Vantage
App Note

Planning and Setting Up Your Vantage® Database

This App Note applies to Vantage Version 8.1

Note: This guide is written for video professionals who are familiar with using Vantage. To implement applications in Vantage, you should know how to create workflows and submit jobs. If you aren't familiar with Vantage, we suggest that you review the *Vantage User's Guide* and *Vantage Domain Management Guide* as needed.

telestream

January 2022

316500

Overview

This application note explains when to put the database on a separate server from the Vantage services, when to move up to SQL Server Standard, and also discusses other database configurations including database mirroring.

When performing a Vantage installation if no other Microsoft SQL database version is already installed, Vantage automatically installs Microsoft SQL 2019 Express for the Vantage domain database, which contains Vantage workflows, job history, catalogs, and associated components. If you are upgrading Vantage from a previous version with an older Microsoft SQL database, Vantage attaches to the existing SQL database and updates the domain database contents.

To ensure the best performance when installing a Vantage array, install the Vantage MS SQL database on a separate server from the Vantage services and client applications. Additionally, your Vantage array may contain sufficient data to warrant installing MS SQL Server Standard instead of Express. For additional data protection, you may want to install a mirrored database or Basic Availability Groups.

Supported Databases, Operating Systems, and Servers

Vantage is supported on the following database systems:

- Microsoft SQL Server 2012 Express, Standard, or Enterprise
- Microsoft SQL Server 2014 Express, Standard, or Enterprise
- Microsoft SQL Server 2016 Express, Standard, or Enterprise
- Microsoft SQL Server 2019 Express, Standard, or Enterprise

The MS SQL Server should be installed and operated only on the following operating systems (64-bit recommended for performance):

- Windows Server 2016 Standard or Data Center Edition
- Windows Server 2019 Standard or Data Center Edition

Note: Microsoft SQL Server 2019 will not install on Windows Server 2012.

Note: SQL database tools must not be used to move a Vantage domain database of one version to a later version of Vantage. To upgrade Vantage, only use Vantage installers or the Vantage Database Deployment Utility.

Note: Depending on the security requirements of your organization's IT department, the default login/password (sa/vantage12!) used by the SQL and Vantage Database installer may be insufficient. In such cases, Telestream recommends using the SQL installer, which allows for specification of custom user/password, then installing the

Vantage Domain Database with the Database Deployment Utility and providing your custom user/password as specified.

Database Server Requirements for SQL Standard

These following recommendations apply only to Vantage domains utilizing Microsoft SQL Standard. To determine which version of SQL to use, please refer to the *Selecting SQL Express or SQL Standard*.

Telestream recommends using "per core" SQL Standard licensing. In this licensing scenario, all physical cores on the server (or virtual machine) must be licensed. Please contact your IT department or Microsoft for more information about SQL Standard licensing options.

Telestream recommends the following hardware for dedicated database servers.

This table provides SQL Standard: 4-core server minimum recommendations.

Component	Specification
CPU	64-bit, 4 physical cores, 8 MB cache, 3.0 GHz or greater. For example, Intel E3-1230 v2.
RAM	16 GB DDR minimum required, 32 GB or more recommended for high job volumes; 1600 MHz recommended
OS/Software HDD	RAID-1, 2 drive volume, minimum 7200 RPM, SSD preferred
Database HDD	RAID-5, 3 drive volume, minimum 250 GB per drive, 7200 RPM
Network	Dual 1 GbE or greater NICs
Operating System	Windows Server 2012 R2, 2016, or 2019 **Note**: SQL 2016 works on Server 2012, but SQL 2019 does not.

This table provides SQL Standard: 8-core server minimum recommendations.

Component	Specification
CPU	64-bit, 8 physical core processors, 2.0 GHz or greater. For example, Intel ES-2640 v2.
RAM	24 GB DDR minimum required, 32 GB or more recommended for high job volumes; 1600 MHz recommended
OS/Software HDD	RAID-1, 2 drive volume, minimum 7200 RPM, SSD preferred
Database HDD	RAID-5, 3 drive volume, minimum 250 GB per drive, 7200 RPM
Network	Dual 1 GbE or greater NICs
Operating System	Windows Server 2012 R2, 2016, or 2019 **Note**: SQL 2016 works on Server 2012, but SQL 2019 does not.

