation (including securities convertible into or exchangeable for such capital stock), other than (A) redemptions of Preferred Stock in accordance with the terms of the Certificate of Incorporation, (B) repurchases of Common Stock from employees and consultants who received the stock in connection with their performance of services at cost upon termination of employment or service, (C) redemptions, retirements, repurchases or acquisitions of 5 1/4% Convertible Subordinated Debentures due June 15, 2005 of the Corporation (“Convertible Debentures”), and (D) repurchases made with the proceeds of an issuance of Junior Stock, except where such proceeds are used to repurchase securities from any officer or director of the Corporation;
- (viii) acquire all or substantially all of the assets or stock of any class of any other corporation, or any equity interest in any partnership, limited liability company, joint venture, association, joint stock company or trust where the aggregate consideration paid by the Corporation (as determined in good faith by the directors of the Corporation at the time definitive agreements are entered into) for such

acquisition is greater than \$80,000,000; or

- (ix) incur any indebtedness for borrowed money, which for purposes of this paragraph shall exclude the Convertible Debentures, or permit any Corporation Subsidiary to incur any indebtedness (other than indebtedness of Corporation Subsidiaries owed to the Corporation or other intercompany indebtedness), in excess of, at any time, the greater of (A) \$50,000,000; or (B) \$65,000,000 less the aggregate principal amount of the then-outstanding Convertible Debentures.

For purposes of this Subsection 3(c), the term “Corporation Subsidiary” shall mean any corporation, partnership, trust, limited liability company or other non-corporate business enterprise in which the Corporation (or another Corporation Subsidiary) holds stock or other ownership interests representing (1) more than 50% of the voting power of all outstanding stock or ownership interests of such entity or (2) the right to receive more than 50% of the net assets of such entity available for distribution to the holders of outstanding stock or ownership interests upon a liquidation or dissolution of such entity. The rights of the holders of the Series D-1 Preferred Stock under Subsections 3(c)(vi) through 3(c)(viii) above shall terminate on the first date on which there are fewer than 30,030 outstanding shares of Series D-1 Preferred Stock.

At any meeting held for the purpose of voting on any of the matters for which the holders of the Series D-1 Preferred Stock or Series D-2 Preferred Stock have class voting rights, the presence in person or by proxy of the holders of a majority of the shares of Series D-1 Preferred Stock then outstanding or the Series D-2 Preferred Stock then outstanding, as the case may be, shall constitute a quorum of the Series D-1 Preferred Stock or Series D-2 Preferred Stock for the purpose of voting on matters to which these class voting rights apply.

4. Optional Conversion

The holders of the Series D Preferred Stock shall have conversion rights as follows (the “Conversion Rights”):

(a) Right to Convert. Each share of Series D Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing the Stated Value of such shares by the Series D Conversion Price (as defined below) in effect on the Conversion Date (as defined below). The “Series D Conversion Price” initially shall be \$3.33. Such initial Series D Conversion Price, and the rate at which shares of Series D Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below. In the event of a notice of redemption of any shares of Series D Preferred Stock pursuant to Section 6 below, the Conversion Rights of the shares of Series D Preferred Stock designated for redemption shall terminate at 5:00 p.m., Eastern time, on the last full day preceding the applicable Redemption Date (as defined below), unless the Redemption Price (as defined below) is not paid or tendered for payment on the Redemption Date, in which case the Conversion Rights for such shares shall continue until such price is paid, or tendered for payment, in full. In the event of a liquidation, dissolution or winding up of the Corporation, (i) the Conversion Rights shall terminate at 5:00 p.m., Eastern time, on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Series D Preferred Stock (unless such amounts are not paid or tendered for payment on the Redemption Date, in which case the Conversion Rights for such shares shall continue until such amounts are paid, or tendered for

which notice shall (A) be sent at least 20 days (unless a greater period is required by law) prior to the termination of the Conversion Rights and (B) state the amount per share of Series D Preferred Stock that will be paid or distributed on such liquidation, dissolution or winding up and in reasonable detail the manner of calculation thereof. For the purposes of this Subsection 4(a), "Redemption Date" shall mean any Mandatory Redemption Date (as defined below) or Optional Redemption Date (as defined below) and "Redemption Price" shall mean, as applicable, the Mandatory Redemption Price (as defined below) or the Optional Redemption Price (as defined below).

(b) Payment in Lieu of Accumulated dividends. Upon conversion of a share of Series D Preferred Stock in accordance with this Section 4, as part of the conversion, the Corporation shall pay to the holder thereof an amount equal to the total accumulated but unpaid dividends on such share. The Corporation shall pay such amount in cash or if the conditions set forth in Section 1(b)(ii) above are satisfied, in Common Stock, in its sole discretion. If the Corporation elects to pay such amount in shares of Common Stock, the number of shares of Common Stock to be issued shall equal the quotient of (i) such amount divided by (ii) the arithmetic average of the Average Daily Prices for five consecutive Trading Days, the last day of which shall be the second Trading Day preceding the date on which the amount is paid. To the extent the Corporation elects to pay such accumulated but unpaid dividends in shares of Common Stock, (i) the Corporation shall immediately notify such holder within two Trading Days of the Conversion Date in accordance with the notice provisions of Section 13 below and (ii) such election may not be revoked or otherwise changed by the Corporation. In the event the Corporation fails to deliver a notice that it intends to pay dividends in Common Stock within two Trading Days as required above, the Corporation shall pay such dividend in cash. All accrued but unpaid dividends paid by the Corporation in Common Stock pursuant to this Subsection 4(b) shall be paid by the Corporation on the tenth Trading Day following the applicable Conversion Date. All accumulated but unpaid dividends paid by the corporation on the fourth Trading Day following the applicable Conversion Date.

(c) Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Series D Preferred Stock pursuant to this Section 4. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the then-effective Series D Conversion Price. The Corporation shall, as soon as practicable after the Conversion Date, and in no event later than three Trading Days after the Conversion Date, pay to such holder any cash payable in lieu of any such fraction of a share.

(d) Mechanics of Conversion

(i) In order for a holder of Series D Preferred Stock to convert shares of Series D Preferred Stock into shares of Common Stock, such holder shall deliver to the office of the transfer agent for the Series D Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent) a written notice (the "Conversion Notice") that such holder elects to convert all or any number of the shares of the Series D Preferred Stock, represented by such certificate or certificates. The Conversion Notice shall state such holder's name or the names of the nominees in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. If required by the Corporation, certificates surrendered for conversion shall be accompanied by a written instrument evidencing such holder's desire to convert a specified number of shares of Series D Preferred Stock, duly executed by the registered holder or such holder's attorney duly authorized in writing. The date specified by the holder in the notice shall be the conversion date or, if no date is specified in the Conversion Notice, the conversion date shall be the date the Conversion

Notice is delivered to the Corporation (as determined in accordance with the notice provisions hereof, such date, the "Conversion Date"). The shares of Common Stock issuable upon conversion of the shares represented by the certificate or certificates delivered to the Corporation shall be deemed to be outstanding as of the Conversion Date. On or before the Conversion Date, the holders shall surrender a certificate or certificates for the shares to be converted (or an affidavit of loss and indemnity agreement relating thereto) to the office of the transfer agent for the Series D Preferred (or at the principal office of the Corporation if the Corporation serves as its own transfer agent). Upon surrender of a certificate following one or more partial conversions, the Corporation shall promptly deliver to such holder a new certificate representing the remaining shares of Series D Preferred Stock. Upon conversion of any Series D Preferred Stock, the Corporation shall promptly (but in no event later than three Trading Days after the Conversion Date) issue or cause to be issued and cause to be delivered to, or upon the written order of, such holder (or former holder, as the case may be) of Series D Preferred Stock and in such name or names as such holder may designate, a certificate for the shares of Common Stock issuable upon such conversion, free of restrictive legends unless such shares of Common Stock are not then freely transferable without volumes restrictions pursuant to Rule 144(k) under the Securities Act. Such holder, or any person so designated by such holder to receive such shares of Common Stock, shall be deemed to have become holder of record of such shares of Common Stock as of the Conversion Date. If and when such shares of Common Stock may be freely transferred pursuant to Rule 144 under the Securities Act or pursuant to an effective registration statement, the Corporation shall use its best efforts to deliver such shares of Common Stock electronically through the Depository Trust Corporation or another established clearing corporation performing similar functions, and shall issue such shares of Common Stock in the same manner as dividend payment shares are issued pursuant to Section 1(b)(iii) above.

(ii) The Corporation covenants that it shall at all times when the Series D Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued stock, for the purpose of effecting the conversion of the Series D Preferred Stock, such number of its duly authorized but unissued and otherwise unreserved shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Series D Preferred Stock or, if the number of shares of Common Stock so reserved is insufficient, the Corporation shall take any corporate action that is necessary to make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock within 90 days after the occurrence of such deficiency. Before taking any action that would cause an adjustment reducing the Series D Conversion Price below the then par value of the Common Stock, the Corporation shall take any corporate action that may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Series D Conversion Price.

(iii) Upon any such conversion, shares of Common Stock issued upon conversion of such shares of Series D Preferred Stock shall not be deemed Additional Shares of Common Stock (as defined below) and no adjustment to the Series D Conversion Price shall be made for any accumulated but unpaid dividends on the Series D Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

(iv) All shares of Series D Preferred Stock that shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall immediately cease and terminate on the Conversion Date, except for the right of the holders thereof to receive shares of Common Stock and cash, if any, in accordance with

11

Subsections 4(b) and 4(c) above. Any shares of Series D Preferred Stock so converted shall be retired and canceled and shall not be reissued, and the Corporation (without the need for action by the holders of Series D Preferred Stock or any other stockholders) may from time to time take such appropriate action as may be necessary to reduce the authorized number of shares of Series D Preferred Stock accordingly.

(v) The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Series D Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Series D Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the reasonable satisfaction of the Corporation, that such tax has been paid.

(e) Adjustments to Series D Conversion Price for Diluting Issues

(i) Special Definitions. For purposes of this Section 4, the following definitions shall apply:

- (A) “Option” shall mean any rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.
- (B) “Series D Original Issue Date” shall mean the date on which a share of Series D Preferred Stock was first issued, regardless of the number of times the transfer of such share shall be made on the Corporation’s stock transfer records and regardless of the number of certificates that may be issued to evidence such share.
- (C) “Convertible Securities” shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.
- (D) “Additional Shares of Common Stock” shall mean all shares of Common Stock issued (or, pursuant to Subsection 4(e)(iii) below, deemed to be issued) by the Corporation after the Series D Original Issue Date, other than shares of Common Stock issued, issuable or deemed issued:
 - (I) as a dividend or distribution on Series D Preferred Stock;
 - (II) by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsection 4(f) or 4(g) below;
 - (III) to employees or directors of, or consultants to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Corporation and by a majority of the directors of the Corporation who are eligible to serve on the Audit Committee of such Board under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market

12

(or other market or exchange on which the Common Stock is then traded or authorized for quotation);

(IV) to Accenture LLP pursuant to agreements in effect on June 1, 2003; or

(V) in connection with any transaction with any strategic investor, vendor or customer, lessor, customer, supplier, marketing partner, developer or integrator or any similar arrangement, in each case the primary purpose of which is not to raise equity capital, provided such issuance is approved by the Board of Directors of the Corporation and by a majority of the directors of the Corporation who are eligible to serve on the Audit Committee of such Board under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market (or other market or exchange on which the Common Stock is then traded or authorized for quotation).

(ii) No Adjustment of Series D Conversion Price. No adjustment in the Series D Conversion Price shall be made as the result of the issuance of Additional Shares of Common Stock if the consideration per share (determined pursuant to Subsection 4(e)(v) below) for such Additional Share of Common Stock issued or deemed to be issued by the Corporation is equal to or greater than the applicable Series D Conversion Price in effect immediately prior to the issuance or deemed issuance of such Additional Shares of Common Stock. In addition, no adjustment in the Series D Conversion Price shall be made (A) with respect to the Series D-1 Preferred Stock, if prior

to such issuance or deemed issuance of Additional Shares of Common Stock, the Corporation receives written notice from the holders of at least a majority of the shares of Series D-1 Preferred Stock then outstanding agreeing that no such adjustment shall be made as a result of such issuance or deemed issuance and (B) with respect to the Series D-2 Preferred Stock, if prior to such issuance or deemed issuance of Additional Shares of Common Stock, the Corporation receives written notice from the holders of at least a majority of the shares of Series D-2 then outstanding agreeing that no such adjustment shall be made as a result of such issuance or deemed issuance.

(iii) Issue of Securities to be a Deemed Issue of Additional Shares of Common Stock

- (A) If the Corporation at any time or from time to time after the Series D Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities that, upon exercise, conversion or exchange thereof, would entitle the holder thereof to receive shares of Common Stock that are specifically excepted from the definition of Additional Shares of Common Stock by Subsection 4(e)(i)(D) above) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.
- (B) If the terms of any Option or Convertible Security, the issuance of which

13

resulted in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4(e)(iv) below, are revised (either automatically pursuant the provisions contained therein or as a result of an amendment to such terms) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then, effective upon such increase or decrease becoming effective, the Series D Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted prospectively to such Series D Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no adjustment pursuant to this clause (B) shall have the effect of increasing the Series D Conversion Price to an amount that exceeds the lower of (i) the Series D Conversion Price on the original adjustment date, or (ii) the Series D Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock between the original adjustment date and such readjustment date.

- (C) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities that, upon exercise, conversion or exchange thereof, would entitle the holder thereof to receive shares of Common Stock that are specifically excepted from the definition of Additional Shares of Common Stock by Subsection 4(e)(i)(D) above), the issuance of which did not result in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4(e)(iv) below (either because the consideration per share (determined pursuant to Subsection 4(e)(v) below) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Series D Conversion Price then in effect, or because such Option or Convertible Security was issued before the Series D Original Issue Date), are revised after the Series D Original Issue Date (either automatically pursuant the provisions contained therein or as a result of an amendment to such terms) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4(e)(iii)(A) above) shall be deemed to have been issued effective upon such increase or decrease becoming effective.
- (D) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security that resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4(e)(iv) below, the Series D Conversion Price shall be readjusted prospectively to such Series D Conversion Price as would have obtained had such Option or Convertible Security never been issued.
- (E) No adjustment in the Series D Conversion Price shall be made upon the issue

14

of shares of Common Stock or Convertible Securities upon the exercise of Options or the issue of shares of Common Stock upon the conversion or exchange of Convertible Securities.

(iv) Adjustment of Series D Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Series D Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4(e)(iii) above), without consideration or for a consideration per share less than the applicable Series D Conversion Price in effect immediately prior to such issue, then the Series D Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying such Series D Conversion Price by a

fraction, (A) the numerator of which shall be (1) the number of shares of Common Stock outstanding immediately prior to such issue plus (2) the number of shares of Common Stock that the aggregate consideration received or to be received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at such Series D Conversion Price; and (B) the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued; provided that, (i) for the purpose of this Subsection 4(e)(iv), all shares of Common Stock issuable upon conversion or exercise of shares of Series D Preferred Stock, Options or Convertible Securities outstanding immediately prior to such issue or upon exercise of such securities shall be deemed to be outstanding, and (ii) the number of shares of Common Stock deemed issuable upon conversion of such outstanding shares of Series D Preferred Stock shall be determined without giving effect to any adjustments to the Series D Conversion Price resulting from the issuance of Additional Shares of Common Stock that is the subject of this calculation.

(v) Determination of Consideration. For purposes of this Subsection 4(e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

- (A) Cash and Property. Such consideration shall:
- (I) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;
 - (II) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the non-management members of the Board of Directors of the Corporation; and
 - (III) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration that covers both, be the proportion of such consideration so received, computed as provided in clauses (I) and (II) above, as determined in good faith by non-management members of the Board of Directors of the Corporation.
- (B) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4(e)(iii) above, relating to Options and

15

Convertible Securities, shall be determined by dividing

- (I) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by
- (II) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities.

(vi) Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are comprised of shares of the same series or class of Preferred Stock and that would result in an adjustment to the Series D Conversion Price pursuant to the terms of Subsection 4(e)(iv) above, and such issuance dates occur within a period of no more than 60 days, then, upon the final such issuance, the Series D Conversion Price shall be readjusted prospectively to give effect to all such issuances as if they occurred on the date of the final such issuance (and without giving effect to any adjustments as a result of such prior issuances within such period).

(f) Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series D Original Issue Date (i) effect a subdivision of the outstanding Common Stock (whether by stock split, stock dividend or otherwise) without a corresponding subdivision of the Series D Preferred Stock, or (ii) combine the outstanding shares of Series D Preferred Stock (whether by reverse stock split or otherwise) without a corresponding combination of the Common Stock, the Series D Conversion Price in effect immediately before that subdivision or combination shall be proportionately decreased. If the Corporation shall at any time or from time to time after the Series D Original Issue Date (x) combine the outstanding shares of Common Stock (whether by reverse stock split or otherwise) without a corresponding combination of the Series D Preferred Stock, or (y) effect a subdivision of the outstanding shares of Series D Preferred Stock (whether by stock split, stock dividend or otherwise) without a corresponding subdivision of the Common Stock, the Series D Conversion Price in effect immediately before the combination or subdivision shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision or combination becomes effective.

(g) Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time, or from time to time after the Series D Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Series D Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Series D Conversion Price then in effect by a fraction:

16

- (i) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and
- (ii) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution;

provided, however, that if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Series D Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Series D Conversion Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends or distributions; and provided further, however, that no such adjustment shall be made if the holders of Series D Preferred Stock simultaneously receive (i) a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Series D Preferred Stock had been converted into Common Stock on the date of such event or (ii) a dividend or other distribution of shares of Series D Preferred Stock that are convertible, as of the date of such event, into such number of shares of Common Stock as is equal to the number of additional shares of Common Stock being issued with respect to each share of Common Stock in such dividend or distribution.

(h) Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series D Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than shares of Common Stock) or in cash or other property, then and in each such event provision shall be made so that the holders of the Series D Preferred Stock shall receive upon conversion thereof, in addition to the number of shares of Common Stock receivable thereupon, the kind and amount of securities of the Corporation, cash or other property that they would have been entitled to receive had the Series D Preferred Stock been converted into Common Stock on the date of such event and had they thereafter, during the period from the date of such event to and including the conversion date, retained such securities receivable by them as aforesaid during such period, giving application to all adjustments called for during such period under this paragraph with respect to the rights of the holders of the Series D Preferred Stock; provided, however, that no such provision shall be made if the holders of Series D Preferred Stock receive, simultaneously with the distribution to the holders of Common Stock a dividend or other distribution of such securities, cash or other property in an amount equal to the amount of such securities, cash or other property as they would have received if all outstanding shares of Series D Preferred Stock had been converted into Common Stock on the date of such event.

(i) Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2(c) above, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation (which is not a Liquidation) in which the Common Stock (but not the Series D Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by paragraph (e), (f) or (g) of this Section 4), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Series D Preferred Stock shall be convertible into the kind and amount of securities, cash or other property that a holder of the number of shares of Common Stock of the Corporation issuable upon conversion of one share of Series D Preferred Stock immediately prior to such

17

reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors of the Corporation) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Series D Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Series D Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Series D Preferred Stock.

(j) Rounding of Calculations; Minimum Adjustments. All calculations under this Section 4 shall be made to the nearest one tenth of a cent. No adjustment in the Series D Conversion Price is required if the amount of such adjustment would be less than \$0.01; provided, however, that any adjustments which by reason of this Subsection 4(j) are not required to be made will be carried forward and given effect in any subsequent adjustment. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

(k) Certificate as to Adjustments. Upon the occurrence of each adjustment pursuant to this Section 4, the Corporation at its expense will promptly compute such adjustment in accordance with the terms hereof and prepare a certificate describing in reasonable detail such adjustment and the transactions giving rise thereto, including all facts upon which such adjustment is based. Upon written request, the Corporation will promptly deliver a copy of each such certificate to each holder of Series D Preferred Stock and to the Corporation's Transfer Agent. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Series D Preferred Stock (but in any event not later than 10 days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Series D Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property that then would be received upon the conversion of Series D Preferred Stock.

(l) Notice of Record Date. In the event;

- (i) the Corporation shall take a record of the holders of its Common Stock (or other stock or securities at the time issuable upon conversion of the Series D Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of stock of any class or any other securities, or to receive any other right; or
- (ii) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, any consolidation or merger of the Corporation with or into another corporation (other than a consolidation or merger in which the Corporation is the surviving entity and its Common Stock is not converted into or exchanged for any other securities or property), or any transfer of all or substantially all of the assets of the Corporation; or

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Series D Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or

right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is to take place, and the time, if any is to be fixed, as of which the holders of Common Stock (or such other stock or securities at the time issuable upon the conversion of the Series D Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up. Any notice required under this Subsection 4(l) shall be sent at least 20 days prior to the record date or effective date for the event specified in such notice.

5. Redemption at the Option of the Corporation

(a) Mandatory Redemption Event. All or any portion of the outstanding shares of Series D Preferred Stock shall be redeemed at a price per share equal to (i) 125% of Stated Value plus (ii) all accumulated but unpaid dividends (the "Mandatory Redemption Price") in accordance with this Section 5 pursuant to written notice (the "Mandatory Redemption Notice") delivered to the holders of Series D Preferred Stock by the Corporation, in its sole discretion, at any time or from time to time after the third anniversary of the Series D Original Issue Date; provided that the Corporation shall be entitled to deliver a Mandatory Redemption Notice only if the Average Daily Price on each Trading Day for a period of at least 45 consecutive Trading Days (such period ending no earlier than four Trading Days prior to the date of such Mandatory Redemption Notice) has exceeded \$7.60 (subject to appropriate adjustment in the event of any stock dividend, stock split, reverse stock split, combination, split-up, recapitalization and like occurrences on or after the Series D Original Issue Date affecting such shares). Any Mandatory Redemption Notice delivered pursuant to this Subsection 5(a) shall specify a date (a "Mandatory Redemption Date") as of which such redemption shall be effected. Each Mandatory Redemption Date shall be a Trading Day not less than 20 Trading Days nor more than 30 Trading Days following the date on which the related Mandatory Redemption Notice is sent by the Corporation. On each Mandatory Redemption Date, the Corporation shall redeem, on a pro rata basis in accordance with the number of shares of Series D Preferred Stock owned by each holder, that number of outstanding shares of Series D Preferred Stock specified in the related Mandatory Redemption Notice.

(b) Mandatory Redemption Notice. Any Mandatory Redemption Notice shall be delivered to each holder of record of Series D Preferred Stock, as applicable, in accordance with the notice provisions set forth in Section 13 below. Each Mandatory Redemption Notice shall state:

- (i) the Mandatory Redemption Date;
- (ii) the Mandatory Redemption Price;
- (iii) the number of shares of Series D Preferred Stock held by the holder that the Corporation shall redeem on the Mandatory Redemption Date;
- (iv) the date upon which the holder's right to convert such shares terminates (as determined in accordance with Section 4 above); and
- (v) that the holder is to surrender to the Corporation, in the manner and at the place designated, its certificate or certificates (or an affidavit of loss and indemnity agreement for such certificates) representing the shares of Series D Preferred Stock to be redeemed.

