Vantage Analysis Server

Installation Guide

Release 11.1

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Build: October 16, 2009, 1:51

Contents

Introduction

Who Should Read This Guide

This guide is intended to be used by network engineers and system administrators installing the Vantage Analysis Server.

Organization of the Guide

The Installation Guide of Vantage Analysis Server is organized as follows:

- Vantage Analysis Server Overview [p. 11] – Describes the Vantage Analysis Server release and lists the supported protocols.
- Installation Checklist [p. 17] – Specifies how to install, license, and configure Vantage Analysis Server, with references to details in other sections of this document as required.
- System Requirements [p. 19] – Describes the minimum hardware and software requirements for Vantage Analysis Server.
- Installing Vantage Analysis Server [p. 25] – Describes how to install the Vantage Analysis Server.
- Upgrading Vantage Analysis Server [p. 33] – Describes how to upgrade the Vantage Analysis Server.
- VAS Basic Configuration Settings [p. 41] – Describes how to configure the Vantage Analysis Server.
- Licensing ClientVantage Agentless Monitoring Products [p. 45] – Describes product licensing.
- Protocols Supported by VAS [p. 51] – Lists protocols supported by VAS.

Product Documentation Library

The following publications offer information on using and configuring Vantage Analysis Server.

ClientVantage Agentless Monitoring Release Notes
Summarizes new product features, known issues, and limitations, and lists last-minute information not included in other publications related to the product.

Distributed License Management – License Installation Guide
Describes how to install and administer Compuware product licensing components.

ClientVantage Agentless Monitoring Getting Started Guide
Introduces product components, release information, system requirements, licensing information, and performance estimates.

Vantage Analysis Server Installation Guide
Describes how to install the report server.

Vantage Agentless Monitoring Device Installation and Configuration Guide
Describes how to install the Agentless Monitoring Device, which collects data for the Vantage Analysis Server and Advanced Web Diagnostics Server.

ClientVantage Agentless Monitoring System Administration Guide
Describes how to configure and administer ClientVantage Agentless Monitoring.

Vantage Analysis Server on-line help
Provides on-line procedures and information to help you use the product.

Vantage Analysis Server User Guide
Guides you through the features of the report server. It describes each top-level report and many lower-level reports, shows you how to interpret the reports, how to identify problems and how to optimize your network and site operation.

ClientVantage Agentless Monitoring Web Services – Getting Started Guide for Developers
Provides data structure definitions and usage examples for CVAM Web service developers.

PDF files can be viewed with Adobe® Reader, version 7 or later. If you do not have the Reader application installed, you can download the setup file from the Adobe Web site at *http://www.adobe.com/downloads/*.

Customer Support and Online Information

Corporate Web site

To access Compuware's site on the Web, go to *http://www.compuware.com*. The Compuware site provides a variety of product and support information.

FrontLine support Web site

You can access online customer support for Compuware products via our FrontLine support site at *http://frontline.compuware.com*. FrontLine provides fast access to critical information about your Compuware products. You can read or download documentation, frequently asked questions, and product fixes, or e-mail your questions or comments. The first time you access FrontLine, you are required to register and obtain a password. Registration is free.

Customer Support

You can contact Compuware Customer Support as follows:

- Web: via the “FrontLine Incident Reporting Form”.
- By phone: Compuware Customer Support.
  - USA and Canada customers: 1-800-538-7822 or 1-313-227-5444.
  - All other countries: please contact your local Compuware office.

All high-priority issues should be reported by phone.

Getting Help

When calling, please provide Customer Support with as much information as possible about your environment and the circumstances that led to the difficulty. You should be ready to provide:

- Client number: this number is assigned to you by Compuware and is recorded on your sales contract.
- The version number of the Agentless Monitoring Device (AMD) and the report servers.

  For the report server

  Use the report server GUI by selecting **Help** → **Product Information** → **About**, or **Tools** → **Diagnostics** → **System Status**.

  For the AMD

  Scroll down to the **Testing AMD** section. At the bottom of the diagnostic data paragraph, look for `“Version ND-RTM v.ndw.`*`x.yy.zz`*`”`.

- Environment information, such as the operating system and release (including service pack level) on which the product (AMD, report server) is installed, memory, hardware/network specifications, and the names and releases of other applications that were running.

  Problem description, including screenshots.

- Exact error messages, if any (screenshots recommended).
- Whether or not the problem is reproducible. If yes, include a sequence of steps for problem recreation. If not, include a description of the actions taken before the problem occurred.
- A description of the actions that may have been taken to recover from the difficulty and their results.
- Debug information as follows:

  Information from the report server

  - Log files from `http://`*`report_server_IP`*`/root/log/` and `watchdog.log` from the `C:\Program Files\Common Files\Compuware\Watchdog` directory.
  - Configuration file: `http://`*`report_server_IP`*`/ExportConfig`
  - Screenshots of the problem.

Information from the AMD

Log files from `/var/log/adlex/`: `rtm.log`, `rtm.log.1`, `rtm_perf.log`, `rtm_perf.log.1`.

Information from the VCAEUE Server

- Log files from `..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\cva\log` directory.
- All files from `..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\platform3.0\InstallLogs`
- All `*.log` files from `..\Documents and Settings\All Users\Application Data\Compuware\<`*`Service Name`*`>\workspace\log\kernel` where <*`Service Name`*> is Microsoft Windows Service Name associated with VCAEUE Server. By default it is `Agentless Platform 1`
- Version file (`version.xml`) located in `..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\`
- Version file (`version.xml`) located in `..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\cva\eclipse`

Information from the VCAEUE Console

The installation log file:

`Vantage_Configuration_for_Agentless_End-User_Experience_11.1_InstallLog.log`

location:

`..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE`

log files located in the following directory of your VCAEUE Console installation:

`..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\eclipse\log`

and version file (`version.xml`) located in `..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\` and in `..\Program Files\Compuware\Vantage_Configuration_For_Agentless_EUE\cva\eclipse`.

NOTE

Please compress all the files before sending them to Customer Support.

Compuware values your comments and suggestions about the Vantage products and documentation. Your feedback is very important to us. If you have questions or suggestions for improvement, please let us know.

Conventions

The following font conventions are used throughout documentation:

This font	Indicates
Bold	Terms, commands, and references to names of screen controls and user interface elements.
Conventions [p. 9]	Links to Internet resources and linked references to titles in Compuware documentation.
`Fixed width`	Cited contents of text files, examples of code, command line inputs or system outputs. Also file and path names.
`Fixed width bold`	User input in console commands.
`Fixed width italic`	Place holders for values of strings, for example as in the command: **`cd`** *`directory_name`*
Menu → **Item**	Menu items.

CHAPTER 1

Vantage Analysis Server Overview

Vantage Analysis Server (VAS) provides real-time access to information about performance and usage of key business applications. It monitors user session, application, and server performance in different configurations, with the purpose of identifying when and where problems occur and how to address them.

Analysis options give insight into business application performance on the transaction and operation level. The information is aligned with the business structure of the organization—such as branches, working groups, and business units—and is not dependent on the infrastructure components. It is delivered via comprehensive, interactive, service-oriented reports, and via event-driven alarms that inform you about important events such as performance degradation or traffic pattern anomalies.

VAS reports are organized as a comprehensive set of scorecards, dashboard reports, and detailed drill-down reports tied to the scorecards. The report structure reflects business organization priorities and allows for quick determination of root causes of problems. VAS is also equipped with powerful data mining and report building tools for creating new or customized reports quickly and easily.

VAS uses measurement data provided by passive network monitoring devices, referred to as Agentless Monitoring Devices (AMDs) or NetworkVantage Probes, and by active network monitoring agents – ClientVantage Active Agents. VAS can also read data from Cisco Network Analysis Module (NAM).

In agentless monitoring, one or more AMDs, NetworkVantage Probes or NAMs are attached to the monitored network near the core switch of the data center or near VPN access switches. The AMDs and NetworkVantage Probes collect data from the monitored network, preprocess it, and deliver it to the report server. Each report server can handle a number of AMDs and NetworkVantage Probes. It processes the received data further, stores it in a database, and then generates user-friendly reports. Reports can then be viewed and analyzed as the need arises: on a daily basis, or only in case of network problems.

VAS provides:

- Web analysis and reporting

- Analysis of Oracle, DB2, MS SQL, Sybase, and Informix protocols
- Analysis of the Oracle Forms protocol
- Analysis of the Jolt (Tuxedo) protocol
- Analysis of MS Exchange protocol
- Analysis of XML-based transactions
- Analysis of SOAP-based transactions
- Analysis of SAP GUI protocol
- Thin client protocol analysis
- VoIP analysis
- VPN analysis
- WAN analysis
- IBM MQ protocol analysis
- Enterprise applications analysis and reporting
- Real-time reports, trending reports, baseline calculations
- Event alarms
- Detection of abnormal application usage and network usage patterns
- User diagnostics
- Customizable reports
- Report access management and report publication/sharing
- Decryption and analysis of HTTPS traffic
- Monitoring of SSL errors.

VAS Product Release Information

The report server is composed of software modules, each with its own version number. The following table lists component module versions for the current and preceding releases of the report server.

Table 1. Component module versions based on preceding and current release report server

Module name	Module version number in report server version		
	10.3.0	**11.0.1**	**11.1.0**
Vantage Analysis Server	10.3.0	11.0.1	11.1.0
DMI	10.3.0	11.0.1	11.1.0
RTM Base System	10.3.0	11.0.1	11.1.0

Module name	Module version number in report server version		
	10.3.0	**11.0.1**	**11.1.0**
RTM GATE	10.3.0	11.0.1	11.1.0
ND Core Base System	10.3.0	11.0.1	11.1.0

Supported Browsers and Connectivity

ClientVantage Agentless Monitoring users can access report servers through browsers with support for cookies, Java VM, JavaScript, and CSS 2. Before you start using the report server, it may be necessary to adjust JavaScript and HTTP 1.1 settings in your browser.

Compuware recommends the following browsers:

- Microsoft Internet Explorer version 6.0 or later with JavaScript and HTTP 1.1 settings enabled.

  Note that due to a different handling of the data within the HTML, Microsoft Internet Explorer may experience degradation in performance while viewing reports containing a large number of columns or reports containing a large number of tooltips.
- Mozilla Firefox version 1.5.0 or later, with JavaScript, cookie support, and HTTP 1.1 enabled.
- Other browsers with support for cookies, Java VM, JavaScript and CSS 2 may also be used, but they are not recommended.

NOTE

- Some configuration screens require a Web browser with Java™ plug-in version 1.5.0.9 or higher.
- In Java plug-in version 1.5, TLS is turned off by default. This may cause some applets not to work in your Web browser. You must turn on TLS in the Java 1.5 Control Panel to have full access to all report server features. For more information, see How to enable TLS 1.0 for Java 1.5 plug-in [p. 14].
- Without JavaScript enabled, the top menu of the report server will not be visible and you will see the following message instead: “`This product uses JavaScript. Please make sure JavaScript is enabled in your browser settings.`”

The Advanced Web Diagnostics Server and Vantage Analysis Server can be accessed using HTTP or, over secured connections, using HTTPS. We recommend secure access with a browser that supports TLS v.1. Using older versions of the protocol, such as SSL ver. 2 or SSL ver. 3, is not recommended but can be configured. For more information, see Configuring the Report Server to Communicate over HTTPS [p. 31].

