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OMB APPROVAL  
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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G

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

OSI SYSTEMS INC  
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(Name of Issuer)

COMMON CIK 0001039065 IRS 330238801  
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(Title of Class of Securities)

671044105  
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(CUSIP Number)

Check the following box if a fee is being paid with this statement [ ]. (A fee is not required only if the filing person: (1) has a previous statement on file reporting beneficial ownership of more than five percent of the class of securities described in Item 1; and (2) has filed no amendment subsequent thereto reporting beneficial ownership of five percent or less of such class.) (See Rule 13d-7).

\*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 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).

## NAME OF REPORTING PERSON

1 S.S. or I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

ESSEX INVESTMENT MANAGEMENT COMPANY  
04-3409177

## CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2 (a)   
(b) 

## SEC USE ONLY

3

## CITIZENSHIP OR PLACE OF ORGANIZATION

4

MASSACHUSETTS

## SOLE VOTING POWER

5  
NUMBER OF SHARES 1,337,855

## SHARED VOTING POWER

6  
BENEFICIALLY OWNED BY EACH

## SOLE DISPOSITIVE POWER

7  
REPORTING PERSON 1,641,580

## SHARED DISPOSITIVE POWER

8  
WITH 0

## AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9  
1,641,580CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  
(SEE INSTRUCTIONS)10 

## PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

11  
13.2%

## TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

12  
IA

INSTRUCTIONS FOR SCHEDULE 13G

Instructions for Cover Page

- (1) Names and Social Security Numbers of Reporting Persons-Furnish the full legal name of each person for whom the report is filed-i.e., each person required to sign the schedule itself-including each member of a group. Do not include the name of a person required to be identified in the report but who is not a reporting person. Reporting persons are also requested to furnish their Social Security or I.R.S. identification numbers, although disclosure of such numbers is voluntary, not mandatory (see "SPECIAL INSTRUCTIONS FOR COMPLYING WITH SCHEDULE 13G," below).
- (2) If any of the shares beneficially owned by a reporting person are held as a member of a group and such membership is expressly affirmed, please check row 2(a). If the membership in a group is disclaimed or the reporting person describes a relationship with other persons but does not affirm the existence of a group, please check row 2(b) [unless a joint filing pursuant to Rule 13d-1(e)(1) in which case it may not be necessary to check row 2(b)].
- (3) The third row is for SEC internal use; please leave blank.
- (4) Citizenship or Place of Organization-Furnish citizenship if the named reporting person is a natural person. Otherwise, furnish place of organization.
- (5)-(9), (11) Aggregate Amount Beneficially Owned by Each Reporting Person, Etc.-Rows (5) through (9) inclusive, and (11) are to be completed in accordance with the provisions of Item 4 of Schedule 13G. All percentages are to be rounded off to the nearest tenth (one place after decimal point).
- (10) Check if the aggregate amount reported as beneficially owned in row (8) does not include shares as to which beneficial ownership is disclaimed pursuant to Rule 13d-4 [17 CFR 240.13d-4] under the Securities Exchange Act of 1934.
- (12) Types of Reporting Person-Please classify each "reporting person" according to the following breakdown (see Item 3 of Schedule 13G) and place the appropriate symbol on the form:

Category	Symbol
Broker-Dealer	BD
Bank	BK
Insurance Company	IC
Investment Company	IV
Investment Adviser	IA
Employee Benefit Plan, Pension Fund, or Endowment Fund	EP
Parent Holding Company	HC
Corporation	CO
Partnership	PN
Individual	IN
Other	OO

Notes:

Attach as many copies of the second part of the cover page as are needed, one reporting person per page.

Filing persons may, in order to avoid unnecessary duplication, answer items on the schedules (Schedule 13D, 13G or 14D-1) by appropriate cross references to an Item or items on the cover page(s). This approach may only be used where the cover page item or items provide all the disclosure required by the schedule item. Moreover, such a use of a cover page item will result in the item becoming a part of the schedule and accordingly being considered as "filed" for purposes of Section 18 of the Securities Exchange Act or otherwise subject to the liabilities of that section of the Act.

Reporting persons may comply with their cover page filing requirements by filing either completed copies of the blank forms available from the Commission, printed or typed facsimiles, or computer printed facsimiles, provided the documents filed have identical formats to the forms prescribed in the Commission's regulations and meet existing Securities Exchange Act rules as to such matters as clarity and size (Securities Exchange Act Rule 12b-12).

Under Sections 13(d), 13(g), and 23 of the Securities Exchange Act of 1934 and the rules and regulations thereunder, the Commission is authorized to solicit the information required to be supplied by this schedule by certain security holders of certain issuers.