(c) Surrender of Certificates; Payment. On or before the applicable Mandatory Redemption

Date, each holder of shares of Series D Preferred Stock to be redeemed on such Mandatory Redemption Date, unless such holder has exercised its right to convert such shares as provided in Section 4 above, shall surrender the certificate or certificates (or deliver an affidavit of loss and indemnity agreement for such certificates) representing such shares to the Corporation in the manner and at the place designated in the Mandatory Redemption Notice, and thereupon the Mandatory Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof, and each surrendered certificate shall be canceled and retired. In the event less than all of the shares of Series D Preferred Stock represented by a certificate are redeemed, a new certificate representing the unredeemed shares of Series D Preferred Stock shall promptly be issued to such holder.

(d) Rights Subsequent to Mandatory Redemption. If the Mandatory Redemption Notice shall have been duly given, and if on the applicable Mandatory Redemption Date the Mandatory Redemption Price payable upon redemption of the shares of Series D Preferred Stock to be redeemed on such Mandatory Redemption Date is paid or tendered for payment, then notwithstanding that the certificates evidencing any of the shares of Series D Preferred Stock so called for redemption shall not have been surrendered, dividends with respect to such shares of Preferred Stock shall cease to accumulate after such Mandatory Redemption Date and all rights with respect to such shares shall forthwith after the Mandatory Redemption Date terminate, except only the right of the holders to receive the Mandatory Redemption Price without interest upon surrender of their certificate or certificates therefor.

(e) Redeemed or Otherwise Acquired Shares. Any shares of Series D Preferred Stock that are redeemed pursuant to this Section 5 or Section 6 below or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately canceled and shall not be reissued, sold or transferred as shares of Series D Preferred Stock. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Series D Preferred Stock following any redemption.

(f) Other Redemptions or Acquisitions. Neither the Corporation nor any subsidiary shall redeem or otherwise acquire any series of Series D Preferred Stock, except (i) as expressly authorized herein, (ii) with the written consent of the holders of at least a majority of the then-outstanding shares of (A) Series D-1 Preferred Stock and (B) Series D-2 Preferred Stock, or (iii) pursuant to a purchase offer made pro rata to all holders of Series D Preferred Stock on the basis of the number of shares of Series D Preferred Stock owned by each such holder.

6. Redemption at the Option of the Holders of Series D Preferred Stock

(a) Right to Redeem. Shares of Series D-1 Preferred Stock shall be redeemed by the Corporation at a price per share equal to the Stated Value plus accumulated but unpaid dividends (the "Optional Redemption Price") at any time and from time to time no earlier than the sixth anniversary of the Series D Original Issue Date after receipt by the Corporation from the holders of at least a majority of the then-outstanding shares of Series D-1 Preferred Stock of written notice (a "Series D-1 Optional Redemption Notice") requesting redemption of all or any portion of the outstanding shares of Series D-1 Preferred Stock. Shares of Series D-2 Preferred Stock shall be redeemed by the Corporation at a price per share equal to the Optional Redemption Price at any time and from time to time no earlier than the sixth anniversary of the Series D Original Issue Date after receipt by the Corporation from holder(s) holding in the aggregate shares of Series D-2 Preferred Stock then outstanding with a Stated Value in excess of \$3,000,000 (or if less than \$3,000,000, all of such holder's shares of Series D-2 Preferred Stock) of written notice (a "Series D-2 Optional Redemption Notice" and together with a Series D-1 Optional Redemption Notice, an "Optional

20

Redemption Notice") requesting redemption of all or any portion of such holder's outstanding shares of Series D-2 Preferred Stock. Notwithstanding any other provision of this Section 6, until the seventh anniversary of the Series D Original Issue Date, the aggregate number of shares of (i) Series D-1 Preferred Stock or (ii) Series D-2 Preferred Stock that the Corporation may be required to redeem under this Section 6 shall not exceed 50% of the number of shares of Series D-1 Preferred Stock or Series D-2 Preferred Stock, respectively, outstanding as of the sixth anniversary of the Series D Original Issue Date. The process for effecting any such redemption shall be as follows:

(i) Within 15 days after the receipt of an Optional Redemption Notice, the Corporation shall send to each holder of Series D Preferred Stock a notice (the "Corporation Notice") which shall (A) state the number of shares of Series D Preferred Stock that are the subject of the applicable Optional Redemption Notice, and (B) specify a date (an "Optional Redemption Date") as of which a redemption pursuant to this Section 6 shall be effected and the date by which a holder may elect to join in the redemption pursuant to subsection (b)(ii) below. Each Optional Redemption Date shall be a Trading Day not less than 40 days or more than 120 days following the date on which the related Corporation Notice is sent by the Corporation.

(ii) Within 20 days after receipt of the Corporation Notice, each holder of Series D Preferred Stock may provide notice to the Corporation that such holder wishes to include all or a portion of its shares of Series D Preferred Stock in such Optional Redemption Notice and stating the number of shares to be so included (and, thereafter such shares shall be deemed to be included in such Optional Redemption Notice).

(iii) Within 50 days after receiving the Optional Redemption Notice and at least 10 days prior to the Optional Redemption Date, the Corporation shall provide each holder of Series D Preferred Shares with written notice ("Closing Notice") that states (i) the applicable Optional Redemption Price, (ii) the applicable Optional Redemption Date, (iii) the number of shares requested to be redeemed on that Optional Redemption Date, (iv) the number of shares of Series D Preferred Stock to be redeemed on such date, and (v) that the holder is to surrender to the Corporation, in the manner and at the place designated, its certificate or certificates (or affidavit of loss and indemnity agreement) representing the shares of Series D Preferred Stock to be redeemed.

(iv) Subject to the limitations above in this Section 6, on the applicable Optional Redemption Date, the Corporation shall redeem, on a pro rata basis in accordance with the number of shares of Series D Preferred Stock owned by each holder for which redemption was requested, that number of outstanding shares of Series D Preferred Stock specified or deemed to be included in the Optional Redemption Notice. In the event the Corporation does not have sufficient funds legally available to redeem on such Optional Redemption Date all shares of Series D Preferred Stock to be redeemed on such Optional Redemption Date, the Corporation shall redeem a pro rata portion of each holder's shares out of funds legally available therefor, based on the respective amounts that would otherwise be payable in respect of the shares to be redeemed if the legally available funds were sufficient to redeem all such shares, and shall redeem the remaining shares to have been redeemed as soon as practicable after the Corporation has funds legally available therefor. If the Corporation has not redeemed all outstanding shares of Series D Preferred Stock which are to be redeemed within 120 days following the date on which the related Optional Redemption Notice is sent by the Corporation, the Dividend Rate with regard to any shares of Series D Preferred Stock that remain outstanding shall be 14% per annum from the date of the Optional Redemption Notice until such date as such shares are actually redeemed.

21

(b) Optional Redemption Notice and Other Notices. Any Optional Redemption Notice shall be delivered to the Corporation, and any Corporation Notice or Closing Notice shall be delivered to each holder of record of Series D Preferred Stock, as applicable, in accordance with the notice provisions set forth in Section 13 below.

(c) Surrender of Certificates: Payment. On or before the applicable Optional Redemption Date, each holder of shares of Series D Preferred Stock to be redeemed on such Optional Redemption Date, unless such holder has exercised its right to convert such shares as provided in Section 4 above, shall surrender the certificate or certificates (or deliver an affidavit of loss and indemnity agreement for such certificates) representing such shares to the Corporation, in the manner and at the place designated by the Corporation in its notice pursuant to this Section 6, and thereupon the Optional Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof, and each surrendered certificate shall be canceled and retired. In the event less than all of the shares of Series D Preferred Stock represented by a certificate are redeemed, a new certificate representing the unredeemed shares of Series D Preferred Stock shall promptly be issued to such holder.

(d) Rights Subsequent to Optional Redemption. If the Optional Redemption Notice shall have been duly given, and if on the applicable Optional Redemption Date the Optional Redemption Price payable upon redemption of the shares of Series D Preferred Stock to be redeemed on such Optional Redemption Date is paid or tendered for payment, then notwithstanding that the certificates evidencing any of the shares of Series D Preferred Stock so called for redemption shall not have been surrendered, dividends with respect to such shares of Preferred Stock shall cease to accumulate after such Optional Redemption Date and all rights with respect to such shares shall forthwith after the Optional Redemption Date terminate, except only the right of the holders to receive the Optional Redemption Price without interest upon surrender of their certificate or certificates therefor.

7. Waivers

The holders of Series D Preferred Stock shall also be entitled to, and shall not be deemed to have waived, any other applicable rights granted to such holders under the Delaware General Corporation Law. Any of the rights of the holders of Series D-1 Preferred Stock or Series D-2 Preferred Stock set forth herein may be waived by the affirmative consent or vote of the holders of at least a majority of the then outstanding shares of Series D-1 Preferred Stock or Series D-2 Preferred Stock, respectively, subject to applicable law.

8. No Impairment

The Corporation will not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation without the written consent of the holders of at least a majority of the then-outstanding shares of Series D Preferred Stock, but will at all times in good faith assist in the carrying out of all the provisions of this Certificate of Designations and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the holders of the Series D Preferred Stock against impairment.

9. Registration of Series D Preferred Stock

The Corporation shall register shares of the Series D Preferred Stock, upon records to be maintained by the Corporation for that purpose (the "Series D Preferred Stock Register"), in the name of the record holders thereof from time to time. The Corporation may deem and treat the registered holder of shares of

22

Series D Preferred Stock as the absolute owner thereof for the purpose of any conversion hereof or any distribution to such holder, and for all other purposes, absent actual notice to the contrary.

10. Registration of Transfers

The Corporation shall register the transfer of any shares of Series D Preferred Stock in the Series D Preferred Stock Register, upon surrender of certificates evidencing such Shares to the Corporation at its address specified herein. Upon any such registration or transfer, a new certificate evidencing the shares of Series D Preferred Stock so transferred shall be issued to the transferee and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring holder.

11. Replacement Certificates

If any certificate evidencing Series D Preferred Stock, or Common Stock issued upon conversion thereof, is mutilated, lost, stolen or destroyed, the Corporation shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for such certificate, a new certificate, but only upon receipt of an affidavit of loss and indemnity agreement reasonably satisfactory to the Corporation evidencing such loss, theft or destruction and customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

12. Limitation on Conversion

(a) Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by any holder of Series D-2 Preferred Stock upon any conversion of Series D-2 Preferred Stock (or otherwise in respect of the Series D-2 Preferred Stock) shall be limited to the extent necessary to insure that, following such conversion (or other issuance), the total number of shares of Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with such holder's for purposes of Section 13(d) of the Exchange Act, does not exceed 4.999% (the "Maximum Percentage") of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such conversion). Each delivery of a Conversion Notice by a holder of Series D-2 Preferred Stock will constitute a representation by such holder that it has evaluated the limitation set forth in this paragraph and determined that issuance of the full number of shares of Common Stock requested in such Conversion Notice is permitted under this paragraph. By written notice to the Corporation, any holder of Series D-2 Preferred Stock may waive the provisions of this Section or increase or decrease the Maximum Percentage to any other percentage specified in such notice, but (i) any such waiver or increase will not be effective until the 61st day after such notice is delivered to the Corporation, and (ii) any such waiver or increase or decrease will apply only to such holder and not to any other holder of Series D-2 Preferred Stock. For purposes of this Section 12, beneficial

23

ownership shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder.

(b) For purposes of this Section 12, in determining the number of outstanding shares of Common Stock, a holder of Series D Preferred Stock may rely on the number of outstanding shares of Common Stock as reflected in (1) the Corporation's most recent Form 10-Q, Form 10-K or other public filing with the Commission, as the case may be, (2) a more recent public announcement by the Corporation, or (3) any other notice by the Corporation or its transfer agent setting forth the number of shares of Common Stock outstanding. Upon the written request of any holder of

Series D Preferred Stock, the Corporation shall promptly, but in no even later than one Trading Day following the receipt of such notice confirm in writing to any such holder the number of shares of Common Stock then outstanding.

13. Notices

Any and all notices or other communications or deliveries hereunder (including without limitation any Conversion Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section prior to 5:30 p.m. (New York City time) on a Trading Day and electronic confirmation of receipt is received by the sender, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. The addresses for such communications shall be: (i) if to the Corporation, to 10 Canal Park, Cambridge, Massachusetts 02141, facsimile: (617) 949-1722, attention: Chief Executive Officer and General Counsel, or (ii) if to a holder of Series D Preferred Stock, to the address or facsimile number appearing on the Corporation's stockholder records or such other address or facsimile number as such holder may provide to the Corporation in accordance with this Section.

14. Preemptive Rights

Each holder of the Series D Preferred Stock shall have preemptive rights, the terms of which are specified in the Investor Rights Agreement among the Corporation and the holders of Series D Preferred Stock dated August 14, 2003 (as amended from time to time in accordance with its terms, and subject to the limitations and other terms set forth in such Investor Rights Agreement, including the right to waive any term thereof).

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Designations to be signed by its President as of August 13, 2003.

ASPEN TECHNOLOGY, INC.

By: /s/ David L. McQuillin
David L. McQuillin
President and Chief Executive Officer

INVESTOR RIGHTS AGREEMENT

by and among

ASPEN TECHNOLOGY, INC.

and

THE STOCKHOLDERS NAMED HEREIN**Dated August 14, 2003**

TABLE OF CONTENTS

1. [DEFINITIONS](#)
2. [REGISTRATION RIGHTS](#)
 - 2.1. [DEMAND REGISTRATIONS](#)
 - 2.2. [INCIDENTAL REGISTRATIONS](#)
 - 2.3. [DIVIDEND REGISTRATION](#)
 - 2.4. [SHELF REGISTRATION](#)
 - 2.5. [REGISTRATION PROCEDURES](#)
 - 2.6. [ALLOCATION OF EXPENSES](#)
 - 2.7. [INDEMNIFICATION AND CONTRIBUTION](#)
 - 2.8. [OTHER MATTERS WITH RESPECT TO UNDERWRITTEN OFFERINGS](#)
 - 2.9. [INFORMATION BY HOLDER](#)
 - 2.10. ["LOCK-UP" AGREEMENT; CONFIDENTIALITY OF NOTICES](#)
 - 2.11. [TERMINATION](#)
3. [PREEMPTIVE RIGHTS](#)
 - 3.1. [RIGHTS OF INVESTORS](#)
 - 3.2. [EXCLUDED TRANSACTIONS](#)
 - 3.3. [TERMINATION](#)
4. [COVENANTS OF THE COMPANY](#)
 - 4.1. [INFORMATION REQUIREMENTS](#)
 - 4.2. [BOARD OF DIRECTORS](#)
 - 4.3. [REPORTS UNDER SECURITIES EXCHANGE ACT OF 1934](#)
 - 4.4. [REGISTRATION RIGHTS](#)
 - 4.5. [AVAILABLE COPY](#)
 - 4.6. [TERMINATION](#)
5. [TRANSFER RESTRICTIONS](#)
 - 5.1. [PROHIBITION](#)
 - 5.2. [RESTRICTIONS](#)
 - 5.3. [LEGENDS](#)
 - 5.4. [ACKNOWLEDGEMENT](#)
6. [STANDSTILL AGREEMENTS](#)
 - 6.1. [RESTRICTIONS](#)
 - 6.2. [CERTAIN PERMITTED TRANSACTIONS AND COMMUNICATIONS](#)
 - 6.3. [TERMINATION](#)
7. [TRADING LIMITATIONS](#)
 - 7.1. [RESTRICTIONS](#)
 - 7.2. [TERMINATION](#)
8. [CONFIDENTIALITY](#)

- 8.1. [RESTRICTIONS](#)
- 8.2. [TERMINATION](#)

9. [ELECTION OF SERIES D-1 DIRECTORS](#)

- 9.1. [INITIAL SERIES D-1 DIRECTORS](#)
- 9.2. [DESIGNATION OF SERIES D-1 DIRECTORS](#)
- 9.3. [COVENANT REGARDING COMMON DIRECTORS](#)
- 9.4. [TERMINATION](#)

10. [NONPUBLIC INFORMATION](#)

11. [GENERAL](#)

- 11.1. [OWNERSHIP CALCULATIONS](#)
- 11.2. [NOTICES](#)
- 11.3. [AMENDMENTS AND WAIVERS](#)
- 11.4. [GOVERNING LAW; VENUE; WAIVER OF JURY TRIAL](#)
- 11.5. [COUNTERPARTS; FACSIMILE SIGNATURES](#)
- 11.6. [ENTIRE AGREEMENT](#)
- 11.7. [INTERPRETATION AND RULES OF CONSTRUCTION](#)
- 11.8. [SEVERABILITY](#)
- 11.9. [SPECIFIC PERFORMANCE](#)

INVESTOR RIGHTS AGREEMENT

THIS AGREEMENT dated as of August 14, 2003 is entered into by and among Aspen Technology, Inc., a Delaware corporation (the “Company”), and the entities listed on the signature pages hereto (the “Investors”).

BACKGROUND

A. The Company and certain of the Investors have entered into a Securities Purchase Agreement dated as of June 1, 2003, pursuant to which such Investors are acquiring shares of Series D Convertible Preferred Stock of the Company contemporaneously with the execution and delivery of this Agreement.

B. Under Sections 7.01(l) and 7.02(h) of such Purchase Agreement, the delivery of this Agreement is a condition to certain Investors’ acquisition, and the Company’s sale, of such shares of Series D Convertible Preferred Stock.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein, the parties hereto agree as follows:

1. Definitions. As used in this Agreement, the following terms shall have the indicated meanings:

“Accredited Investor” means each Investor that is an “accredited investor” within the meaning of Rule 501(a) under the Securities Act.

“Advent” means Advent International Corporation, a Delaware corporation.

“Adverse Disclosure” means public disclosure of material non-public information, which disclosure in the good faith judgment of the Board of Directors of the Company (after consultation with external legal counsel) (i) would be required to be made in any Registration Statement so that such Registration Statement would not be materially misleading, (ii) would not be required to be made at such time but for the filing, effectiveness or continued use of such Registration Statement, and (iii) would be materially detrimental to the Company’s ability to effect a material proposed merger, acquisition or sale.

“Affiliate” of a Person shall mean any Person which, directly or indirectly, controls, is controlled by, or is under common control with such Person. The term “control” (including, with correlative meaning, the terms “controlled by” and “under common control with”), as used with respect to any Person, shall mean the possession, directly or indirectly, of the power to elect a majority of the board of directors (or other governing body) or to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise and, in any event and without limiting the generality of the foregoing, any Person owning more than 10% of the voting securities of another Person shall be deemed to control that Person. With respect to each of the initial Series D-1 Investors, the term “Affiliate” shall also include (i) any entity in which such Series D-1 Investor (or one of its Affiliates) is a general partner or member, (ii) each investor in such Series D-1 Investor, but only in connection with the liquidation, winding up or dissolution of the Series D-1 Investor, and only to the extent of such investor’s pro rata share in the Series D-1 Investor and (iii) any investment fund managed by Advent.

“Beneficially Own” has the meaning set forth in Rule 13d-3 under the Exchange Act, and “Beneficial Ownership” shall have a correlative meaning.

“Commission” means the Securities and Exchange Commission or any other federal agency at the time administering the Securities Act or the Exchange Act.

“Common Stock” means the common stock, par value \$.10 per share, of the Company, or any common stock or other securities issued in respect of such Common Stock, or into which such Common Stock is converted, due to stock splits, stock dividends or other distributions, merger, consolidation, reclassifications, recapitalizations or otherwise.

“Company” has the meaning ascribed to it in the introductory paragraph hereto.

“Company Offer” means a written notice of any proposed issuance, sale or exchange of Company-Offered Securities containing the information specified in Section 3.1(a).

“Company-Offer Acceptance” means a written notice from an Investor to the Company containing the information specified in Section 3.1(b).

“Company-Offer Available Unsubscribed Amount” means the difference between the total of all of the Company-Offer Basic Amounts available for purchase by Accredited Investors pursuant to Section 3.1 and the Company-Offer Basic Amounts subscribed for pursuant to Section 3.1.

“Company-Offer Basic Amount” means, with respect to an Accredited Investor, its pro rata portion of the Company-Offered Securities determined by multiplying the number of Company-Offered Securities by a fraction, the numerator of which is the aggregate number of shares of Common Stock then held by such Accredited Investor (giving effect to the conversion into Common Stock of all shares of convertible preferred stock and exercise of all warrants (assuming cashless exercise) then held by such Accredited Investor) and the denominator of which is the total number of shares of Common Stock then outstanding (giving effect to (i) the conversion into Common Stock of all outstanding shares of convertible preferred stock, (ii) the exercise of all outstanding options to purchase shares of Common Stock issued under employee stock plans of the Company, and (iii) the shares issuable pursuant to the cashless exercise of warrants to the extent included in the numerator, in the case of (i) and (ii), which have been approved by a majority of the Independent Directors and that are then convertible or exercisable at an exercise price less than the then-current market price of the Common Stock).

“Company-Offer Refused Securities” means those Company-Offered Securities as to which a Company-Offer Acceptance has not been given by Accredited Investors pursuant to Section 3.1.

“Company-Offer Unsubscribed Amount” means, with respect to an Accredited Investor, any additional portion of the Company-Offered Securities attributable to the Company-Offer Basic Amounts of other Accredited Investors as such Accredited Investor indicates it will purchase or acquire should the other Accredited Investors subscribe for less than their Company-Offer Basic Amounts.

“Company-Offered Securities” means (a) any shares of Common Stock, (b) any other equity securities of the Company, including shares of preferred stock, (c) any option, warrant or other right to subscribe for, purchase or otherwise acquire any equity securities of the Company, or (d) any debt securities convertible into capital stock of the Company.

2

“Company Sale” means:

- (a) a merger, consolidation, recapitalization, reorganization or other transaction in which (i) the Company is a constituent party, or (ii) a Subsidiary is a constituent party and the Company issues shares of its capital stock pursuant to such merger or consolidation, recapitalization, reorganization or other transaction except any such merger or consolidation involving the Company or a Subsidiary in which the holders of capital stock of the Company immediately prior to such merger or consolidation continue to hold immediately following such merger or consolidation more than 50% by voting power of the capital stock of or ownership interest in (a) the surviving or resulting entity or (b) if the surviving or resulting entity is a wholly owned subsidiary of another entity immediately following such merger or consolidation, the parent entity of such surviving or resulting entity; or
- (b) the sale, in a single transaction or series of related transactions, (i) by the Company of all or substantially all the assets of the Company (except where such sale is to a wholly owned subsidiary of the Company) or (ii) by the stockholders of the Company of more than 50% by voting power of the then-outstanding capital stock of the Company.

“Competitor” shall mean (a) any Person (i) that itself or together with its Affiliates, derives any portion of its business revenues from developing, maintaining, supporting, marketing, licensing, selling, implementing, training or providing other services related to software products or services used in the process industries, including without limitation, the oil and gas, refining, petrochemical, chemical or pharmaceutical businesses and (ii) to which the Company is then selling or providing, or has previously sold or provided at any time within the past two (2) years, any of the products or services described in the preceding clause (i), and (b) with respect to Series D-1 Investors, any institutional investor that owns 10% or more of the publicly traded stock of a Person described in clause (a) above or 30% or more of the privately owned equity interests of a Person described in clause (a) above.

“Confidential Information” means any information that is labeled as confidential, proprietary or secret that an Investor obtains from the Company pursuant to financial statements, reports and other materials provided by the Company to such Investor pursuant to this Agreement.

“Convertible Debentures” means the Company’s 5¼% Convertible Subordinated Debentures due June 15, 2005.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and any successor thereto, and the rules and regulations promulgated thereunder or in connection therewith, all as the same shall be in effect from time to time.