How to enable JavaScript and support for HTTP 1.1 in your browser

Internet Explorer

To enable JavaScript:

1. Select **Tools** → **Internet Options** from the top menu in your browser and click the **Security** tab.
2. Choose the **Custom level...** button and enable **Active scripting** on the list of options.

To enable the HTTP 1.1:

1. Navigate to **Tools** → **Internet Options** and click the **Advanced** tab.
2. Scroll within the **Settings** list to the section titled **HTTP 1.1 settings** and make sure that the **Use HTTP 1.1** check box is selected.
3. Click **OK** and restart your browser.

Mozilla Firefox

To enable JavaScript:

1. Select **Tools** → **Options...** from the top menu in your browser and click the **Content** tab.
2. Select the **Enable JavaScript** check box.

To enable HTTP 1.1:

1. Open the browser and, in the address bar, type **`about:config`** and press `[Enter]`.

   The browser will display a list of current preferences.
2. Scroll to the **network.http.version** preference and make sure its value is `1.1`. If the value is other than `1.1` it can be changed by double clicking on the parameter name.

How to enable TLS 1.0 for Java 1.5 plug-in

TLS for Java plug-ins is turned on in **Java Control Panel**, in the **Security** settings of the **Advanced** tab.

1. Access **Java Control Panel** in one of the following ways:
   - Windows control panel:

     In Windows, click **Start** → **Settings** → **Control Panel** and select **Java** to open **Java Control Panel**. Note that **Java Control Panel** opens for the default Java installation whose number may be different than the plug-in's that you are trying to modify.
   - Java installation directory:

     Navigate to the `bin` directory where the Java version you intend to modify is installed (for example `C:\Program Files\Java\jre1.5.0_11\bin`). Click the file `javacpl.exe` to activate the configuration tool.
   - Java platform icon in system tray:

     Right-click the icon and choose **Open Control Panel** from the menu.
2. In **Java Control Panel**, click the **Advanced** tab and expand the **Security** tree.

3. Select the **Use TLS 1.0** check box.
4. Click **OK**.

Internationalization Support

Vantage Analysis Server supports international environments on both ends: report server and client browser.

Localized server support

The user interface of the report server is rendered in the following languages:

- English
- Japanese
- Korean
- Chinese simplified
- Chinese traditional.

For English, which is the default language setting, there is no need for additional configuration of the operating system or browser. To enable support for other languages, install the required font set for the target language and customize the regional options accordingly. For more information, see *Localizing the Report Server* in the *Advanced Web Diagnostics Server – User Guide*.

Character encoding support for monitored traffic

Vantage Analysis Server recognizes the following character encodings in monitored HTTP and XML traffic:

European:

- ISO-8859-1
- ISO-8859-2
- Unicode (UTF-8)

Japanese:

- Unicode (UTF-8)
- Shift_JIS
- EUC-JP

Korean:

- Unicode (UTF-8)
- EUC-KR
- ISO-2022-KR

Chinese:

- Unicode (UTF-8)

- GB18030
- Big5
- Big5-HKSCS
- EUC-TW
- ISO-2022-CN
- GB2312
- GBK
- HZ.

For more information, see *Character Encoding Support for Monitored Traffic* in the *ClientVantage Agentless Monitoring – System Administration Guide*.

CHAPTER 2

Installation Checklist

Installation actions should be performed in this order. Follow the links for details on performing individual steps.

1. Verify hardware and software suitability.

   See System Requirements [p. 19] to make sure the hardware and software requirements are met.

2. Obtain a license for your Vantage Analysis Server installation.

   For more information, see Licensing ClientVantage Agentless Monitoring Products [p. 45].

3. Install Vantage Analysis Server.

   For new installation, see Installing Vantage Analysis Server [p. 25], for upgrade procedures, see Upgrading Vantage Analysis Server [p. 33].

4. Configure the Vantage Analysis Server.

   VAS Basic Configuration Settings [p. 41] describes VAS basic configuration, which has to be performed before the product can function.

   For detailed information on how to set all of the other configuration options supported by Vantage Analysis Server, please refer to *ClientVantage Agentless Monitoring System Administration Guide*.

CHAPTER 3

System Requirements

Ensure that your system meets the requirements to run ClientVantage Agentless Monitoring components.

Satisfying *minimum* requirements may not ensure the requested usability level. Choose the most appropriate hardware and system platform to achieve the best performance and optimal operation of your installation.

Recommended Hardware Platforms

Recommended hardware comes in two classes: Tier 1 and Tier 2. The table below represents specific platform support for Tier 1 and Tier 2. Although the performance between Tier 1 and Tier 2 is similar, Tier 2 hardware platforms have been designed to analyze much larger traffic data and to operate with a higher number of network interfaces. Tier 2 hardware architecture uses specific system models to support large traffic analysis and storage capabilities.

Table 2. Supported hardware platforms

Product	Tier 1	Tier 2
AMD	Dell, HP, IBM	HP, Sun, IBM
Report Server	Dell, HP, IBM, Sun	

For specific details and model numbers on Tier 1 and Tier 2 hardware configurations, please refer to a document titled *Recommended Hardware Configurations*.

Recommended Software Platform for Report Servers

The following software platform components are recommended for ClientVantage Agentless Monitoring report servers:

- Microsoft Windows Server 2008 (64-bit Edition) with the latest release, service packs, and five Client Access Licenses (CALs). Windows Server 2008 is the report server default platform.
- Microsoft Windows Server 2003 (64-bit Edition) with the latest release, service packs, and five Client Access Licenses (CALs).
- Microsoft SQL Server 2008 (64-bit Edition).
- Microsoft SQL Server 2005 (64-bit Edition).
- Adobe Reader, version 7.0.5 or higher.
- PuTTY (Telnet/SSH utility), version 0.58 or higher.
- WinSCP (Windows secure file copy utility), version 3.8.3 or higher.

The recommended minimum screen resolution on the report server machine is 1024x768, with at least 16-bit color mode.

Recommended Operating System Configuration for Report Servers

Typical preparations for a secure report server deployment require several steps to be performed on the side of the operating system. This section does not include all possible preventive measures, but it is intended to serve system administrators as a list of recommended good practices for system hardening.

1. Disable all unnecessary services.
   - Disable all unused system accounts (*for example*, Guest or SQLDebugger).
   - Disable DCOM.
   - Turn off indexing on all volumes (services).
   - Disable network protocols and bindings:

     SMB
     NetBios over TCP/IP

   - Disable the following services (if unused):

     Alerter
     Application Layer Gateway Service
     Application Management
     Automatic updates
     Background Intelligent Transfer Service (BITS)
     Computer Browser
     ClipBook
     Distributed File System
     Distributed Link Tracking Client
     Distributed Link Tracking Server
     MS Software Shadow copy Provider

DNS Server
Error Reporting Service
File replication
Help and support
HTTP SSL
Human Interface Device Access
IAS Jet Database Access
IMAPI CD Burning COM Service
Indexing Service
Intersite Messaging
Kerberos Key Distribution Center
Licence Logging Service
Messenger
Microsoft Search
NetMeeting Remote Desktop Sharing
Network DDE
Network DDE DSDM
Network Location Awareness (NLA)
Print Spooler
Remote Registry
Server
SNMP Trap Service
SQL Server FullText Search
TCP/IP NetBIOS Helper Service
Telnet
Telephony
Windows Management Instrumentation Driver Extension
WMI Performance Adapter
Windows Image Acquisition (WIA)

2. Remove all unnecessary executables and registry entries.
3. Apply restrictive permissions to files, services, end points and registry entries.
   All of these values should be created under the following registry key (if not present already):

   ```
   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters
   ```

   ```
   SynAttackProtect, REG_DWORD, 1
   EnableDeadGWDetect, REG_DWORD, 0
   NoNameReleaseOnDemand, REG_DWORD,1
   EnablePMTUDiscovery, REG_DWORD, 0
   KeepAliveTime, REG_DWORD (time in milliseconds), 300000
   EnableICMPRedirect, REG_DWORD, 0
   DisableIPSourceRouting, REG_DWORD, 2
   TcpMaxConnectResponseRetransmissions, REG_DWORD, 2
   TcpMaxDataRetransmissions, REG_DWORD, 3
   PerformRouterDiscovery, REG_DWORD, 0
   TcpMaxPortsExhausted, REG_DWORD, 5
   ```

   All values given above are hexadecimal.

For more information, refer to recommended reading on the Internet:

http://www.informit.com/articles/article.asp?p=371702&rl=1

http://searchwindowssecurity.techtarget.com/tip/0,289483,sid45_gci1069540,00.html

http://support.microsoft.com/default.aspx?scid=kb;en-us;324270

MS SQL Server Setup Recommendations

The following sections provide a brief description of SQL Server 2005 setup for reliable and secure functioning with Vantage Analysis Server.

NOTE

Most of the recommendations listed here may have already been applied if the Agentless Monitoring Device was purchased as a *turnkey* solution. In cases when only Compuware software solution was chosen some of the steps may not be applicable. For more information, see *Purchase Options* in the *ClientVantage Agentless Monitoring – Getting Started Guide*.

The changes must be applied with caution so as not to affect the operation of the SQL Server or Vantage Analysis Server.

SQL Server 2005 Installation

Prior to SQL Server installation, make sure the following services are enabled (set the start to automatic) and started:

- COM+ System Application
- Distributed Transaction Coordinator

Then perform the following:

1. Start the installation of SQL Server 2005.
   Select the *Server components, tools, Books Online, and samples* install option.
2. Configure installation options.
   System configuration check may display several warnings about components needed only for Reporting Services. Because Reporting Services are not installed, the following warnings should not cause any problems with SQL Server 2005:
   - IIS Feature Requirement
   - ASP.NET Version Registration Requirement
3. Choose components to install.

   Select the following components:
   - SQL Server Database Services
   - Workstation components, Books Online, and development tools
4. Choose the instance name.

   Since it is permissible to utilize one of many MS SQL Server instances, you are permitted to use any name meaningful to you for each of the instances.
5. Define Service Account.

Select **Use the built-in system account** with **Local System** as an option.

6. Select the authentication mode.
   Choose **Mixed mode**, set *sa* password to *adlex*.
7. Define collation settings.
   Leave default Collation selection: **Dictionary order, case insensitive, for use with 1252 Character set**.
8. Disable **Error and usage Report Settings.**
   Do not send any data outside your network, clear all options.

SQL Server 2005 Configuration

After installing SQL Server 2005, perform the following configuration steps:

1. Create a new default database file location.

   Set the directory `e:\mssql\data` as **Database default locations** (for Data and Log).

2. Move the `tempdb` database to the new location.

   a) Open SQL Server Management Studio and connect to local database with administrative privileges (sa or local machine administrator). In **Object Explorer**, expand **Databases** → **System databases**, right click `tempdb`, and choose **New Query**.

   b) Execute the following query:

   ```
   ALTER DATABASE tempdb MODIFY FILE ( NAME = tempdev , FILENAME =
   'e:\mssql\data\tempdb.mdf' )
   ALTER DATABASE tempdb MODIFY FILE ( NAME = templog , FILENAME =
   'e:\mssql\data\templog.ldf' )
   ```

   c) Stop the SQLServer service.

   d) Move `tempdb.mdf` and `tempdb.ldf` from `C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Data` to `e:\mssql\data`

   e) Start the SQLServer Service.

   f) To verify changes in the database, execute the following query:

   ```
   SELECT name, physical_name AS CurrentLocation, state_desc
   FROM sys.master_files WHERE database_id = DB_ID(N'tempdb');
   ```

   A summary table like the following should appear:

Name	**CurrentLocation**	**state_desc**
`tempdev`	`E:\mssql\data\tempdb.mdf`	`ONLINE`
`templog`	`E:\mssql\data\templog.ldf`	`ONLINE`

   g) Close SQL Server Management Studio.