When choosing your database server, the primary consideration is how many clients will access job status views simultaneously. Real-time job status views are the largest consumer of database CPU resources.

This table guides you in selecting a server and determining which software to host on it, based on your client requirements.

Job Status View Clients	Database Server	Notes
1 or 2 clients	4-core server	IIS and the Workflow Designer may run on the DB server.
3-8 clients	4-core server	IIS and Workflow Designer must run on a separate server.
More than 8 clients	8-core server (or more)	Contact Telestream for guidance if you plan to have more than 20 clients.

Note: These recommendations ensure sufficient CPU headroom for activities such as Workflow Portal operation, running large arrays, deleting jobs, etc.

Selecting SQL Express or SQL Standard

The decision about whether to use SQL Standard or Express depends on your planned maximum database size and the expected average volume of database traffic. These topics provide information to help you choose which database to use:

- Comparing SQL Express and SQL Standard
- Vantage Guidelines for SQL 2019 Express

Comparing SQL Express and SQL Standard

SQL Express and SQL Standard database limitations are compared in this table:

SQL 2014/16/19 Express	SQL 2014/16/19 Standard
Max. Cores: 4	Max. Cores: 16/24/24
Max. DB RAM: 1 GB	Max. DB RAM: 64/128/128 GB
Database Size: 10 GB	Max. Database Size: 524 PB

Microsoft offers additional information about SQL Server capabilities and limitations at: http://msdn.microsoft.com/en-us/library/cc645993.

Vantage ships with SQL 2019 Express, which is suitable for single-node installations or array installations up to four servers. For very large installations, SQL Standard may be required.

Vantage Guidelines for SQL 2019 Express

Vantage installs SQL 2019 Express, which allows up to 10 GB of database storage. Due to this storage limitation, SQL Express is not suitable for every Vantage domain.

The following guidelines indicate the maximums for using Vantage with SQL 2019 Express:

- **Transcoding:** SQL 2019 Express can support up to 15,000 Vantage jobs in the database at a time. ***Note:*** *This assumes that each job contains 10 actions. More actions in a job require more storage, allowing fewer jobs.*
- **TrafficManager:** SQL 2019 Express can support up to 1,500 TrafficManager commercials in inventory at a time.
- **Vantage array:** Up to four Vantage servers can simultaneously connect to SQL 2019 Express as part of a Vantage array. This includes any redundant or backup machines.

Note: Microsoft SQL Server 2019 will not install on Windows Server 2012.

Database Shutoff Feature for SQL Express

If a Vantage single-node or array installation using SQL Express nears the SQL Express database size limit, Vantage stops accepting jobs. Attempts to submit jobs manually

launches a warning dialog indicating that the database is at or near capacity. To release space in the database, see the procedure in the Managing a Vantage Domain chapter: *Shrinking a Full Database* in the Vantage Domain Management Guide.

Guidelines for an Array Installation with SQL Standard

For high traffic installations, Vantage performance improves when you use SQL Standard and separate the database from other services such as Vantage services. The following guidelines provide increasing levels of performance improvement:

- Always place SQL Standard and the database on a dedicated server, separate from Vantage services, the Vantage store, and the input and output files. This approach provides the largest increase in performance.
- Place the Vantage database files on a dedicated physical drive or RAID array, separate from the operating system.

Note: Installing a Vantage domain database on a separate server does not require an extra Vantage license for that server.

Note: Operating System support presented here is current at the time of publication. However, updates to supported Operating Systems may occur. Verify that the server on which you plan to install Vantage meets the platform requirements, as specified at telestream.net/vantage/tech-specs.htm.

To improve database availability, see *Improving Uptime with Mirroring or Availability Groups*.