Disclosure of the information specified in this schedule is mandatory, except for Social Security or I.R.S. identification numbers, disclosure of which is voluntary. The information will be used for the primary purpose of determining and disclosing the holdings of certain beneficial owners of certain equity securities. This statement will be made a matter of public record. Therefore, any information given will be available for inspection by any member of the public.

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Because of the public nature of the information, the Commission can utilize it for a variety of purposes, including referral to other governmental authorities of securities self-regulatory organizations for investigatory purposes or in connection with litigation involving the Federal securities laws or other civil, criminal or regulatory statutes or provisions, Social Security or I.R.S. identification numbers, if furnished, will assist the Commission in identifying security holders and, therefore, in promptly processing statements of beneficial ownership of securities.

Failure to disclose the information requested by this schedule, except for Social Security or I.R.S. Identification numbers, may result in civil or criminal action against the persons involved for violation of the Federal securities laws and rules promulgated thereunder.

#### GENERAL INSTRUCTIONS

A. Statements containing the information required by this schedule shall be filed not later than February 14 following the calendar year covered by the statement or within the time specified in Rule 13d-1(b)(2), if applicable.

B. Information contained in a form which is required to be filed by rules under section 13(f)(15 U.S.C. 78m(f)) for the same calendar year as that covered by a statement on this schedule may be incorporated by reference in response to any of the items of this schedule. If such information is incorporated by reference in this schedule, copies of the relevant pages of such form shall be filed as an exhibit to this schedule.

C. The item numbers and captions of the items shall be included by the text of the items is to be omitted. The answers to the items shall be so prepared as to indicate clearly the coverage of the items without referring to the text of the items. Answer every item. If an item is inapplicable or the answer is in the negative, so state.

Item 1.

- (a) Name of Issuer OSI SYSTEMS INC
- (b) Address of Issuer's Principal Executive Offices  
12525 CHADRON AVE., HAWTHORNE, CA 90250

Item 2.

- (a) Name of Person Filing  
ESSEX INVESTMENT MANAGEMENT COMPANY
- (b) Address of Principal Business Office or, if none, Residence  
125 HIGH STREET, BOSTON, MA 02110
- (c) Citizenship U.S.A.
- (d) Title of Class of Securities COMMON
- (e) CUSIP Number 671044105

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

- (a)  Broker or Dealer registered under Section 15 or 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)  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; see (S)240.13d-1(b)(1)(ii)(F)
- (g)  Parent Holding Company, in accordance with (S)240.13d-1(b)(ii)(G)  
(Note: See Item 7)
- (h)  Group, in accordance with (S)240.13d-1(b)(1)(ii)(H)

Item 4. Ownership

If the percent of the class owned, as of December 31 of the year covered by the statement, or as of the last day of any month described in Rule 13d-1(b)(2), if applicable, exceeds five percent, provide the following information as of that date and identity those shares which there is a right to acquire.

- (a) Amount Beneficially Owned 1,641,580
- (b) Percent of Class 13.2%

(c) Number of shares as to which such person has:	
(i) sole power to vote or to direct the vote	1,377,855
(ii) shared power to vote or to direct the vote	0
(iii) sole power to dispose or to direct the disposition of	1,641,580
(iv) shared power to dispose or to direct the disposition of	0

Instruction: For computations regarding securities which represent a right to acquire an underlying security see Rule 13d-3(d)(1).

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

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following [ ].

Instruction: Dissolution of a group requires a response to this item.

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

If any other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such securities, a statement to that effect should be included in response to this item and, if such interest relates to more than five percent of the class, such person should be identified. A listing of the shareholders of an investment company registered under the Investment Company Act of 1940 or the beneficiaries of employee benefit plan, pension fund or endowment fund is not required.

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

If a parent holding company has filed this schedule, pursuant to Rule 13d-1(b)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company has filed this schedule pursuant to Rule 13d-1(c), attach an exhibit stating the identification of the relevant subsidiary.

Item 8. Identification and Classification of Members of the Group

If a group has filed this schedule pursuant to Rule 13d-1(b)(ii)(H), so indicate under Item 3(h) and attach an exhibit stating the identity and Item 3 classification of each member of the group. If a group has filed this schedule pursuant to Rule 13d-1(c), attach an exhibit stating the identity of each member of the group.

Item 9. Notice of Dissolution of Group

Notice of dissolution of a group may be furnished as an exhibit stating the date of the dissolution and that all further filings with respect to transactions in the security reported on will be filed, if required, by members of the group, in their individual capacity. See Item 5.

Item 10. Certification

Following certification shall be included if the statement is filed pursuant to Rule 13d-1(b):

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

January 9, 2002

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Date

/s/ Charles H. Ritt III

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Signature

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Name/Title

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The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative other than an executive officer or general partner of the filing person, evidence of the representative's authority to sign on behalf of such person shall be filed with the statement, provided, however, that a power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

Note: Six copies of this statement, including all exhibits, should be filed with the Commission.

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001)

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