3. Turn off **Customer Experience Improvement Program**.

Vantage Analysis Server and NetworkVantage Enterprise Manager Installation

When planning an installation of the VAS and NetworkVantage Enterprise Manager on a single machine, make sure all hardware and software requirements are met by both components. Also take into consideration any additional factors that may influence the operation of VAS or NetworkVantage, such as service pack installation, upgrade of only one of the two services, performance issues (during data collections performed by Enterprise Manager), and port assignments (for communication with Probes and database server).

CHAPTER 4

Installing Vantage Analysis Server

Use the installation wizard to install your report server.

Note that no installation actions are performed until all of the installation information has been gathered and you have confirmed that the installation should proceed.

During the installation process:

- Click **Next** to record your selections for that step and proceed to the next step (unless errors or inconsistencies are found in the choices you specify).
- Click **Back** (if available) to go to the previous step and change settings.
- Click **Cancel** (if available) to terminate the process.

Performing the Installation

You must have Administrator privileges to install Vantage Analysis Server.

CAUTION

Exit all programs before running the setup program. Some Windows programs, such as anti-virus software, may interfere with the installation process.

To install the report server:

1. Activate the installation program.

Insert Vantage Analysis Server installation CD into the CD-ROM drive. The Vantage Setup browser should automatically appear. If it does not, navigate to the root directory of the CD and double-click the file named `setup.exe`.

The Vantage Setup browser lists all of the products provided on the installation CD and links to product documentation and release notes.

2. Select the product to install.

Vantage Analysis Server is available in versions for 32-bit and 64-bit platforms.

- If you are installing it on a machine with a 32-bit architecture, click **Install Vantage Analysis Server** to install the 32-bit version.
- If you are installing it on a machine with a 64-bit architecture and sufficient system resources, you can use either the 32-bit or the 64-bit version of Vantage Analysis Server.

  Compared with the 32-bit version, the 64-bit version of Vantage Analysis Server uses more memory to handle the same volume of traffic, but it is capable of managing much larger volumes of traffic, provided your computer is equipped with sufficient memory to support this. The recommended minimum memory size for installing the 64-bit version is 16GB . If you decide to use the 64-bit version, click **Install Vantage Analysis Server x64**.

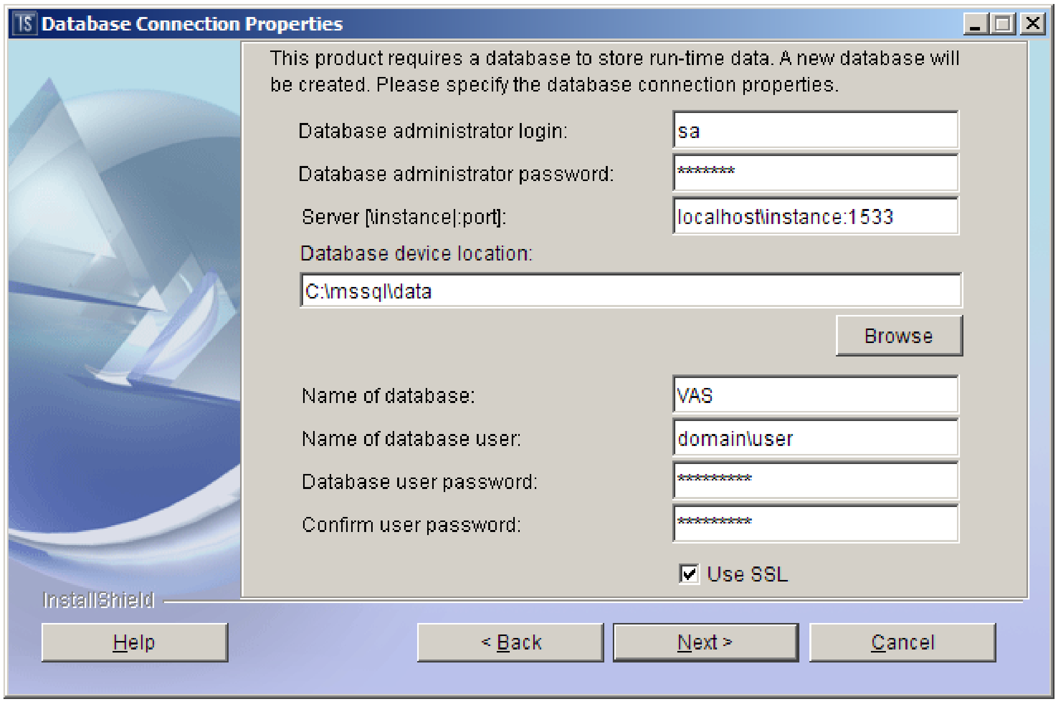
You may briefly see one or two messages from the InstallShield Wizard telling you that InstallShield Wizard is being prepared and initialized for the installation process. This may take a few seconds, after which a Vantage Analysis Server welcome screen displays the product release number.

3. If a warning concerning insufficient RAM appears, click **Cancel** to abort the installation process or click **Next** to proceed with installation.
4. Click **Next** on the Vantage Analysis Server welcome screen, view the license agreement screen, and, if you agree with the terms of the license agreement, indicate your choice and click **Next** to proceed with the installation or **Cancel** to terminate the installation.
5. Type or browse for the target installation directory and click **Next**.

   If a previous installation is detected, you are offered the choice of reinstalling or upgrading your product. Refer to Upgrading Vantage Analysis Server [p. 33] for details of re-installation and upgrade procedures.
6. Define the SQL database connection properties.

   Vantage Analysis Server requires a database to store run-time data. You need to specify the information as shown on the following screen:

Figure 1. Defining SQL database connection properties



This product requires a database to store run-time data. A new database will be created. Please specify the database connection properties.

Database administrator login: sa

Database administrator password: ********

Server [\instance|:port]: localhost\instance:1533

Database device location: C:\mssql\data

Name of database: VAS

Name of database user: domain\user

Database user password: **********

Confirm user password: **********

☑ Use SSL

You may need to consult the database administrator to determine the correct values. If the database server is on the same machine, enter the word **`localhost`** in the **Server** field. For remote servers, enter the server name or IP address. Add the port number (preceded by a colon) if it is different from the default value of 1433. Using a "\" separator, you can indicate the SQL database instance to which you want to connect. You can also point to the SQL server instance by giving the port number only instead of the name. For more information, see Determining Microsoft SQL Server Named Instance Port Number [p. 57].

The database device location is the physical location of the database on the database server computer.

The default database username can be replaced with a local database server user or a valid domain user. Specify a domain name in the following format: **`domain\user`**.

CAUTION

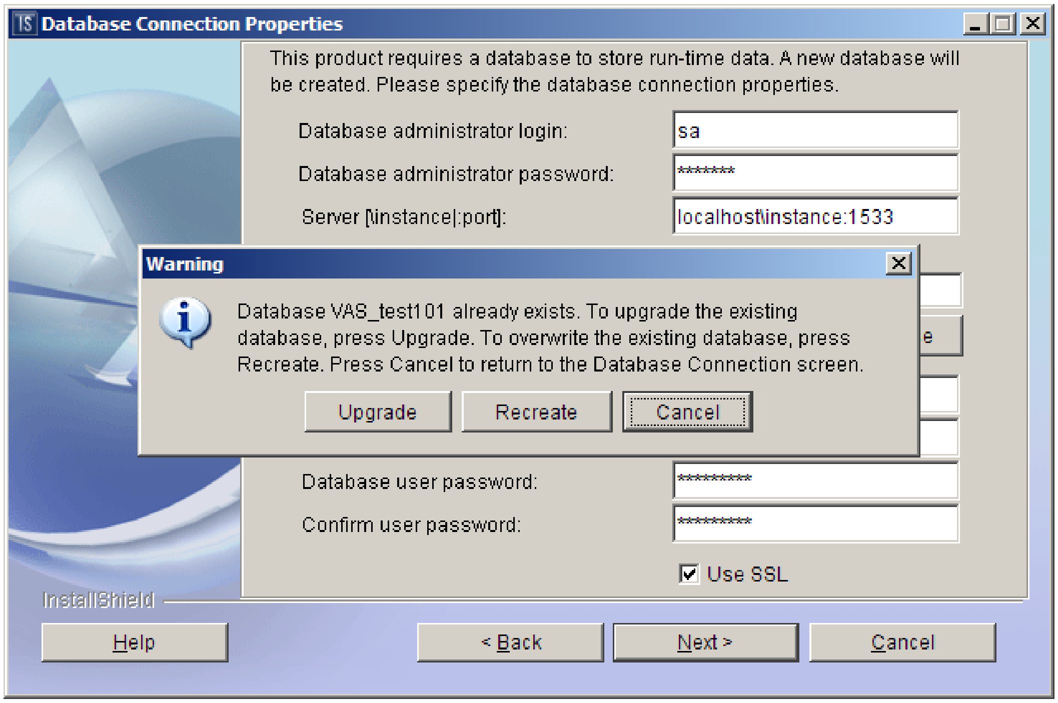
If you are going to create a database on Microsoft SQL Server 2008 and want to use a Windows domain user as the database user, you must enable this account on the SQL server prior to the report server installation. Make sure the domain user is assigned the `sysadmin` server role.

Select or clear **Use SSL** to indicate whether encryption should be used in communication with the SQL Server. Note that for this feature to work, you must also set **Force Encryption** to **Yes** in the SQL Server instance network configuration.

Click **Next** to submit your database connection choices.

7. If a database of the specified name already exists, a warning message prompts you to specify whether to **Upgrade** the existing database (and preserve the data) or **Recreate** the database (and delete all of your existing data).

Figure 2. Selecting to upgrade or recreate a database



Database Connection Properties

This product requires a database to store run-time data. A new database will be created. Please specify the database connection properties.

Database administrator login: sa

Database administrator password: ********

Server [\instance|:port]: localhost\instance:1533

Warning

Database VAS_test101 already exists. To upgrade the existing database, press Upgrade. To overwrite the existing database, press Recreate. Press Cancel to return to the Database Connection screen.

Database user password: **********

Confirm user password: **********

☑ Use SSL

If you want to specify another database name, click **Cancel** to go back to the previous installation screen.

8. If the **Database Size** screen appears, specify the size of the new database and then click **Next**.

   This screen is displayed if no database of the specified name already exists, or if you have selected to overwrite an existing database. The suggested size displayed on this screen is calculated to leave room for performing a backup of the database on the same disk.

9. If the **Database Server Memory Setting** screen appears, specify the maximum size of the SQL server memory and then click **Next**.

   This screen is displayed if a new database is created or if an existing database is overwritten.