“Indemnified Person” means a Person entitled to indemnification pursuant to Section 2.6.

“Indemnifying Person” means a Person obligated to provide indemnification pursuant to Section 2.6.

“Independent Director” means, as of a given time, a director of the Company who is eligible to serve on the Audit Committee of the Board of Directors of the Company under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market (or such other exchange, market or trading or quotation facility on which the Common Stock is then listed).

3

“Investor” means each Person listed on the signature pages hereto and each other Person to which Shares are Transferred pursuant to Section 5.2(c) or (d), *provided* that such Person delivers in accordance with such Section a written instrument agreeing to be bound by the terms of this Agreement.

“Other Registration Rights” means written agreements entered into after the date hereof under which the Company agrees to include securities of the Company (other than Registrable Shares) in a Registration Statement, *provided* that “Other Registration Rights” shall not include any such agreement to the extent it relates solely to securities of the Company issued in connection with the acquisition by the Company or any Subsidiary of all or a majority of the equity or assets of any entity or line of business.

“Other Registration Rights Holders” means holders of securities subject to Other Registration Rights.

“Person” means an individual or a corporation, partnership, limited liability company, association, trust, or any other entity or organization, including a government or political subdivision or an agency or instrumentality thereof.

“Prospectus” means the prospectus included in any Registration Statement, as amended or supplemented by an amendment or prospectus supplement, including post-effective amendments, and all material incorporated by reference or deemed to be incorporated by reference in such Prospectus.

“Purchase Agreement” means the Securities Purchase Agreement dated as of June 1, 2003 by and among the Company and the Investors.

“Registrable Shares” means, collectively, Series D-1 Registrable Shares and Series D-2 Registrable Shares.

“Registration Expenses” means all expenses incurred by the Company in complying with the provisions of Section 2, including all registration and filing fees, exchange listing fees, printing expenses, fees and expenses of counsel for the Company and the fees and expenses of Registration Selling Investor Counsel, state Blue Sky fees and expenses, and the expense of any special audits incident to or required by any such registration, but excluding underwriting discounts, selling commissions and the fees and expenses of Registration Selling Investors’ own counsel (other than Registration Selling Investor Counsel).

“Registration Initiating Investors” means the Series D-1 Investors initiating a request for registration pursuant to Section 2.1(a).

“Registration Selling Investor” means any Investor owning Registrable Shares included in a Registration Statement.

“Registration Selling Investor Counsel” means (a) if Advent or one of its Affiliates is participating as a Registration Selling Investor with respect to a registration, counsel selected by Advent to represent all Registration Selling Investors with respect to such registration, or (b) if Advent or one of its Affiliates is not participating as a Registration Selling Investor with respect to a registration, counsel selected by the holders of a majority of the Registrable Shares to be included in such registration to represent all Registration Selling Investors with respect to such registration.

4

“Registration Statement” means a registration statement filed by the Company with the Commission for a public offering and sale of securities of the Company, other than (a) a registration statement on Form S-4 or Form S-8, or their successors, or any other form for a similar limited purpose, or (b) any registration statement covering only securities proposed to be issued in exchange for securities or assets of another corporation.

“Remaining Investor-Offered Shares” has the meaning ascribed to it in Section 4.2(b).

“Rule 144” means Rule 144 promulgated under the Securities Act, and any successor rule or regulation thereto, and in the case of any referenced section of such rule, any successor section thereto, collectively and as from time to time amended and in effect.

“Securities Act” means the Securities Act of 1933, as amended, and any successor thereto, and the rules and regulations promulgated thereunder or in connection therewith, all as the same shall be in effect from time to time.

“Series D Certificate” means the Certificate of Designations of Series D-1 Convertible Preferred Stock and Series D-2 Convertible Preferred Stock forming a part of the Certificate of Incorporation of the Company.

“Series D-1 Directors” means the members of the Board of Directors of the Company elected by the holders of shares of Series D-1 Stock pursuant to the Series D Certificate.

“Series D-1 Investors” means those Investors to the extent they hold Series D-1 Registrable Shares, which initially shall consist of the entities identified on the signature pages hereto as Series D-1 Investors.

“Series D-1 Registrable Shares” means (a) the shares of Common Stock issued or issuable upon conversion of the Series D-1 Stock, (b) any other shares of Common Stock, and any shares of Common Stock issued or issuable upon the conversion or exercise of any other securities, acquired by the Series D-1 Investors pursuant to Section 3, (c) the shares of Common Stock issued or issuable upon the exercise of Series D-1 Warrants, and (d) any other shares of Common Stock issued in respect of such shares; *provided, however*, that shares of Common Stock that are Series D-1 Registrable Shares

shall cease to be Series D-1 Registrable Shares upon any sale pursuant to a Registration Statement or Rule 144 or at such time at which such Series D-1 Registrable Shares may be sold pursuant to paragraph (k) of Rule 144.

“Series D-1 Stock” means the Series D-1 Convertible Preferred Stock of the Company issued pursuant to the Purchase Agreement.

“Series D-1 Warrants” means the warrants being issued on the date hereof to Series D-1 Investors pursuant to the Purchase Agreement.

“Series D-2 Investors” means those Investors to the extent they hold Series D-2 Registrable Shares, which initially shall consist of the entities identified on the signature pages hereto as Series D-2 Investors.

“Series D-2 Registrable Shares” means (a) the shares of Common Stock issued or issuable upon conversion of the Series D-2 Stock, (b) any other shares of Common Stock, and any shares of Common Stock issued or issuable upon the conversion or exercise of any other securities, acquired by the Series D-2 Investors pursuant to Section 3, (c) the shares of Common Stock issued or issuable upon the exercise of the Series D-2 Warrants, and (d) any other shares of Common Stock issued in

5

respect of such shares; *provided, however*, that shares of Common Stock that are Series D-2 Registrable Shares shall cease to be Series D-2 Registrable Shares upon any sale pursuant to a Registration Statement or Rule 144 or at such time as when such Series D-2 Registrable Shares may be sold pursuant to paragraph (k) of Rule 144.

“Series D-2 Securities” means the Series D-2 Stock and the shares of Common Stock issuable upon conversion thereof or as payment of dividends thereon.

“Series D-2 Stock” means the Series D-2 Convertible Preferred Stock of the Company issued pursuant to the Series D Certificate.

“Series D-2 Warrants” means the warrants being issued on the date hereof to Series D-2 Investors pursuant to the Purchase Agreement and the warrants issued to the Series D-2 Investors pursuant to the Repurchase and Exchange Agreement, dated as of June 1, 2003, by and among the Company and the Series D-2 Investors.

“Shares” means, collectively, shares of Series D-1 Stock and Series D-2 Stock held by the Investors.

“Shelf Registration Statement” means a Registration Statement filed by the Company with the Commission pursuant to Section 2.4 covering the resale of all Series D-2 Registrable Shares for an offering to be made on a continuous basis pursuant to Rule 415 promulgated under the Securities Act.

“Subsidiary” means any corporation or other entity of which the capital stock or other ownership interests having ordinary voting power to elect a majority of the board of directors or other Persons performing similar functions is at the time directly or indirectly owned by the Company.

“Trading Day” means (a) any day on which the Common Stock is listed or quoted and traded on the Nasdaq National Market, the New York Stock Exchange, the American Stock Exchange or the Nasdaq SmallCap Market or (b) if the Common Stock is not traded on any such market, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto).

“Transfer” means, as the context requires, (a) any sale, transfer, distribution or other disposition, whether voluntarily or by operation of law, or (b) the act of effecting such a sale, transfer, distribution or other disposition.

2. Registration Rights

2.1. Demand Registrations

(a) One or more Series D-1 Investors may, at any time, request, in writing, that the Company file a Registration Statement to effect the registration of an offering of Series D-1 Registrable Shares owned by such Series D-1 Investor(s) and having an aggregate value of at least \$10,000,000, based on the last reported sale price of the Common Stock on the trading day immediately preceding the date of such request. If the Company files a Registration Statement on Form S-3 (or any successor form) pursuant to this Section 2.1(a), the Company shall set forth therein any information that may be required in a registration that is filed on Form S-1 and that the underwriter lead managing the offering requests be expressly included in the Registration Statement.

6

(b) Upon receipt of any request for registration pursuant to this Section 2, the Company shall promptly (but in any event within five days) give written notice of such proposed registration to all other Series D-1 Investors. Such other Series D-1 Investors shall have the right, by giving written notice to the Company within 20 days after the Company provides its notice, to elect to have included in such registration such of their Series D-1 Registrable Shares as such Series D-1 Investors may request in such notice of election, subject in the case of an underwritten offering to the terms of Section 2.1(c). Thereupon, the Company shall, as expeditiously as possible, use all commercially reasonable efforts to effect the registration on an appropriate registration form of all Series D-1 Registrable Shares that the Company has been requested to so register.

(c) If the Registration Initiating Investors intend to distribute the Series D-1 Registrable Shares covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1(a) and the Company shall include such information in its written notice referred to in Section 2.1(b). In such event, (i) the right of any other Series D-1 Investor to include its Series D-1 Registrable Shares in such registration pursuant to Section 2.1(a) shall be conditioned upon such other Series D-1 Investor's participation in such underwriting on the terms set forth herein, and (ii) all Series D-1 Investors including Series D-1 Registrable Shares in such registration shall enter into an underwriting agreement upon customary terms with the underwriter or underwriters managing the offering; *provided that* such underwriting agreement shall not provide for indemnification or contribution obligations on the part of the Series D-1 Investors materially greater

than the obligations of the Series D-1 Investors pursuant to Section 2.7. The Company shall have the right to select the managing underwriter(s) for any underwritten offering requested pursuant to Section 2.1(a), which selection must be made out of a pool of three underwriting firms chosen by the Company and the Registration Initiating Investors, each of which firms shall have a national reputation and experience with software companies. If any Series D-1 Investor that has requested inclusion of its Series D-1 Registrable Shares in such registration as provided above disapproves of the terms of the underwriting, such Person may elect, by written notice to the Company, to withdraw its Series D-1 Registrable Shares from such Registration Statement and underwriting. If the lead managing underwriter advises the Company in writing that marketing factors require a limitation on the number of shares to be underwritten, the number of Series D-1 Registrable Shares to be included in the Registration Statement and underwriting shall be allocated among all Series D-1 Investors requesting registration in proportion, as nearly as practicable, to the respective number of Series D-1 Registrable Shares each Series D-1 Investor has requested be included in such registration.

(d) The Company shall not be required to effect more than a total of four registrations requested pursuant to Section 2.1(a). The Series D-1 Investors shall not deliver a notice pursuant to Section 2.1(a) requesting registration of any underwritten offering until at least 18 months after the closing of any prior underwritten offering registered pursuant to a request under Section 2.1(a). For purposes of this Section 2.1(d), a Registration Statement shall not be counted until such time as such Registration Statement has been declared effective by the Commission. If the Registration Initiating Investors withdraw their request for such registration, it shall not count as a Registration Statement if the Registration Initiating Investors pay the Registration Expenses therefor pursuant to Section 2.6. Notwithstanding the foregoing, any request withdrawn by the Registration Initiating Investors as a result of information concerning the business or financial condition of the Company, where such information is made known to the Series D-1 Investors after the date on which such registration was requested, shall not count as a Registration Statement.

7

(e) If at the time of any request to register Series D-1 Registrable Shares by Registration Initiating Investors pursuant to this Section 2.1, the Company is engaged or has plans to engage in a registered public offering or is engaged in a material proposed acquisition, disposition, financing, reorganization, recapitalization or similar transaction that, in the good faith determination of the Company's Board of Directors, would be adversely affected by the requested registration, then the Company may at its option direct that such request be delayed for a period not in excess of 30 days from the date of such request, such right to delay a request to be exercised by the Company not more than once in any 12-month period.

2.2. Incidental Registrations

(a) Whenever the Company proposes to file a Registration Statement covering shares of Common Stock (other than a Registration Statement filed (i) pursuant to Section 2.1, 2.3 or 2.4, (ii) in accordance with the requirements of a written agreement entered into prior to the date hereof, (iii) with respect to shares issued by the Company in connection with an acquisition by the Company or any Subsidiary of all or a majority of the equity or assets of any entity, or (iv) with respect to a so-called "private investment, public equity" (a/k/a "PIPE") offering of Company-Offered Securities to which the provisions of Section 3.1 apply, except in any such case to the extent expressly permitted therein) at any time and from time to time, it will, prior to such filing, give written notice to all Series D-1 Investors of its intention to do so; *provided* that no such notice need be given if no Series D-1 Registrable Shares are to be included therein as a result of a written notice from the managing underwriter pursuant to Section 2.2(b). Upon the written request of a Series D-1 Investor or Series D-1 Investors given within 10 days after the Company provides such notice (which request shall state the intended method of disposition of such Series D-1 Registrable Shares), the Company shall use all commercially reasonable efforts to cause all Series D-1 Registrable Shares that the Company has been requested by such Series D-1 Investor or Series D-1 Investors to register to be registered under the Securities Act to the extent necessary to permit their sale or other disposition in accordance with the intended methods of distribution specified in the request of such Series D-1 Investor or Series D-1 Investors; *provided* that the Company shall have the right to postpone or withdraw any registration effected pursuant to this Section 2.2 without obligation upon 10 days' advance written notice to the Series D-1 Investors. Upon receipt of such notice, the Series D-1 Investors may elect to exercise their right to demand a registration in accordance with Section 2.1.

(b) If the registration for which the Company gives notice pursuant to Section 2.2(a) is a registered public offering involving an underwriting, the Company shall so advise the Series D-1 Investors as a part of the written notice given pursuant to Section 2.2(a). In such event, (i) the right of any Series D-1 Investor to include its Series D-1 Registrable Shares in such registration pursuant to this Section 2.2 shall be conditioned upon such Series D-1 Investor's participation in such underwriting on the terms set forth herein and (ii) all Series D-1 Investors including Series D-1 Registrable Shares in such registration shall enter into an underwriting agreement upon customary terms with the underwriter or underwriters selected for the underwriting by the Company. If any Series D-1 Investor who has requested inclusion of its Series D-1 Registrable Shares in such registration as provided above disapproves of the terms of the underwriting, such Person may elect, by written notice to the Company, to withdraw its shares from such Registration Statement and underwriting. If the managing underwriter advises the Company in writing that marketing factors require a limitation on the number of shares to be underwritten, the shares held by holders other than the Series D-1 Investors and Other Registration Rights Holders shall be excluded from such Registration Statement and underwriting to the extent deemed advisable by the managing underwriter, and if a further

8

reduction of the number of shares is required, the number of shares that may be included in such Registration Statement and underwriting shall be allocated among all Series D-1 Investors and Other Registration Rights Holders requesting registration in proportion, as nearly as practicable, to the respective number of shares of Common Stock (on an as converted basis) held by them on the date the Company gives the notice specified in Section 2.2(a). If any Series D-1 Investor or Other Registration Rights Holder would thus be entitled to include more shares than such holder has requested to be registered, the excess shall be allocated among other requesting Series D-1 Investors and Other Registration Rights Holders pro rata in the manner described in the preceding sentence.

2.3. Dividend Registration. For so long as it is required by the terms of the Series D Certificate, shares of Common Stock issued in payment of dividends on the Shares shall be, at the time such shares are issued, registered for resale for an offering to be made on a continuous basis pursuant to Rule 415 of the Securities Act. Whenever the Company proposes to file a Registration Statement covering shares of Common Stock to be issued in payment of dividends on Shares, it will, prior to such filing, give written notice to all Investors of its intention to do so. Upon issuance, such shares shall constitute Registrable Shares in accordance with the definition thereof in Section 1. The Company shall cause all such Registrable Shares to be

registered under the Securities Act to permit their sale or other disposition by any methods of distribution reasonably requested by the Investors, other than by means of an underwriting.

2.4. Shelf Registration. The Company shall prepare and file with the Commission a Shelf Registration Statement as promptly as practicable after the date hereof and shall take such steps as are necessary to enable the Shelf Registration to be declared effective by the Commission as promptly as practicable after the date hereof (and in any event by no later than 90 days after the date of this Agreement or, if the Shelf Registration Statement (including any of the documents incorporated by reference therein) is the subject of a complete or partial review by the Commission, in any event by no later than 120 days after the date of this Agreement). The Shelf Registration Statement shall be on Form S-3 (except if the Company is not then eligible to register for resale the Series D-2 Registrable Shares on Form S-3, in which case such Shelf Registration Statement shall be on such other form as the Company is eligible to use) and shall contain the "Plan of Distribution" attached hereto as Annex A. The Company shall notify each Series D-2 Investor in writing promptly (in any event within one Trading Day) after receiving notification from the Commission that the Shelf Registration Statement has been declared effective.

2.5. Registration Procedures

(a) If and whenever the Company is required by the provisions of this Agreement to use all commercially reasonable efforts to effect the registration of any Registrable Shares under the Securities Act, the Company shall:

- (i) prepare and file with the Commission a Registration Statement with respect to such Registrable Shares (which, in the case of the Series D-2 Registrable Shares, shall be the Shelf Registration Statement) and use all commercially reasonable efforts to cause that Registration Statement to become effective as soon as possible;
- (ii) not less than three Trading Days prior to the filing of a Registration Statement or any related Prospectus or any amendment or supplement thereto (including any document that would be incorporated or deemed to be incorporated therein by reference), the Company shall (i) furnish to the each Registration Selling Investor and its counsel copies of all such documents proposed to be

9

filed, which documents (other than those incorporated or deemed to be incorporated by reference) will be subject to the review of such Registrable Selling Investor and its counsel, and (ii) cause its officers and directors, counsel and independent certified public accountants to respond to such inquiries as shall be necessary, in the reasonable opinion of respective counsel, to conduct a reasonable investigation within the meaning of the Securities Act; and the Company shall not file any Registration Statement or any such Prospectus or any amendments or supplements thereto to which the Registrable Selling Investors holding a majority of the Registrable Securities to be registered thereunder and their counsel shall reasonably object, *provided* that such objection is communicated to the Company within three Trading Days of receipt of such documents;

- (iii) as expeditiously as possible prepare and file with the Commission any amendments and supplements to the Registration Statement and the prospectus included in the Registration Statement as may be necessary to comply with the provisions of the Securities Act (including the anti-fraud provisions thereof) and use all commercially reasonable efforts to keep the Registration Statement continuously effective:
 - (A) in the case of a shelf registration of an offering of Series D-1 Registrable Shares on a continuous basis under Rule 415 under the Securities Act for 180 days from the effective date or such lesser period until all such Registrable Shares are sold,
 - (B) in the case of a Registration Statement filed pursuant to Section 2.3 with respect to shares of Common Stock paid as dividends on the Shares, for (1) 45 days from the date such dividends were issued, if such dividends represent no more than one year's accumulated dividends on the Shares, (2) 90 days from the date such dividends were issued, if such dividends represent more than one year's accumulated dividends on the Shares or (3) such lesser period until all such shares of Common Stock are sold,
 - (C) in the case of the Shelf Registration Statement filed pursuant to Section 2.4, until the earliest of (1) the second anniversary of the date hereof, (2) the date on which all of the Series D-2 Registrable Shares covered by the Shelf Registration Statement have been sold, and (3) the date on which all of such Series D-2 Registrable Shares may be sold pursuant to paragraph (k) of Rule 144 (assuming utilization of any cashless exercise feature of any securities), as determined by the Company after consultation with legal counsel; *provided* that if the Company ceases to keep the Registration Statement effective by reason of Section 2.5(a)(iii)(C)(3), the Company must certify to the Series D-2 Investors that the Series D-2 Registrable Shares may be sold pursuant to paragraph (k) of Rule 144 (assuming utilization of any cashless exercise feature of any securities), and
 - (D) in the case of all other registrations, for (1) 45 days from the effective date or such greater period, up to 120 days, as an underwriter may require, or (2) such lesser period until all such Registrable Shares are sold;

10

provided that the number of days specified in the foregoing clauses (A), (B) and (D) shall not include any day on which a Registration Selling Investor is restricted from offering or selling Registrable Shares pursuant to Section 2.5(b) or 2.5(c) below.

- (iv) in all cases respond as promptly as reasonably possible to any comments received from the Commission with respect to any Registration Statement or any amendment thereto and as promptly as reasonably possible provide to the counsel for the Registration Selling Investors true and complete copies of all correspondence from and to the Commission relating to the applicable Registration Statement;

- (v) as expeditiously as possible furnish to each Registration Selling Investor and its counsel, without charge, at least one conformed copy of the applicable Registration Statement and each amendment thereto, including financial statements and schedules, all documents incorporated or deemed to be incorporated therein by reference, and all exhibits to the extent requested by such Person (including those previously furnished or incorporated by reference) promptly after the filing of such documents with the Commission;
- (vi) as expeditiously as possible furnish to each Registration Selling Investor (with a copy to counsel to such Registration Selling Investors) such reasonable numbers of copies of the Prospectus, including any preliminary Prospectus, in conformity with the requirements of the Securities Act, and such other documents as such Registration Selling Investor may reasonably request in order to facilitate the public sale or other disposition of the Registrable Shares owned by such Registration Selling Investor; and the Company hereby consents to the use of any such Prospectus and each amendment or supplement thereto by each Registration Selling Investor in connection with the offering and sale of the Registrable Securities covered by such Prospectus and any amendment or supplement thereto;
- (vii) use all commercially reasonable efforts to avoid the issuance of or, if issued, obtain the withdrawal of (x) any order suspending the effectiveness of any Registration Statement or (y) any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any jurisdiction as soon as reasonably practicable;
- (viii) as expeditiously as possible (and in the case of the Shelf Registration Statement, prior to the public offering of Registrable Securities pursuant thereto) use all commercially reasonable efforts to register or qualify the Registrable Shares covered by the Registration Statement under the securities or Blue Sky laws of such states as the Registration Selling Investors shall reasonably request, and do any and all other acts and things that may be necessary or desirable to enable the Registration Selling Investors to consummate the public sale or other disposition in such states of the Registrable Shares owned by the Registration Selling Investors; *provided, however*, that the Company shall not be required in connection with this paragraph (viii) to qualify as a foreign corporation or execute a general consent to service of process in any jurisdiction;

11

- (ix) as expeditiously as possible, cause all such Registrable Shares to be listed on each securities exchange or automated quotation system on which similar securities issued by the Company are then listed;
- (x) promptly provide a transfer agent and registrar for all such Registrable Shares not later than the effective date of such registration statement;
- (xi) cooperate with the Registration Selling Investors to facilitate the timely preparation and delivery of certificates representing Registrable Securities to be delivered to a transferee pursuant to an effective Registration Statement, which certificates shall be free, to the extent permitted hereunder, of all restrictive legends, and to enable such Registrable Securities to be in such denominations and registered in such names as any such Registration Selling Investors may request;
- (xii) promptly make available for inspection by the Registration Selling Investors, any managing underwriter participating in any disposition pursuant to such Registration Statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the Registration Selling Investors, all financial and other records, pertinent corporate documents and properties of the Company and cause the Company's officers, directors, employees and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant or agent in connection with such Registration Statement; provided that the Company will not make available to any Series D-2 Investor material nonpublic information;
- (xiii) in connection with an underwritten disposition of Registrable Shares, provide such reasonable assistance in the marketing of the Registrable Shares as is customary of issuers in primary underwritten public offerings (including participation by its senior management in "road shows");
- (xiv) as expeditiously as possible, notify each Registration Selling Investor, promptly after it shall receive notice thereof, of the time when such Registration Statement has become effective or a supplement to any Prospectus forming a part of such Registration Statement has been filed; and
- (xv) as expeditiously as possible following the effectiveness of such Registration Statement, notify each seller of such Registrable Shares of any request by the Commission for the amending or supplementing of such Registration Statement or Prospectus.

