Vantage 8.0

Virtual Domain Management Guide

telestream

Copyrights and Trademark Notices

SharpSSH2. SharpSSH2 Copyright (c) 2008, Ryan Faircloth. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Diversified Sales and Service, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Telerik. RadControls for ASP.NET AJAX copyright Telerik All rights reserved.

VoiceAge. This product is manufactured by Telestream under license from VoiceAge Corporation.

x264 LLC. The product is manufactured by Telestream under license from x264 LLC.

Xceed. Copyright ©1994-2012 Xceed Software Inc., all rights reserved.

ZLIB. Copyright (C) 1995-2013 Jean-loup Gailly and Mark Adler.

Other brands, product names, and company names are trademarks of their respective holders, and are used for identification purpose only.

MPEG Disclaimers

MPEGLA MPEG2 Patent

ANY USE OF THIS PRODUCT IN ANY MANNER OTHER THAN PERSONAL USE THAT COMPLIES WITH THE MPEG-2 STANDARD FOR ENCODING VIDEO INFORMATION FOR PACKAGED MEDIA IS EXPRESSLY PROHIBITED WITHOUT A LICENSE UNDER APPLICABLE PATENTS IN THE MPEG-2 PATENT PORTFOLIO, WHICH LICENSE IS AVAILABLE FROM MPEG LA, LLC, 4600 S. Ulster Street, Suite 400, Denver, Colorado 80237 U.S.A.

MPEGLA MPEG4 VISUAL

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER FOR (i) ENCODING VIDEO IN COMPLIANCE WITH THE MPEG-4 VISUAL STANDARD ("MPEG-4 VIDEO") AND/ OR (ii) DECODING MPEG-4 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL, INTERNAL AND COMMERCIAL USES AND LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE HTTP://WWW.MPEGLA.COM.

MPEGLA AVC

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE HTTP://WWW.MPEGLA.COM.

MPEG4 SYSTEMS

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 SYSTEMS PATENT PORTFOLIO LICENSE FOR ENCODING IN COMPLIANCE WITH THE MPEG-4 SYSTEMS STANDARD, EXCEPT THAT AN ADDITIONAL LICENSE AND PAYMENT OF ROYALTIES ARE NECESSARY FOR ENCODING IN CONNECTION WITH (i) DATA STORED OR REPLICATED IN PHYSICAL MEDIA WHICH IS PAID FOR ON A TITLE BY TITLE BASIS AND/OR (ii) DATA WHICH IS PAID FOR ON A TITLE BY TITLE BASIS AND IS TRANSMITTED TO AN END USER FOR PERMANENT STORAGE AND/OR USE. SUCH ADDITIONAL LICENSE MAY BE OBTAINED FROM MPEG LA, LLC. SEE HTTP://WWW.MPEGLA.COM FOR ADDITIONAL DETAILS.

Limited Warranty and Disclaimers

Telestream, LLC (the Company) warrants to the original registered end user that the product will perform as stated below for a period of one (1) year from the date of shipment from factory:

Hardware and Media—The Product hardware components, if any, including equipment supplied but not manufactured by the Company but NOT including any third party equipment that has been substituted by the Distributor for such equipment (the "Hardware"), will be free from defects in materials and workmanship under normal operating conditions and use.

Warranty Remedies

Your sole remedies under this limited warranty are as follows:

Hardware and Media—The Company will either repair or replace (at its option) any defective Hardware component or part, or Software Media, with new or like new Hardware components or Software Media. Components may not be necessarily the same, but will be of equivalent operation and quality.

Software Updates

Except as may be provided in a separate agreement between Telestream and You, if any, Telestream is under no obligation to maintain or support the Software and Telestream has no obligation to furnish you with any further assistance, technical support, documentation, software, update, upgrades, or information of any nature or kind.

Restrictions and Conditions of Limited Warranty

This Limited Warranty will be void and of no force and effect if (i) Product Hardware or Software Media, or any part thereof, is damaged due to abuse, misuse, alteration, neglect, or shipping, or as a result of service or modification by a party other than the Company, or (ii) Software is modified without the written consent of the Company.

