

SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G  
(Rule 13d-102)  
Information statement pursuant to Rules 13d-1 and 13d-2

Under the Securities Exchange Act of 1934  
(Amendment No.4)

Mercury Computer Systems Inc.  
(Name of Issuer)

Common Stock  
(Title of Class of Securities)

589378108  
(CUSIP Number)

Date of Event Which Requires Filing of this Statement: December 31, 2009

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 589378108 13G

1 NAME OF REPORTING PERSON

S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

Royce & Associates, LLC 52-2343049

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

(a)

(b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

New York

NUMBER OF 5 SOLE VOTING POWER

SHARES 3,205,549

BENEFICIALLY 6 SHARED VOTING POWER

OWNED BY

EACH 7 SOLE DISPOSITIVE POWER

REPORTING 3,205,549

PERSON 8 SHARED DISPOSITIVE POWER

WITH

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING

PERSON 3,205,549

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)

EXCLUDES CERTAIN SHARES

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

13.64%

12 TYPE OF REPORTING PERSON

IA

CUSIP No. 589378108 13G

Item 1(a) Name of Issuer:

Mercury Computer Systems Inc.

Item 1(b) Address of Issuer's Principal Executive Offices:

Investor Relations

199 Riverneck Road

Chelmsford, MA 1824

Item 2(a) Name of Persons Filing:

Royce & Associates, LLC

Item 2(b) Address of Principal Business Office, or, if None, Residence:

745 Fifth Avenue, New York, NY 10151

Item 2(c) Citizenship:

New York Corporation

Item 2(d) Title of Class of Securities:

Common Stock

Item 2(e) CUSIP Number:

589378108

Item 3 If this statement is filed pursuant to rules 13d-1(b), or 13d-2(b), check whether the person filing is a:

(a)  Broker or Dealer registered under Section 15 of the Act

(b)  Bank as defined in Section 3(a)(6) of the Act

- (c) [ ] Insurance Company as defined in Section 3(a)(19) of the Act
- (d) [ ] Investment Company registered under Section 8 of the Investment Company Act
- (e) [X] Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940
- (f) [ ] Employee Benefit Plan, Pension Fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund
- (g) [ ] Parent Holding Company, in accordance with Rule 13d-1 (b)(ii)(G)
- (h) [ ] Group

CUSIP No. 589378108 13G

Item 4 Ownership

- (a) Amount Beneficially Owned:  
3,205,549
- (b) Percent of Class:  
13.64%
- (c) Number of shares as to which such person has:

- (i) sole power to vote or to direct the vote  
3,205,549
- (ii) shared power to vote or to direct the vote
- (iii) sole power to dispose or to direct the disposition of  
3,205,549
- (iv) shared power to dispose or to direct the disposition of

Item 5 Ownership of Five Percent or Less of a Class. [ ]

Item 6 Ownership of More than Five Percent on Behalf of Another Person .

Various Accounts managed by Royce & Associates, LLC, have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of shares of the issuer.

The interest of one account, Royce Value Plus Fund an investment company registered under the Investment Company Act of 1940 and managed by Royce & Associates, LLC, amounted to 2,198,749 shares or 9.35% of the total shares outstanding.

Item 7 Identification and Classification of the Subsidiary Which Acquired The Security Being Reported on by the Parent Holding Company.

NOT APPLICABLE

Item 8 Identification and Classification of Members of the Group.

NOT APPLICABLE

Item 9 Notice of Dissolution of Group.

NOT APPLICABLE

CUSIP No. 589378108 13G

Item 10 Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement with respect to it is true, complete and correct.

Date: January 26, 2010

By: W. Whitney George, Vice President