(b) At any time when a Prospectus is required to be delivered under the Securities Act, the Company shall promptly notify each Registration Selling Investor and its counsel of any of the following events: (i) the Commission notifies the Company whether there will be a "review" of the Registration Statement; (ii) the Commission comments in writing on the Registration Statement (in which case the Company shall deliver to each Registration Selling Investor a copy of such comments and of all written responses thereto); (iii) the Registration Statement or any post-effective amendment is declared effective; (iv) the Commission or any other Federal or state governmental authority requests any amendment or supplement to the Registration Statement or Prospectus or requests additional information related thereto; (v) the Commission issues any stop order suspending the effectiveness of the Registration Statement or initiates any Suit (as defined in the Purchase Agreement) for that purpose; (vi) the Company

12

receives notice of any suspension of the qualification or exemption from qualification of the Registrable Securities for sale in any jurisdiction, or the initiation or threat of any Suit for such purpose; or (vii) the financial statements included in the Registration Statement become ineligible for

inclusion therein or any statement made in the Registration Statement or Prospectus or any document incorporated or deemed to be incorporated therein by reference is untrue in any material respect or any revision to the Registration Statement, Prospectus or other document is required so that it will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. If requested, the Registration Selling Investors shall immediately cease making offers of Registrable Shares pursuant to the Registration Statement until its receipt of the copies of the supplemented or amended Prospectus. Following receipt of the revised Prospectuses, the Registration Selling Investors shall be free to resume making offers of the Registrable Shares.

(c) In the event that it is advisable to suspend use of a Prospectus included in a Registration Statement because continued use would require Adverse Disclosure, the Company shall notify all Registration Selling Investors to such effect, and, upon receipt of such notice, each such Registration Selling Investor shall immediately discontinue any sales of Registrable Shares pursuant to such Registration Statement until such Registration Selling Investor has received copies of a supplemented or amended Prospectus or until such Registration Selling Investor is advised in writing by the Company that the then current Prospectus may be used and has received copies of any additional or supplemental filings that are incorporated or deemed incorporated by reference in such Prospectus. Notwithstanding anything to the contrary herein, the Company shall not exercise its rights under this Section 2.5(c) to suspend sales of Registrable Shares for a period in excess of 30 consecutive days or a total of 60 days in any 365-day period, *provided* that the Company may suspend such sales for a period of up to 90 consecutive days (and a total of 90 days in a 365-day period) if the reason for the continued suspension beyond 30 days relates solely to the preparation of financial statements required to be filed in accordance with Item 7 of Form 8-K under the Exchange Act (in which event the Company shall use all commercially reasonable efforts to cause such financial statements to be prepared as promptly as reasonably practicable in the circumstances), and such suspension period shall automatically terminate two Trading Days after the filing of such financial statements. In no event shall the Company's right under this Section 2.5(c) be exercised to suspend sales of Registrable Shares beyond the period during which sales of Registrable Shares would require Adverse Disclosure. After the end of any suspension period under this Section 2.5, the Company shall use all commercially reasonable efforts (including filing any required supplemental prospectus) to restore, as promptly as reasonably possible, the effectiveness of the Registration Statement and the ability of the Registration Selling Investors to publicly resell their Registrable Securities pursuant to such effective Registration Statement.

2.6. Allocation of Expenses. The Company will pay all Registration Expenses for all registrations under this Agreement; *provided, however*, that: (a) if a registration under Section 2.1 is withdrawn at the request of the Registration Initiating Investors (other than as a result of information concerning the business or financial condition of the Company that is made known to the Registration Selling Investors after the date on which such registration was requested), the Registration Selling Investors may pay the Registration Expenses of such registration pro rata in accordance with the number of their Series D-1 Registrable Shares included in such registration in order that, in accordance with Section 2.1(d), such registration shall not be counted as a registration requested under Section 2.1; and (b) the Company shall not be obligated to pay fees and expenses of Registration Selling Investors Counsel to the extent those fees and expenses exceed \$50,000 with

13

respect to a registration for an underwritten offering or \$20,000 with respect to a registration for any other offering.

2.7. Indemnification and Contribution

(a) In the event of any registration of any of the Registrable Shares under the Securities Act pursuant to this Agreement, the Company shall indemnify and hold harmless each Registration Selling Investor and each underwriter of such Registrable Shares, their respective partners, members, agents, directors, officers, fiduciaries, investment advisors, brokers (including brokers who offer and sell Registrable Securities as principal as a result of a pledge or any failure to perform under a margin call of Common Stock) and employees of each of them, and each other Person, if any, who controls such Registration Selling Investor or underwriter within the meaning of the Securities Act or the Exchange Act and the officers, directors, partners, members, agents and employees of each such controlling Person (each such Person an "Investor Indemnified Person"), to the fullest extent permitted by applicable law, from and against any and all losses, claims, damages, liabilities, settlement costs and expenses, as incurred, joint or several, that arise out of, relate to or are based upon (i) any untrue statement or alleged untrue statement of any material fact contained in any Registration Statement under which such Registrable Shares were registered under the Securities Act, any preliminary prospectus or final prospectus contained in the Registration Statement or any amendment or supplement to such Registration Statement or Prospectus, (ii) the omission or alleged omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law in connection with the Registration Statement or the offering contemplated thereby; and the Company will reimburse such Investor Indemnified Person for any legal or any other expenses reasonably incurred by such Investor Indemnified Person in connection with investigating or defending any such loss, claim, damage, liability or action; *provided, however*, that the Company will not be liable to any Investor Indemnified Person, in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any untrue statement or omission made in such Registration Statement, preliminary prospectus or prospectus, or any such amendment or supplement, in reliance upon and in conformity with information furnished to the Company, in writing, by such Person specifically for use in the preparation thereof.

(b) In the event of any registration of any of the Registrable Shares under the Securities Act pursuant to this Agreement, each Registration Selling Investor, severally and not jointly, will indemnify and hold harmless the Company, each of its directors and officers and each underwriter (if any) and each Person, if any, who controls the Company or any such underwriter within the meaning of the Securities Act or the Exchange Act, against any and all losses, claims, damages, liabilities, settlement costs and expenses arising solely out of (i) any untrue statement or alleged untrue statement of a material fact contained in any Registration Statement under which such Registrable Shares were registered under the Securities Act, any preliminary prospectus or final prospectus contained in the Registration Statement, or any amendment or supplement to the Registration Statement or Prospectus, or (ii) any omission or alleged omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading, if and to the extent (and only to the extent) that the statement or omission was made in reliance upon and in conformity with information relating to such Registration Selling Investor furnished in writing to the Company by such Registration Selling Investor specifically for use in connection with the preparation of such Registration

14

Statement, prospectus, amendment or supplement; *provided, however*, that the obligations of a Registration Selling Investor hereunder shall be limited to an amount equal to the net proceeds to such Registration Selling Investor of Registrable Shares sold in connection with such registration.

(c) Each Indemnified Person shall give notice to the Indemnifying Person promptly after such Indemnified Person has actual knowledge of any claim as to which indemnity may be sought, and shall permit the Indemnifying Person to assume the defense of any such claim or any litigation resulting therefrom; *provided*, that counsel for the Indemnifying Person, who shall conduct the defense of such claim or litigation, shall be approved by the Indemnified Person (whose approval shall not be unreasonably withheld, conditioned or delayed); and, *provided, further*, that the failure of any Indemnified Person to give notice as provided herein shall not relieve the Indemnifying Person of its obligations under this Section 2.7 except to the extent that the Indemnifying Person is actually prejudiced by such failure. The Indemnified Person may participate in such defense at such party's expense; *provided, however*, that the Indemnifying Person shall pay such expense if the Indemnified Person reasonably concludes that representation of such Indemnified Person by the counsel retained by the Indemnifying Person would be inappropriate due to actual or potential differing interests between the Indemnified Person and any other party represented by such counsel in such proceeding; *provided further* that in no event shall the Indemnifying Person be required to pay the expenses of more than one law firm per jurisdiction as counsel for the Indemnified Person. The Indemnifying Person also shall be responsible for the expenses of such defense if the Indemnifying Person does not elect to assume such defense. No Indemnifying Person, in the defense of any such claim or litigation shall, except with the consent of each Indemnified Person, consent to entry of any judgment or enter into any settlement that does not include as an unconditional term thereof the giving by the claimant or plaintiff to such Indemnified Person of a release from all liability in respect of such claim or litigation, and no Indemnified Person shall consent to entry of any judgment or settle such claim or litigation without the prior written consent of the Indemnifying Person, which consent shall not be unreasonably withheld, conditioned or delayed.

(d) In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in this Section 2.7 is due in accordance with its terms but for any reason is held to be unavailable to an Indemnified Person in respect to any losses, claims, damages and liabilities referred to herein, then the Indemnifying Person shall, in lieu of indemnifying such Indemnified Person, contribute to the amount paid or payable by such Indemnified Person as a result of such losses, claims, damages or liabilities to which such party may be subject in such proportion as is appropriate to reflect the relative fault of the Company on the one hand and the Registration Selling Investors on the other in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities. The relative fault of the Company and the Registration Selling Investors shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of material fact related to information supplied by the Company or the Registration Selling Investors and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Registration Selling Investors agree that it would not be just and equitable if contribution pursuant to this Section 2.7(d) were determined by pro rata allocation or by any other method of allocation that does not take account of the equitable considerations referred to above. Notwithstanding the provisions of this Section 2.7(d), in no case shall any one Registration Selling Investor be liable or responsible for any amount in excess of the net proceeds received by such Registration Selling Investor from the offering of Registrable Shares; *provided, however*, that no Person guilty of

15

fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation. Any party entitled to contribution will, promptly after receipt of notice of commencement of any action, suit or proceeding against such party in respect of which a claim for contribution may be made against another party or parties under this Section 2.7(d), notify such party or parties from whom contribution may be sought, but the omission so to notify such party or parties from whom contribution may be sought shall not relieve such party from any other obligation it or they may have thereunder or otherwise under this Section 2.7(d). No party shall be liable for contribution with respect to any action, suit, proceeding or claim settled without its prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed.

(e) The indemnity and contribution agreements contained in this Section are in addition to any other liability that any Indemnifying Person may have to any Indemnified Person.

2.8. Other Matters with Respect to Underwritten Offerings. In the event that Series D-1 Registrable Shares are sold pursuant to a Registration Statement in an underwritten offering pursuant to Section 2.1, the Company agrees to (a) enter into an underwriting agreement containing customary representations and warranties with respect to the business and operations of the Company and customary covenants and agreements to be performed by the Company, including customary provisions with respect to indemnification by the Company of the underwriters of such offering; (b) use all commercially reasonable efforts to cause its legal counsel to render customary opinions to the underwriters with respect to the Registration Statement; and (c) use all commercially reasonable efforts to cause its independent public accounting firm to issue customary "cold comfort letters" to the underwriters with respect to the Registration Statement.

2.9. Information by Holder. Each holder of Registrable Shares included in any registration shall furnish to the Company such customary information regarding such holder and the distribution proposed by such holder as the Company may reasonably request in writing and that is required under applicable laws, rules and regulations.

2.10. "Lock-up" Agreement; Confidentiality of Notices

(a) Each Series D-2 Investor that Beneficially Owns 5.0% or more of the outstanding Common Stock on the date of the filing of an initial registration statement for an underwritten offering (a "5% Series D-2 Investor") and each Series D-1 Investor, in each case if requested by the Company and the managing underwriter of such underwritten offering, shall not Transfer any Registrable Shares or other securities of the Company held by such Series D-1 Investor or 5% Series D-2 Investor for a period of 90 days following the effective date of the Registration Statement for such underwritten offering and shall enter into customary separate agreements to such effect as reasonably requested by the Company and such managing underwriter; *provided* that substantially all executive officers and directors (other than Series D-1 Directors) of the Company enter into similar agreements as required by the underwriter. The Company may impose stop-transfer instructions with respect to the Registrable Shares or other securities owned by any such Series D-1 Investor or 5% Series D-2 Investor subject to the foregoing restriction until the end of such 90-day period.

(b) Any Investor receiving any written notice from the Company regarding the Company's plans to file a Registration Statement shall treat such notice confidentially and shall not disclose such information to any Person other than as necessary to exercise its rights under this Agreement.

2.11. Termination. The rights and obligations of an Investor under this Section 2 shall terminate on the first date on which such Investor no longer holds any Registrable Shares, except that the rights and obligations of the Company and the Registration Selling Investors under Section 2.7 shall survive the termination of any and all other provisions of this Agreement.

3. Preemptive Rights

3.1. Rights of Investors

(a) The Company shall not issue, sell or exchange, agree to issue, sell or exchange, or reserve or set aside for issuance, sale or exchange, any Company-Offered Securities, unless in each such case the Company shall have first complied with this Section 3.1. The Company shall deliver to each Investor a Company Offer, which shall (i) identify and describe the Company-Offered Securities, (ii) describe the price (expressed in either a fixed dollar amount or a definitive formula pursuant to which the only variable is the market price of the Common Stock at or near the time of the proposed issuance, sale or exchange) and other terms upon which they are to be issued, sold or exchanged, and the number or amount of the Company-Offered Securities to be issued, sold or exchanged, (iii) identify the Persons (if known) to which or with which the Company-Offered Securities are to be offered, issued, sold or exchanged, and (iv) offer to issue and sell to or exchange with such Investor that is an Accredited Investor (a) such Accredited Investor's Company-Offer Basic Amount and (b) such Accredited Investor's Company-Offer Unsubscribed Amount. Notwithstanding the other provisions of this Section 3.1, after delivery of the Company Offer, the Company may issue, sell or exchange, agree to issue, sell or exchange, or reserve or set aside for issuance, sale or exchange, Company-Offered Securities to the offerees or purchasers described in the Company Offer and upon the terms and conditions (including unit prices and interest rates) that are not more favorable, in the aggregate, to the acquiring Person or Persons than those set forth in the Company Offer without complying with the terms of this Section 3.1, *provided* that the Company permits each Accredited Investor to purchase the number of Company-Offered Securities that such Accredited Investor is entitled to purchase pursuant to this Section 3.1 on substantially the same terms as the Company sold the Company-Offered Securities in the initial transaction, within 20 days after the Company receives a Company-Offer Acceptance from such Accredited Investor.

(b) To accept a Company Offer, in whole or in part, an Accredited Investor must deliver to the Company, on or prior to the date 15 days after the date of delivery of the Company Offer, a Company-Offer Acceptance providing a representation letter certifying that such Accredited Investor is an accredited investor within the meaning of Rule 501 under the Act and indicating the portion of the Accredited Investor's Company-Offer Basic Amount that such Accredited Investor elects to purchase and, if such Accredited Investor shall elect to purchase all of its Company-Offer Basic Amount, the Company-Offer Unsubscribed Amount (if any) that such Accredited Investor elects to purchase. If the Company-Offer Basic Amounts subscribed for by all Accredited Investors are less than the total of all of the Company-Offer Basic Amounts available for purchase, then each Accredited Investor who has set forth a Company-Offer Unsubscribed Amount in its Company-Offer Acceptance shall be entitled to purchase, in addition to the Company-Offer Basic Amounts subscribed for, the Company-Offer Unsubscribed Amount it has subscribed for; *provided, however*, that if the Company-Offer Unsubscribed Amounts subscribed for exceed the Company-Offer Available Unsubscribed Amount, each Accredited Investor who has subscribed for any Company-Offer Unsubscribed Amount shall be entitled to purchase only that portion of the Company-Offer Available Unsubscribed Amount as the Company-Offer Unsubscribed Amount subscribed for

by such Accredited Investor bears to the total Company-Offer Unsubscribed Amounts subscribed for by all Investors, subject to rounding by the Board of Directors to the extent it deems reasonably necessary.

(c) The Company shall have 90 days from the expiration of the period set forth in Section 3.1(b) to issue, sell or exchange all or any part of the Company-Offer Refused Securities, but only to the offerees or purchasers described in the Company Offer (if so described therein) and only upon terms and conditions (including unit prices and interest rates) that are not more favorable, in the aggregate, to the acquiring Person or Persons than those set forth in the Company Offer.

(d) In the event the Company shall propose to sell less than all the Company-Offer Refused Securities, then each Accredited Investor may, at its sole option and in its sole discretion, reduce the number or amount of the Company-Offered Securities specified in its Company-Offer Acceptance to an amount that shall be not less than the number or amount of the Company-Offered Securities that the Accredited Investor elected to purchase pursuant to Section 3.1(b) multiplied by a fraction, (i) the numerator of which shall be the number or amount of Company-Offered Securities the Company actually proposes to issue, sell or exchange (including Company-Offered Securities to be issued or sold to Accredited Investors pursuant to Section 3.1(b) prior to such reduction) and (ii) the denominator of which shall be the original amount of the Company-Offered Securities. In the event that any Accredited Investor so elects to reduce the number or amount of Company-Offered Securities specified in its Company-Offer Acceptance, the Company may not issue, sell or exchange more than the reduced number or amount of the Company-Offered Securities unless and until such securities have again been offered to the Accredited Investors in accordance with Section 3.1(a).

(e) Upon (i) the closing of the issuance, sale or exchange of all or less than all of the Company-Offer Refused Securities or (ii) such other date agreed to by the Company and Accredited Investors who have subscribed for a majority of the Company-Offered Securities subscribed for by the Accredited Investors, such Accredited Investor or Investors shall acquire from the Company and the Company shall issue to such Accredited Investor or Investors, the number or amount of Company-Offered Securities specified in the Investor Offers of Acceptance, as reduced pursuant to Section 3.1(d) if any of the Accredited Investors has so elected, upon the terms and conditions specified in the Company Offer.

(f) The purchase by the Accredited Investors of any Company-Offered Securities is subject in all cases to the preparation, execution and delivery by the Company and the Accredited Investors of a purchase agreement relating to such Company-Offered Securities reasonably satisfactory in form and substance to the Accredited Investors and their respective counsel.

(g) Company-Offered Securities not acquired by the Accredited Investors or other Persons in accordance with Section 3.1(c) may not be issued, sold or exchanged until they are again offered to the Accredited Investors under the procedures specified in this Agreement.

3.2. Excluded Transactions. The rights of the Accredited Investors under Section 3.1 shall not apply to:

- (a) the issuance of securities of the Company for consideration other than cash, including the issuance of shares (i) as a stock dividend to holders of Common Stock, Shares or any other Company securities, or upon any subdivision or combination of shares of Common Stock, Shares or any other Company securities,

18

and (ii) upon exercise or conversion of preferred stock, options, warrants or debt securities exercisable or convertible for Common Stock pursuant to their terms;

- (b) the issuance of Common Stock or options to purchase Common Stock to employees, directors or consultants of the Company or any Subsidiary pursuant to a stock option plan, employee stock purchase plan or other equity incentive plan or arrangement approved by the Board of Directors of the Company and by a majority of the Independent Directors;
- (c) the issuance of securities solely in consideration for the acquisition (whether by merger or otherwise) by the Company or any of its subsidiaries of all or substantially all of the stock or assets of such entity;
- (d) the issuance of securities of the Company in a firm-commitment underwritten public offering pursuant to an effective Registration Statement;
- (e) the issuance of securities of the Company, or the grant of options or warrants therefor, in connection with any present or future borrowing, line of credit, leasing or similar financing arrangement approved by the Board of Directors of the Company and by a majority of the Independent Directors; or
- (f) the issuance of securities in connection with any transaction with a strategic investor, vendor, lessor, customer, supplier, marketing partner, developer or integrator or any similar arrangement, in each case the primary purpose of which is not to raise equity capital, approved by the Board of Directors of the Company and by a majority of the Independent Directors.

In addition, the rights under Section 3.1 of Accredited Investors that are (i) Series D-1 Investors shall not apply to an issuance of securities as to which Series D-1 Investors holding not less than a majority of the Series D-1 Stock have delivered to the Company a written notice to the effect that Series D-1 Investors have waived their right to participate in the contemplated offering under Section 3.1, or (ii) Series D-2 Investors shall not apply to an issuance of securities as to which Series D-2 Investors holding not less than a majority of the Series D-2 Stock have delivered to the Company a written notice to the effect that Series D-2 Investors have waived their right to participate in the contemplated offering under Section 3.1.

3.3. Termination. The rights of an Investor under this Section 3 shall terminate upon the earlier of (a) the first date on which the Investors, in the aggregate, hold less than 10% of the Shares originally issued on the date hereof and (b) the closing of a Company Sale.

4. Covenants of the Company.

4.1. Information Requirements. The Company shall furnish to each Investor:

- (a) promptly after filing, a copy of each report or other document (including any schedules or exhibits thereto) that is filed by the Company with the Commission under the Securities Act or the Exchange Act and that is available to the general public; *provided that* no such copy shall be required if such report was filed using the Electronic Data Gathering, Analysis, and Retrieval system of the Commission; and

19

- (b) contemporaneously with delivery to holders of Common Stock, a copy of each report or other document (other than any document filed with the Commission under the Securities Act or the Exchange Act) delivered to holders of Common Stock.

4.2. Board of Directors. For so long as any director is serving at the election of the holders of Series D-1 Stock pursuant to the Series D Certificate:

(a) The Company shall reimburse the Series D-1 Directors for their reasonable out-of-pocket expenses incurred in attending meetings of the Board of Directors of the Company or any committee thereof, to the extent provided in, and in accordance with, the Company's reimbursement policy in effect from time to time with respect to other directors who are not employees of the Company or a Subsidiary. The Series D-1 Directors shall be entitled to receive such fees or other compensation as may be paid by the Company from time to time to directors who are not employees of the Company or a Subsidiary.

(b) The Company's Certificate of Incorporation shall at all times provide for the indemnification of the members of the Board of Directors to the fullest extent provided by the Delaware General Corporation Law. In the event that the Company or any of its successors or assigns (i) consolidates with or merges into any other entity and shall not be the continuing or surviving corporation in such consolidation or merger or (ii) Transfers all or substantially all of its properties and assets to any entity, then, and in each such case, to the extent necessary, proper provision shall be made so that the successors and assigns of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as contained in the Company's Certificate of Incorporation.

(c) The Company shall use all commercially reasonable efforts to carry and maintain any insurance against directors' and officers' liability to cover such directors to the same extent as directors elected by the holders of Common Stock; *provided, however*, that if the aggregate annual premiums for such insurance exceed 200% of the per annum rate of premium currently paid by the Company on the date of this Agreement for such insurance, then the Company shall provide, at a minimum, the maximum coverage that shall then be available at an annual premium equal to 200% of such rate; *provided, however*, that in no event should the coverage afforded the Series D-1 Directors be less favorable in any respect than the coverage afforded directors elected by the holders of Common Stock.