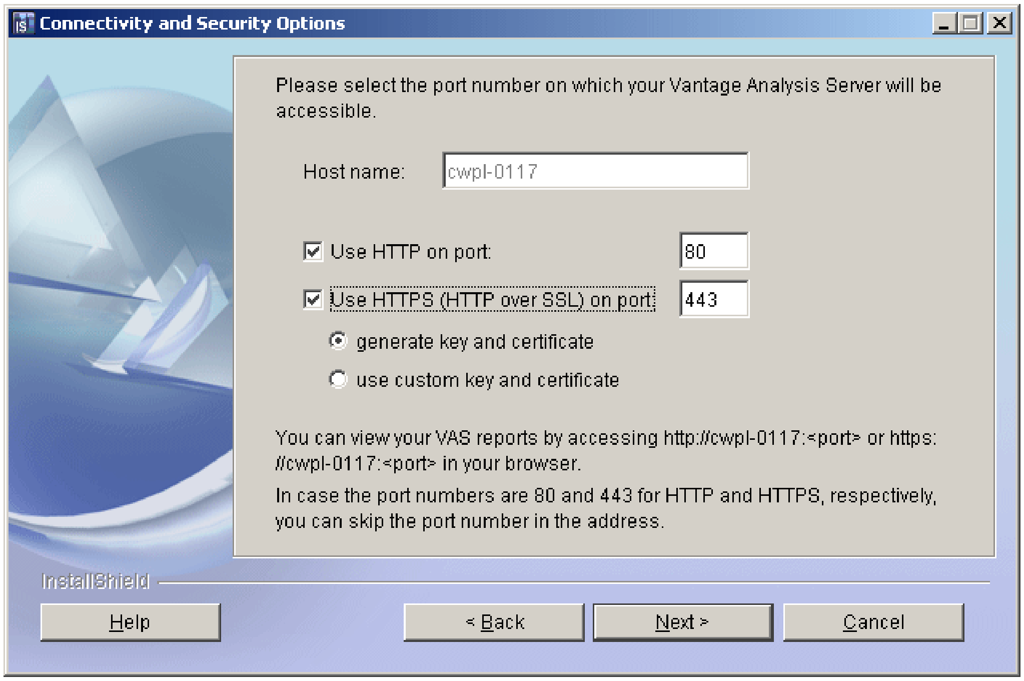
   Note that for the reconfiguration to take effect, the SQL server must be restarted. If you are using a local SQL server, the installation program offers to restart it automatically. If you have specified a remote server, you are asked to restart the server manually before attempting to use the database.

10. Configure the connectivity and security options.

    The configuration screen prompts you to specify the port number on which your Vantage Analysis Server should be accessible. The host name under which your Vantage Analysis Server will be recognized is shown on the screen for your information. You will view your Vantage Analysis Server reports by accessing this host in your browser. The host name should be followed by the port number, if the port number is not 80.

    If you need to transfer or display the reports securely across the network, you can also specify the HTTPS port number. When accessing the Vantage Analysis Server reports on a port other that 443, remember to supply the selected port number together with the host name in your browser. Note that HTTP/HTTPS settings can be modified by running the **Change/Remove** program from the **Add or Remove Programs** utility.

Figure 3. An example of the **Connectivity and Security Options** screen



Connectivity and Security Options

Please select the port number on which your Vantage Analysis Server will be accessible.

Host name: cwpl-0117

☑ Use HTTP on port: 80

☑ Use HTTPS (HTTP over SSL) on port: 443

● generate key and certificate

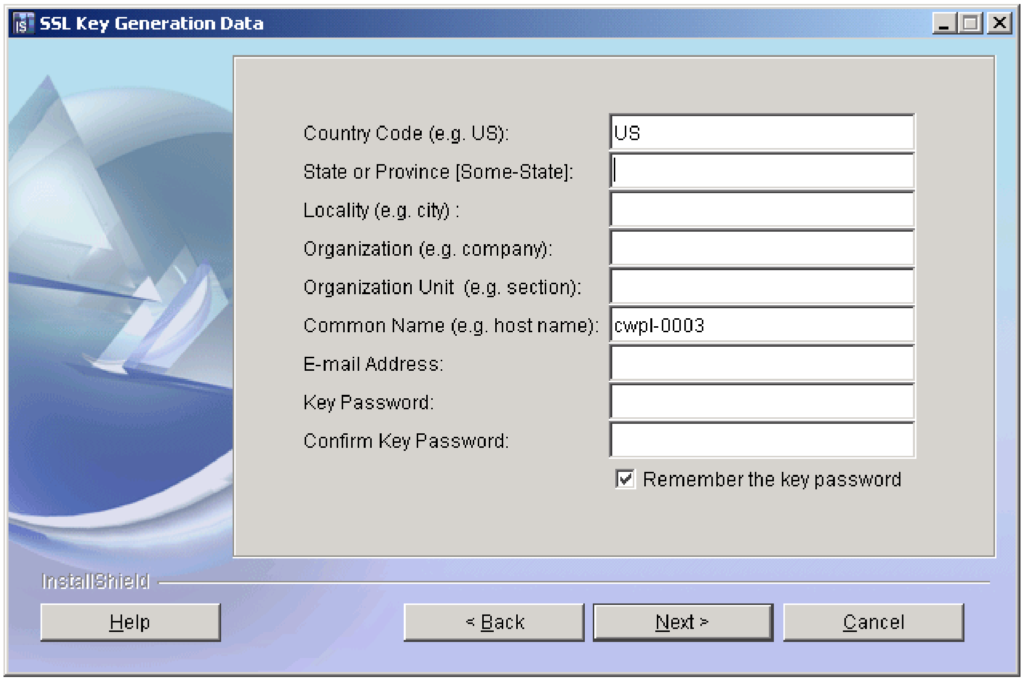
○ use custom key and certificate

You can view your VAS reports by accessing http://cwpl-0117:<port> or https://cwpl-0117:<port> in your browser.

In case the port numbers are 80 and 443 for HTTP and HTTPS, respectively, you can skip the port number in the address.

If you select the HTTPS option, the **SSL Key Generation Data** screen enables you to either automatically generate a key and a certificate, or to use a custom encryption key. To generate the key, provide the required data, which varies depending on whether you chose automatic or custom key generation.

Figure 4. Supplying SSL key generation data



Country Code (e.g. US): US

State or Province [Some-State]:

Locality (e.g. city) :

Organization (e.g. company):

Organization Unit (e.g. section):

Common Name (e.g. host name): cwpl-0003

E-mail Address:

Key Password:

Confirm Key Password:

☑ Remember the key password

Choosing a custom encryption key requires configuring the server manually, which involves copying both the key and the certificate to the proper directory and modifying the `common.properties` file. For more information, see Configuring the Report Server to Communicate over HTTPS [p. 31].

NOTE

On the **SSL Key Generation Data** screen, there is a **Remember the key password** check box. If you decide not to store the password during the installation procedure, you can supply it on system start-up, but only if you are using a console that is directly connected to the server. Remember that the dialog box for entering the password will *not* appear if you are connected to the server using a remote console.

Also, remember that not providing a password means that the key will not be encrypted.

11. Review the summary of your installation choices and, if you are satisfied with them, click **Install**.

    If you need to change anything, use the **Back** button to retrace your steps to the appropriate configuration screen.

12. Your Vantage Analysis Server software is installed.

    The process of installing and pre-configuring software components and defining your database may take several seconds, minutes, or even hours, depending on the size of the database. A progress box shows the status of the installation action currently in progress. When all of the required actions have been completed, a final post-installation information screen is displayed.

13. Perform post-installation actions.

Depending on the operating system you are using, you may be asked at this stage whether you want to start Vantage Analysis Server. Indicate your choice in the check box provided and click **Finish**.

Configuring the Report Server to Communicate over HTTPS

You can set up your report server to use secure connections with user Web browsers, and to use automatically generated data or your own keys and certificates.

Prerequisites

It is recommended that secure access be performed using `TLSv1` (TLS version 1), which is more secure than its predecessors. Use of older versions of the protocol can be configured by setting the configuration property `connector.ssl.SSLProtocol` to `SSLv3` or `SSLv2`, as required. Note that Apache Tomcat default is `all`, with other acceptable values being `SSLv2`, `SSLv3`, `TLSv1`, and `SSLv2+SSLv3`. Leaving the `connector.ssl.SSLProtocol` parameter empty causes the Web browser negotiate the version of a secure protocol when connecting to the Web server. For more information on secure connection configuration in Apache Tomcat, refer to *http://tomcat.apache.org/tomcat-6.0-doc/apr.html#HTTPS*.

The report server implementation of SSL uses OpenSSL. This means that encryption, certification, and other operations are handled as defined in OpenSSL.

The subdirectory `tools\openssl` of the report server installation directory contains the OpenSSL tool, which can be used for SSL key and certificate generation, conversions, and management. The report server installation process uses the tools in this directory to generate a self-signed SSL certificate and a key pair for initial HTTPS server operation.

This certificate and the key pair are, by default, stored in the `wwwroot/WEB-INF/ssl` subdirectory of the report server installation directory. To change this path, modify the `connector.ssl.SSLCertificateFile` and `connector.ssl.SSLCertificateKeyFile` configuration properties in `common.properties`.

To configure your own encryption keys and register the server in the CA (certificate authority) infrastructure, the `common.properties` file has to be edited manually. Refer to the Apache Tomcat documentation: *http://tomcat.apache.org/tomcat-5.5-doc/apr.html*.

All certification procedures, such as certificate request or certificate signing, have to be handled manually by using the OpenSSL utility. For instructions on how to use the OpenSSL utility, refer to *http://www.openssl.org*.

The report server can connect to the network via standard HTTP or HTTPS (HTTP over SSL), both of which are supported by the report server installation process, or via other modes that can be configured manually.

The connectivity configuration settings are stored in the configuration file `common.properties`, in the `config` subdirectory of the report server installation directory. The names of the configuration properties in `common.properties` follow the standard names used for Tomcat and OpenSSL. (The format of the file is different, but the names of the configuration parameters are the same.)

All of the connectivity configuration properties are set by the installation program during report server installation.

NOTE

Subsequent modifications to connectivity settings are possible but should be performed with great care. These settings require a thorough understanding of Web server connector settings and OpenSSL.

The simplest procedure for joining the server to the certification infrastructure can be summarized as follows:

1. Generate a private RSA key as described in *http://www.openssl.org/docs/HOWTO/keys.txt*.

   It is suggested that the password should be encrypted. The report server can ask for the key password every time it starts, or the password can be configured using the report server installation program.

2. Create a certificate request as described in *http://www.openssl.org/docs/HOWTO/certificates.txt* (section 3).
3. Pass the certificate to a certification authority for signing.
4. Set configuration properties.

   Configure the following settings in the `common.properties` file:

   - Point `connector.ssl.CertificateFile` to the received certificate file.
   - Point `connector.ssl.CertificateFileKey` to the generated key.
   - Point `connector.ssl.CertificateChainFile` to the chain of certificates.

5. Set the key password.

   If the key was encrypted, use the report server installation program to set the key password.

CHAPTER 5

Upgrading Vantage Analysis Server

The Vantage Analysis Server installation program will detect older versions of the product and offer to upgrade them to the current release, optionally preserving configuration information and traffic monitoring data contained in the Vantage Analysis Server database. Configuration migration is fully supported for upgrades from versions not older than two releases back. If upgrading from an earlier version, some elements of configuration migration may have to be performed manually. This applies in particular to the configuration of alarms.

Navigating the Upgrade Process

- Click **Next** to record your selections for that step and proceed to the next step (unless errors or inconsistencies are found in the choices you specify).
- Click **Back** (if available) to go to the previous step and change settings.
- Click **Cancel** (if available) to terminate the process.

Performing a Report Server Upgrade

You must have administrative privileges to upgrade Vantage Analysis Server.

CAUTION

Exit all programs before running the setup program. Some Windows programs, such as anti-virus software, may interfere with the upgrade process.

To upgrade Vantage Analysis Server (to install a newer version over an existing version):

1. Stop the currently running server.

   In Windows, click **Start** → **Programs** → **Vantage Analysis Server** → **Server** → **Stop**.