Limitations of Warranties

THE EXPRESS WARRANTIES SET FORTH IN THIS AGREEMENT ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No oral or written information or advice given by the Company, its distributors, dealers or agents, shall increase the scope of this Limited Warranty or create any new warranties.

Geographical Limitation of Warranty—This limited warranty is valid only within the country in which the Product is purchased/licensed.

Limitations on Remedies—YOUR EXCLUSIVE REMEDIES, AND THE ENTIRE LIABILITY OF Telestream, LLC WITH RESPECT TO THE PRODUCT, SHALL BE AS STATED IN THIS LIMITED WARRANTY. Your sole and exclusive remedy for any and all breaches of any Limited

Warranty by the Company shall be the recovery of reasonable damages which, in the aggregate, shall not exceed the total amount of the combined license fee and purchase price paid by you for the Product.

Damages

Telestream, LLC SHALL NOT BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF YOUR USE OR INABILITY TO USE THE PRODUCT, OR THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF THOSE DAMAGES, OR ANY REMEDY PROVIDED FAILS OF ITS ESSENTIAL PURPOSE.

Further information regarding this limited warranty may be obtained by writing:
Telestream
848 Gold Flat Road
Nevada City, CA 95959 USA

You can call Telestream, LLC. via telephone at (530) 470-1300.

Part number: 279861

Date: August 2019

Version: 8.0

Contents

telestream

Preface

To obtain product information, technical support, or provide comments on this guide set, contact us using our web site, email, or phone number as listed in the table below.

Resource	Contact Information
Telestream Technical Support	Web Site: http://www.telestream.net/telestream-support
Vantage Technical Support	Web Site: http://www.telestream.net/telestream-support/vantage/support.htm
	Support Web Mail: http://www.telestream.net/telestream-support/vantage/contact-support.htm
	US Enterprise Product Support: (877) 257-6245
	International Enterprise Support: +49 228 280 9141
Telestream	Web Site: www.telestream.net
	Sales and Marketing Email: info@telestream.net
	Telestream 848 Gold Flat Road Nevada City, CA. USA 95959
International Distributor Support	Web Site: www.telestream.net
	See the Telestream Web site for your regional authorized Telestream distributor.
Telestream Technical Writers	Email: techwriter@telestream.net
	If you have comments or suggestions about improving this document, or other Telestream documents—or if you've discovered an error or omission, please email us.

telestream

Configuring a Vantage Virtual Domain

Important Note: This guide covers only how to configure the specific settings for a Vantage Virtual Domain. All other standard aspects of Vantage configuration and administration are covered in the standard Vantage user guides.

Note: Features in products for which you don't have a license are disabled and indicate that you need a license to use them.

The following topics are presented in this chapter:
- Virtual Domain Overview
- Installation and Configuration
- Managing the Virtual Node Life Cycle
- Recommendations and Troubleshooting
- Appendix A: Deploying a Virtual Domain in a Windows Workgroup

telestream

Virtual Domain Overview

A Vantage Virtual Domain is a Vantage installation implemented in a private or public cloud environment. Vantage Virtual Domain capitalizes on the deployment flexibility offered by Infrastructure as a Service (IaaS) cloud-based environments, such as Amazon AWS. This flexibility allows you to deploy Vantage machine instances in the cloud where they will be available when you need them without investing in additional hardware.

Virtual nodes can reside in any of these environments:

- Private data centers using managed virtualization

- Public cloud IAAS, such as Amazon AWS, Rackspace, Google GCE, MS Azure, etc.