4.3. Reports Under Securities Exchange Act of 1934. With a view to making available to the Investors the benefits of Rule 144 and any other rule or regulation of the Commission that may at any time permit a Holder to sell securities of the Company to the public without registration, and with a view to making it possible for Investors to have the Registrable Shares registered for resale pursuant to a registration on Form S-3 (or any successor form), the Company shall:

- (a) use all commercially reasonable efforts to make and keep current public information about the Company available, as those terms are understood and defined in Rule 144, at all times;
- (b) use its best efforts to file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act; and
- (c) furnish to any Investor upon request (i) a written statement by the Company as to its compliance with the reporting requirements of Rule 144 and (ii) such other reports

20

and documents of the Company as such Investor may reasonably request to avail itself of any similar rule or regulation of the Commission allowing it to sell any Registrable Shares without registration.

4.4. Registration Rights. The Company shall not enter into any Other Registration Rights with any Other Registration Rights Holder unless such Other Registration Rights do not conflict with the provisions of this Agreement. Such Other Registration Rights shall not be deemed to conflict with this Agreement solely as a result of a grant of incidental registration rights to the Other Registration Rights Holders with respect to a Registration Statement filed pursuant to Section 2.1, *provided that*:

- (a) Investors are granted the right to exercise incidental registration rights with respect to any registration required by such Other Registration Rights Holders to be made by the Company;
- (b) if a managing underwriter advises the Company that marketing factors require a limitation on the number of shares to be underwritten in an offering made at the request of the Other Registration Rights Holders, the shares held by the Investors shall be excluded first, before any shares of such Other Registration Rights Holders are excluded; and
- (c) if a managing underwriter advises the Company that marketing factors require a limitation on the number of shares to be underwritten in an offering requested under Section 2.1, the shares held by such Other Registration Rights Holders shall be excluded first, before any shares of the Investors are excluded.

4.5. Available Copy. The Secretary of the Company shall maintain an original copy of this Agreement, duly executed by each of the parties hereto, at the principal executive office of the Company and shall make such copy available for inspection by any Person requesting it.

4.6. Termination. The rights of an Investor under this Section 4 shall terminate upon the first date on which such Investor no longer holds any Shares, *provided that* Section 4.4 shall terminate upon the earlier of (A) the first date on which such Investor no longer holds any Shares, and (B) the closing of a Company Sale.

5. Transfer Restrictions

5.1. Prohibition. Any Transfer, whether direct or indirect, of any of the Shares or Registrable Shares by an Investor, other than according to the terms of this Agreement, shall be void and convey no right, title, or interest in or to any of such Shares or Registrable Shares to the purported transferee.

5.2. Restrictions. No Investor shall Transfer any Shares or Registrable Shares or any legal or beneficial interest therein except for:

- (a) Transfers of Registrable Shares pursuant to a bona fide public offering under a Registration Statement filed with the Commission under the Securities Act, including pursuant to the exercise of rights granted in Section 2;
- (b) Transfers of Registrable Shares pursuant to Rule 144;

21

- (c) Transfers of Shares to any non-Affiliate (other than a Competitor), *provided that* (i) immediately after giving effect to such Transfer, the Investor reasonably believes the transferee Beneficially Owns less than 10% of the outstanding Common Stock, and (ii) such transferee delivers to the Company and the Investors a written instrument, in form and substance reasonably acceptable to the Company, agreeing to be bound by the terms of this Agreement as if such transferee were an Investor;
- (d) Transfers of Shares or Registrable Shares to an Affiliate of such Investor (or to any investor in such Affiliate of such Investor pursuant to a pro rata liquidation or distribution), *provided that* such transferee delivers to the Company and the Investors a written instrument, in form and substance reasonably acceptable to the Company, agreeing to be bound by the terms of this Agreement as if such transferee were an Investor;

- (e) Transfers of Shares or Registrable Shares pursuant to a bona fide public offer that is subject to the provisions of Regulation 14D or Rule 13e-3 under the Exchange Act (or any successor regulation, rule or statute) by a Person to purchase or exchange for cash or other consideration any shares of Common Stock and that consists of an offer to acquire more than 25% of the then-outstanding Common Stock, *provided* that such offer is not made by and does not include (i) the Company, an Investor, or an Affiliate of the Company or any Investor or (ii) any group (within the meaning of Section 13(d) of the Exchange Act) formed for the purpose of acquiring, holding, voting or disposing of Common Stock that includes the Company, an Investor, or an Affiliate of the Company or any Investor; or
- (f) Transfers of Shares or Registrable Shares pursuant to a merger, consolidation or reorganization to which the Company is a party.

5.3. Legends

(a) Each Series D-1 Investor agrees to the imprinting on certificates representing such Investor's Shares or Registrable Shares of a legend substantially to the following effect:

"THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE SOLD, TRANSFERRED, DISTRIBUTED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT UNDER SUCH ACT OR AN OPINION OF COUNSEL SATISFACTORY TO THE CORPORATION TO THE EFFECT THAT SUCH REGISTRATION IS NOT REQUIRED. THE SALE OR OTHER DISPOSITION OF ANY OF THE SHARES REPRESENTED BY THIS CERTIFICATE IS RESTRICTED BY AN INVESTOR RIGHTS AGREEMENT DATED AS OF AUGUST 14, 2003 BY AND AMONG THIS CORPORATION AND CERTAIN OF THE STOCKHOLDERS OF THIS CORPORATION. A COPY OF SUCH AGREEMENT IS AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS AT THE PRINCIPAL EXECUTIVE OFFICE OF THIS CORPORATION."

The legend set forth above shall be removed if and when (a) the securities represented by such certificate are disposed of pursuant to an effective Registration Statement or (b) the Series D-1 Investor delivers to the Company an opinion of counsel reasonably acceptable to the Company to the effect that such legend may be removed.

(b) Each Series D-2 Investor agrees to the imprinting, so long as is required by this Section 5.3(b), of the following legend on any certificate evidencing Series D-2 Securities:

22

"THESE SECURITIES HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN COMPLIANCE WITH APPLICABLE STATE SECURITIES OR BLUE SKY LAWS. THESE SECURITIES AND THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES."

Certificates evidencing Series D-2 Securities shall not be required to contain such legend or any other legend (i) pursuant to or following any sale of such Series D-2 Securities pursuant to an effective Registration Statement covering the resale of such Series D-2 Securities under the Securities Act, (ii) following any sale of such Series D-2 Securities pursuant to Rule 144, (iii) if such Series D-2 Securities are eligible for sale under Rule 144(k), or (iv) if such legend is not, in the reasonable opinion of the Company counsel, required under the circumstances under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the Staff of the Commission). Following the effectiveness of the Shelf Registration Statement or at such earlier time as a legend is no longer required for certain Series D-2 Securities, the Company will, no later than three Trading Days following the delivery by a Series D-2 Investor to the Company or the Company's transfer agent of a legended certificate representing such Series D-2 Securities, deliver or cause to be delivered to such Series D-2 Investor a certificate representing such Series D-2 Securities that is free from all restrictive and other legends. The Company may not make any notation on its records or give instructions to any transfer agent of the Company that enlarge the restrictions on transfer set forth in this Section, except as may be required by applicable law.

5.4. Acknowledgement. The Company acknowledges and agrees that a Series D-2 Investor may from time to time pledge pursuant to a bona fide margin agreement or grant a security interest in some or all of the Series D-2 Securities and, if required under the terms of such arrangement, such Series D-2 Purchaser may transfer pledged or secured Series D-2 Securities to the pledgees or secured parties. Such a pledge or transfer would not be subject to approval of the Company and no legal opinion of the pledgee, secured party or pledgor shall be required in connection therewith except as required by applicable law. Further, no notice shall be required of such pledge. At the appropriate Series D-2 Investor's expense, the Company will execute and deliver such reasonable documentation as a pledgee or secured party of Series D-2 Securities may reasonably request in connection with a pledge or transfer of the Series D-2 Securities, including the preparation and filing of any required prospectus supplement under Rule 424(b)(3) of the Securities Act or other applicable provision of the Securities Act to appropriately amend the list of Selling Stockholders thereunder.

6. Standstill Agreements

6.1. Restrictions

(a) No Series D-1 Investor shall, directly or indirectly, unless specifically permitted by this Agreement or authorized or consented to do so in writing in advance by the Company:

- (i) except for shares or securities acquired as a dividend or distribution on the Shares, acquire or agree, offer, seek or propose to acquire, or cause to be acquired, Beneficial Ownership of any shares of Common Stock, or any

options, warrants or other rights (including any convertible or exchangeable securities) to acquire any shares of Common Stock, to the extent that such acquisition would result in an increase in such Investor's (or Affiliate's, as the case may be) percentage Beneficial Ownership of Common Stock above the percentage Beneficial Ownership of Common Stock as of the date of this Agreement;

- (ii) make, or in any way participate in, any "solicitation" of "proxies" (as such terms are defined in Rule 14a-1 under the Exchange Act) with respect to the voting of any securities of the Company;
- (iii) deposit any securities of the Company in a voting trust or subject any such securities to any arrangement or agreement with any Person (other than one or more Investors or Affiliates);
- (iv) form, join, or in any way become a member of any group within the meaning of Section 13(d) of the Exchange Act (other than a "group" consisting solely of Investors and Affiliates that together Beneficially Own less than a majority of the Company's outstanding voting securities);
- (v) arrange any financing for, or provide any financing commitment specifically for, the purchase by such Investor of any voting securities or securities convertible or exchangeable into or exercisable for any voting securities or assets of the Company, except for such assets as are then being offered for sale by the Company; *provided, however*, that this clause (v) shall not apply to any such financing arrangements or commitments to the extent involving a Transfer of Common Stock Beneficially Owned by an Investor to any Person that is not an Investor;
- (vi) seek to propose or propose, whether alone or in concert with other Investors, any tender offer, exchange offer, merger, business combination, restructuring, liquidation, recapitalization or similar transaction involving the Company or any of the Subsidiaries;
- (vii) for so long as holders of Series D-1 Stock are entitled to elect Series D-1 Directors pursuant to the Series D Certificate, nominate any Person for election by the holders of Common Stock as a director of the Company who is not nominated by the then-incumbent directors, or propose any matter to be voted upon by the stockholders of the Company (other than for an Affiliate of such Investor acting in his or her capacity as a director of the Company);
- (viii) authorize or direct any of its directors, officers, employees, agents or other representatives acting in any such capacities to take any action described in clauses (i) through (vii) above;
- (ix) solicit, initiate, or knowingly or intentionally facilitate the taking of any action by an Affiliate of such Series D-1 Investor (that is not itself an Investor) that would be prohibited by this Section 6.1 if such Affiliate were an Investor; or
- (x) publicly announce or disclose any intention, plan or arrangement inconsistent with the foregoing.

Notwithstanding the foregoing, a Series D-1 Investor shall not be prohibited from taking any action described in clauses (i) through (x) to the extent such action is taken in response to, and in competition with, a similar action that has been undertaken by a Person who is not an Investor.

(b) No Series D-1 Investor will, nor will it authorize or permit any of its directors, officers, employees, agents or other representatives acting in any such capacities to, take any action that would require the Company to make a public announcement regarding any of the matters set forth in Section 6.1(a).

(c) Anything in this Section 6.1 to the contrary notwithstanding, this Section 6.1 shall not prohibit or restrict (i) the voting of securities of the Company held by the Series D-1 Investors or (ii) any disclosure pursuant to Section 13(d) of the Exchange Act that a Series D-1 Investor reasonably believes, after consulting with outside counsel, is required in connection with any action taken by a Series D-1 Investor pursuant to Section 6.1(b).

6.2. **Certain Permitted Transactions and Communications.** Anything in Section 6.1 to the contrary notwithstanding, Section 6.1 shall not prohibit (a) the conversion of Series D-1 Stock, the exercise of the Series D-1 Warrants, or the consummation by a Series D-1 Investor of any transaction expressly provided for in this Agreement, *provided* that if such transaction is to be consummated on or before the earliest of (i) June 15, 2005, (ii) the first date on which none of the Convertible Debentures remains outstanding, and (iii) the first date on which the provision in the Convertible Debentures requiring redemption upon a Change of Control (as defined in the indenture governing the Convertible Debentures) is not in effect, then such Series D-1 Investor (which for this purpose shall include any syndicate or group that includes such Series D-1 Investor and that would be deemed to be a person under Section 13(d)(3) of the Exchange Act) shall not, without the prior written consent of the Company, be entitled to consummate such transaction to the extent such Series D-1 Investor (including any such syndicate or group) would thereafter Beneficially Own more than 49.9% of the then-outstanding voting securities of the Company (any voting securities of which such Series D-1 Investor is the Beneficial Owner that are not then outstanding being deemed outstanding for purposes of calculating such percentage), Common Stock, (b) any action taken by Series D-1 Investors in connection with the nomination and election of the Series D-1 Directors or any action taken by the Series D-1 Directors in such capacities, (c) officers and employees of the Series D-1 Investors from communicating with officers of the Company or its Affiliates on matters related to or governed by this Agreement, matters relating to the Series D-1 Investors investment in the Company, or operational matters, or (d) the Series D-1 Investors from communicating with the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer or the Chief Financial Officer of the Company, so long as any such communication is conveyed in confidence, would not require public disclosure by the Series D-1 Investors or by the Company, and is not intended to elicit, and, in the reasonable belief (after consulting with outside counsel) of the Series D-1 Investor making such communication, does not require the issuance of, a public response by the Company.

6.3. Termination. The obligations of a Series D-1 Investor under this Section 6 shall terminate upon the earlier of (a) the first date on which such Series D-1 Investor and its Affiliates Beneficially Own less than 5% of the outstanding shares of Common Stock, collectively (on an as-converted basis), and (b) the closing of a Company Sale.

7. Trading Limitations

7.1. Restrictions. For so long as an Investor or its Affiliates hold Shares, such Investor shall not sell, contract to sell, grant any option to purchase, or make any short sale of Common Stock,

25

establish a “put equivalent position” (as such term is defined in Rule 16a-1(h) under the Exchange Act) or engage in any transaction the result of which would involve any of the foregoing, at a time when such Investor has no equivalent offsetting long position in Common Stock. For purposes of determining whether an Investor has an equivalent offsetting long position in the Common Stock, all Common Stock held by such Investor, all shares of Common Stock issuable upon conversion of all Shares or upon exercise in full of any warrant for Common Stock then held by such Investor (assuming that such securities were then fully convertible or exercisable, notwithstanding any provisions to the contrary, and giving effect to any conversion or exercise price adjustments scheduled to take effect in the future), and all shares of Common Stock issuable upon exercise of any call option or “call equivalent position” (as defined in Rule 16a-1(b) under the Exchange Act) held by such Investor (assuming that such call position was then fully convertible or exercisable, notwithstanding any provisions to the contrary, and giving effect to any conversion or exercise price adjustments scheduled to take effect in the future) shall be deemed to be held long by such Investor.

7.2. Termination. The obligations of an Investor under this Section 7 shall terminate upon the earlier of (a) the first date on which such Investor no longer Beneficially Owns any Shares or Registrable Shares and (b) the closing of a Company Sale.

8. Confidentiality

8.1. Restrictions. Each Series D-1 Investor agrees that it will keep confidential and will not disclose, divulge or use for any purpose, other than to monitor its investment in the Company, any Confidential Information, unless such Confidential Information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 8 by such Series D-1 Investor), (b) is or has been independently developed or conceived by the Series D-1 Investor without use of the Company’s Confidential Information or (c) is or has been made known or disclosed to the Series D-1 Investor by a third party unless at the time of the proposed disclosure by the Series D-1 Investor, the Series D-1 Investor has knowledge that the disclosure was made to the Series D-1 Investor in breach of an obligation of confidentiality such third party had to the Company; *provided, however*, that a Series D-1 Investor may disclose Confidential Information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company, (ii) to any prospective purchaser of any Shares from such Series D-1 Investor as long as such prospective purchaser agrees to be bound by the provisions of this Section 8 and names the Company as a third party beneficiary of such agreement, (iii) to any Affiliate, *provided* that the Confidential Information is disclosed on a confidential basis to such party, or (iv) as may otherwise be required by law, legal process or regulatory requirements, *provided* that the Series D-1 Investor takes reasonable steps to minimize the extent of any such required disclosure. Notwithstanding the foregoing, such information shall not be deemed confidential for the purpose of enforcing this Agreement. The Series D-1 Investor shall be liable for the disclosure of any Confidential Information by any Person described in the preceding clauses (i) and (iii).

8.2. Termination. The obligations of a Series D-1 Investor under this Section 8 shall terminate on the second anniversary of the earlier of (a) the first date on which such Series D-1 Investor no longer Beneficially Owns any Shares or Registrable Shares and (b) the closing of a Company Sale.

9. Election of Series D-1 Directors

9.1. Initial Series D-1 Directors. The Company confirms that its Board of Directors has elected, effective contemporaneously with the execution and delivery of this Agreement, Douglas A. Kingsley and Michael Pehl as directors of the Company. The Series D-1 Investors confirm that such

26

individuals shall constitute two of the initial Series D-1 Directors. The Company and the Series D-1 Investors agree to take any such further actions as may be necessary or desirable (i) to effect the appointment of such additional initial Series D-1 Directors as the Series D-1 Investors are permitted to designate pursuant to the Series D Certificate and (ii) to effect the election, from time to time in the future, of individuals as Series D-1 Directors pursuant to the Series D Certificate, subject to the provisions of Section 9.2. No individual designated to serve on the Board of Directors as a Series D-1 Director shall be deemed to be the deputy of or otherwise required to discharge his or her duties under the direction of, or with special attention to the interests of, the Series D-1 Investors.

9.2. Designation of Series D-1 Directors. The Company shall provide the Series D-1 Investors with 30 days’ prior written notice of any intended mailing of a notice to stockholders for a meeting at which the term of one or more Series D-1 Directors shall expire. Such notice shall specify (i) the date of such meeting, (ii) the date on which such mailing is intended to be made, and (iii) the name or names of the Series D-1 Directors whose terms are to expire at such meeting. A Series D-1 Investor or Investors holding in the aggregate a majority of the shares of Series D-1 Stock then outstanding (not including outstanding shares of Common Stock) may give written notice to the other Series D-1 Investors and the Company, no later than 15 days after receipt of such notice from the Company, of the individuals to be designated by the Board as nominees for election as Series D-1 Directors at such meeting. Only the individuals designated pursuant to the preceding sentence or otherwise in accordance with the Series D Certificate shall be nominated and recommended for election as Series D-1 Directors. If Series D-1 Investors fail to give notice to the Company as provided above, then the individuals then serving as Series D-1 Directors shall be deemed to have been designated for reelection.

9.3. Covenant Regarding Common Directors. In the event one or more directors elected by the holders of the Common Stock (voting as a single class or with one or more other classes or series of capital stock (the “Common Directors”)) no longer serves as a member of the Board of Directors due to his or her resignation, removal, incapacity or death (the resulting vacancy in the Board of Directors being referred to herein as a “Common Director

Vacancy”), for so long as this Section 9 is in effect and the Series D-1 Investors have the right to elect one or more members of the Board of Directors pursuant to the terms of the Series D Certificate, the Series D-1 Investors hereby covenant and agree as follows:

(a) In the event the Board of Directors elects to fill a Common Director Vacancy by vote of the members of the Board of Directors then in office, the Series D-1 Investors shall use all commercially reasonable efforts to cause the Series D-1 Directors to vote for the nominee approved by a majority of the remaining Common Directors then in office.

(b) In the event a Common Director Vacancy is filled by a person who was not approved by a majority of the Common Directors in office (regardless of whether the Series D-1 Investors used all commercially reasonable efforts as required by subsection (a) above), the Series D-1 Investors shall, notwithstanding their rights contained in the Series D Certificate, use commercially reasonable efforts to cause a Series D-1 Director to resign and be replaced by a person approved by a majority of the Common Directors then in office.

9.4. Termination. The rights of the Series D-1 Investors under this Section 9 shall terminate as of the date on which holders of shares of Series D-1 Stock are no longer entitled to elect Series D-1 Directors pursuant to the Series D Certificate.

10. Nonpublic Information. Notwithstanding any other provision of this Agreement, neither the Company nor any Person acting on its behalf will provide any Series D-2 Investor with any material, nonpublic information about the Company unless such Series D-2 Investor consents to receive such

27

information in writing in advance even if otherwise required pursuant to the terms of any Transaction Document (as defined in the Purchase Agreement). The Company understands and confirms that each of the Series D-2 Investors will rely on the foregoing covenant in effecting transactions in securities of the Company.

11. General

11.1. Ownership Calculations

(a) Except as otherwise expressly provided herein, in determining the number or percentage of Shares owned by an Investor for purposes of exercising rights under this Agreement, (i) Shares owned by an Investor shall be deemed to include Shares that have been converted into Common Stock so long as such Common Stock is owned by such Investor and (ii) all Shares held by Affiliates shall be aggregated together, *provided that* no Shares shall be attributed to more than one Person within any such group of Affiliates.

(b) In determining the number or percentage of Registrable Shares owned by an Investor for purposes of exercising rights under this Agreement, the determination shall include shares of Common Stock issuable upon conversion, exercise or exchange of securities, including the Shares, even if such conversion, exercise or exchange has not been effected.

11.2. Notices. All notices, requests and other communications to any party hereunder shall be in writing (including facsimile or similar writing) and shall be given to such party at its address or facsimile number set forth on the signature page hereof, or such other address or facsimile number as such party may hereinafter specify for the purpose of this Section to the party giving such notice. Each such notice, request or other communication shall be effective (a) if given by facsimile transmission, when such facsimile is transmitted to the facsimile number specified on the signature pages of this agreement and the appropriate confirmation is received or, (b) if given by mail, 72 hours after such communication is deposited in the mails with first class postage prepaid, addressed as aforesaid or, (c) if given by any other means, when delivered at the address specified on the signature pages of this Agreement.

11.3. Amendments and Waivers. This Agreement may be amended or terminated and the observance of any term of this Agreement may be waived with respect to all parties to this Agreement (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company, Investors holding greater than 50% of the Series D-1 Stock then held by Investors and Investors holding greater than 50% of the Series D-2 Stock then held by Investors; *provided that* any amendment, termination or waiver to:

- (a) any provision of this Agreement that affects only the rights of holders of Series D-1 Stock and has no adverse effect on the rights of holders of Series D-2 Stock may be amended with the written consent of the Company and Investors holding greater than 50% of the Series D-1 Stock then held by Investors; *provided that* after such amendment such provision continues to affect only the holders of the Series D-1 Stock; and
- (b) any provision of this Agreement that affects only the rights of holders of Series D-2 Stock and has no adverse effect on the rights of holders of Series D-1 Stock may be amended with the written consent of the Company and Investors holding greater than 50% of the Series D-2 Stock then held by Investors; *provided that* after such amendment such provision continues to affect only the holders of the Series D-2 Stock.

28

Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereunder may not be waived with respect to any Investor without the written consent of such Investor unless such amendment, termination or waiver applies to all Investors of the same series of Series D Preferred Stock in the same fashion (it being agreed that a waiver of the provisions of Section 3 with respect to a particular transaction shall be deemed to apply to all Accredited Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Accredited Investors may nonetheless, by agreement with the Company, purchase securities in such transaction). The Company shall give prompt written notice of any amendment or termination of this Agreement or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination or waiver. Any amendment, termination or waiver effected in accordance with this Section 10.3 shall be binding on all parties hereto, even if they do not execute such consent. No waivers of or exceptions to any term, condition or provision of this Agreement, in any one or more instances, shall be deemed to be, or construed as, a further or continuing waiver of any such term, condition or provision.