2. Activate the installation program.

Insert the Vantage Analysis Server installation CD into the CD-ROM drive. The Vantage CD browser should automatically appear. If it does not, navigate to the root directory of the CD and double-click the file named `Autostart.exe`.

The Vantage CD browser lists all of the products and documentation provided on the installation CD.

3. Specify whether to install the 32-bit version or the 64-bit version of the product.

   Vantage Analysis Server is available in two versions:

   - For a machine with a 32-bit architecture, click **Install Vantage Analysis Server** to install the standard 32-bit version.
   - For a machine with a 64-bit architecture, you can use either the 32-bit version (as above) or you can click **Install Vantage Analysis Server x64** to install the 64-bit version of Vantage Analysis Server.

     You should choose based on the available memory and the volume of traffic you need to monitor. Compared with the 32-bit version, the 64-bit version of Vantage Analysis Server uses more memory to handle the same volume of traffic, but it is capable of managing much larger volumes of traffic, provided your computer is equipped with sufficient memory to support this. The recommended minimum memory size for installing the 64-bit version is 16GB.

   NOTE

   Upgrade from a 32-bit version to a 64-bit version is not supported. If you need to perform such an upgrade, you must save your 32-bit configuration settings manually (this pertains only to new server configuration files added after the 32-bit installation) and uninstall the 32-bit version of the product, while preserving the database. You should then install the 64-bit version as a new installation, not an upgrade, and perform a manual migration of configuration settings. Note that those settings that are maintained in the database will be migrated together with the database. For more information, see Migrating the Report Server to 64-bit Version [p. 38].

   When you select the version, you may briefly see one or two messages from the InstallShield wizard telling you that InstallShield Wizard is being prepared and initialized for the installation process, after which the welcome screen displays product release number information and the amount of physical memory available is checked.

4. If the detected amount of physical memory (RAM) on the target machine is lower than the recommended amount, you will see a warning message.

   Click **Cancel** to abort the installation and perhaps upgrade the machine's RAM before restarting the installation process, or click **Next** (not recommended) to continue this installation with less than the recommended amount of RAM.

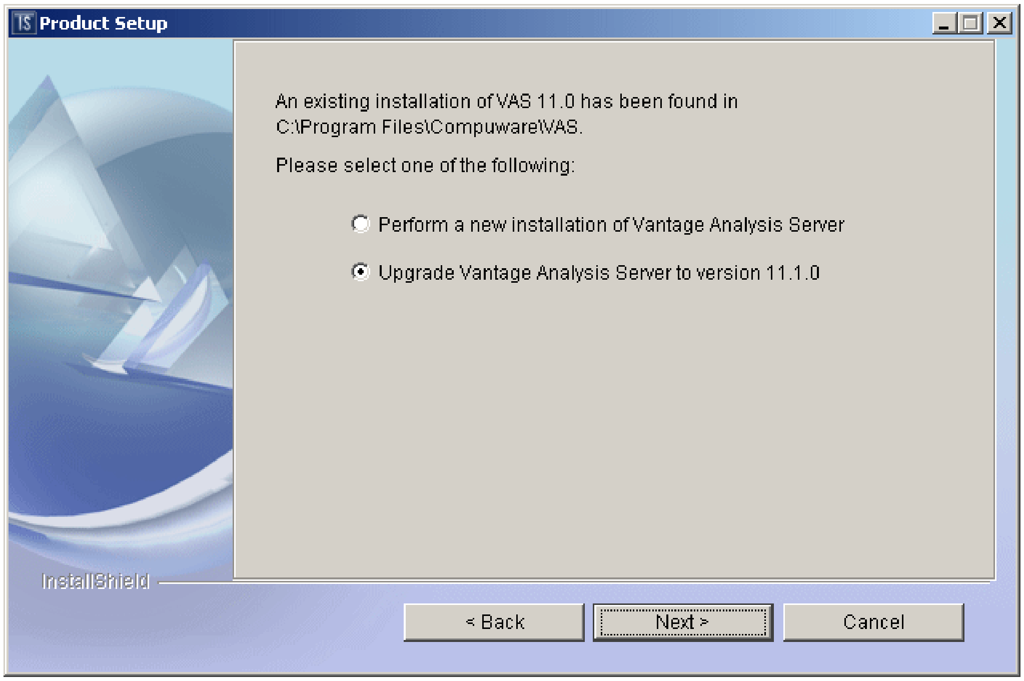
5. Click **Next** on the welcome screen and view the license agreement screen.
6. If you agree with the terms of the license agreement, select the appropriate radio button and click **Next** to proceed with the installation.

   If you do not accept the terms of the license agreement, click **Cancel** to terminate the installation process.

7. Choose whether to perform a new installation or an upgrade to the current installation.

When an existing version of the software is detected, you are given the option to either perform a fresh installation of the current version of the product, or to upgrade, while optionally preserving configuration settings and/or database contents:

Figure 5. Choosing between a new installation and an upgrade



An existing installation of VAS 11.0 has been found in C:\Program Files\Compuware\VAS.

Please select one of the following:

○ Perform a new installation of Vantage Analysis Server

● Upgrade Vantage Analysis Server to version 11.1.0

Note that configuration migration is fully supported for upgrades from versions 5.1 or later. If upgrading from an earlier version, some elements of configuration migration may have to be performed manually. This applies in particular to the configuration of alarms.

After you select an option (new installation or upgrade), click **Next** to proceed with the new installation or upgrade. Note that Vantage Analysis Server component services will be stopped before the installation or upgrade can be performed.

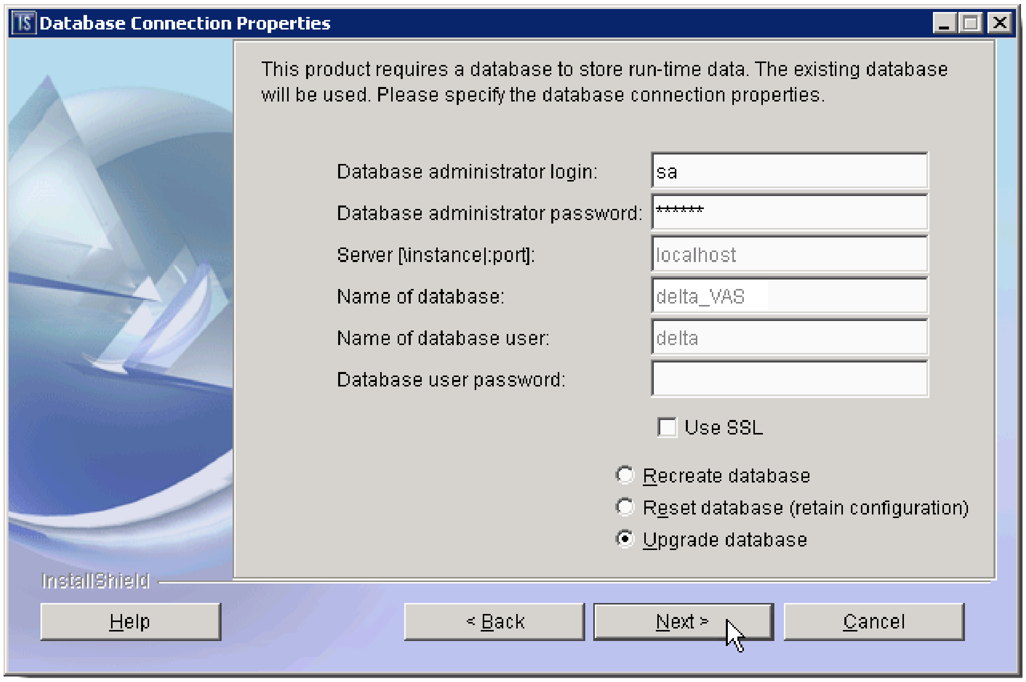
IMPORTANT

- If you chose to perform a new installation, you should stop reading this procedure and now refer to Step 5 [p. 26] of Installing Vantage Analysis Server [p. 25].
- If you chose to perform an upgrade, continue with the next step of this procedure.

8. Confirm SQL database connection properties.

Vantage Analysis Server requires a database to store run-time data. When you are upgrading an existing installation, the current database connection properties are displayed, allowing you to modify the database administrator login name and password:

Figure 6. Database Connection Properties



Database Connection Properties

This product requires a database to store run-time data. The existing database will be used. Please specify the database connection properties.

Database administrator login: sa

Database administrator password: ******

Server [\instance|:port]: localhost

Name of database: delta_VAS

Name of database user: delta

Database user password:

☐ Use SSL

○ Recreate database

○ Reset database (retain configuration)

● Upgrade database

Select or clear the **Use SSL** check box to indicate whether SSL should be used in communication with a report server.

Use the radio buttons to specify what to do with the database:

Recreate database
This option deletes the database and creates a new database of the same name. All the information contained in the database is lost.

Reset database
This option purges traffic monitoring data from the database but preserves the product configuration settings.

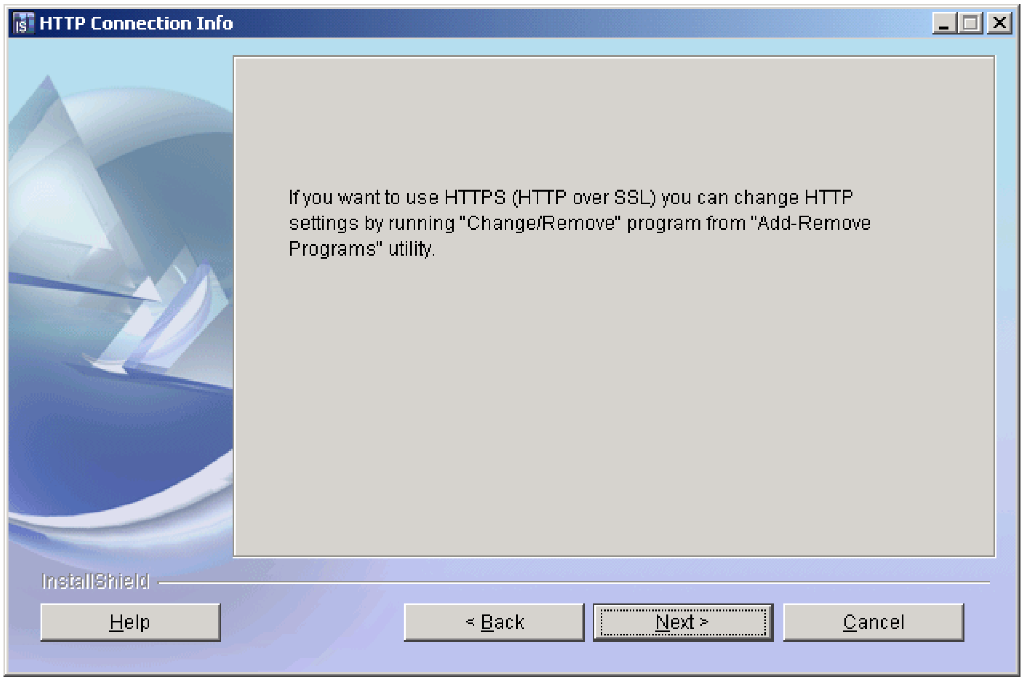
Upgrade database
This option preserves all traffic monitoring data and product configuration settings.

Click **Next** to submit your database connection choices.

9. *Optional:* Modify HTTP/HTTPS settings.