Recommendations for Large Arrays

For arrays containing 10 or more nodes, consider these additional recommendations: .

Feature	Recommendation
Server memory for DB < 32 GB	64 GB
Server memory for DB > 32 GB	128 GB
Cores	16 cores minimum, 24 cores recommended.
Partitioning	Create a dedicated partition for SQL Server data.
SSD or hard drives	SSDs may provide better performance but only in cases of high I/O. Use SQL to monitor I/O wait times and PERFMON to measure average disk I/O latency. Latency should be less than 0.020 seconds (20 ms).

Other Database Configurations

Vantage systems can work with other special database configurations:

- For a fully redundant system, you can use SQL Standard with Basic Availability Groups or with Mirroring. This requires professional services from Telestream with servers and licenses for two SQL Standard databases plus a third server running the free SQL Express.
- Large volume systems can use SQL Enterprise.
- You can use SQL with Clustering.

Improving Uptime with Mirroring or Availability Groups

SQL Server Availability Groups or database mirroring can prevent Vantage domain interruption if a single database server fails. Telestream supports mirroring for SQL Standard 2012 and SQL Standard 2014 and Basic Availability Groups for SQL Standard 2016 and SQL Standard 2019. SQL Enterprise with Clustering may also be used for high availability.

A mirrored database requires the following physical servers:

- A dedicated server to host the principal database
- A dedicated server (of similar capability to the principal database server) to host the mirror database
- An optional dedicated server to host the witness server

The witness database is a lightweight service which can run effectively on a low-end server, but cannot be installed on a database server.

Basic Availability Groups require:

- A dedicated server to host the primary replica database
- A dedicated server (of similar capacity) to host the secondary replica database
- A reliable witness file share server.

Note: This guide does not provide instructions for installing or implementing a mirrored database or Availability Groups. Consult your database administrator or contact your Telestream representative regarding installation service options.

Note: Telestream strongly recommends using a dedicated server for the witness server to ensure uninterrupted operation in case of a database failover. If the witness server function is placed on a server with Vantage services, transcoding can consume too many resources and prevent timely database switchover.

Note: If a mirrored database fails over, the domain change is not reflected in Vantage client program title bars, which still show the original domain name. Users can correct this by using File > Change Vantage Domain in the clients to select the new domain.

Setting Up a Vantage Array Database

If you are creating or upgrading a single server Vantage installation, pre-installing the database is not necessary. The Vantage Setup installer will install MS SQL Server Express and the Vantage database automatically on the single-node server with the Vantage applications and services.

However, if you are installing or upgrading an existing Vantage array on multiple servers, you need to have MS SQL Server Standard (or better) installed before you install Vantage using the Vantage Setup installer. This procedure guides you through the MS SQL Server Standard installation, and the procedure that follows (*Installing the Vantage Domain Database*) installs or upgrades the Vantage database. After SQL Server and the Vantage database are installed, you can install the Vantage array using the Vantage Setup installer.

Note: This guide does not provide instructions for installing or implementing a mirrored database or Availability Groups. Consult your database administrator or contact your Telestream representative regarding installation service options.

To set up the Vantage domain database, perform these procedures in the order listed:

- *Installing SQL Server 2012 Standard*
- *Installing SQL Server 2014 Standard*
- *Installing SQL Server 2016/2019 Standard*
- *Installing the Vantage Domain Database*

Installing SQL Server 2012 Standard

The following procedure explains how to install SQL Server 2012 Standard. If you are installing SQL Server 2014, SQL Server 2016, or SQL Server 2019, please skip to, *Installing SQL Server 2014 Standard* or *Installing SQL Server 2016/2019 Standard*.

Follow these steps to install SQL Server 2012 Standard:

1. Log into the target server with a local administrator account.
2. Launch setup from the SQL Server 2012 Standard installation media.
3. SQL Server Installation Center—Click Installation in the left column, then select *New installation or add features to an existing installation*.
4. Setup Support Rules—Click OK.
5. Product Key—Enter your product key and click Next.
6. License Terms—Accept the license terms and click Next.
7. SQL Server Updates—Click Next after updates have completed.
8. Feature Selection—Check Database Engine Services and Management Tools, and click Next.