11.4. Governing Law; Venue; Waiver of Jury Trial. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware, for the adjudication of any dispute hereunder or in connection with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Each of the parties hereby waives all rights to a trial by jury.

11.5. Counterparts; Facsimile Signatures. This Agreement may be executed in any number of counterparts (including facsimile signature), each of which shall be an original with the same effect as if the signatures thereto and hereto were upon the same instrument. No provision of this Agreement is intended to confer upon any Person other than the parties hereto any rights or remedies hereunder, except to the extent expressly provided herein.

11.6. Entire Agreement. This Agreement constitutes the entire agreement and understanding among the parties hereto with respect to the subject matter of this Agreement and supersedes any and all prior agreements and understandings, written or oral, relating to such subject matter.

11.7. Interpretation and Rules of Construction. Definitions contained in this Agreement apply to singular as well as the plural forms of such terms and to the masculine as well as to the feminine and neuter genders of such terms. Words in the singular shall be held to include the plural and vice versa, and words of one gender shall be held to include the other gender as the context requires. The terms "hereof," "herein," "hereby" and "herewith" and words of similar import shall, unless otherwise stated, be construed to refer to this Agreement as a whole and not to any particular provision of this Agreement. The terms "includes" and the word "including" and words of similar import shall be deemed to be followed by the words "without limitation." Section and paragraph references are to the Sections and paragraphs of this Agreement unless otherwise specified. The word "or" shall not be exclusive. For purposes of this Agreement, the terms "Company" and "Subsidiary" shall include any entity which is, in whole or in part, a predecessor of the Company or

29

any Subsidiary, unless the context expressly requires otherwise. The headings in this Agreement are included for convenience only and shall be ignored in the construction or interpretation hereof.

11.8. Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement.

11.9. Specific Performance. In addition to any and all other remedies that may be available at law in the event of any breach of this Agreement, each Investor shall be entitled to specific performance of the agreements and obligations of the Company hereunder and to such other injunctive or other equitable relief as may be granted by a court of competent jurisdiction.

IN WITNESS WHEREOF, the parties hereto have caused this Investor Rights Agreement to be duly executed by their respective authorized signatories as of the date first written above.

ASPEN TECHNOLOGY, INC.

By: /s/ David L. McQuillin
David L. McQuillin
President and Chief Executive Officer

Address for notices:
Aspen Technology, Inc.
Ten Canal Park
Cambridge, Massachusetts 02141
Attention: Chief Financial Officer and General Counsel
Facsimile: 617.949.1717

With a copy to:
Hale and Dorr LLP
60 State Street
Boston, Massachusetts 02109
Attention: Mark L. Johnson
Facsimile: 617.526.5000

[INVESTOR SIGNATURE PAGES FOLLOW]

30

SERIES D-1 INVESTORS:

ADVENT ENERGY II LIMITED PARTNERSHIP

ADVENT PGGM GLOBAL LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-A LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-B LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-C LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-D C.V.

DIGITAL MEDIA & COMMUNICATIONS III-E C.V.

GLOBAL PRIVATE EQUITY III LIMITED PARTNERSHIP

GLOBAL PRIVATE EQUITY IV LIMITED PARTNERSHIP

By: Advent International Limited Partnership,
General Partner

By: Advent International Corporation, General Partner

By: /s/ Douglas Kingsley
Senior Vice President

31

Address for notices:

c/o Advent International Corporation
75 State Street
Boston, Massachusetts 02109
Attention: Douglas A. Kingsley, Managing Director
Facsimile: 617.951.0568

With a copy to:

Pepper Hamilton LLP
3000 Two Logan Square
18th and Arch Streets
Philadelphia, Pennsylvania 19103
Attention: Julia D. Corelli
Facsimile: 215.981.4750

32

ADVENT PARTNERS (NA) GPE III LIMITED PARTNERSHIP

ADVENT PARTNERS DMC III LIMITED PARTNERSHIP

ADVENT PARTNERS GPE-III LIMITED PARTNERSHIP

ADVENT PARTNERS GPE-IV LIMITED PARTNERSHIP

ADVENT PARTNERS II LIMITED PARTNERSHIP

By: Advent International Corporation,
General
Partner

By: /s/ Douglas Kingsley
Senior Vice President

Address for notices:

c/o Advent International Corporation
75 State Street
Boston, Massachusetts 02109
Attention: Douglas A. Kingsley, Managing Director
Facsimile: 617.951.0568

With a copy to:
Pepper Hamilton LLP
3000 Two Logan Square
18th and Arch Streets
Philadelphia, Pennsylvania 19103
Attention: Julia D. Corelli
Facsimile: 215.981.4750

33

SERIES D-2 INVESTORS:

PINE RIDGE FINANCIAL INC.

By: /s/ Avi Vigder
Name: Avi Vigder
Title: Authorized Signatory

Address for notices:
Pine Ridge Financial Inc.
c/o Cavallo Capital Corp.
660 Madison Avenue
New York, NY 10022
Attention: Avi Vigder
Telephone: 212.651.9000
Facsimile: 212.651.9010

With a copy to:
Proskauer Rose LLP
1585 Broadway
New York, NY 10036-8299
Attention: Adam J. Kansler, Esq.
Facsimile: 212.969.2900

34

SMITHFIELD FIDUCIARY LLC

By: /s/ Adam J. Chill
Name: Adam J. Chill
Title: Authorized Signatory

Address for notices:
Smithfield Fiduciary LLC
c/o Highbridge Capital Management, LLC
9 West 57th Street, 27th Floor
New York, NY 10019
Attention: Ari J. Storch / Adam J. Chill
Facsimile: 212.751.0755

With a copy to:
Schulte Roth & Zabel LLP
919 Third Avenue
New York, NY 10022
Attn: Eleazer Klein, Esq.
Facsimile: 212.593.5955

35

PERSEVERANCE LLC

By: /s/ Fiona Theaker
Name: Fiona Theaker
Title: Director

Address for notices:
Perseverance LLC

c/o Cavallo Capital Corp.
660 Madison Avenue
New York, NY 10022
Attention: Avi Vigder
Facsimile: 212.651.9010

With a copy to:
Proskauer Rose LLP
1585 Broadway
New York, NY 10036-8299
Attention: Adam J. Kansler, Esq.
Facsimile: 212.969.2900

Plan of Distribution

The selling stockholders may, from time to time, sell any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

The selling stockholders may also engage in short sales against the box, puts and calls and other transactions in our securities or derivatives of our securities and may sell or deliver shares in connection with these trades.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved. Any profits on the resale of shares of common stock by a broker-dealer acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. Discounts, concessions, commissions and similar selling expenses, if any, attributable to the sale of shares will be borne by a selling stockholder. The selling stockholders may agree to indemnify any agent, dealer or broker-dealer that participates in transactions involving sales of the shares if liabilities are imposed on that person under the Securities Act.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time under this prospectus after we have filed an amendment to this prospectus under Rule 424(b)(3) or

other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus and may sell the shares of common stock from time to time under this prospectus after we have filed an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders and any broker-dealers or agents that are involved in selling the shares of common stock may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any

profit on the resale of the shares of common stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We are required to pay certain fees and expenses incident to the registration of the shares of common stock, including certain fees and disbursements of counsel to the selling stockholders. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

The selling stockholders have advised us that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their shares of common stock, nor is there an underwriter or coordinating broker acting in connection with a proposed sale of shares of common stock by any selling stockholder. If we are notified by any selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of shares of common stock, if required, we will file a supplement to this prospectus. If the selling stockholders use this prospectus for any sale of the shares of common stock, they will be subject to the prospectus delivery requirements of the Securities Act.

The anti-manipulation rules of Regulation M under the Securities Exchange Act may apply to sales of our common stock and activities of the selling stockholders.

ASPEN TECHNOLOGY, INC.
Ten Canal Park
Cambridge, Massachusetts 02141-2201

August 14, 2003

To: The Funds Listed Below

This letter is being issued in connection with the acquisition by the parties listed below (each, an "Advent Investor" and, collectively, the "Advent Investors") of an aggregate of 3,003,003 shares of Series D-1 Convertible Preferred Stock ("Series D-1 Preferred Stock") issued by Aspen Technology, Inc. (the "Company"), pursuant to the terms and conditions set forth in that certain Securities Purchase Agreement, dated as of June 1, 2003 ("Purchase Agreement"). Capitalized terms used but not otherwise defined herein shall have the meaning set forth in the Investor Rights Agreement among the Company, the purchasers of the Series D-1 Preferred Stock and the Series D-2 Preferred Stock, dated as of August 14, 2003. The Advent Investors desire to actively assist the Company in developing, reviewing and considering certain proposals and suggestions relating to the management of the Company's business and the Company desires such assistance. In order to facilitate the Advent Investors' input with respect to the management of the business of the Company, the Company agrees:

1. For so long as the Advent Investors own shares of Series D-1 Preferred Stock (or shares of Common Stock into which such shares of Series D-1 Preferred Stock are convertible), to grant to each Advent Investor the management rights described below and further agrees that it will give due consideration to such input as may be provided by an Advent Investor in exercise of such rights:

- a) at reasonable times and on reasonable notice, the right to discuss, and provide advice with respect to, the business operations, properties and financial and other conditions of the Company with the Company's officers, employees and directors and the right to consult with and advise the Company's senior management on matters materially affecting the business and affairs of the Company;
- b) at reasonable times and on reasonable notice, the right to submit business proposals or suggestions to the Company's senior management from time to time and to have such proposals or suggestions reasonably considered; and
- c) the right (1) to visit the Company's business premises and other properties during normal business hours and on reasonable notice, (2) to receive the information of the Company set forth in Section 4.1 of the Investor Rights Agreement, (3) to examine the books and records of the Company during normal business hours and on reasonable notice, and (4) to request such other information at reasonable times and intervals in light of the Company's normal business operations concerning the general status of the Company's business, financial condition and operations but only to the extent such information is reasonably available to the Company and in a format consistent with how the Company maintains such information.

2. For so long as the Advent Investors beneficially own at least 5% of the outstanding shares of Common Stock, then the Advent Investors shall have the following rights, subject, in all cases, to paragraph 3 below:

- a) in the event that the Series D-1 Investors have the right under the Series D Certificate to appoint a Series D-1 Director, the right to send such director to all meetings of committees of the Board of Directors of the Company, in a non-voting observer capacity, and
- b) in the event that the Series D-1 Investors no longer have the right under the Series D Certificate to appoint a Series D-1 Director, (i) the right to send one representative to attend all meetings of the Company's Board of Directors, and all meetings of each committee of the Board of Directors, in a non-voting observer capacity, and (ii) the right to receive copies of all notices, minutes, consents and other materials the Company provides to its directors in connection with any meeting, except for materials pertaining to the portion of any meeting from which a representative of the Advent Investor is excluded pursuant to paragraph 3 below.

3. The Advent Investors understand and acknowledge that the Board of Directors (or a committee of the Board of Directors, as the case may be) shall have and reserve the right to exclude the director or other representative attending a meeting under paragraph 2(a) or 2(b) above (each, a "Representative") from all or any portion of a meeting to the extent (i) necessary to preserve attorney client privilege, (ii) the Board of Directors (or such committee), in its sole discretion, deems the presence of such Representative to be inconsistent with the Company's goal of adhering to best practices of corporate governance or otherwise inadvisable under then-current laws, rules, regulations, including any guidelines and interpretations thereof set forth or proposed by Nasdaq or any exchange on which the Common Stock is then traded. In no event shall Advent have any right pursuant to this letter agreement to send a Representative to a meeting of a "special committee" of the Board of Directors which has been established to evaluate (A) a potential claim of the Company against its officers or directors, or (B) a strategic transaction or proposal where the special committee deems the presence of such Representative to be inappropriate under the circumstances.

Any and all Confidential Information disclosed by the Company under this letter agreement shall be subject to Section 8 of the Investor Rights Agreement.

The rights afforded by this letter agreement shall be assignable to any person who is an Advent Investor.

Please acknowledge your agreement by signing below and returning a copy to the Company.

Sincerely,

ASPEN TECHNOLOGY, INC.

By: /s/David L. McQuillin
David L. McQuillin

Acknowledged and agreed to as of the date first set forth above by the following Funds:

ADVENT ENERGY II LIMITED PARTNERSHIP

ADVENT PARTNERS (NA) GPE III LIMITED PARTNERSHIP

ADVENT PGGM GLOBAL LIMITED PARTNERSHIP

ADVENT PARTNERS DMC III LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III LIMITED PARTNERSHIP

ADVENT PARTNERS GPE-III LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-A LIMITED PARTNERSHIP

ADVENT PARTNERS GPE-IV LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-B LIMITED PARTNERSHIP

ADVENT PARTNERS II LIMITED PARTNERSHIP

DIGITAL MEDIA & COMMUNICATIONS III-C LIMITED PARTNERSHIP

By: Advent International Corporation, General Partner

DIGITAL MEDIA & COMMUNICATIONS III-D C.V.

By: /s/ Douglas Kingsley

Senior Vice President

DIGITAL MEDIA & COMMUNICATIONS III-E C.V.

GLOBAL PRIVATE EQUITY III LIMITED PARTNERSHIP

GLOBAL PRIVATE EQUITY IV LIMITED PARTNERSHIP

By: Advent International Limited Partnership,
General Partner

By: Advent International Corporation, General
Partner

By: /s/ Douglas Kingsley
Senior Vice President

On August 14, 2003, we issued warrants, in the form of the attached warrant, to the following investors to purchase the indicated number of shares:

<u>Name of Warrant Holder</u>	<u>Number of Shares</u>
Advent Energy II Limited Partnership	396,400
Advent PGGM Global Limited Partnership	84,080
Digital Media & Communications III Limited Partnership	388,220
Digital Media & Communications III-A Limited Partnership	192,200
Digital Media & Communications III-B Limited Partnership	48,040
Digital Media & Communications III-C Limited Partnership	768,780
Digital Media & Communications III-D C.V.	144,140
Digital Media & Communications III-E C.V.	96,100
Global Private Equity III Limited Partnership	840,841
Global Private Equity IV Limited Partnership	2,935,904
Advent Partners (NA) GPE III Limited Partnership	2,140
Advent Partners DMC III Limited Partnership	22,280
Advent Partners GPE-III Limited Partnership	7,200
Advent Partners GPE-IV Limited Partnership	37,160
Advent Partners II Limited Partnership	42,521
Pine Ridge Financial Inc.	630,640
Smithfield Fiduciary LLC	630,640

NEITHER THESE SECURITIES NOR THE SECURITIES FOR WHICH THESE SECURITIES ARE EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN COMPLIANCE WITH APPLICABLE STATE SECURITIES OR BLUE SKY LAWS. NOTWITHSTANDING THE FOREGOING, THESE SECURITIES AND THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY SUCH SECURITIES.

Warrant No. WD -

Number of Shares:
(subject to adjustment)

Date of Issuance: August 14, 2003

Original Issue Date (as defined in
subsection 2(a)(i)(B)): August 14, 2003

ASPEN TECHNOLOGY, INC.

Common Stock Purchase Warrant

(Void after August 14, 2010)

Aspen Technology, Inc., a Delaware corporation (the "Company"), for value received, hereby certifies that _____, or its registered assigns (the "Registered Holder"), is entitled, subject to the terms and conditions set forth below, to purchase from the Company, at any time or from time to time on or after the date of issuance and on or before 5:00 p.m. (Eastern time) on August 14, 2010, _____ shares of Common Stock, \$0.10 par value per share, of the Company ("Common Stock"), at a purchase price of \$3.33 per share. The shares purchasable upon exercise of this Warrant, and the purchase price per share, each as adjusted from time to time pursuant to the provisions of this Warrant, are hereinafter referred to as the "Warrant Shares" and the "Purchase Price," respectively.

1. Exercise

(a) Exercise for Cash. The Registered Holder may, at its option, elect to exercise this Warrant, in whole or in part and at any time or from time to time, by surrendering this Warrant, with the purchase form appended hereto as Exhibit I duly executed by or on behalf of the Registered Holder, at the

principal office of the Company, or at such other office or agency as the Company may designate, accompanied by payment in full, in lawful money of the United States, of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise.

(b) Cashless Exercise

(i) The Registered Holder may, at its option, elect to exercise this Warrant, in whole or in part from time to time, on a cashless basis, by surrendering this Warrant, with the purchase form appended hereto as Exhibit I duly executed by or on behalf of the Registered Holder, at the principal office of the Company, or at such other office or agency as the Company may

designate, by canceling a portion of this Warrant in payment of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise, *provided* that the Registered Holder may not elect to exercise this Warrant on a cashless basis to purchase shares of Common Stock that are the subject of (and may be freely resold under) a then-effective registration statement under the Securities Act of 1933, as amended (the "Act"). In the event of an exercise pursuant to this subsection 1(b), the number of Warrant Shares issued to the Registered Holder shall be determined according to the following formula:

$$X = \frac{Y(A-B)}{A}$$

Where:

X = the number of Warrant Shares that shall be issued to the Registered Holder;

Y = the number of Warrant Shares for which this Warrant is being exercised (which shall include both the number of Warrant Shares issued to the Registered Holder and the number of Warrant Shares subject to the portion of the Warrant being cancelled in payment of the Purchase Price);

A = the Fair Market Value (as defined below) of one share of Common Stock; and

B = the Purchase Price then in effect.

(ii) The Fair Market Value per share of Common Stock shall be determined as follows:

(A) If the Common Stock is listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the average of the high and low reported sale prices per share of Common Stock thereon on the trading day immediately preceding the Exercise Date, *provided* that if no such price is reported on such day, the Fair Market Value per share of Common Stock shall be determined pursuant to clause (B) below.

(B) If the Common Stock is not listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the amount most recently determined by the Board of Directors of the Company to represent the fair market value per share of the Common Stock (including a determination for purposes of granting Common Stock options or issuing Common Stock under any plan, agreement or arrangement with employees of the Company); and, upon request of the Registered Holder, such Board (or a representative thereof) shall, as promptly as reasonably practicable but in any event not later than 20 days after such request, notify the Registered Holder of the Fair Market Value per share of Common Stock and furnish the Registered Holder with reasonable documentation of such Board's determination of such Fair Market Value. Notwithstanding the foregoing, if the Board has not made such a determination within the three-month period prior to the Exercise Date, then (a) the Board shall make, and shall provide or cause to be provided to the Registered Holder notice of, a determination of the Fair Market Value per share of the Common Stock within 15 days of a request by the Registered Holder that it do so, and (b) the exercise of this Warrant pursuant to this subsection 1(b) shall be delayed until such determination is made and notice thereof is provided to the Registered Holder.

(c) Exercise Date. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the day on which this Warrant shall have been surrendered to the Company as provided in subsection 1(a) or 1(b) above (the "Exercise Date"). At such time, the person or persons in whose name or names any certificates for Warrant Shares shall be issuable upon such exercise as provided in subsection 1(d) below shall be deemed to have become the holder or holders of record of the Warrant Shares represented by such certificates. The Company shall use all commercially reasonable efforts to deliver Warrant Shares hereunder electronically through the Depository Trust Corporation or another established clearing corporation performing similar functions.

(d) Issuance of Certificates. As soon as practicable after the exercise of this Warrant in whole or in part, and in any event within three Trading Days (as defined below) thereafter, the Company, at its expense, shall cause to be issued in the name of, and delivered to, the Registered Holder, or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct:

- (i) a certificate or certificates for the number of full Warrant Shares to which the Registered Holder shall be entitled upon such exercise plus, in lieu of any fractional share to which the Registered Holder would otherwise be entitled, cash in an amount determined pursuant to Section 3 below; and
- (ii) in case such exercise is in part only, a new warrant or warrants of like tenor, calling in the aggregate on the face or faces thereof for the number of Warrant Shares equal (without giving effect to any adjustment therein) to the number of such shares called for on the face of this Warrant minus the number of Warrant Shares for which this Warrant was so exercised.

For purposes of this Warrant, "Trading Day" shall mean (a) any day on which the Common Stock is listed on the Nasdaq National Market or another nationally recognized trading system on which the Common Stock is then listed or quoted or (b) if the Common Stock is not then listed or quoted on the Nasdaq National Market or another nationally recognized trading system, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto).

2. Adjustments

(a) Adjustments to Purchase Price for Diluting Issues

(i) Special Definitions. For purposes of this Section 2, the following definitions shall apply:

(A) "Option" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(B) "Original Issue Date" shall mean the date on which this Warrant was first issued (or, if this Warrant was issued upon partial exercise of, or in replacement of, another warrant of like tenor, then the date on which such original warrant was first issued).

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to subsection 2(a)(iii) below, deemed to be issued) by the Company after the Original Issue Date, other than shares of Common Stock issued, issuable or deemed issued:

- (I) as a dividend or distribution on Series D-1 Convertible Preferred Stock or Series D-2 Convertible Preferred Stock of the Company;
- (II) by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by subsection 2(b) or 2(c) below;
- (III) to employees or directors of, or consultants to, the Company or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Company and by a majority of the directors of the Company who are eligible to serve on the Audit Committee of such Board under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market (or such other trading or quotation facility on which the Common Stock is then listed);
- (IV) to Accenture LLP pursuant to agreements in effect on June 1, 2003; or
- (V) in connection with any transaction with any strategic investor, vendor or customer, lessor, customer, supplier, marketing partner, developer or integrator or any similar arrangement, in each case the primary purpose of which is not to raise equity capital, *provided* such issuance is approved by the Board of Directors of the Company and by a majority of the directors of the Company who are eligible to serve on the Audit Committee of such Board under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market (or such other trading or quotation facility on which the Common Stock is then listed).

(ii) No Adjustment of Purchase Price. No adjustment of the Purchase Price shall be made as the result of the issuance of Additional Shares of Common Stock if the consideration per share (determined pursuant to subsection 2(a)(v)) for such Additional Share of Common Stock issued or deemed to be issued by the Company is equal to or greater than the Purchase Price in effect immediately prior to the issuance or deemed issuance of such Additional Shares of Common Stock.

(iii) Issue of Securities to be a Deemed Issue of Additional Shares of Common Stock

(A) If the Company at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which, upon exercise, conversion or exchange thereof, would entitle the holder thereof to receive shares of Common Stock that are specifically excepted from the definition of Additional Shares of Common Stock by subsection 2(a)(i)(D) above) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options

therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(B) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Purchase Price pursuant to the terms of subsection 2(a)(iv) below, are revised (either automatically pursuant the provisions contained therein or as a result of an amendment to such terms) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Company upon such exercise, conversion or exchange, then, effective upon such increase or decrease becoming effective, the

Purchase Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Purchase Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no adjustment pursuant to this clause (B) shall have the effect of increasing the Purchase Price to an amount which exceeds the lower of (i) the Purchase Price on the original adjustment date, or (ii) the Purchase Price that would have resulted from any issuances of Additional Shares of Common Stock between the original adjustment date and such readjustment date.

(C) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which, upon exercise, conversion or exchange thereof, would entitle the holder thereof to receive shares of Common Stock which are specifically excepted from the definition of Additional Shares of Common Stock by subsection 2(a)(i)(D) above), the issuance of which did not result in an adjustment to the Purchase Price pursuant to the terms of subsection 2(a)(iv) below (either because the consideration per share (determined pursuant to subsection 2(a)(v) hereof) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Purchase Price then in effect, or because such Option or Convertible Security was issued before the Original Issue Date), are revised after the Original Issue Date (either automatically pursuant the provisions contained therein or as a result of an amendment to such terms) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Company upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in subsection 2(a)(iii)(A) above) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(D) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged (as applicable) Convertible Security which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Purchase Price pursuant to the terms of subsection 2(a)(iv) below, the Purchase Price shall be readjusted to such Purchase Price as would have obtained had such Option or Convertible Security never been issued.