- An on-premises/IaaS hybrid cloud model, if an adequate dedicated connection is available
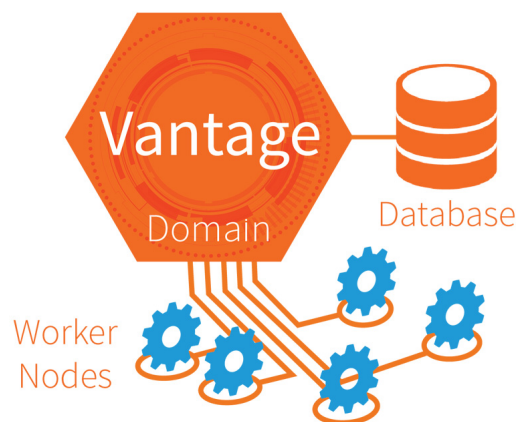
The only cost Telestream charges you is for Vantage licenses for machines (cloud or local) that you are actually using. Licenses can be permanent or rented in increments as small as 30 days. (Additional charges from your cloud provider may apply to both active and idle nodes for the amount of processing you use). For Vantage Array users who prefer not to spend money on local hardware infrastructure or whose workload varies, a Virtual Domain offers ideal flexibility. You license and deploy a Vantage Array containing the number of *worker nodes* you need on an average basis, either on prem or in the cloud. Later, if you need more capacity, you deploy additional virtual nodes in the cloud and license them for as few as 30 days.

When one Vantage Virtual installation is complete, you can duplicate it to spin up new Vantage Virtual instances. When you no longer need the additional virtual nodes, you can unlicense them and shut them down. (Note that ongoing cloud provider charges may apply if the instances are left running, even if unlicensed.)

The infrastructure platform you use is up to you as long as you can provide Windows Server based machine instances that meet our performance, networking, and storage specifications.

Example deployments include on-premises virtualization with VMWare and COTS blade servers, Amazon AWS EC2 computing instances, and Microsoft Azure.

When you are ready to put together your Vantage Virtual Domain, contact Telestream Support to discuss your plans and get help to implement a smoothly working system.

Installation and Configuration

Install and configure a base Vantage Array according to the installation procedures in the *Vantage Domain Management Guide*. The following topics explain the additional requirements for a Vantage Virtual Domain:

- Virtual Domain System Requirements
- Installing and Configuring Vantage Services

Virtual Domain System Requirements

The following topics list and describe the machine instances, software, connectivity, and accounts you will need to implement a Vantage Virtual Domain in either a virtualization environment or an IaaS cloud platform.

Vantage Media Processing Machine Instance Requirements

Windows operating systems:

- Windows Server 2012 R2 (64-bit)
- Windows Server 2016 (64-bit, with Desktop Experience) Standard or Data Center

Requirements for machine instances that host Vantage services:

- CPU—Minimum 16 Intel-based 64-bit virtual CPU cores, 2.0 Ghz. Recommend 24+ cores. Because of CPU-intensive Vantage processing, we recommend that CPU resources be dedicated (reserved) in the infrastructure platform.
- RAM—16 GB minimum. Recommend 32 GB+. Vantage consistently uses many GB of RAM when processing media. We recommend that some or all memory resources be dedicated (reserved) in the infrastructure system.
- OS Volume—6 GB of space should be available for Vantage service installation.
- Networking—All Vantage machine instances should have 1 Gb+ low-latency management connectivity and access to the Vantage MS SQL database instance. Networking infrastructure must allow for high-speed access to shared storage (see below).
- DNS—Each instance must be addressable via a forward-lookup DNS record matching the Windows host name. virtual instances much be reachable via this DNS record within 60 seconds of instantiation.
- Active Directory—All Vantage instances should be members of a Microsoft Active Directory. An Active Directory account should be used for Vantage service logons and MS SQL authentication. This provides the Vantage services permission to access file locations shared with the Windows user. An Active Directory account is also a prerequisite for an Virtual Domain so that Vantage services on virtual nodes can use SSPI (Security Support Provider Interface) for implicit authorization in SQL Server and the Vantage Domain Database. If Active Directory is not available, see *Appendix A: Deploying a Virtual Domain in a Windows Workgroup* for alternative methods.

telestream

- Networking Security—Vantage instances must be able to communicate with each other over a variety of TCP ports. See the *Vantage Domain Management Guide* for port lists.

- NTP—All Vantage instances should have accurate system clocks established by using an NTP server.

- Remote Access—All instances should be accessible either via Microsoft Remote Desktop or a virtual console for support purposes.

- Shared Media Storage—Multi-node Vantage systems depend on shared media storage locations for media file input, output, and intermediate storage. This storage must be accessible from all Vantage machine instances via either UNC paths or drive letters provided by SAN client software for block-level media SANs. Vantage processing performance depends on the throughput and latency of this storage.