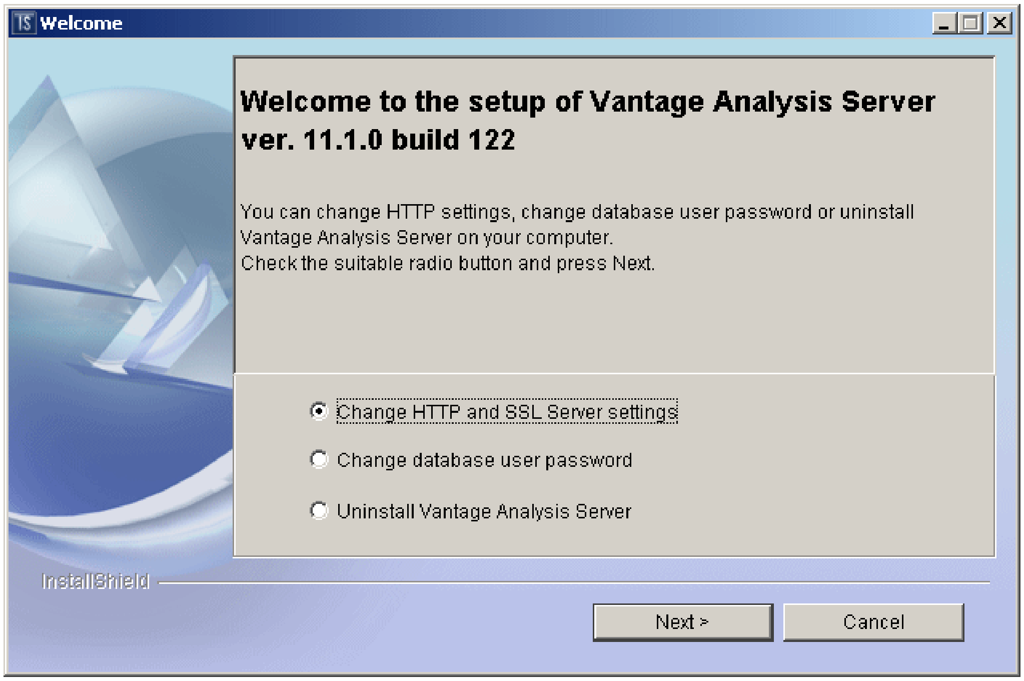
During the upgrade procedure, you cannot change connectivity and security settings. However, you can do so at any time after the upgrade by running the **Change/Remove** program from the **Add or Remove Programs** utility located in the Windows **Control Panel**. Each time, during the server upgrade to 11.1 version, a screen will appear to remind you about it.

Figure 7. The **HTTP Connection Info** screen



If you want to use HTTPS (HTTP over SSL) you can change HTTP settings by running "Change/Remove" program from "Add-Remove Programs" utility.

Figure 8. Modifying the HTTPS settings on the **Change/Remove** screen



Welcome to the setup of Vantage Analysis Server ver. 11.1.0 build 122

You can change HTTP settings, change database user password or uninstall Vantage Analysis Server on your computer.
Check the suitable radio button and press Next.

● Change HTTP and SSL Server settings

○ Change database user password

○ Uninstall Vantage Analysis Server

For more information on how to configure HTTPS settings, refer to the Step 10 [p. 28] of the Vantage Analysis Server installation procedure, and to Configuring the Report Server to Communicate over HTTPS [p. 31].

10. Review the summary of installation choices.

Before the actual upgrade commences, a summary screen displays all of the choices you have made. Review them carefully and, if you need to change any of them, use the **Back** button to retrace your steps to the appropriate configuration screen.

11. Upgrade Vantage Analysis Server

On the summary screen, click **Install** to commence the actual process of upgrading and pre-configuring software components and defining your database. The amount of time this takes depends on the size of the database and may be anything between several seconds and, for large databases, several hours. A progress box shows the status of the installation action currently in progress. When all of the required actions have been completed, a final post-upgrade information screen is displayed.

12. Perform post-installation actions.

Depending on the operating system you are using, you may be asked at this stage whether you want to start Vantage Analysis Server. Indicate your choice in the check box provided and click **Finish**. There is no such choice for Windows 2000, which requires re-booting before the Vantage Analysis Server can function. In case of Windows 2000, after clicking **Finish** on the post-installation information screen, you will be asked, in a separate message box, if you wish to re-boot the system now or later.

It is possible to change the database user password during the upgrade procedure (see Step 8 [p. 35]) or at any time after the installation or upgrade by running the **Change/Remove** program from the **Add or Remove Programs** utility located in the **Control Panel** (Figure 8. Modifying the HTTPS settings on the Change/Remove screen [p. 37]).

After selecting the option **Change database user password** choose **Next** and enter a new password in the following screen.

Migrating the Report Server to 64-bit Version

Prerequisites

A working installation of a 32-bit version with a database attached, is required in order to upgrade to a 64-bit version. Make note of the `sa` database password and path to the database.

The path for upgrading to a 64-bit version of VAS requires uninstalling of the current 32-bit version, and installation of a new 64-bit version. This process requires a manual transfer of custom settings from one version to the other. The majority of report server configurations and settings are stored in the attached database. Only the configuration files that were created after the default installation need to be transferred manually. These include alarm configuration files located in `C:\Program Files\Compuware\VAS\config` folder and custom SQL scripts that are located in the `C:\Program Files\Compuware\VAS\config\sql\ms\def` folder.

- Files starting with `alarm-` in their filename located in the `C:\Program Files\Compuware\VAS\config` folder should be copied to a repository folder outside of the current VAS installation path.
- The SQL script files located in the `C:\Program Files\Compuware\VAS\config\sql\ms\def` folder should be copied to the repository folder.

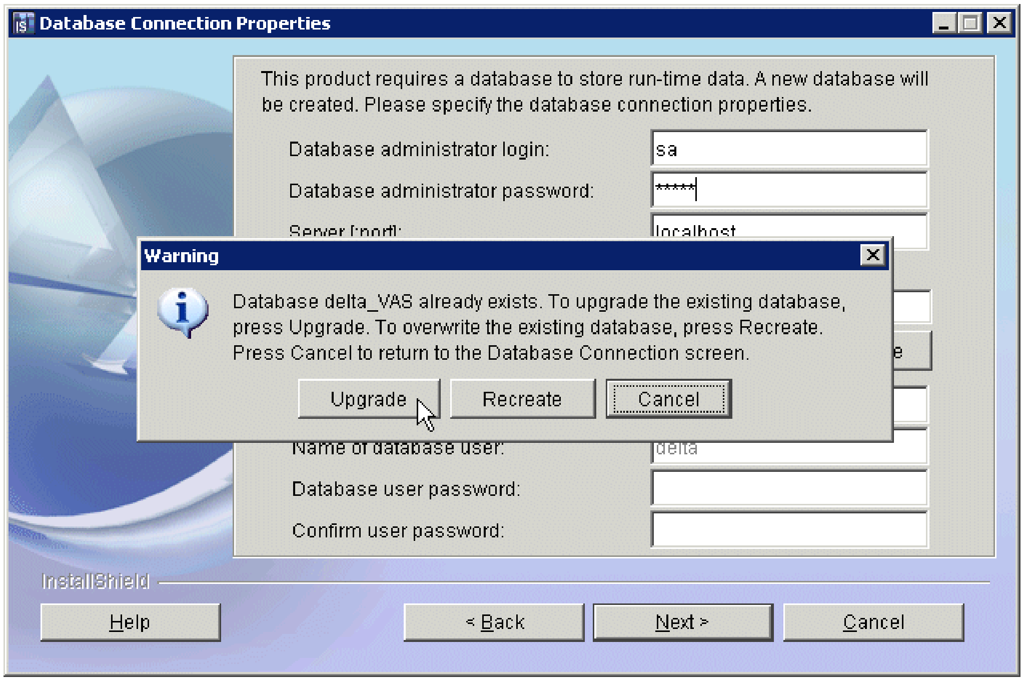
- The current 32-bit version of VAS should be uninstalled preserving the database.
- The new 64-bit version should be installed using default installation path and the **upgrade** option for the database installation.
- All of the configuration files should be moved back to their respective paths within a new installation.

1. Create a temporary repository folder.
2. Navigate to `C:\Program Files\Compuware\VAS\config` and copy all files starting with `alarm-` to the repository folder.
3. Navigate to `C:\Program Files\Compuware\VAS\config\sql\ms\def` and copy all of the SQL scripts to the repository folder.
   The repository folder should now contain all of the alarm XML files and all of the SQL script files.
4. Uninstall the current 32-bit version using **Add or Remove Programs** in the **Start** → **Settings** → **Control Panel**.
5. Install the VAS 64-bit version using the same installation procedures and information used for the 32-bit version.

CAUTION

Make sure that during the installation process, the **Upgrade** option is chosen when the existing database is detected.

Figure 9. Database upgrade



Database Connection Properties

This product requires a database to store run-time data. A new database will be created. Please specify the database connection properties.

Database administrator login: sa

Database administrator password: *****

Server [:port]: localhost

Warning

Database delta_VAS already exists. To upgrade the existing database, press Upgrade. To overwrite the existing database, press Recreate. Press Cancel to return to the Database Connection screen.

Name of database user: delta

Database user password:

Confirm user password:

6. Copy all the `alarm-` files from the repository to the `C:\Program Files\Compuware\VAS\config` folder.

7. Examine and compare the `C:\Program Files\Compuware\VAS\config\sql\ms\def` folder contents with the repository and copy the missing SQL scripts from the repository into the new installation.

The new 64-bit installation will now contain the configuration read from the upgraded database and all of the custom alarm and SQL scripts created in the 32-bit version.

It is recommended to confirm that the new installation contains the proper settings before removing the temporary repository.

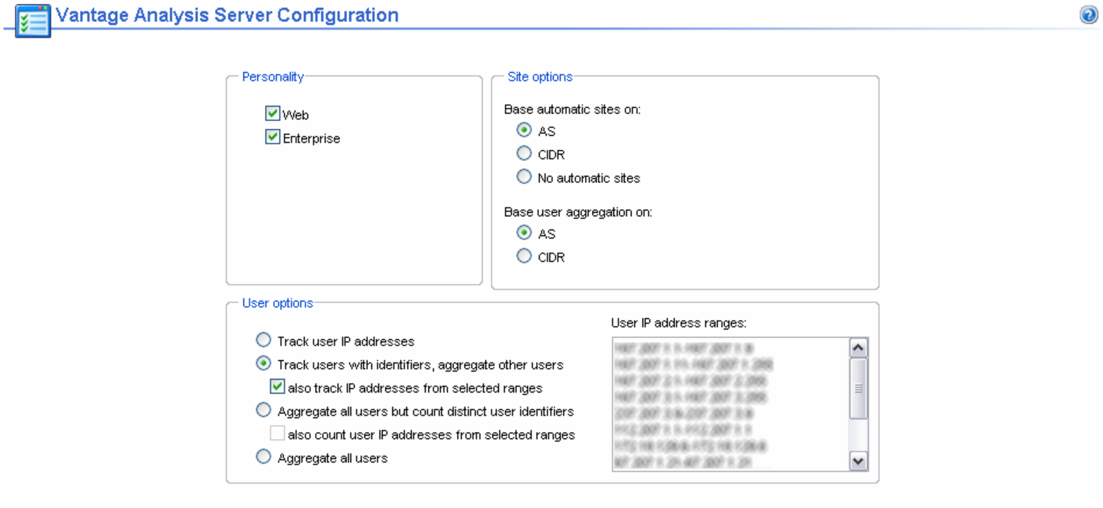
CHAPTER 6

VAS Basic Configuration Settings

When you attempt to use Vantage Analysis Server for the first time, you will be asked to specify a number of basic configuration options. These options are fundamental to the operation of the product and must be specified before Vantage Analysis Server starts to function.