(E) No adjustment in the Purchase Price shall be made upon the issue of shares of Common Stock or Convertible Securities upon the exercise of Options or the issue of shares of Common Stock upon the conversion or exchange of Convertible Securities.

(iv) Adjustment of Purchase Price Upon Issuance of Additional Shares of Common Stock. In the event the Company shall at any time after the Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subsection 2(a)(iii)), without consideration or for a consideration per share less than the Purchase Price in effect immediately prior to such issue, then the Purchase Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying such Purchase Price by a fraction, (A) the numerator of which shall be (1) the number of shares of Common Stock outstanding immediately prior to such issue plus (2) the number of shares of Common Stock which the aggregate consideration received or to be received by the Company for the total number of Additional Shares of Common Stock so issued would purchase at such Purchase Price; and (B) the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued; *provided* that (i) for the purpose of this subsection 2(a)(iv), all shares of Common Stock issuable upon conversion or exchange of shares of Series D Convertible Preferred Stock of the Company, Options or Convertible Securities outstanding immediately prior to such issue or upon exercise of such securities shall be deemed to be outstanding, and (ii) the number of shares of Common Stock deemed issuable upon conversion or exchange of such outstanding shares of Series D Convertible Preferred Stock, Options or Convertible Securities and upon the exercise of such outstanding securities shall be determined without giving effect to any adjustments to the conversion or exchange price or conversion or exchange rate of such securities or the exercise price or number of shares issuable upon exercise of such outstanding securities resulting from the issuance of Additional Shares of Common Stock that is the subject of this calculation.

(v) Determination of Consideration. For purposes of this subsection 2(a), the consideration received by the Company for the issue of any Additional Shares of Common Stock shall be computed as follows:

(A) Cash and Property. Such consideration shall:

- (I) insofar as it consists of cash, be computed at the aggregate of cash received by the Company, excluding amounts paid or payable for accrued interest;
- (II) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors of the Company; and
- (III) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Company for consideration that covers both, be the proportion of such consideration so received, computed as provided in clauses (I) and (II) above, as determined in good faith by the Board of Directors of the Company.

(B) Options and Convertible Securities. The consideration per share received by the Company for Additional Shares of Common Stock deemed to have been issued pursuant to subsection 2(a)(iii), relating to Options and Convertible Securities, shall be determined by dividing

- (I) the total amount, if any, received or receivable by the Company as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set

forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Company upon the exercise of such Options or the conversion or exchange of such

Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

- (II) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities.

(vi) Multiple Closing Dates. In the event the Company shall issue on more than one date Additional Shares of Common Stock which are comprised of shares of the same series or class of Preferred Stock, and such issuance dates occur within a period of no more than 60 days, then, upon the final such issuance, the Purchase Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the final such issuance (and without giving effect to any adjustments as a result of such prior issuances within such period).

(b) Adjustment for Stock Splits and Combinations. If the Company shall at any time or from time to time after the Original Issue Date effect a subdivision of the outstanding Common Stock, the Purchase Price then in effect immediately before that subdivision shall be proportionately decreased. If the Company shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock, the Purchase Price then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision or combination becomes effective.

(c) Adjustment for Certain Dividends and Distributions. In the event the Company at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Purchase Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Purchase Price then in effect by a fraction:

- (i) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and
- (ii) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution;

provided, however, that if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Purchase Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Purchase Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends or distributions.

(d) Adjustment in Number of Warrant Shares. When any adjustment is required to be made in the Purchase Price pursuant to subsection 2(a), 2(b) or 2(c) above, the number of Warrant Shares purchasable upon the exercise of this Warrant shall be changed to the number determined by dividing (i) an amount equal to the number of shares issuable upon the exercise of this Warrant immediately prior to such adjustment, multiplied by the Purchase Price in effect immediately prior to such adjustment, by (ii) the Purchase Price in effect immediately after such adjustment.

(e) Adjustments for Other Dividends and Distributions. In the event the Company at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Company (other than shares of Common Stock) or in cash or other property, then in each such event the Purchase Price in effect immediately prior to the record date fixed for determination of stockholders entitled to receive such dividend or distribution shall be reduced (effective on such record date) by the then fair market value of the distributed property distributed in respect of one outstanding share of Common Stock, as determined in good faith by the Company's Board of Directors. In such event, the Registered Holder, after receipt of the determination by the Company's Board of Directors, shall have the right to request that the Company select an appraiser (which shall be a nationally recognized investment banking firm or accounting firm), and the Registered Holder shall select an additional such appraiser and such fair market value shall be deemed to equal the average of the values determined by each of the of the appraisers. As an alternative to the foregoing adjustment to the Purchase Price, at the request of the Registered Holder delivered before the thirtieth day after such record date, provision shall be made so that the Registered Holder shall receive upon exercise hereof, in addition to the number of shares of Common Stock issuable hereunder, the kind and amount of securities of the Company, cash or other property that the Registered Holder would have been entitled to receive had this Warrant been exercised on the date of such event and had the Registered Holder thereafter, during the period from the date of such event to and including the Exercise Date, retained any such securities receivable during such period, giving application to all adjustments called for during such period under this Section 2 with respect to the rights of the Registered Holder.

(f) Fundamental Transactions. If, at any time while this Warrant is outstanding, (i) the Company effects any merger or consolidation of the Company with or into another Person, (ii) the Company effects any sale of all or substantially all of its assets in one or a series of related transactions, (iii) any tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to tender or exchange their shares for other securities, cash or property, or (iv) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (in any such case, a "Fundamental Transaction"), then the Holder shall have the right thereafter to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant (the "Alternate Consideration"). The aggregate Exercise Price for this Warrant will not be affected by any such Fundamental Transaction, but the Company shall apportion such aggregate Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. At the Holder's request, any successor to the Company or surviving entity in such Fundamental Transaction shall issue to the Holder a new warrant evidencing the Holder's right to

purchase the Alternate Consideration for the aggregate Exercise Price upon exercise thereof and consistent with the foregoing provisions, *provided that* (i) the covenant set forth in Section 9 relating to the reservation of Common Stock shall be replaced with a covenant to the effect that sufficient Alternate Consideration shall be reserved for issuance upon exercise of the Warrants and (ii) the terms of subsection 2(a) shall be deleted. The terms of any agreement pursuant to which a Fundamental Transaction is effected shall include terms requiring any such successor or surviving entity to comply with the provisions of this paragraph (f) and ensuring that the Warrant (or any such replacement security) will be similarly adjusted upon any subsequent transaction analogous to a Fundamental Transaction.

(g) Rounding of Calculations; Minimum Adjustments. All calculations under this Section 2 shall be made to the nearest one tenth of a cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

(h) Certificate as to Adjustments. Upon the occurrence of each adjustment pursuant to this Section 2, the Company at its expense will promptly compute such adjustment in accordance with the terms hereof and prepare a certificate describing in reasonable detail such adjustment and the transactions giving rise thereto, including all facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Registered Holder and to the Company's Transfer Agent. The Company shall, as promptly as reasonably practicable after the written request at any time of the Registered Holder (but in any event not later than 20 days thereafter), furnish or cause to be furnished to the Registered Holder a certificate setting forth (i) the Purchase Price then in effect and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property that then would be received upon the exercise of this Warrant.

3. Fractional Shares. The Company shall not be required upon the exercise of this Warrant to issue any fractional shares, but shall pay the value thereof to the Registered Holder in cash on the basis of the Fair Market Value per share of Common Stock, determined as follows:

(a) If the Common Stock is listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the average of the high and low reported sale prices per share of Common Stock thereon on the trading day immediately preceding the Exercise Date, *provided that* if no such price is reported on such day, the Fair Market Value per share of Common Stock shall be determined pursuant to clause (b) below.

(b) If the Common Stock is not listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the amount most recently determined by the Board of Directors of the Company to represent the fair market value per share of the Common Stock (including a determination for purposes of granting Common Stock options or issuing Common Stock under any plan, agreement or arrangement with employees of the Company); and, upon request of the Registered Holder, such Board (or a representative thereof) shall, as promptly as reasonably practicable but in any event not later than 20 days after such request, notify the Registered Holder of the Fair Market Value per share of Common Stock and furnish the Registered Holder with reasonable documentation of such Board's determination of such Fair Market Value.

4. Investment Representations. At the time of exercise of this Warrant, the Registered Holder of this Warrant shall be required to represent and warrant that that: (a) it is an "accredited investor" as

defined in Rule 501(a) under the Securities Act of 1933, as amended (the "Securities Act"); (b) it has made such inquiry concerning the Company and its business and personnel as it has deemed appropriate; (c) it has sufficient knowledge and experience in finance and business that it is capable of evaluating the risks and merits of its investment in the Company; and (d) if it is paying the Purchase Price in cash pursuant to subsection 9(a), it is acquiring the shares of Common Stock by exercise hereof for investment and not with a view to the resale or distribution of such shares or any interest therein other than in a transaction that is registered or exempt from registration under the Securities Act; provided that such representation is without prejudice to the Registered Holder's right to dispose of such shares of Common Stock in compliance with applicable securities laws.

5. Transfers, etc.

(a) The Company shall maintain a register containing the name and address of the Registered Holder of this Warrant. The Registered Holder may change its address as shown on the warrant register by written notice to the Company requesting such change.

(b) Subject to the provisions of this Section 5 and the Investor Rights Agreement, this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant with a properly executed assignment (in the form of Exhibit II hereto) at the principal office of the Company (or, if another office or agency has been designated by the Company for such purpose, then at such other office or agency).

6. No Impairment. The Company shall not, by amendment of its charter or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but shall at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Registered Holder against impairment. The Company's obligations to issue and deliver Warrant Shares subject to and in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by the Registered Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Registered Holder or any other person of any obligation to the Company or any violation or alleged violation of law by the Registered Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Company to the Registered Holder in connection with the issuance of Warrant Shares. Nothing herein shall limit a Registered Holder's right to pursue any other remedies available to it hereunder, at law or in equity including a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing shares of Common Stock upon exercise of this Warrant as required pursuant to the terms hereof.

7. Notices of Record Date, etc. In the event:

- (a) the Company shall take a record of the holders of its Common Stock (or other stock or securities at the time deliverable upon the exercise of this Warrant) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of stock of any class or any other securities, or to receive any other right; or
- (b) of any capital reorganization of the Company, any reclassification of the Common Stock of the Company, any consolidation or merger of the Company with or into another corporation (other than a consolidation or merger in which the Company is the surviving

entity and its Common Stock is not converted into or exchanged for any other securities or property), or any transfer of all or substantially all of the assets of the Company; or

- (c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then, and in each such case, the Company will send or cause to be sent to the Registered Holder a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other stock or securities at the time deliverable upon the exercise of this Warrant) shall be entitled to exchange their shares of Common Stock (or such other stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up. Such notice shall be sent at least 10 days prior to the record date or effective date for the event specified in such notice.

8. Charges, Taxes and Expenses. The Company shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon exercise of this Warrant. The Company shall not, however, be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of Warrant Shares or Warrants in a name other than that in which this Warrant is registered.

9. Reservation of Stock. The Company shall at all times reserve and keep available, solely for issuance and delivery upon the exercise of this Warrant, such number of Warrant Shares and other securities, cash and/or property, as from time to time shall be issuable upon the exercise of this Warrant. If the number of shares of Common Stock so reserved is insufficient, in addition to any other remedy available to the Registered Holder, the Company shall take any corporate action that is necessary to make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock within 60 days after the occurrence of such deficiency.

10. Exchange or Replacement of Warrants

(a) Upon the surrender by the Registered Holder, properly endorsed, to the Company at the principal office of the Company, the Company shall, subject to the provisions of Section 5 above, issue and deliver to or upon the order of the Registered Holder, at the Company's expense, a new Warrant or Warrants of like tenor, in the name of the Registered Holder or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock (or other securities, cash and/or property) then issuable upon exercise of this Warrant.

(b) Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and (in the case of loss, theft or destruction) upon delivery of an indemnity agreement to the Company, or (in the case of mutilation) upon surrender and cancellation of this Warrant, the Company will issue, in lieu thereof, a new Warrant of like tenor.

11. Limitation on Exercise. Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by the Registered Holder upon any exercise of this Warrant (or otherwise in respect hereof) shall be limited to the extent necessary to ensure that, following such exercise (or other issuance), the total number of shares of Common Stock then beneficially owned by such Registered Holder and its affiliates and any other individuals or entities whose beneficial ownership of Common Stock would be aggregated with the Registered Holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.999%

(the "Maximum Percentage") of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise). For such purposes, beneficial ownership shall be determined in accordance with Section 13(d) of such Securities Exchange Act and the rules and regulations promulgated thereunder. Each delivery of a notice of exercise of this Warrant pursuant to Section 1 above will constitute a representation by the Registered Holder that it has evaluated the limitation set forth in this paragraph and determined that issuance of the full number of Warrant Shares requested in such notice of Exercise is permitted under this paragraph. The Company's obligation to issue shares of Common Stock in excess of the limitation referred to in this Section 11 shall be suspended (and shall not terminate or expire notwithstanding any contrary provisions hereof) until such time, if any, as such shares of Common Stock may be issued in compliance with such limitation. By written notice to the Company, the Registered Holder may waive the provisions of this Section 11 or increase or decrease the Maximum Percentage to any other percentage specified in such notice, but (a) any such waiver or increase will not be effective until the sixty-first day after such notice is delivered to the Company and (b) any such waiver or increase or decrease will apply only to the Registered Holder and not to any other holder of warrants issued by the Company.

12. Notices. All notices and other communications from the Company to the Registered Holder in connection herewith shall be mailed by certified or registered mail, postage prepaid, or sent via a reputable nationwide overnight courier service guaranteeing next business day delivery, to the address last furnished to the Company in writing by the Registered Holder. All notices and other communications from the Registered Holder to the Company in connection herewith shall be mailed by certified or registered mail, postage prepaid, or sent via a reputable nationwide overnight courier service guaranteeing next business day delivery, to the Company at its principal office set forth below. If the Company should at any time change the location of its principal office to a place other than as set forth below, it shall give prompt written notice to the Registered Holder and thereafter all references in this Warrant to the location of its principal office at the particular time shall be as so specified in such notice. All such notices and communications shall be deemed delivered (a) two business days after being sent by certified or registered mail, return receipt requested, postage prepaid, or (b) one business day after being sent via a reputable nationwide overnight courier service guaranteeing next business day delivery.

13. No Rights as Stockholder. Until the exercise of this Warrant, the Registered Holder shall not have or exercise any rights by virtue hereof as a stockholder of the Company. Notwithstanding the foregoing, in the event (a) the Company effects a split of the Common Stock by means of a stock dividend and the Purchase Price of and the number of Warrant Shares are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend) and (b) the Registered Holder exercises this Warrant between the record date and the distribution date for such stock dividend, the Registered Holder shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

14. Amendment. This Warrant may be amended only by a writing signed by both the Company and the Registered Holder (or their respective successors or assigns).

15. Construction. The section headings in this Warrant are for the convenience of the parties and in no way alter, modify, amend, limit or restrict the contractual obligations of the parties. The word "including" as used herein shall not be construed so as to exclude any other thing not referred to or described. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby and the parties will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

16. Governing Law; Waiver of Jury Trial. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware. Each of the Company and the Registered Holder hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the transaction documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, or that such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Each of the Company and the Registered Holder hereby waives all rights to a trial by jury.

17. Facsimile Signature. This Warrant may be executed by facsimile signature.

EXECUTED as of the Date of Issuance indicated above.

ASPEN TECHNOLOGY, INC.

By: _____
Title: _____

ATTEST:

Secretary

Exhibit I

PURCHASE FORM

To: Aspen Technology, Inc.

Dated: _____

The undersigned is the Registered Holder of Warrant No. WD-_____ (the "Warrant") issued by Aspen Technology, Inc., a Delaware corporation (the "Company"). Capitalized terms used herein and not otherwise defined have the respective meanings set forth in the Warrant.

- a. The Warrant is currently exercisable to purchase a total of _____ Warrant Shares.
- b. The undersigned Holder hereby exercises its right to purchase _____ Warrant Shares pursuant to the Warrant.
- c. The Holder intends that payment of the Purchase Price shall be made as (check one):
 "Cash Exercise" under subsection 9(a)
 "Cashless Exercise" under subsection 9(b)
- d. If the holder has elected a Cash Exercise, the holder shall pay the sum of \$ _____ to the Company in accordance with the terms of the Warrant.
- e. Pursuant to this exercise, the Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

Following this exercise, the Warrant shall be exercisable to purchase a total of _____ The undersigned represents and warrants to the Company that: (a) it is an “accredited investor” as defined in Rule 501(a) under the Securities Act of 1933, as amended (the “Securities Act”); (b) it has made such inquiry concerning the Company and its business and personnel as it has deemed appropriate; (c) it has sufficient knowledge and experience in finance and business that it is capable of evaluating the risks and merits of its investment in the Company; and (d) if it is paying the Purchase Price by “Cash Exercise” pursuant to subsection 9(a), it is acquiring the shares of Common Stock by exercise hereof for investment and not with a view to the resale or distribution of such shares or any interest therein other than in a transaction that is registered or exempt from registration under the Securities Act; provided that such representation is without prejudice to the undersigned’s right to dispose of such shares of Common Stock in compliance with applicable securities laws.

Dated: _____, _____

Name of Holder:

(Print) _____

By: _____

Name: _____

Title: _____

(Signature must conform in all respects to name of holder as specified on the face of the Warrant)

I-1

Exhibit II

ASSIGNMENT FORM

FOR VALUE RECEIVED, _____ hereby sells, assigns and transfers all of the rights of the undersigned under the attached Warrant (No. WD- _____) with respect to the number of shares of Common Stock of Aspen Technology, Inc. covered thereby set forth below, unto:

<u>Name of Assignee</u>	<u>Address</u>	<u>No. of Shares</u>

Dated: _____

Signature: _____

II-1

On August 14, 2003, we issued warrants, in the form of the attached warrant, to the following investors to purchase the indicated number of shares:

<u>Name of Warrant Holder</u>	<u>Number of Shares</u>
Pine Ridge Financial Inc.	381,349
Smithfield Fiduciary LLC	279,832
Perseverance LLC	129,863

THESE SECURITIES HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN COMPLIANCE WITH APPLICABLE STATE SECURITIES OR BLUE SKY LAWS. THESE SECURITIES AND THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

Warrant No. WB - _____ Number of Shares: _____
(subject to adjustment)

Date of Issuance: August 14, 2003

Original Issue Date (as defined in subsection 2(a)(i)(B)): August 14, 2003

ASPEN TECHNOLOGY, INC.

Common Stock Purchase Warrant

(Void after _____, 2007)

Aspen Technology, Inc., a Delaware corporation (the "Company"), for value received, hereby certifies that _____, or its registered assigns (the "Registered Holder"), is entitled, subject to the terms and conditions set forth below, to purchase from the Company, at any time or from time to time on or after the date of issuance and on or before 5:00 p.m. (Eastern time) on _____, 2007, _____ shares of Common Stock, \$0.10 par value per share, of the Company ("Common Stock"), at a purchase price of \$4.08 per share. The shares purchasable upon exercise of this Warrant, and the purchase price per share, each as adjusted from time to time pursuant to the provisions of this Warrant, are hereinafter referred to as the "Warrant Shares" and the "Purchase Price," respectively.

1. Exercise

(a) Exercise for Cash. The Registered Holder may, at its option, elect to exercise this Warrant, in whole or in part and at any time or from time to time, by surrendering this Warrant, with the purchase form appended hereto as Exhibit I duly executed by or on behalf of the Registered Holder, at the principal office of the Company, or at such other office or agency as the Company may designate, accompanied by payment in full, in lawful money of the United States, of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise.

(b) Cashless Exercise

(i) The Registered Holder may, at its option, elect to exercise this Warrant, in whole or in part from time to time, on a cashless basis, by surrendering this Warrant, with the purchase form appended hereto as Exhibit I duly executed by or on behalf of the Registered Holder, at the principal office of the Company, or at such other office or agency as the Company may designate, by canceling a portion of this Warrant in payment of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise, *provided* that the Registered Holder may not elect to exercise this Warrant on a cashless basis to purchase shares

of Common Stock that are the subject of (and may be freely resold under) a then-effective registration statement under the Securities Act of 1933, as amended (the "Act"). In the event of an exercise pursuant to this subsection 1(b), the number of Warrant Shares issued to the Registered Holder shall be determined according to the following formula:

$$X = \frac{Y(A-B)}{A}$$

Where: X = the number of Warrant Shares that shall be issued to the Registered Holder;

Y = the number of Warrant Shares for which this Warrant is being exercised (which shall include both the number of Warrant Shares issued to the Registered Holder and the number of Warrant Shares subject to the portion of the Warrant being cancelled in payment of the Purchase Price);

A = the Fair Market Value (as defined below) of one share of Common Stock; and

B = the Purchase Price then in effect.

(ii) The Fair Market Value per share of Common Stock shall be determined as follows:

(A) If the Common Stock is listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the average of the high and low reported sale prices per share of Common Stock thereon on the trading day immediately preceding the Exercise Date, *provided* that if no such price is reported on such day, the Fair Market Value per share of Common Stock shall be determined pursuant to clause (B) below.

(B) If the Common Stock is not listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the amount most recently determined by the Board of Directors of the Company to represent the fair market value per share of the Common Stock (including a determination for purposes of granting Common Stock options or issuing Common Stock under any plan, agreement or arrangement with employees of the Company); and, upon request of the Registered Holder, such Board (or a representative thereof) shall, as promptly as reasonably practicable but in any event not later than 20 days after such request, notify the Registered Holder of the Fair Market Value per share of Common Stock and furnish the Registered Holder with reasonable documentation of such Board's determination of such Fair Market Value. Notwithstanding the foregoing, if the Board has not made such a determination within the three-month period prior to the Exercise Date, then (a) the Board shall make, and shall provide or cause to be provided to the Registered Holder notice of, a determination of the Fair Market Value per share of the Common Stock within 15 days of a request by the Registered Holder that it do so, and (b) the exercise of this Warrant pursuant to this subsection 1(b) shall be delayed until such determination is made and notice thereof is provided to the Registered Holder.

(c) Exercise Date. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the day on which this Warrant shall have been surrendered to the Company as provided in subsection 1(a) or 1(b) above (the "Exercise Date"). At

such time, the person or persons in whose name or names any certificates for Warrant Shares shall be issuable upon such exercise as provided in subsection 1(d) below shall be deemed to have become the holder or holders of record of the Warrant Shares represented by such certificates. The Company shall use all commercially reasonable efforts to deliver Warrant Shares hereunder electronically through the Depository Trust Corporation or another established clearing corporation performing similar functions.