9. Instance Configuration:
   a. Select Named instance.
   b. Enter *VANTAGE* in the Named instance field and the Instance ID field.
   c. Click Next to continue.
10. Disk Space Requirements—Click Next to continue.
11. Server Configuration:
   a. For SQL Server Agent, the Startup Type should be disabled. (If the Startup Type is set to automatic, the service must be stopped before running Vantage Setup.)
   b. For Server Database Engine, select NT AUTHORITY\NETWORK SERVICE
   c. Click Next to continue.
12. Database Engine Configuration:
   a. Click Add Current User.
   b. Select Mixed Mode.
   c. Enter the Vantage sa user password (*vantage12!*) in the Enter Password and Confirm Password fields.
   d. Click Next to continue.
13. Continue to click through the installer windows accepting the default settings to complete installation.
14. Complete—Click Close to close the SQL Server installer.
15. Select Start > SQL Server Management Studio.
16. Connect to the Vantage domain database using the following information:

    Server type: Database Engine
    Server name: [hostname]\VANTAGE
    Authentication: SQL Server Authentication
    Login: sa
    Password: vantage12!
17. In the Object Explorer panel, right-click [hostname]\VANTAGE and select Properties.
18. In the Server Properties window, go to the Memory page.
19. Set the *Maximum server memory (in MB)* to 75% of the system's memory. For example: If the system's memory is 8 GB (8192 MB), then the maximum server memory for SQL should be set to 6 GB (6144 MB) (8192 x 0.75 = 6144).
20. Click OK.
21. Close the SQL Server Management Studio.

Proceed to *Installing the Vantage Domain Database*.

Installing SQL Server 2014 Standard

Follow these steps to install SQL Server 2014 Standard on a server (skip this topic if you already installed another version of SQL Server):

1. Launch setup from the SQL Server 2014 Standard installation media.
2. In the *SQL Server Installation Center*, go to *Installation* on the left.

3. Select *New SQL Server Stand-alone installation or add features to an existing installation*.
4. On the Product Key page, enter a product key and click Next.
5. Accept the license terms and click Next.
6. Click Next on the Microsoft Update page.
7. On the Setup Role page, select *SQL Server Feature Installation* and click Next.
8. On the Feature Selection page, enable *Database Engine Services*, *Management Tools – Complete* and click Next.
9. On the Instance Configuration page, select *Named instance*, enter *VANTAGE* and click Next.
10. On the Server Configuration page, click the cell for the account name of the *SQL Server Database Engine* service. After selecting the cell, click the drop-down list and select <<*Browse…*>>.
11. In the *Enter the object name to select* field, type *NETWORK SERVICE* and click OK. Then click Next on the Server Configuration page.
12. On the Database Engine Configuration page, select *Mixed Mode (SQL Server authentication and Windows authentication)*. Enter *vantage12!* for the password and click the *Add Current User* button.
13. (Optional) If you would like to specify a non-default location for the database files, go to the Database Engine Configuration page, select the Database Directories tab, and change the Data root directory path.
14. Click Next on the Database Engine Configuration page.
15. Click install on the Ready to Install page.
16. When installation completes, click Close and close the SQL Server Installation window.
17. From the Start menu, launch the SQL Server 2014 Management Studio.
18. In the *Server name* field, enter .*vantage* as the server name.
19. Set authentication to *SQL Server Authentication*.
20. Enter *sa* for the login and *vantage12!* for the password.
21. In the Object Explorer panel, right click .*vantage (SQL Server 12.0.2000 – sa)* and select *Properties*.
22. From the Select a page panel, go to *Memory* and set *Maximum server memory (in MB)* to 75% of the host system's memory. For example, if the system's memory is 8 GB (8192 MB), then the maximum server memory for SQL should be set to 6 GB (6144 MB) (8192 x 0.75 = 6144).
23. Click OK to close the Microsoft SQL Server Management Studio window.