You must have administrative privileges to be able to modify the basic configuration settings.

Figure 10. The **Vantage Analysis Server Configuration** screen



Vantage Analysis Server Configuration

Personality

☑ Web
☑ Enterprise

Site options

Base automatic sites on:
● AS
○ CIDR
○ No automatic sites

Base user aggregation on:
● AS
○ CIDR

User options

○ Track user IP addresses
● Track users with identifiers, aggregate other users
☑ also track IP addresses from selected ranges
○ Aggregate all users but count distinct user identifiers
□ also count user IP addresses from selected ranges
○ Aggregate all users

User IP address ranges:

VAS Personality

Vantage Analysis Server can be licensed in one of two personalities: Web or Enterprise. The personality determines the types of reports offered.

VAS-Web and VAS-Enterprise are intended to work separately, on separate hardware, but they can also be installed together in the same instance of VAS. This option is particularly useful for monitoring sites with relatively low traffic, where one machine has much more capacity than is required either by VAS-Web or VAS-Enterprise.

Web

Primarily for analysis of end-user experience with Web-hosted applications.

- Analysis options for HTTP, SMTP, DNS, and TCP generic transactions.

  (TCP generic transaction data is available only through DMI reports.)
- Dedicated reports for HTTP (including per-URL reports), SMTP and DNS.
- DMI access to all data, including HTTP (with per-URL data), SMTP, DNS, TCP.

For the Web personality, the list of available reports includes **Website Status**, **Activity Map**, **User Activity**, **Mail Status** and **DNS Status** from the **Software Services** group of reports.

Enterprise

For analysis of performance and usage of key IT resources.

- Analysis options for HTTP, SMTP, DNS and TCP generic transactions.
- Reports providing unified view of all applications—no dedicated reports for HTTP, SMTP or DNS.
- DMI access to all data, including HTTP (no per-URL data), SMTP and DNS.

For the Enterprise server personality, the list of available reports includes all **Network** reports: **Network View**, **Link View**, **Software Services View**, **Reporting Groups**, **User Diagnostics**. Additionally, **VoIP Status** reports are available from the **Software Services** group and **VPN Status** from the **Network** group. Note that VPN support is a licensed feature, and VoIP reports require NetworkVantage Probe attached to the VAS to produce VoIP performance data.

VAS can be licensed with one or more of the following supplemental analysis options, unrelated to personality settings and depending on presence of their own licenses:

- IBM DB2/DRDA
- IBM Websphere MQ
- Informix
- Microsoft SQL Server/Sybase
- Oracle SQL*Net
- Oracle Forms
- Tuxedo Jolt
- VPN Gateway (Juniper Neoteris, Nortel Contivity, and Intel NetStructure)
- Microsoft Outlook/Exchange
- Thin Client (Citrix and Windows Terminal Services for Windows Server 2000 and 2003)
- XML (transactional analysis with XML message tracking, including SOAP)
- SAP GUI.

NOTE

Personality selection or change is allowed only if the product has been licensed for the target personality, though the license may be temporary.

Sites, User Aggregation, and User Tracking

A site is an organizing concept introduced to help report users identify particular IP networks. A site is an IP network or a part of a network.

A site is defined in one of two ways:

- manual sites are specified as explicit IP address ranges,
- automatic sites are based on either AS names or CIDR blocks, where a block is defined by an IP address and a network mask.

All client IP addresses that are neither manual nor automatic sites are treated as belonging to the *Default* site. All server IP addresses that do not fall into any of the manual or automatic sites are treated as belonging to the *Default Data Center* site.

User aggregation means that users are not recognized individually, but are counted per site. Note that if sites are based on AS names, users can still be aggregated to CIDR blocks within ASes. However, if sites are based on CIDR blocks, users cannot be aggregated to ASes because these are not recognized as entities in this configuration.

The configuration option **Base automatic sites on** allows you to select automatic sites based on either ASes or CIDR blocks. You can also opt not to have automatic sites.

The option **Base user aggregation on** allows you to aggregate users to ASes or CIDR blocks, subject to any additional aggregation and user tracking options you may configure.

Note that user aggregation is compatible with the way you configure the creation of automatic sites. If automatic sites are based on CIDR blocks, user aggregation can also be based on CIDR blocks, but it cannot be based on ASes, because ASes are not recognized entities. However, if you choose automatic sites based on ASes, you will have the choice of aggregating users to ASes or individual CIDR blocks.

Additional user tracking and aggregation options enable you to track or count all or selected IP addresses or user identifiers, while aggregating other users. These options may require you to enter IP address ranges consisting of IP addresses separated by hyphens (in the form *nnn.nnn.nnn.nnn—nnn.nnn.nnn.nnn*).

Modifying VAS Basic Configuration Settings

If further modifications to the basic product configuration are required, after Vantage Analysis Server has been configured when it was first accessed, the configuration screen can be accessed by selecting **Settings** → **Vantage Analysis Server** → **Server Configuration** from the Vantage Analysis Server menu.

CAUTION

If you change the way automatic sites are defined, or if you modify the basic user aggregation options from AS to CIDR or vice versa, the traffic monitoring data currently stored in the report server database will no longer be compatible with the new definitions.

A warning message will be displayed, giving you the option to abandon the configuration changes or to proceed with or without purging the traffic monitoring information in the database. A purge is recommended, since any attempt to access old traffic monitoring data while new site or aggregation definitions are in place would have unpredictable results.

After clearing the database, the data gathered by the AMD is re-read by the report server.

Configuring Other VAS Settings

For detailed information on how to set all of the other configuration options supported by Vantage Analysis Server, please refer to *ClientVantage Agentless Monitoring—System Administration Manual*. Sections referring exclusively to Vantage Analysis Server are marked “(VAS)”; sections referring to all of the report servers, VAS and AWDS, have no applicability annotations in titles.

CHAPTER 7

Licensing ClientVantage Agentless Monitoring Products

Vantage products are protected by a license management system called Compuware Distributed License Management (DLM).

DLM uses the following components to help manage product licensing:

License File

DLM authorizes you to use Compuware products through a license file, which is a text file that contains information about the component options purchased with the product, including information for the product's features and the number and types of licenses that were purchased.

Compuware License Service (`cpwr.exe`)

An application (invoked by the DLM application or executed from the command line) that manages and services requests for the licenses of your Compuware products. The Compuware License Service can be installed on Windows and UNIX platforms. In many cases, it is recommended that you co-locate the Compuware License Service with the server-based components of one of the Compuware products you are installing.

License types

DLM offers several different types of licenses as described in the table below. Each Compuware product may support different combinations of these license types.

Table 3. DLM license types

License type	Description	Obtained by...
Trial License	A trial license ships with some Compuware products. This license type lets you evaluate the product. The default evaluation period is two weeks, after which time the trial license expires.	Installing the product.

License type	Description	Obtained by...
Temporary License	A temporary license has a fixed expiration date from the time that it is installed on your system. You must run the DLM to install this license type.	Requesting the license from Compuware, not shipped with the product.
Permanent Node-Locked License	A Permanent Node-Locked license is a client-based single-user license and does not have an expiration date. A Node-Locked license is identified by the HOSTID keyword in the license file and must always run on the same machine (same *node*, and hence the license is "node-locked") as it was originally installed. If you change workstations or *NIC* cards, you must contact Compuware to obtain a new license.	Running the DLM to determine your node identifier and providing the information to Compuware. Compuware will e-mail you a license file based on the node identifier. Vantage licenses will only recognize the first NIC address identified during system startup. If you have a multi-homed system, you will need to obtain a license based on your disk serial number.
Permanent Concurrent (Floating) License	A Permanent Concurrent license is server-based and allows you to purchase a specific number of licenses without assigning them to a particular workstation. When all available licenses are checked out from the License Manager, no additional users can run the product until a license is checked back in. This type of license has a license file with SERVER and DAEMON lines.	Running the DLM on the server for the License Manager to obtain the node identifier and providing the information to Compuware. The License Manager software and the license files must be installed on the server. Use the DLM from the client machines to connect them to the License Manager.
Borrowed License	A borrowed license is a license that the user checks out of the borrow proxy server and later checks back in. This enables the user to detach from the network and still use the Compuware product.	License must be requested from Compuware. Requires the Borrow License Client application to be installed in the same directory as the DLM.

Licensing Report Server Features

Compuware recommends that you back up the license information (license file) before installing the license with the Compuware Distributed License Management (DLM).

If, on the computer on which you are installing the report server, DLM is not already installed, it will be installed automatically as part of the report server installation.

NOTE

A stand-alone installation of DLM can also be found on the report server installation CD. For a 32-bit version of the report server, use the DLM version in the subdirectory named `win32`; for a 64-bit version of the report server, use the DLM version in the `x64` subdirectory.

When the report server is first installed, a two-week trial license is installed with the product. The trial license allows you to use both of the configurable personalities of the product as well as all of the licensable features. To continue using the product past the trial period, contact Compuware to obtain a license suited to your requirements.

If you are using multiple Compuware products, merge the license files with the DLM to easily manage the licenses.

You can run the licensing utility by selecting **Start** → **Programs** → **Compuware** → **Distributed License Management**.

Refer to the License Manager documentation for instructions on using the DLM to install a new or trial license.

NOTE

The report server checks for new licenses every few minutes. Therefore, it may take a number of minutes before a newly applied license is recognized by the server.

Features are usually licensed on the report servers, with the feature-specific functionality being enabled on the AMD , but if the AMD is a standalone product with no report server available, it is also possible to license a feature on the AMD itself.

Post-licensing actions

After installation of a new license on the report server, re-application of the license to AMDs is performed automatically. AMDs are able to accept a new license without restart. Note, however, that if the new license extends the current functionality of the product, this new functionality has to be configured before it can be used. For example, if the new license allows you to monitor a new protocol, this protocol has to be added to the list of monitored protocols by specifying it in the configuration settings.

Licensed Features Supported by VAS, AWDS, and AMD

Vantage Analysis Server (VAS) and Advanced Web Diagnostics Server (AWDS) are licensed per module, which mean that for each of the analysis options you use (such as Web, Enterprise, Database analyzer, or Oracle Forms), you must purchase a license. Compuware does not limit the usage of the report servers; any number of users can access VAS and AWDS reports.

