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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

POST EFFECTIVE AMENDMENT NO.1

TO

FORM S-4

ON

FORM S-8

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CIENA CORPORATION
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

23-2725311

(I.R.S. Employer Identification No.)

1201 Winterson Road
Linthicum, Maryland 21090
(410) 865-8500

(Address, including zip code, and telephone
number, including area code, of registrant's principal
executive offices)

Cyras Systems, Inc. 1998 Stock Plan
(Full title of the Plan)

Michael O. McCarthy III
Senior Vice President, General Counsel and Secretary
CIENA Corporation
1201 Winterson Road
Linthicum, Maryland 21090
(410) 865-8500

(Name, address and telephone number, including area code, of agent for service)

Copy to:
Michael J. Silver
Amy Bowerman Freed
Hogan & Hartson L.L.P.
111 South Calvert Street
Baltimore, Maryland 21202
(410) 659-2700

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EXPLANATORY NOTE

The Registrant is filing this Post Effective Amendment No. 1 to Form S-4 on Form

S-8 to register the issuance of 2,015,783 shares of common stock under the Cryas Systems, Inc. 1998 Stock Option Plan that the Registrant has assumed pursuant to the Agreement and Plan of Merger dated December 18, 2000 between the Registrant, Cryas Systems, Inc., a Delaware corporation, and CO Acquisition Corp., a wholly-owned subsidiary of the Registrant, pursuant to which Cryas Systems became a wholly-owned subsidiary of the Registrant effective March 29, 2001.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I will be sent or given to employees as specified by Rule 428(b)(1) of the Securities Act of 1933 (the "Securities Act"). In accordance with the instructions to Part I of Form S-8, such documents will not be filed with the Securities and Exchange Commission (the "Commission"). These documents and the documents incorporated by reference pursuant to Item 3 of Part II of this registration statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

CIENA Corporation (the "Company") hereby incorporates by reference into this registration statement the following documents filed by it with the Commission:

- (a) The Registrant's Form 10-K for the fiscal year ended October 31, 2000 and filed December 7, 2000, as amended on January 18, 2001;
- (b) The Registrant's Form 10-Q for the fiscal quarter ended January 31, 2001 and filed February 15, 2001;
- (c) The Registrant's current reports on Form 8-K filed on January 18, 2001 and April 2, 2001;
- (d) All reports filed with the Commission pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), since October 31, 2000; and
- (e) The description of the Company's Common Stock, \$.01 par value per share ("Common Stock"), contained in the Registrant's Registration Statement on Form 8-A filed with the Commission on January 13, 1997, including all amendments and reports filed under Section 13(a) or 15(d) of the Exchange Act for purposes of updating the description of Common Stock.

In addition, all documents and reports filed by the Company subsequent to the date hereof pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment to this registration statement which indicates that all securities offered have been sold or which deregisters all securities remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be part hereof from the date of filing of such documents or reports. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequent filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

ITEM 4. DESCRIPTION OF SECURITIES.

Not applicable (the Common Stock is registered under Section 12(g) of the Exchange Act).

ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL.

Not applicable.

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law permits indemnification of officers, directors and other corporate agents under certain circumstances and subject to certain limitations. The Registrant's Third Amended and Restated Certificate of Incorporation and bylaws provide that the Registrant shall indemnify its directors, officers, employees and agents to the full extent permitted by Delaware General Corporation Law, including in circumstances in which indemnification is otherwise discretionary under Delaware law. In addition, the Registrant has entered into separate indemnification agreements with its directors, officers and certain employees which require the Registrant, among other things, to indemnify them against certain liabilities which may arise by reason of their status or service (other than liabilities arising from willful misconduct of a culpable nature) and to maintain directors' and officers' liability insurance, if available on reasonable terms. The Registrant has directors' and officers' liability insurance with up to \$100 million coverage per year. These indemnification provisions and the indemnification agreement between the Registrant and its officers and directors may be sufficiently broad to permit indemnification of the Registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act.

* * *

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED.

Not applicable.

ITEM 8. EXHIBITS.

Exhibit Number	Description
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- 4.1 Form of Common Stock Certificate (filed as Exhibit 4.1 to the Company's Registration Statement on Form S-1, Registration No.333-17729 and incorporated herein by reference).
- 4.2 Rights Agreement dated December 29, 1997 (filed as Exhibit 4.2 to the Registrant's Form 8-K dated December 29, 1997 and incorporated herein by reference).
- 5.1 Opinion of Hogan & Hartson L.L.P. regarding the legality of the shares being registered (previously filed).
- 23.1 Consent of Hogan & Hartson L.L.P. (included in Exhibit 5.1).
- 23.2 Consent of PricewaterhouseCoopers LLP (filed herewith).
- 23.3 Consent of Deloitte & Touche LLP (filed herewith).
- 24.1 Power of Attorney (previously filed).

ITEM 9. UNDERTAKINGS.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the registration statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the

Securities Exchange Act that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) The undertaking concerning indemnification is set forth under the response to Item 6.

SIGNATURES

Pursuant to the requirements of the Securities Act, CIENA has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Linthicum, Maryland, on this 10th day of April, 2001.

CIENA CORPORATION

By: /s/ Michael O. McCarthy, III

Michael O. McCarthy, III

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Date: April 10, 2001 /s/ Patrick H. Nettles, Ph.D.*

Patrick H. Nettles, Ph.D.
Chief Executive Officer, Chairman of the
Board of Directors
Principal Executive Officer

Date: April 10, 2001 /s/ Gary B. Smith*

Gary B. Smith
President, Chief Operating Officer
and Director

Date: April 10, 2001 /s/ Joseph R. Chinnici*

Joseph R. Chinnici
Sr. Vice President, Finance and Chief
Financial Officer
Principal Financial Officer

Date: April 10, 2001 /s/ Andrew C. Petrik*

Andrew C. Petrik
Vice President, Controller and Treasurer
Principal Accounting Officer

Date: April 10, 2001 /s/ Stephen P. Bradley*

Stephen P. Bradley
Director

Date: April 10, 2001

/s/ Harvey B. Cash*

Harvey B. Cash
Director

Date: April 10, 2001

/s/ John R. Dillon*

John R. Dillon
Director

Date: April 10, 2001

/s/ Lawton W. Fitt*

Lawton W. Fitt
Director

Date: April 10, 2001

/s/ Judith M. O'Brien*

Judith M. O'Brien
Director

Date: April 10, 2001

/s/ Gerald H. Taylor*

Gerald H. Taylor
Director

* pursuant to power of attorney

By: /s/ Michael O. McCarthy, III

Michael O. McCarthy, III
Attorney-in-Fact

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our reports dated December 6, 2000 relating to the financial statements and financial statement schedule of CIENA Corporation, which appear in CIENA Corporation's Annual Report on Form 10-K for the year ended October 31, 2000, as amended.

/s/ PricewaterhouseCoopers LLP

April 9, 2001
McLean, Virginia

Consent of Deloitte & Touche LLP

We consent to the incorporation by reference in this Post Effective Amendment No. 1 to Form S-4 on Form S-8 (File No. 333-53146) of CIENA Corporation of our report dated August 2, 2000 (December 18, 2000 as to Note 12) related to the financial statements of Cyras Systems, Inc. appearing in the current report on Form 8-K for CIENA Corporation filed on January 18, 2001 and our report dated February 12, 2001 related to the financial statements of Cyras Systems, Inc. appearing in the current report on Form 8-K for CIENA Corporation filed on April 2, 2001.

/s/ Deloitte & Touche LLP

San Jose, California

April 9, 2001