- (Optional) GPU - A Virtual Lightspeed License (delivered either in the base perpetual license or in a rental license), allows Vantage media processing instances to utilize GPUs presented to the instance via GPU passthrough (also known as 1-to-1 mapping and direct device assignment). The GPU model must be qualified by Telestream, and the hypervisor or cloud platform must perform a native passthrough allowing for native GPU driver installation. Contact Telestream or visit Telestream.net for information on qualified GPU models.

Vantage Domain Database Server Instance

Vantage Domains require a Microsoft SQL database. Please consult the *Planning and Setting Up Your Vantage Database App Note* to determine which edition of SQL Server to use: http://www.telestream.net/pdfs/app-notes/app_Vantage_DatabaseSetup.pdf.

- SQL Server Standard is recommended for Virtual Domains expected to have 5 or more Vantage nodes running at a time. The *Planning and Setting Up Your Vantage Database* PDF also explains how to install SQL Server Standard for use by Vantage.

The requirements and deployments of this database are covered in the *Vantage Domain Management Guide*. The Vantage database can be deployed using machine instances meeting the performance requirements described in the guide. Follow the guide to deploy the Vantage database structure into the MS SQL instance.

- For Vantage Virtual Domains to allow virtual services to use SSPI to connect to the database with implicit authentication, the Windows domain user for Vantage services logon must be given the *sysadmin* Server Role with SQL Server. (By default, the user specified as the SQL Server Administrator during the installation of SQL Server is given the *sysadmin* role.)

Note: For Amazon AWS deployments, the Vantage database can be deployed into an RDS instance if desired. Contact Telestream for more information.

Vantage Web Apps Server Instance

Vantage installations utilizing one or more web applications require a web server hosting the applications.

- The web apps web server can be deployed as a machine instance with CPU and RAM allocations of a typical web server. The server must meet the other environmental requirements listed above for Vantage media processing machine instances.

See the *Vantage Domain Management Guide* for more information on deploying and configuring a Vantage web apps server.

Configuring Vantage Client Instance(s)

Vantage administration is performed in two client applications, the Vantage Workflow Designer and the Vantage Management Console. These applications can be run from any instance within the Vantage Domain.

- We recommend that you provision an administration client instance to run the Vantage Workflow Designer and the Vantage Management Console and perform other management tasks.

Client Operating Systems:
- Windows Server 2012 R2
- Windows Server 2016
- Windows 7
- Windows 8.1
- Windows 10

Client Network Security:
- The configuration instance must be able to communicate with Vantage media processing instances over a variety of TCP ports and the SQL database ports listed in the *Vantage Domain Management Guide.*

Users, Shared Storage, and ComponentPacs

Vantage requires shared storage and a central location for ComponentPacs, accessible to all Vantage nodes. Follow the guidance below and refer to the *Vantage Domain Management Guide* for details.

- For the Vantage services to properly authenticate to a UNC location, either use the *Authorization* tab of the Management Console (under *Settings & Options*) to provide the user credential, or change the logon of the Vantage services.
- Note that the Vantage services must have permission to read from the shared location where the ComponentPacs reside.
- Copy your ComponentPacs from the default directory (*C:\Program Files (x86)\Telestream\Vantage\ComponentPacs*) to your shared storage location.
- In the Vantage Management Console *ComponentPac Management* panel, enter or browse to your central ComponentPac storage location, and press Enter.

Licensing Your Vantage Software

You will need the following software and licenses:

- Vantage 8.0 or later Installer.
- Vantage Virtual Domain XML license file (permanent or rental) which includes:
  - The features licensed in the domain
  - The licensed node count for each feature

Once an Vantage Domain agreement has been completed, Telestream will deliver a Domain license specifying licensed features, quantities, and functionality available to Vantage nodes, including virtual nodes.

Note: If you plan to use a GPU with your nodes, you must purchase the Vantage Virtual Lightspeed License option to include in your domain license.