Proceed to *Installing the Vantage Domain Database*.

Installing SQL Server 2016/2019 Standard

Follow these steps to install SQL Server 2016 SP1 Standard or SQL Server 2019 Standard on a server (skip this topic if you have already installed either of these versions):

Note: SQL 2016 can be installed on Server 2012 but SQL 2019 cannot.

1. Launch setup from the SQL Server 2016/2019 Standard installation media.
2. In the SQL Server Installation Center, select *Installation* on the left.
3. Select *New SQL Server Stand-alone installation or add features to an existing installation*.
4. On the Product Key page, enter a product key and click *Next*.
5. Accept the license terms and click *Next*.
6. Click *Next* on the Microsoft Update page and the Install Rules page.
7. On the Feature Selection page, click *Feature Selection* on the left, enable *Database Engine Services* and click *Next*.
8. On the Instance Configuration page, select *Named instance*, enter *VANTAGE* and click *Next*.
9. Click the cell where the SQL Server Database Engine Row and Account Name column intersect. After selecting the cell, click the drop-down list and select *<<Browse…>>*.
10. In the *Enter the object name to select* field, type *NETWORK SERVICE* and click OK. Then click *Next* on the Server Configuration page.
11. On the Database Engine Configuration page, select *Mixed Mode (SQL Server authentication and Windows authentication)*. Enter *vantage12!* for the password and click the *Add Current User* button.
12. (Optional) If you would like to specify a non-default location for the database files, go to the Database Engine Configuration page, select the Data Directories tab, and change the Data root directory path.
13. Click *Next* on the Database Engine Configuration page.
14. Click *Install* on the Ready to Install page.
15. When installation completes, click *Close* and close the SQL Server Installation window.
16. (SQL Server 2016) Install SQL Server 2016 Service Pack 1 (SP1):

    https://www.microsoft.com/en-us/download/details.aspx?id=54276

Installing SQL Server Management Studio

Management Studio is not automatically installed for SQL Server 2016/2019. To install and configure it, follow these steps:

1. Browse to https://msdn.microsoft.com/en-us/library/mt238290.aspx.

2. Click the link to "Download SQL Server Management Studio." At the time this document was written, version 18.10 is available.
3. After the download completes, launch the setup and click Install.
4. Click Close when the installation completes.

After the SQL Server Management Studio has been installed, it must be used to set the maximum limit for SQL Server's memory consumption:

1. From the Start menu, launch the SQL Server Management Studio.
2. Connect to the instance using SQL Server Authentication:

   Server name: .\VANTAGE

   Authentication: SQL Server Authentication

   Login: sa

   Password: vantage12!
3. Right-click the hostname at the top of the Object Explorer tree and select Properties.
4. From the Select a page panel, go to *Memory* and set *Maximum server memory (in MB)* to 75% of the host system's memory. For example, if the system's memory is 8 GB (8192 MB), then the maximum server memory for SQL should be set to 6 GB (6144 MB) (8192 x 0.75 = 6144).
5. Click *OK* to close the Microsoft SQL Server Management Studio window.

Proceed to *Installing the Vantage Domain Database*.

Installing the Vantage Domain Database

Now that SQL Server Standard is installed and configured for Vantage, install the Vantage domain database as explained in the *Installing the Vantage Domain Database* chapter of the *Vantage Domain Management Guide*. The Vantage installer will detect that SQL Standard is already installed, will not install SQL Express, and will attach to the installed instance.

Moving the Vantage Domain Database to Another Database

This procedure is not part of setting up a new database, but you may need this information if you want to move the Vantage domain database for any of these reasons:

- You are upgrading SQL Server from Express to Standard
- You are upgrading SQL Server from an older version to a newer one
- You are moving the database from one server to another

Note: This procedure backs up the database, moves the database to a different SQL Server version and/or server, and restores the database. Vantage does not support a Vantage restore from one Vantage database version to another. If you are upgrading Vantage and moving the database, upgrade Vantage first, and then move the database.