The following separately licensable features are supported by VAS, AWDS, and Agentless Monitoring Device (AMD):

Table 4. ClientVantage Agentless Monitoring and Agentless Monitoring Device licensable features

Feature name	Description	VAS	AWDS	AMD
`VAS_Web`	VAS – Web personality	YES	—	YES

Feature name	Description	VAS	AWDS	AMD
VAS_Enterprise	VAS – Enterprise personality	YES	—	YES
VAS_EUE	VAS – End-User Experience	YES	YES	YES
AMD_VFC	License to connect AMDs	YES	YES	—
AM_OracleApplications	Enables “packaged” definitions for Oracle Applications	YES	YES	YES
AM_Siebel	Enables “packaged” definitions for Siebel CRM suite	YES	YES	YES
AM_SSL_Decryption	SSL support	YES	YES	YES
AMD_ClientVantage [1]	Enables ClientVantage integration.	YES	YES	YES
AWDS	AWDS	—	YES	YES
VAS_Citrix	Thin Client (Citrix Presentation Server and Windows Terminal Server) analysis	YES	—	YES
VAS_DB_DRDA	DRDA (DB2) analysis	YES	—	YES
VAS_DB_Informix	Informix Database analysis	YES	—	YES
VAS_DB_Oracle	Oracle Database analysis	YES	—	YES
VAS_DB_TDS	TDS (Sybase and MS SQL) analysis	YES	—	YES
VAS_DNS	DNS analysis	YES	—	YES
VAS_Exchange	MS Exchange analysis	YES	—	YES
VAS_FIX	FIX transaction analysis	YES	—	YES
VAS_Mail	SMTP analysis	YES	—	YES
VAS_MQ	IBM MQ analysis	YES	—	YES
VAS_OracleForms	Oracle Forms analysis	YES	—	YES
VAS_SAP	SAP GUI monitoring	YES	YES	YES
VAS_Tuxedo	Tuxedo/Jolt analysis	YES	—	YES
VAS_VPN	VPN support	YES	—	YES
VAS_XML	XML and SOAP transaction analysis, including XML over MQ	YES	YES	YES

[1] This feature is licensed on the report server, but the feature-specific functionality is enabled on the AMD.

NOTE

- If you purchased `VAS_Enterprise` and used the HTTP analysis in the past, after upgrade to the release 11.1 you need to purchase the `VAS_Web` feature to continue the HTTP analysis. This feature has been removed from the `VAS_Enterprise` in version 11.0.1.
- VAS can read data from AMDs even if you do not have the `VAS_Web` or `VAS_Enterprise` features installed. In such cases, your setup will be able to monitor transactions only.

APPENDIX A

Protocols Supported by VAS

Table 5. Protocols supported in this release

Analyzer	Protocol	Version	Limitations	Example application
DNS	DNS	RFC 1035	UDP-based DNS only. No support for multi-query requests.	
DRDA (DB2)	DRDA (DB2)	DRDA version 2		IBM DB2 Universal Database 8.1
Exchange/RPC	Exchange	MS Exchange 2003, 2007	Encryption at application level is reported as “Encrypted transaction”	Microsoft Exchange Server 2003
Generic	TCP	RFC 793		
Generic (with transactions)	TCP	RFC 793		
HTTP	HTTP	1.1, 1.0 (RFC 2616)	Advanced analysis for GET/POST methods. For all other methods, including WebDAV, every hit is reported separately. No pipelining.	
IBM MQ	IBM MQ	WebSphere 6.0	Traffic for channels with encryption is not monitored. Traffic for channels with header compression is not monitored.	WebSphere • Traffic between MQ servers, (Manager to Manager) and between MQ

Analyzer	Protocol	Version	Limitations	Example application
			MQGET message segmentation is not supported.	clients and MQ servers can be analyzed. • Dynamic queue names are recognized. • Persistent TCP sessions are supported.
ICA (Citrix)	Citrix	3, 4, and 4.5		Citrix Metaframe Presentation Server
ICMP	ICMP	RFC 792		
Informix	Informix	IDS 7.31, IDS 9.40		Informix Dynamic Server
IP	IP	RFC 791		
Jolt (Tuxedo)	Jolt	8.1		BEA Tuxedo
Kerberos	SMB	Microsoft Kerberos 5		All Microsoft Windows systems that use the SMB 1.0 protocol. (Tested on Windows 2000 and Windows XP.)
Oracle	SQL *Net	9i, 10g R1, 10g R2, 11g R1		Oracle 9i, 10g, 11g
Oracle Applications over HTTP	HTTP	1.1, 1.0 (RFC 2616)	Monitoring applications using HTTP protocol may register excessive traffic. For more information, see *Supported Packaged Applications* in the *ClientVantage Agentless Monitoring – System Administration Guide*.	Oracle E-Business Suite 11i Oracle E-Business Suite 12
Oracle Applications over HTTPS	HTTPS	HTTP 1.1 encapsulated in SSL, SSL 3.0, TLS1.0 (RFC 2246)		
Oracle Forms over HTTP Oracle Forms over TCP	Oracle Forms	6i, 10.1		Oracle Forms 6i Oracle Application Server 9i, 10i, 10g R2

Analyzer	Protocol	Version	Limitations	Example application
Oracle Forms over SSL Oracle Forms over HTTPS				
SAP GUI	SAP GUI protocol (DIAG)	6.40, 7.10	No errors detection.	SAP GUI for Java 7.10rev8, Windows SAP GUI v.7.10, SAP GUI Console
Siebel over HTTP	HTTP	1.1, 1.0 (RFC 2616)	A special parameter configuration is recommended for analyzing Siebel applications. For more information, see *Global Settings for Recognition and Parsing of URLs* in the *ClientVantage Agentless Monitoring – System Administration Guide*.	Siebel CRM 7.8.2.0
Siebel over HTTPS	HTTPS	HTTP 1.1 encapsulated in SSL, SSL 3.0, TLS1.0 (RFC 2246)		
SMB	SMB	SMB 1.0		All Microsoft Windows systems that use the SMB 1.0 protocol. (Tested on Windows 2000 and Windows XP.)
SMTP	SMTP	RFC 821	Supported commands: HELO/EHLO, MAIL FROM, RCPT TO, DATA, QUIT, RSET, VRFY, HELP, EXPN, NOOP (no support for: SEND, SOML, SAML, TURN Multi-part attachments are always saved in one piece (no segmentation is preserved). MS Exchange Server native RPC protocol and POP3 (e-mail download) are not supported.	Only mail servers that use the SMTP protocol (TCP/25)
SOAP over HTTP	SOAP	SOAP 1.1 and 1.2	Support for Remote Procedures Calls only.	Any business application that uses

Analyzer	Protocol	Version	Limitations	Example application
SOAP over HTTPS				SOAP for data exchange over the network.
SSL SSL Decrypted	HTTPS	HTTP 1.1 encapsulated in SSL SSL 3.0, TLS1.0 (RFC 2246)	56-bit DES is not supported. Only RSA Key Exchange Algorithm supported. GET/POST methods only; no pipelining. Only a 1024-bit SSL key supported on cswift SSL cards. Open SSL supports 1024-bit, 2048-bit, and 4096-bit keys. nCipher cards support 1024-bit, 2048-bit, and 4096-bit keys. Cavium NITROX XL FIPS cards support 1024-bit and 2048-bit keys.	
TCP	TCP	RFC 793		
TDS	TDS	5.0, 7.0, 8.0		MS SQL Server 7.0, 2000, 2005, 2008 Sybase 10.0, Sybase Adaptive Server Enterprise (ASE) 15
UDP	UDP	RFC 768		
VoIP	RTP, RTCP, G.711, H.323, SIP, UniStim (Nortel)	RFC-3261, RFC-3550, ITU-T G.107, G.711, G.721, G.722, G.723.1, G.726, G.728, G.729, H.225.0, H.245, H.323	ITU-T G.107 E-Model quality metrics (MOS/R-Factor) are only supported when an RTP voice conversation is monitored by a companion RTCP conversation.	
XML XML over SSL XML over HTTP	XML	W3C recommendation 1.0 and 1.1	Encapsulated in TCP, in HTTP, and in HTTPS	

Analyzer	Protocol	Version	Limitations	Example application
XML over HTTPS				
XML over MQ	XML MQ	XML: W3C recommendation 1.0 and 1.1 MQ: WebSphere 6.0	XML encapsulated in MQ. MQ traffic for channels with encryption is not monitored. MQ traffic for channels with header compression is not monitored. MQGET message segmentation is not supported.	

APPENDIX B

Determining Microsoft SQL Server Named Instance Port Number

When you perform a named instance installation of Microsoft SQL Server, the port is chosen dynamically at the time of installation. You can determine your SQL Server named instance in several ways; using **SQL Server Configuration Manager** is the most appropriate one.

Prerequisites

You need physical or remote access to the operating system where Microsoft SQL Server instance is installed.

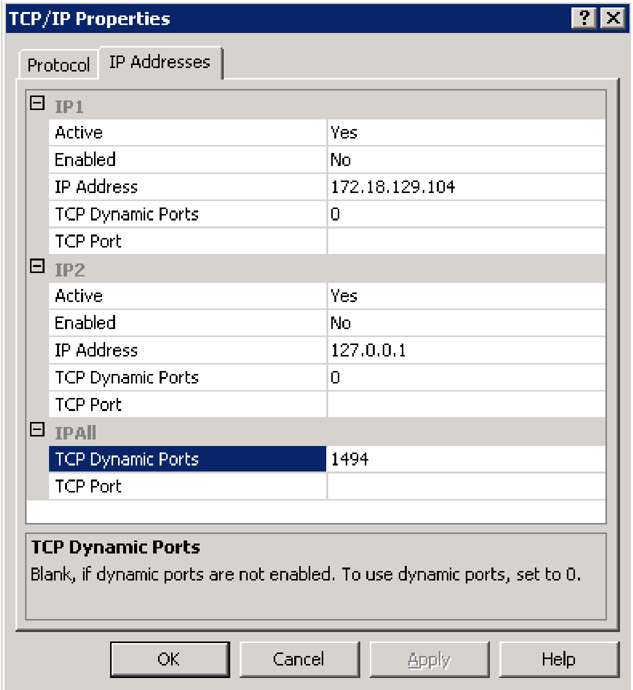
If enabled, the default instance of the SQL Server Database Engine listens on TCP port 1433. Named instances of the Database Engine are configured for dynamic ports. This means they select an available port when the SQL Server service is started.

In general, you should refer to your SQL Server named instances by name so that you always address the valid instance (the port number may change but the instance name does not). If, during installation of the report server, you are unable to use the instance name and are forced to give a port number, you can check its value:

1. Log into the system either remotely (via Remote Desktop, for example) or locally.
2. In Windows, go to **Programs** → **Microsoft SQL Server *<server_version>*** → **Configuration Tools** and choose **SQL Server Configuration Manager**.
3. Select **Protocols for *<instance name>*** and then double-click **TCP/IP** to inspect the instance TCP/IP settings.
4. In the **TCP/IP Properties** dialog box, on the **IP Addresses** tab, determine the currently assigned port number.

   If the **TCP Dynamic Ports** dialog box contains 0, this indicates that the Database Engine is listening on dynamic ports. The **IPAll** dialog contains the port number used by the SQL Server named instance you selected.

Figure 11. TCP/IP Properties for the SQL Server named instance



IP1	
Active	Yes
Enabled	No
IP Address	172.18.129.104
TCP Dynamic Ports	0
TCP Port	
IP2	
Active	Yes
Enabled	No
IP Address	127.0.0.1
TCP Dynamic Ports	0
TCP Port	
IPAll	
TCP Dynamic Ports	1494
TCP Port	

TCP Dynamic Ports

Blank, if dynamic ports are not enabled. To use dynamic ports, set to 0.

5. Click **Cancel** to close **TCP/IP Properties**.
6. *Optional:* Repeat steps Step 3 [p. 57]–Step 5 [p. 58] for each instance you need to verify.
7. *Optional:* You can validate port number discovery using `netstat` program.

   Connect to the Database Engine with **SQL Server Management Studio** from a remote machine. On the machine hosting SQL Server, issue the `netstat` command and inspect the **Local Address** and **Foreign Address** columns. Find a matching pair (or pairs) of addresses that represents your remote connection to the SQL Server. The **Local Address** column contains the port number associated with the local machine (separated by a colon from the IP address).

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