
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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): April 22, 2009

Mercury Computer Systems, Inc.

(Exact Name of Registrant as Specified in Charter)

Massachusetts
(State or Other Jurisdiction
of Incorporation)

000-23599
(Commission File Number)

04-2741391
(IRS Employer
Identification No.)

199 Riverneck Road, Chelmsford, Massachusetts
(Address of Principal Executive Offices)

01824
(Zip Code)

Registrant's telephone number, including area code: (978) 256-1300

Not Applicable

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 5.02 Departure of Directors or Principal Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

(a), (b), (c), and (d): Not applicable.

(e) On April 22, 2009, the Board of Directors of Mercury Computer Systems, Inc. (the “Company”) approved an amendment to the Company’s 2005 Stock Incentive Plan (the “2005 Plan”). As a result of the amendment, Section 12 (“Change of Control”) of the 2005 Plan was deleted in its entirety and replaced with the following:

SECTION 12. CHANGE OF CONTROL

(a) Occurrence of Change of Control. If within six months following the consummation of a Change of Control of the Company, as defined in Section 12(b)(i), the employment of a grantee with a minimum of six months of service with the Company or any of its Subsidiaries as of the effective date of such Change of Control (the “Effective Date”) is involuntarily terminated, then (i) if such Change in Control does not constitute a Sale Event, 50% of the unvested Awards of such grantee will automatically be fully vested, (ii) if such Change in Control constitutes a Sale Event and provision is made for the assumption or continuation of Awards hereunder, or the substitution of such Awards with new Awards of the successor entity or parent thereof, 50% of the unvested assumed, continued or substituted Awards will automatically be fully vested, and (iii) if such Change in Control constitutes a Sale Event and provision is not made for the assumption, continuation or substitution of Awards hereunder, such that all of the unvested Awards of such grantee terminated upon consummation of the Sale Event without any payment with respect thereto, the grantee will be entitled to receive a cash payment equal to the difference between (x) the Sale Price multiplied by the number of shares of Stock subject to 50% of such grantee’s unvested Awards as of the consummation of the Sale Event and (y) the aggregate exercise price of such unvested Awards. Notwithstanding the foregoing, in the event that the fair market value (less any exercise price) of the Awards subject to automatic vesting or any cash payment to which the grantee may become entitled in accordance with the preceding sentence exceeds \$25,000 as of the date of termination of employment, then such vesting or payment shall be conditioned upon the grantee executing and failing to revoke during any applicable revocation period a general release of all claims against the Company and its Subsidiaries and affiliates in a form acceptable to the Company or its successor within 60 days of such termination. For purposes hereof, a grantee’s employment with the Company or any Subsidiary is considered “involuntarily terminated” if the Company or any Subsidiary terminates such grantee’s employment with the Company or such Subsidiary without Cause, as defined in Section 12(b)(ii), or such grantee resigns his or her employment with the Company or such Subsidiary for Good Reason, as defined in Section 12(b)(iii). Notwithstanding the foregoing, in the event the Change of Control of the Company is not approved by the Board of Directors, all of the outstanding Awards will automatically become fully vested upon the consummation of the Change of Control of the Company.

(b) Definitions. For purposes of the Plan:

(i) A “Change of Control of the Company” shall be deemed to have occurred upon the occurrence of any of the following events:

(A) any “Person,” as such term is used in Sections 13(d) and 14(d) of the Exchange Act (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all “affiliates” and “associates” (as such terms are defined in Rule 12b-2 under the Exchange Act) of such person, shall become the “beneficial owner” (as such term is

defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 50 percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board of Directors ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company or an acquisition of securities involving a Corporate Transaction of the type described in the exclusion set forth in clause (C) below); or

(B) persons who, as of the date hereof, constitute the Company's Board of Directors (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the date hereof shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by either (x) a vote of at least a majority of the Incumbent Directors or (y) a vote of at least a majority of the Incumbent Directors who are members of a nominating committee comprised, in the majority, of Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board of Directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(C) the consummation of a consolidation, merger or consolidation or sale or other disposition of all or substantially all of the assets of the Company (a "Corporate Transaction"); excluding, however, a Corporate Transaction in which the shareholders of the Company immediately prior to the Corporate Transaction, would, immediately after the Corporate Transaction, beneficially own (as such term is defined in Rule 13d-3 under the Exchange Act), directly or indirectly, shares representing in the aggregate more than 50 percent of the voting shares of the corporation issuing cash or securities in the Corporate Transaction (or of its ultimate parent corporation, if any).

Notwithstanding the foregoing, a "Change of Control of the Company" shall not be deemed to have occurred for purposes of the foregoing clause (A) solely as the result of an acquisition of securities by the Company that, by reducing the number of shares of Voting Securities outstanding, increases the proportionate number of shares of Voting Securities beneficially owned by any person to 50 percent or more of the combined voting power of all then outstanding Voting Securities; provided, however, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns 50 percent or more of the combined voting power of all then outstanding Voting Securities, then a "Change of Control of the Company" shall be deemed to have occurred for purposes of the foregoing clause (A).

(ii) "Cause" shall mean (A) conduct by the grantee constituting a material act of willful misconduct in connection with the performance of his or her duties, including, without limitation, misappropriation of funds or property of the Company or any of its Subsidiaries other than the occasional, customary and de minimis use of the Company or its

Subsidiaries' property for personal purposes; (B) the commission by the grantee of any felony or a misdemeanor involving moral turpitude, deceit, dishonesty or fraud, or any conduct by the grantee that would reasonably be expected to result in material injury to the Company or any of its Subsidiaries; (C) the grantee's willful and continued failure to perform his or her duties with the Company and its Subsidiaries (other than any failure resulting from incapacity due to physical or mental illness), which continues 30 days after a written demand of performance is delivered to the grantee by any Senior Vice President or Vice President of the Company, which identifies the manner in which such person believes that the grantee has not performed his or her duties; (D) a violation by the grantee of the employment policies of the Company and its Subsidiaries which has continued following written notice of such violation from any Senior Vice President or Vice President of the Company; or (E) the grantee's willful failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company or any of its Subsidiaries to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the willful inducement of others to fail to cooperate or to produce documents or other materials.

(iii) "Good Reason" shall mean (A) a reduction in the grantee's annual cash base salary as in effect on the Effective Date, except for across-the-board reductions similarly affecting all or substantially all Company employees; or (B) a relocation whereby the Company or any Subsidiary requires the grantee to be principally based at any office or location that is more than 50 miles from the grantee's office on the Effective Date; provided that the reasons set forth above will not constitute "Good Reason" unless, within 30 days after the first occurrence of such Good Reason event, the grantee shall have given written notice to the Company specifically identifying the event that the grantee believes constitutes Good Reason and the Company, or, if applicable, its Subsidiary, has not remedied such event within a reasonable cure period of not less than 30 days after the Company's receipt of such notice.

SIGNATURES

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 thereunto duly authorized.

Dated: April 24, 2009

MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Alex A. Van Adzin

Alex A. Van Adzin

Vice President, General Counsel, and Corporation Secretary