To move a Vantage domain database, follow the procedures in order:

1. Preparing for the Move
2. Backing up the Existing Database
3. Removing Microsoft SQL Server
4. Installing SQL Server Standard
5. Installing the Vantage Domain Database
6. Restoring the Vantage Domain Database Backup
7. Finishing the Move

Preparing for the Move

If you are upgrading SQL Server, it is recommended that you back up the Vantage domain database. However, if you are moving the Vantage domain database to a new server, you must back up the database, as the backup file will be used to restore the domain on the new server.

To back up the existing Vantage domain database so that it can be transferred to the new database later, follow these steps:

1. Use Vantage Workflow Designer to deactivate all active workflows to prevent new jobs from starting.
2. Use the Job Status Views tab in Vantage Workflow Designer, the Vantage Job Status Views web application, or Vantage Dashboard to either determine when all jobs are complete or stop any jobs in process or in waiting.
3. If you are moving the database to another server, do the following:
   a. Take note of any Storage, Variables, and/or Qualification Rules settings for each service. (In the Vantage Management Console, select Services. In the service panel, click each service and check the tabs at the bottom of the window.)

      When you move the Vantage domain database from one server to another, the Storage, Variable, and Qualification rule configuration for each service is lost. Write down any configuration that you want to transfer to the new server.

Note: The service Storage, Variable, and Qualification Rule configuration is not lost when you change the SQL Server version on a server. Skip to Step 4 if you are not moving the Vantage domain database to a different server.

---

   b. In the Vantage Management Console, remove all services from the Vantage domain as described in *Removing a Service from the Domain* in the *Vantage Domain Management Guide*.

Note: The default Vantage user account is *Administrator* with no password. This account has administrative privileges.

---

   c. In the Vantage Management Console, select Licenses in the components panel.
   d. On the Licenses tab, select all licenses and click the Delete button ✕.

Note: To add the licenses back at the end of this procedure, you will need access to the license files. If you do not know where these files are, locate them now before you delete them from the existing database.

---

4. If you are changing the Microsoft SQL version on a server (and not moving the database to another server), place all services in Maintenance Mode as described in *Entering and Exiting Service Maintenance Mode* in the *Vantage Domain Management Guide*.

Backing up the Existing Database

If you are upgrading SQL Server, it is recommended that you back up the Vantage domain database. If you are moving the Vantage domain database to a new server, you must back up the database, as the backup file will be used to restore the domain on the new server.

To back up the existing Vantage domain database so that it can be transferred to the new database later, follow these steps:

1. In the Vantage Management Console, select the domain you want to modify, select Domain Management in the components panel, click Backup..., and use the file save dialog to save the backup file to a safe location.

   You will need to access the backup file to restore the Vantage domain database after you move it. For more information, see *Backing Up the Domain* in the *Vantage Domain Management Guide*.
2. Close all Vantage clients, including Vantage Workflow Designer, Vantage Web Applications, Vantage Workflow Portal, and Vantage Management Console.

Removing Microsoft SQL Server

When you are upgrading Microsoft SQL Server or moving the Vantage domain database to another server, you may want to remove the old version of SQL Server. However, Telestream strongly recommends that you do not remove the SQL Server software from the original installation until you know you have everything working on the new installation.

To remove Microsoft SQL Server, follow these steps:

1. Log into the server with a local administrator account.
2. Open the control panel tool for removing programs:
   Control Panel > Programs and Features > Uninstall Programs.
3. Select Microsoft SQL Server and click Remove or Uninstall.

Note: If you are prompted to stop the SQL Server (VANTAGE) service, go to Start > Services and stop the service before clicking Retry to continue with uninstalling.

Note: If you have multiple instances (for example SQLEXPRESS and VANTAGE), you will need to remove them both.

