



April 29, 2008

Barbara Jacobs  
Assistant Director  
Securities and Exchange Commission (Mail Stop 4561)  
100 F Street, N.E.  
Washington, D.C. 20549

**Re: VirnetX Holding Corporation (the "Company")  
Registration Statements on Form S-3  
Filed March 25, 2008**

Dear Ms. Jacobs,

Please find as set forth below, our responses to the Staff's comment letter dated April 14, 2008. For the Staff's convenience, the Staff's comments are set forth in italics before each response.

Post-Effective Amendment No. 1 to Form SB-2 on Form S-3

*1. Because of the late filing of the Form 8-K filed on July 12, 2008, you are ineligible to use the Form S-3. See General Instruction I.A.3(b) of the Form S-3. Please file a new post-effective amendment on a registration form that you currently are eligible to use.*

The Company has filed post-effective amendment no. 2 to registration statement no. 333-145765 using Form S-1.

Form S-3

General

*2. As noted in the previous comment, you are ineligible to use the Form S-3. Please file your amendment on a registration form that you are currently eligible to use.*

The Company plans to file amendment no. 1 to registration statement no. 333-149884 on Form S-1 once the Staff has completed its review of registration statement no. 333-145765 since they contain nearly identical disclosure.

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3. You currently have numerous outstanding effective registration statements. In the interest of simplified disclosure, please consider the application of Securities Act Rule 429. You may wish to rely upon this rule by filing an amendment that contains a single prospectus relating to the shares in this offering and in your other outstanding offerings. Absent the use of Rule 429, please revise the cover pages of File Nos. 333-145765 and 222-149884 to reference concisely your current offerings.

The Company wishes to keep the two registration statements separate in light of the priority it is contractually obligated to give to the selling stockholders on registration statement no. 333-145765. In response to the Staff's comment, the Company will include a reference to the other registration statement on the cover pages of each.

4. We note that the registration statement covers the resale of a large amount of VirnetX Holding Corporation's outstanding common shares. We also note that the registration statement covers the resale of common shares that are being offered in large amounts by major shareholders, such as Mr. Larson. Generally, we view transactions of this nature, particularly resale transactions by affiliated parties in this amount, as offerings "by or on behalf of the issuer" for purposes of Rule 415(a)(4) of Regulation C. Under the rule, equity securities offered by or on behalf of the registrant cannot be sold "at the market" price unless the offering satisfies the requirements set forth in the rule. Your offering does not appear to meet the requirements. Please provide us with a detailed legal analysis setting forth your view as to why the subject transaction is eligible to be made under Rule 415(a)(1)(i). Provide a similar analysis as it relates to the proposed resale of common shares by your affiliates.

The Company is working with the selling stockholders to obtain the necessary information in order to respond to this comment and plans to do so after the Staff has completed its review of registration statement no. 333-145765.

Selling Security Holders, page 36

5. Please provide a materially complete discussion of how the selling shareholders acquired the securities that you are registering on their behalf for resale. The background of the issuances to the selling shareholders and the nature of the arrangements, agreements, and relationships with the company does not appear to be complete and should include, for each selling security holder, a discussion of the date of the transaction in which the securities were sold, the amount of securities sold, the agreement(s) that evidence the sale, the instrument(s) that define the rights of the security holders, and the private placement agent, if any. Your disclosure should also include a description of the material terms of the warrants held by the relevant selling security holder.

The Company is working with the selling stockholders to obtain the necessary information in order to respond to this comment and plans to do so after the Staff has completed its review of registration statement no. 333-145765.

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6. For each selling security holder that is a legal entity, please ensure that your document discloses the natural person or persons who exercise the sole or shared voting and/or dispositive powers with respect to the shares to be offered by that shareholder.

The Company is working with the selling stockholders to obtain the necessary information in order to respond to this comment and plans to do so after the Staff has completed its review of registration statement no. 333-145765.

Liquidity and Capital Resources, page 8

7. This disclosure in this section indicates the registrant expects its net proceeds from this offering to be approximately \$10 million. However, elsewhere in the prospectus, the registrant indicates that it will not receive any proceeds from the sale of the securities being registered in this registration statement. Please revise your disclosure as appropriate.

The Company has revised its disclosure in response to the Staff's comment and to update all of its disclosure to include information with respect to its fiscal year ended December 31, 2007.

Please find enclosed a courtesy copy of our post-effective amendment no. 2 to registration statement no. 333-145765 using Form S-1.

Very truly yours,

/s/ Lowell D. Ness

Lowell D. Ness

cc: Kendall Larsen, VirnetX Holding Corporation

/Enclosures/