(d) Issuance of Certificates. As soon as practicable after the exercise of this Warrant in whole or in part, and in any event within three Trading Days (as defined below) thereafter, the Company, at its expense, shall cause to be issued in the name of, and delivered to, the Registered Holder, or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct:

- (i) a certificate or certificates for the number of full Warrant Shares to which the Registered Holder shall be entitled upon such exercise plus, in lieu of any fractional share to which the Registered Holder would otherwise be entitled, cash in an amount determined pursuant to Section 3 below; and
- (ii) in case such exercise is in part only, a new warrant or warrants of like tenor, calling in the aggregate on the face or faces thereof for the number of Warrant Shares equal (without giving effect to any adjustment therein) to the number of such shares called for on the face of this Warrant minus the number of Warrant Shares for which this Warrant was so exercised.

For purposes of this Warrant, "Trading Day" shall mean (a) any day on which the Common Stock is listed on the Nasdaq National Market or another nationally recognized trading system on which the Common Stock is then listed or quoted or (b) if the Common Stock is not then listed or quoted on the Nasdaq National Market or another nationally recognized trading system, then a day on which trading occurs on the New York Stock Exchange (or any successor thereto).

2. Adjustments

(a) Adjustments to Purchase Price for Diluting Issues

(i) Special Definitions. For purposes of this Section 2, the following definitions shall apply:

(A) "Option" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(B) "Original Issue Date" shall mean the date on which this Warrant was first issued (or, if this Warrant was issued upon partial exercise of, or in replacement of, another warrant of like tenor, then the date on which such original warrant was first issued).

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to subsection 2(a)(iii) below, deemed to be issued) by the Company after the Original Issue Date, other than shares of Common Stock issued,

issuable or deemed issued:

- (I) as a dividend or distribution on Series D-1 Convertible Preferred Stock or Series D-2 Convertible Preferred Stock of the Company;

- (II) by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by subsection 2(b) or 2(c) below;
- (III) to employees or directors of, or consultants to, the Company or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Company and by a majority of the directors of the Company who are eligible to serve on the Audit Committee of such Board under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market (or such other trading or quotation facility on which the Common Stock is then listed);
- (IV) to Accenture LLP pursuant to agreements in effect on June 1, 2003; or
- (V) in connection with any transaction with any strategic investor, vendor or customer, lessor, customer, supplier, marketing partner, developer or integrator or any similar arrangement, in each case the primary purpose of which is not to raise equity capital, *provided* such issuance is approved by the Board of Directors of the Company and by a majority of the directors of the Company who are eligible to serve on the Audit Committee of such Board under the then-applicable rules of the Securities and Exchange Commission and the Nasdaq National Market (or such other trading or quotation facility on which the Common Stock is then listed).

(ii) No Adjustment of Purchase Price. No adjustment of the Purchase Price shall be made as the result of the issuance of Additional Shares of Common Stock if the consideration per share (determined pursuant to subsection 2(a)(v)) for such Additional Share of Common Stock issued or deemed to be issued by the Company is equal to or greater than the Purchase Price in effect immediately prior to the issuance or deemed issuance of such Additional Shares of Common Stock.

(iii) Issue of Securities to be a Deemed Issue of Additional Shares of Common Stock

(A) If the Company at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which, upon exercise, conversion or exchange thereof, would entitle the holder thereof to receive shares of Common Stock that are specifically excepted from the definition of Additional Shares of Common Stock by subsection 2(a)(i)(D) above) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(B) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Purchase Price pursuant to the terms of subsection 2(a)(iv) below, are revised (either automatically pursuant the provisions contained therein or as a result of an amendment to such terms) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Company upon such exercise, conversion or exchange, then, effective upon such increase or decrease becoming effective, the Purchase Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Purchase Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no adjustment pursuant to this clause (B) shall have the effect of increasing the Purchase Price to an amount which exceeds the lower of (i) the Purchase Price on the original adjustment date, or (ii) the Purchase Price that would have resulted from any issuances of Additional Shares of Common Stock between the original adjustment date and such readjustment date.

(C) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which, upon exercise, conversion or exchange thereof, would entitle the holder thereof to receive shares of Common Stock which are specifically excepted from the definition of Additional Shares of Common Stock by subsection 2(a)(i)(D) above), the issuance of which did not result in an adjustment to the Purchase Price pursuant to the terms of subsection 2(a)(iv) below (either because the consideration per share (determined pursuant to subsection 2(a)(v) hereof) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Purchase Price then in effect, or because such Option or Convertible Security was issued before the Original Issue Date), are revised after the Original Issue Date (either automatically pursuant the provisions contained therein or as a result of an amendment to such terms) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Company upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in subsection 2(a)(iii)(A) above) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(D) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged (as applicable) Convertible Security which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Purchase Price pursuant to the terms of subsection 2(a)(iv) below, the Purchase Price shall be readjusted to such Purchase Price as would have obtained had such Option or Convertible Security never been issued.

(E) No adjustment in the Purchase Price shall be made upon the issue of shares of Common Stock or Convertible Securities upon the exercise of Options or the issue of shares of Common Stock upon the conversion or exchange of Convertible Securities.

(iv) Adjustment of Purchase Price Upon Issuance of Additional Shares of Common Stock. In the event the Company shall at any time after the Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed

to be issued pursuant to subsection 2(a)(iii)), without consideration or for a consideration per share less than the Purchase Price in effect immediately prior to such issue, then the Purchase Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying such Purchase Price by a fraction, (A) the numerator of which shall be (1) the number of shares of Common Stock outstanding immediately prior to such issue plus (2) the number of shares of Common Stock which the aggregate consideration received or to be received by the Company for the total number of Additional Shares of Common Stock so issued would purchase at such Purchase Price; and (B) the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued; *provided* that (i) for the purpose of this subsection 2(a)(iv), all shares of Common Stock issuable upon conversion or exchange of shares of Series D Convertible Preferred Stock of the Company, Options or Convertible Securities outstanding immediately prior to such issue or upon exercise of such securities shall be deemed to be outstanding, and (ii) the number of shares of Common Stock deemed issuable upon conversion or exchange of such outstanding shares of Series D Convertible Preferred Stock, Options or Convertible Securities and upon the exercise of such outstanding securities shall be determined without giving effect to any adjustments to the conversion or exchange price or conversion or exchange rate of such securities or the exercise price or number of shares issuable upon exercise of such outstanding securities resulting from the issuance of Additional Shares of Common Stock that is the subject of this calculation.

(v) Determination of Consideration. For purposes of this subsection 2(a), the consideration received by the Company for the issue of any Additional Shares of Common Stock shall be computed as follows:

(A) Cash and Property. Such consideration shall:

- (I) insofar as it consists of cash, be computed at the aggregate of cash received by the Company, excluding amounts paid or payable for accrued interest;
- (II) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors of the Company; and
- (III) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Company for consideration that covers both, be the proportion of such consideration so received, computed as provided in clauses (I) and (II) above, as determined in good faith by the Board of Directors of the Company.

(B) Options and Convertible Securities. The consideration per share received by the Company for Additional Shares of Common Stock deemed to have been issued pursuant to subsection 2(a)(iii), relating to Options and Convertible Securities, shall be determined by dividing

- (I) the total amount, if any, received or receivable by the Company as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Company upon the exercise of such Options or the

conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

- (II) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities.

(vi) Multiple Closing Dates. In the event the Company shall issue on more than one date Additional Shares of Common Stock which are comprised of shares of the same series or class of Preferred Stock, and such issuance dates occur within a period of no more than 60 days, then, upon the final such issuance, the Purchase Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the final such issuance (and without giving effect to any adjustments as a result of such prior issuances within such period).

(b) Adjustment for Stock Splits and Combinations. If the Company shall at any time or from time to time after the Original Issue Date effect a subdivision of the outstanding Common Stock, the Purchase Price then in effect immediately before that subdivision shall be proportionately decreased. If the Company shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock, the Purchase Price then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision or combination becomes effective.

(c) Adjustment for Certain Dividends and Distributions. In the event the Company at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Purchase Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Purchase Price then in effect by a fraction:

- (i) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and
- (ii) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution;

provided, however, that if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Purchase Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Purchase Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends or distributions.

(d) Adjustment in Number of Warrant Shares. When any adjustment is required to be made in the Purchase Price pursuant to subsection 2(a), 2(b) or 2(c) above, the number of Warrant Shares purchasable upon the exercise of this Warrant shall be changed to the number determined by

dividing (i) an amount equal to the number of shares issuable upon the exercise of this Warrant immediately prior to such adjustment, multiplied by the Purchase Price in effect immediately prior to such adjustment, by (ii) the Purchase Price in effect immediately after such adjustment.

(e) Adjustments for Other Dividends and Distributions. In the event the Company at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Company (other than shares of Common Stock) or in cash or other property, then in each such event the Purchase Price in effect immediately prior to the record date fixed for determination of stockholders entitled to receive such dividend or distribution shall be reduced (effective on such record date) by the then fair market value of the distributed property distributed in respect of one outstanding share of Common Stock, as determined in good faith by the Company's Board of Directors. In such event, the Registered Holder, after receipt of the determination by the Company's Board of Directors, shall have the right to request that the Company select an appraiser (which shall be a nationally recognized investment banking firm or accounting firm), and the Registered Holder shall select an additional such appraiser and such fair market value shall be deemed to equal the average of the values determined by each of the appraisers. As an alternative to the foregoing adjustment to the Purchase Price, at the request of the Registered Holder delivered before the thirtieth day after such record date, provision shall be made so that the Registered Holder shall receive upon exercise hereof, in addition to the number of shares of Common Stock issuable hereunder, the kind and amount of securities of the Company, cash or other property that the Registered Holder would have been entitled to receive had this Warrant been exercised on the date of such event and had the Registered Holder thereafter, during the period from the date of such event to and including the Exercise Date, retained any such securities receivable during such period, giving application to all adjustments called for during such period under this Section 2 with respect to the rights of the Registered Holder.

(f) Fundamental Transactions. If, at any time while this Warrant is outstanding, (i) the Company effects any merger or consolidation of the Company with or into another Person, (ii) the Company effects any sale of all or substantially all of its assets in one or a series of related transactions, (iii) any tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to tender or exchange their shares for other securities, cash or property, or (iv) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (in any such case, a "Fundamental Transaction"), then the Holder shall have the right thereafter to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant (the "Alternate Consideration"). The aggregate Exercise Price for this Warrant will not be affected by any such Fundamental Transaction, but the Company shall apportion such aggregate Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. At the Holder's request, any successor to the Company or surviving entity in such Fundamental Transaction shall issue to the Holder a new warrant evidencing the Holder's right to purchase the Alternate Consideration for the aggregate Exercise Price upon exercise thereof and consistent with the foregoing provisions, provided that (i) the covenant set forth in Section 9 relating to the reservation of Common Stock shall be replaced with a covenant to the effect that sufficient

Alternate Consideration shall be reserved for issuance upon exercise of the Warrants and (ii) the terms of subsection 2(a) shall be deleted. The terms of any agreement pursuant to which a Fundamental Transaction is effected shall include terms requiring any such successor or surviving entity to comply with the provisions of this paragraph (f) and ensuring that the Warrant (or any such replacement security) will be similarly adjusted upon any subsequent transaction analogous to a Fundamental Transaction. If any Fundamental Transaction constitutes or results in a "Rule 13e-3 transaction" within the meaning of Rule 13d-3 under the Securities Exchange Act of 1934, as amended, or any other transaction in which holders of Common Stock receive (or the Registered Holder would receive a warrant to acquire) consideration other than freely tradable securities of a public reporting company, then, at the request of the Holder delivered before the thirtieth day after such Fundamental Transaction, the Company (or any such successor or surviving entity) will purchase this Warrant from the Holder for a purchase price, payable in cash within five Trading Days after such request (or, if later, on the effective date of the Fundamental Transaction), equal to the value of the remaining unexercised portion of this Warrant on the date of such request, which value shall be determined by use of the Black and Scholes Option Pricing Model reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of this Warrant as of such date of request and (ii) an expected volatility equal to the lesser of 50% and the expected volatility then used by the Company in valuing options for purposes of preparing its consolidated financial statements.

(g) Rounding of Calculations; Minimum Adjustments. All calculations under this Section 2 shall be made to the nearest one tenth of a cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Corporation, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

(h) Certificate as to Adjustments. Upon the occurrence of each adjustment pursuant to this Section 2, the Company at its expense will promptly compute such adjustment in accordance with the terms hereof and prepare a certificate describing in reasonable detail such adjustment and the transactions giving rise thereto, including all facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Registered Holder and to the Company's Transfer Agent. The Company shall, as promptly as reasonably practicable after the written request at any time of the Registered Holder (but in any event not later than 20 days thereafter), furnish or cause to be furnished to the Registered Holder a certificate setting forth (i) the Purchase Price then in effect and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property that then would be received upon the exercise of this Warrant.

3. Fractional Shares. The Company shall not be required upon the exercise of this Warrant to issue any fractional shares, but shall pay the value thereof to the Registered Holder in cash on the basis of the Fair Market Value per share of Common Stock, determined as follows:

(a) If the Common Stock is listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the average of the high and low reported sale prices per share of Common Stock thereon on the trading day immediately preceding the Exercise Date, *provided* that if no such price is reported on such day, the Fair Market Value per share of Common Stock shall be determined pursuant to clause (b) below.

(b) If the Common Stock is not listed on a national securities exchange, the Nasdaq National Market or another nationally recognized trading system as of the Exercise Date, the Fair Market

Value per share of Common Stock shall be deemed to be the amount most recently determined by the Board of Directors of the Company to represent the fair market value per share of the Common Stock (including a determination for purposes of granting Common Stock options or issuing Common Stock under any plan, agreement or arrangement with employees of the Company); and, upon request of the Registered Holder, such Board (or a representative thereof) shall, as promptly as reasonably practicable but in any event not later than 20 days after such request, notify the Registered Holder of the Fair Market Value per share of Common Stock and furnish the Registered Holder with reasonable documentation of such Board's determination of such Fair Market Value.

4. Investment Representations. At the time of exercise of this Warrant, the Registered Holder of this Warrant shall be required to represent and warrant that that: (a) it is an "accredited investor" as defined in Rule 501(a) under the Securities Act of 1933, as amended (the "Securities Act"); (b) it has made such inquiry concerning the Company and its business and personnel as it has deemed appropriate; (c) it has sufficient knowledge and experience in finance and business that it is capable of evaluating the risks and merits of its investment in the Company; and (d) if it is paying the Purchase Price in cash pursuant to subsection 9(a), it is acquiring the shares of Common Stock by exercise hereof for investment and not with a view to the resale or distribution of such shares or any interest therein other than in a transaction that is registered or exempt from registration under the Securities Act; provided that such representation is without prejudice to the Registered Holder's right to dispose of such shares of Common Stock in compliance with applicable securities laws.

5. Transfers, etc.

(a) The Company shall maintain a register containing the name and address of the Registered Holder of this Warrant. The Registered Holder may change its address as shown on the warrant register by written notice to the Company requesting such change.

(b) Subject to the provisions of this Section 5 and the Investor Rights Agreement, this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant with a properly executed assignment (in the form of Exhibit II hereto) at the principal office of the Company (or, if another office or agency has been designated by the Company for such purpose, then at such other office or agency).

6. No Impairment. The Company shall not, by amendment of its charter or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but shall at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Registered Holder against impairment. The Company's obligations to issue and deliver Warrant Shares subject to and in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by the Registered Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Registered Holder or any other person of any obligation to the Company or any violation or alleged violation of law by the Registered Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Company to the Registered Holder in connection with the issuance of Warrant Shares. Nothing herein shall limit a Registered Holder's right to pursue any other remedies available to it hereunder, at law or in equity including a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing shares of Common Stock upon exercise of this Warrant as required pursuant to the terms hereof.

7. Notices of Record Date, etc. In the event:

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- (a) the Company shall take a record of the holders of its Common Stock (or other stock or securities at the time deliverable upon the exercise of this Warrant) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of stock of any class or any other securities, or to receive any other right; or
 - (b) of any capital reorganization of the Company, any reclassification of the Common Stock of the Company, any consolidation or merger of the Company with or into another corporation (other than a consolidation or merger in which the Company is the surviving entity and its Common Stock is not converted into or exchanged for any other securities or property), or any transfer of all or substantially all of the assets of the Company; or
 - (c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then, and in each such case, the Company will send or cause to be sent to the Registered Holder a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other stock or securities at the time deliverable upon the exercise of this Warrant) shall be entitled to exchange their shares of Common Stock (or such other stock or securities) for securities or other property deliverable upon such reorganization,

reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up. Such notice shall be sent at least 10 days prior to the record date or effective date for the event specified in such notice.

8. Charges, Taxes and Expenses. The Company shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon exercise of this Warrant. The Company shall not, however, be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of Warrant Shares or Warrants in a name other than that in which this Warrant is registered.

9. Reservation of Stock. The Company shall at all times reserve and keep available, solely for issuance and delivery upon the exercise of this Warrant, such number of Warrant Shares and other securities, cash and/or property, as from time to time shall be issuable upon the exercise of this Warrant. If the number of shares of Common Stock so reserved is insufficient, in addition to any other remedy available to the Registered Holder, the Company shall take any corporate action that is necessary to make available a sufficient number of authorized but unissued and otherwise unreserved shares of Common Stock within 60 days after the occurrence of such deficiency.

10. Exchange or Replacement of Warrants

(a) Upon the surrender by the Registered Holder, properly endorsed, to the Company at the principal office of the Company, the Company shall, subject to the provisions of Section 5 above, issue and deliver to or upon the order of the Registered Holder, at the Company's expense, a new Warrant or Warrants of like tenor, in the name of the Registered Holder or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock (or other securities, cash and/or property) then issuable upon exercise of this Warrant.

(b) Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and (in the case of loss, theft or destruction) upon delivery of an indemnity agreement to the Company, or (in the case of mutilation) upon surrender and

cancellation of this Warrant, the Company will issue, in lieu thereof, a new Warrant of like tenor.

11. Limitation on Exercise. Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by the Registered Holder upon any exercise of this Warrant (or otherwise in respect hereof) shall be limited to the extent necessary to ensure that, following such exercise (or other issuance), the total number of shares of Common Stock then beneficially owned by such Registered Holder and its affiliates and any other individuals or entities whose beneficial ownership of Common Stock would be aggregated with the Registered Holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.999% (the "Maximum Percentage") of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise). For such purposes, beneficial ownership shall be determined in accordance with Section 13(d) of such Securities Exchange Act and the rules and regulations promulgated thereunder. Each delivery of a notice of exercise of this Warrant pursuant to Section 1 above will constitute a representation by the Registered Holder that it has evaluated the limitation set forth in this paragraph and determined that issuance of the full number of Warrant Shares requested in such notice of Exercise is permitted under this paragraph. The Company's obligation to issue shares of Common Stock in excess of the limitation referred to in this Section 11 shall be suspended (and shall not terminate or expire notwithstanding any contrary provisions hereof) until such time, if any, as such shares of Common Stock may be issued in compliance with such limitation. By written notice to the Company, the Registered Holder may waive the provisions of this Section 11 or increase or decrease the Maximum Percentage to any other percentage specified in such notice, but (a) any such waiver or increase will not be effective until the sixty-first day after such notice is delivered to the Company and (b) any such waiver or increase or decrease will apply only to the Registered Holder and not to any other holder of warrants issued by the Company.

12. Notices. All notices and other communications from the Company to the Registered Holder in connection herewith shall be mailed by certified or registered mail, postage prepaid, or sent via a reputable nationwide overnight courier service guaranteeing next business day delivery, to the address last furnished to the Company in writing by the Registered Holder. All notices and other communications from the Registered Holder to the Company in connection herewith shall be mailed by certified or registered mail, postage prepaid, or sent via a reputable nationwide overnight courier service guaranteeing next business day delivery, to the Company at its principal office set forth below. If the Company should at any time change the location of its principal office to a place other than as set forth below, it shall give prompt written notice to the Registered Holder and thereafter all references in this Warrant to the location of its principal office at the particular time shall be as so specified in such notice. All such notices and communications shall be deemed delivered (a) two business days after being sent by certified or registered mail, return receipt requested, postage prepaid, or (b) one business day after being sent via a reputable nationwide overnight courier service guaranteeing next business day delivery.

13. No Rights as Stockholder. Until the exercise of this Warrant, the Registered Holder shall not have or exercise any rights by virtue hereof as a stockholder of the Company. Notwithstanding the foregoing, in the event (a) the Company effects a split of the Common Stock by means of a stock dividend and the Purchase Price of and the number of Warrant Shares are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend) and (b) the Registered Holder exercises this Warrant between the record date and the distribution date for such stock dividend, the Registered Holder shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

14. Amendment. This Warrant may be amended only by a writing signed by both the Company and the Registered Holder (or their respective successors or assigns).

15. Construction. The section headings in this Warrant are for the convenience of the parties and in no way alter, modify, amend, limit or restrict the contractual obligations of the parties. The word "including" as used herein shall not be construed so as to exclude any other thing not referred to or described. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby and the parties will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

16. Governing Law; Waiver of Jury Trial. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware. Each of the Company and the Registered Holder hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the transaction documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, or that such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Each of the Company and the Registered Holder hereby waives all rights to a trial by jury.

17. Facsimile Signature. This Warrant may be executed by facsimile signature.

EXECUTED as of the Date of Issuance indicated above.

ASPEN TECHNOLOGY, INC.

By: _____
Title: _____

ATTEST:

Secretary

Exhibit I

PURCHASE FORM

To: Aspen Technology, Inc.

Dated:

The undersigned is the Registered Holder of Warrant No. WB- (the "Warrant") issued by Aspen Technology, Inc., a Delaware corporation (the "Company"). Capitalized terms used herein and not otherwise defined have the respective meanings set forth in the Warrant.

- a. The Warrant is currently exercisable to purchase a total of _____ Warrant Shares.
- b. The undersigned Holder hereby exercises its right to purchase _____ Warrant Shares pursuant to the Warrant.
- c. The Holder intends that payment of the Purchase Price shall be made as (check one):
 - “Cash Exercise” under subsection 9(a)
 - “Cashless Exercise” under subsection 9(b)
- d. If the holder has elected a Cash Exercise, the holder shall pay the sum of \$ _____ to the Company in accordance with the terms of the Warrant.
- e. Pursuant to this exercise, the Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

Following this exercise, the Warrant shall be exercisable to purchase a total of _____. The undersigned represents and warrants to the Company that: (a) it is an "accredited investor" as defined in Rule 501(a) under the Securities Act of 1933, as amended (the "Securities Act"); (b) it has made such inquiry concerning the Company and its business and personnel as it has deemed appropriate; (c) it has sufficient knowledge and experience in finance and business that it is capable of evaluating the risks and merits of its investment in the Company; and (d) if it is paying the Purchase Price by "Cash Exercise" pursuant to subsection 9(a), it is acquiring the shares of Common Stock by exercise hereof for investment and not with a view to the resale or distribution of such shares or any interest therein other than in a transaction that is registered or exempt from registration under the Securities Act; provided that such representation is without prejudice to the undersigned's right to dispose of such shares of Common Stock in compliance with applicable securities laws.

Dated: _____, _____

Name of Holder:
(Print) _____
By: _____
Name: _____
Title: _____

(Signature must conform in all respects to name of holder as specified on the face of the Warrant)

ASSIGNMENT FORM

FOR VALUE RECEIVED, _____ hereby sells, assigns and transfers all of the rights of the undersigned under the attached Warrant (No. WB- _____) with respect to the number of shares of Common Stock of Aspen Technology, Inc. covered thereby set forth below, unto:

Name of Assignee	Address	No. of Shares

Dated: _____

Signature: _____