---

4. Select Microsoft SQL Server Native Client and click Remove or Uninstall.

Note: Uninstalling the SQL Server does not delete your Vantage workflows, resources, or transaction history. It leaves your domain database files intact in [Install_Drive]:\Program Files\Telestream\Vantage\Database. For information on removing the database files, see *Uninstalling Vantage from a Server* in the *Vantage Installation Guide* or the *Vantage Domain Management Guide*.

At this point, the SQL Server is removed but the database files and any Vantage services and clients that were installed on the server remain installed. The domain cannot resume operation until the SQL Server is reinstalled on this server or set up on another server.

Installing SQL Server Standard

Please see *Installing SQL Server 2012 Standard*, *Installing SQL Server 2014 Standard*, or *Installing SQL Server 2016/2019 Standard*. After installing SQL, continue with the next topic to install the Vantage database.

Installing the Vantage Domain Database

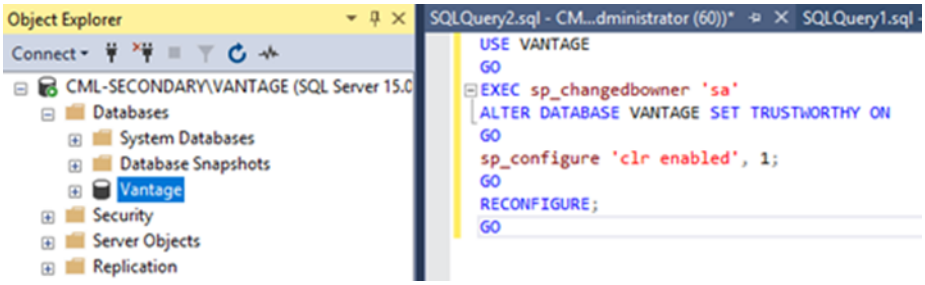
To install the Vantage Domain Database on the target server, please see *Installing the Vantage Domain Database*.

Restoring the Vantage Domain Database Backup

To restore the Vantage domain database using the backup file you previously created, follow these steps:

1. Install SQL Server Management Studio (SSMS) and execute the following query on the Vantage database on the target server:

```
USE VANTAGE
GO
EXEC sp_changedbowner 'sa'
ALTER DATABASE VANTAGE SET TRUSTWORTHY ON
GO
sp_configure 'clr enabled', 1;
GO
RECONFIGURE;
GO
```



2. Use the SQL Server Management Studio to restart the Vantage database engine.

3. Start the Vantage Management Console on any Vantage server in the domain.

Note: If you have moved the Vantage domain database to a new server, the name of the Vantage domain changed to the name of the new host server.

4. In the Vantage Management Console, select the domain to modify, select Domain Management in the components panel, click Restore..., and select the file to restore. For more information, see *Backing Up the Domain* in the *Vantage System Administration Guide* or the *Vantage Domain Management Guide*.

Finishing the Move

To finish the move, you must enable the services you disabled when preparing for the move. If you moved the Vantage domain database to another server, you must also install Vantage licenses. To return Vantage to operation, follow these steps:

1. If you changed the Microsoft SQL version on a server (and did not move the database to another server), do the following:
   a. Remove all services from Maintenance Mode as described in *Entering and Exiting Service Maintenance Mode* in the *Vantage System Administration Guide* or the *Vantage Domain Management Guide*.
   b. Skip to Step 4.
2. If you moved the Vantage domain database to a different server, activate Vantage Domain licenses as follows:
   a. In the Vantage Management Console, open the domain you want to modify, and select Licenses in the components panel.
   b. On the Licenses tab, click the Add License button and use the open file dialog to select the license file.

      If your domain has multiple license files (for multiple features), repeat this step for additional licenses.
3. If you moved the database to another server, update the configuration of services as follows:
   a. In the Vantage Management Console, open the domain you want to modify, and select Services in the components panel.
   b. In the Services panel, click the Add Service button and use the dialog to select a service to add.
   c. If any Storage, Variables, and/or Qualification Rules settings were configured for the service, add them now.
   d. Repeat this step for each service until all services are updated.
4. Use Vantage Workflow Designer to reactivate all workflows.

Copyright and Trademark Notice