Free Writing Prospectus Dated November 21, 2016 Filed Pursuant to Rule 433 Registration Statement No. 333-211645

Vantiv Announces Secondary Public Offering and Associated Repurchase of its Common Stock

CINCINNATI, November 21, 2016 — Vantiv, Inc. (NYSE: VNTV) ("Vantiv") announced today that Fifth Third Bank net exercised its remaining warrant to receive 5,651,432 Class C units of Vantiv Holding, LLC. Fifth Third Bank will exchange those units on a one-for-one basis into shares of Vantiv's Class A common stock (the "Exchange"). Fifth Third Bank will sell 4,801,432 shares of the Class A common stock received in the Exchange through an underwritten secondary offering (the "Offering"), and Vantiv intends to repurchase the remaining 850,000 shares of Class A common stock (the "Share Repurchase"). Fifth Third Bank will receive all of the proceeds from the Offering. No shares are being sold by Vantiv.

After giving effect to the above, Fifth Third Bank will no longer hold any rights to purchase Class C units of Vantiv Holding, LLC and will have sold all of the shares of Class A common stock received in the Exchange. Fifth Third Bank currently holds 18.3% of the voting power in Vantiv, Inc. and will hold 17.9% of the voting power in Vantiv, Inc. after the successful completion of the Offering.

Assuming the Share Repurchase is completed at the anticipated amount, Vantiv expects that it will result in accretion of approximately \$0.01 in pro forma adjusted net income per share in 2017, primarily due to the anticipated 850,000 share reduction in diluted share count. Due to the anticipated closing date, Vantiv does not expect a significant impact on pro forma adjusted net income per share in 2016.

In connection with the Share Repurchase, Vantiv entered into a stock repurchase agreement with Fifth Third Bank, pursuant to which it intends to repurchase 850,000 shares of its Class A common stock from Fifth Third Bank at a price per share equal to today's closing share price on the New York Stock Exchange. The repurchased shares of Class A common stock will be cancelled and no longer outstanding following the Offering. A special committee of Vantiv's board of directors comprised of independent, disinterested directors has authorized the Share Repurchase from Fifth Third Bank subject to the terms and conditions set forth in the stock repurchase agreement. The Share Repurchase is subject to a number of conditions, including the consummation of the Offering, and there can be no assurance that the Share Repurchase will be completed.

If the Offering is consummated, Fifth Third Bank will be entitled to appoint one director to Vantiv's board of directors instead of two. Accordingly, Vantiv intends to decrease the size of its board to 11 members, and we expect that one of the Fifth Third Bank directors will resign from Vantiv's board.

Morgan Stanley & Co. LLC is the underwriter of the Offering. The last reported sales price of Vantiv's common stock on November 21, 2016 was \$59.73 per share. Morgan Stanley & Co. LLC proposes to offer the shares of Class A common stock for sale from time to time in one or more transactions on the New York Stock Exchange, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices, subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part.

The Offering is being made pursuant to an effective shelf registration statement, including a prospectus and a preliminary prospectus supplement related to the Offering, filed by Vantiv with the Securities and Exchange Commission (the "SEC"). Before you invest, you should read the prospectus supplement and accompanying prospectus in that registration statement and other documents Vantiv has filed with the SEC for more complete information about Vantiv and the Offering. You may get these documents for free by visiting EDGAR on the SEC Web site at: www.sec.gov. Alternatively, copies of the prospectus supplement and accompanying prospectus relating to the Offering, when available, may be obtained from: Morgan Stanley & Co. LLC , 180 Varick Street, 2nd Floor, New York, New York 10014, Attention: Prospectus Department.

This press release is for informational purposes only and does not constitute an offer to sell, or a solicitation of an offer to buy, nor shall there be any sale of these securities in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction. Any offer or sale of these securities will be made only by means of a prospectus, including a

prospectus supplement, forming a part of the related registration statement. Nothing in this press release should be construed as an offer to sell, or the solicitation of an offer to buy, any securities subject to the Share Repurchase.

About Vantiv

Vantiv is a leading, integrated payment processor differentiated by an integrated technology platform.

Pro Forma Adjusted Net Income

Vantiv uses pro forma adjusted net income for financial and operational decision making as a means to evaluate period-to-period comparisons of its performance and results of operations. Pro forma adjusted net income is also incorporated into performance metrics underlying certain share-based payments issued under the 2012 Vantiv, Inc. Equity Incentive Plan and its variable compensation plan. Vantiv believes pro forma adjusted net income provides useful information about its performance and operating results, enhances the overall understanding of past financial performance and future prospects and allows for greater transparency with respect to key metrics used by management in its financial and operational decision making. In calculating pro forma adjusted net income, Vantiv makes certain non-GAAP adjustments, as well as pro forma adjustments, to its GAAP operating results, and this measure should be considered together with its GAAP operating results. Please refer to the "Management's Discussion and Analysis of Results of Operations and Financial Condition" sections of Vantiv's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 and Annual Report on Form 10-K for the year ended December 31, 2015 for a reconciliation of Vantiv's GAAP income (loss) before applicable income taxes to historical pro forma adjusted net income.

Forward-Looking Statements

This release contains forward-looking statements that are subject to risks and uncertainties. All statements other than statements of historical fact or relating to present facts or current conditions included in this release are forward-looking statements including any statements regarding guidance and statements of a general economic or industry specific nature. Forward-looking statements give our current expectations and projections relating to our financial condition,

results of operations, guidance, plans, objectives, future performance and business. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "estimate," "expect," "project," "plan," "intend," "believe," "may," "should," "can have," "likely" and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events.

The forward-looking statements contained in this release are based on assumptions that we have made in light of our industry experience and our perceptions of historical trends, current conditions, expected future developments and other factors we believe are appropriate under the circumstances. As you review and consider information presented herein, you should understand that these statements are not guarantees of future performance or results. They depend upon future events and are subject to risks, uncertainties (many of which are beyond our control) and assumptions. Although we believe that these forward-looking statements are based on reasonable assumptions, you should be aware that many factors could affect our actual future performance or results and cause them to differ materially from those anticipated in the forward-looking statements. Certain of these factors and other risks are discussed in the company's filings with the SEC and include, but are not limited to: (i) our ability to adapt to developments and change in our industry; (ii) competition; (iii) unauthorized disclosure of data or security breaches; (iv) systems failures or interruptions; (v) our ability to expand our market share or enter new markets; (vi) our ability to identify and complete acquisitions, joint ventures and partnerships; (vii) failure to comply with applicable requirements of Visa, MasterCard or other payment networks or changes in those requirements; (viii) our ability to pass along fee increases; (ix) termination of sponsorship or clearing services; (x) loss of clients or referral partners; (xi) reductions in overall consumer, business and government spending; (xii) fraud by merchants or others; (xiii) a decline in the use of credit, debit or prepaid cards; (xiv) consolidation in the banking and retail industries; (xv) the effects of governmental regulation or changes in laws; and (xvi) outcomes of future litigation or investigations. Should one or more of these risks or uncertainties materialize, or should any of these a

2

these forward-looking statements. More information on potential factors that could affect the company's financial results and performance is included from time to time in the "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of the company's periodic reports filed with the SEC, including the company's most recently filed Annual Report on Form 10-K and its subsequent filings with the SEC.

Any forward-looking statement made by us in this release speaks only as of the date of this release. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

Contact

Nathan Rozof, CFA Senior Vice President Investor Relations 866.254.4811 or 513.900.4811 IR@vantiv.com