
**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): May 27, 2008

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) and (b): Not applicable.

(c): Effective May 27, 2008, Mercury Computer Systems, Inc. (the “Company”) appointed Karl D. Noone as Vice President, Controller and designated him as the Company’s principal accounting officer. Prior to assuming his position with the Company, Mr. Noone, age 39, had been Senior Vice President and Corporate Controller of Digitas, Inc., a digital marketing and media company, since 2005. He also served as Senior Vice President and Corporate Controller of Authorize.Net, Inc., a transaction processing company from 2004 – 2005. From 2002 – 2004, Mr. Noone was Senior Vice President of Finance for CentrePath, Inc., a provider of data center networking solutions.

It is expected that the Company will enter into a change of control severance agreement with Mr. Noone in substantially the same form as with the Company’s executive officers. A summary description of the terms of this change of control severance agreement is included in the Company’s proxy statement filed with the Securities and Exchange Commission on October 12, 2007 under the heading “Executive Compensation – Change in Control Arrangements,” which description is incorporated herein by reference.

Subject to the approval of the Compensation Committee and in connection with his appointment, it is expected that Mr. Noone will be granted an option to purchase 40,000 shares of the Company’s common stock.

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: June 2, 2008

MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Alex A. Van Adzin
Alex A. Van Adzin
Vice President, General Counsel,
and Corporation Secretary