Configuring Your System for Security

Telestream recommends the following secure network configuration practices:

- Establish a secure Vantage server within your enterprise security system.
- Only access your Vantage Virtual Domain directly from your secure server.
- Use a VPN connection to the on-premises server, and use RDP from the server to the Vantage Virtual Domain.
- Do NOT configure two servers for access to the same Vantage Virtual Domain.

Installing and Configuring Vantage Services

Follow these instructions to install Vantage on local and virtual nodes.

There are two primary types of nodes that may be configured:

- Local nodes—Local nodes are installed on your local on premises hardware, including Lightspeed servers or other Windows servers meeting our specifications.
- Virtual nodes—Virtual nodes are installed on virtual machines or bare metal rented servers in a public or private cloud environment meeting our specifications (see *Virtual Domain System Requirements*).

The process of installing Vantage services onto an instance is similar for both virtual and local nodes, but virtual nodes may include additional installation requirements established by the cloud provider. Refer to the cloud provider's installation instructions.

Note: The deployment, management, and support of instances meeting the requirements listed previously in *Virtual Domain System Requirements* is the customer's responsibility. The steps involved vary depending on the environment and selected infrastructure provider. This document does not attempt to detail this process.

Installing and Configuring Vantage on Virtual Nodes

Follow the installation instructions in the *Vantage Domain Management Guide* plus the additional instructions below to install Vantage on virtual worker nodes.

- Use the Vantage installer to install Vantage in the cloud. Browse to your cloud server when the installer asks where to install.
- In the installer, you can select specific services to install as part of a virtual or local domain, or you can install a complete Vantage domain.
- If using cloud storage for media or other Vantage-related storage, refer to the Telestream app note, *Using Cloud Storage with Vantage*.

Change the Vantage Service Logon and Startup

Change the logon of the Vantage services on the virtual node to the Active Directory user that was given the sysadmin SQL Server Role. This allows the Vantage services to use implicit authentication with SSPI database connectivity to automatically join the domain upon startup.

Important Note: The Active Directory user must be a local administrator on the worker node so that the Vantage services have permission to update log files.

In the following examples, Windows panels are shown, but you can also use a BAT file.

telestream

Important Note: If you use a BAT file, first use the Windows services console to manually change the logon of at least one Windows service. After this is done once, the local group policy is updated to allow services to log on as a specified user.


- Open the *Services* panel, right-click each Vantage service, and select *Properties*. On the Log On tab, set *This Account* for the Vantage user.
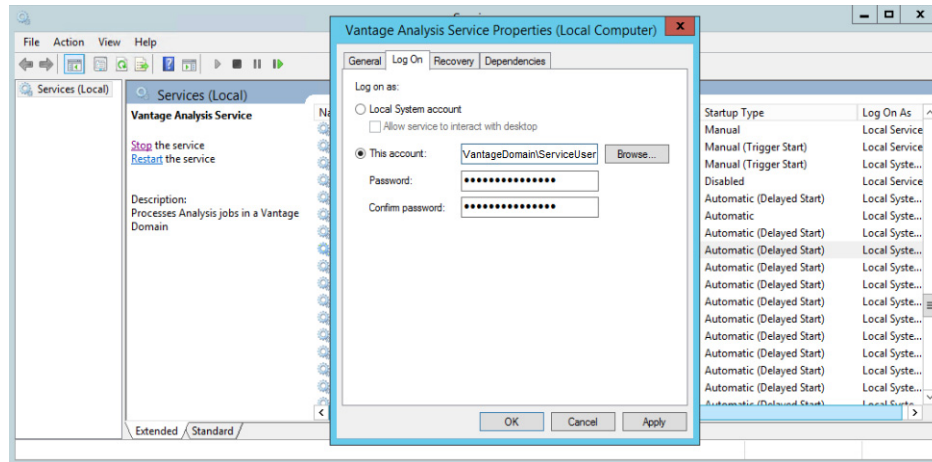
- Restart the instance so that service settings take effect, and the services join the Vantage domain, unpack ComponentPacs, and come fully online.

- After reboot, change the Vantage services to *Automatic* Startup Type for faster starts. This can be done manually or by using a BAT file.

Note: If the startup type of the services is changed before the first reboot of the instance after the installation of Vantage, the startup type will revert back to the Automatic (Delayed Start) type.
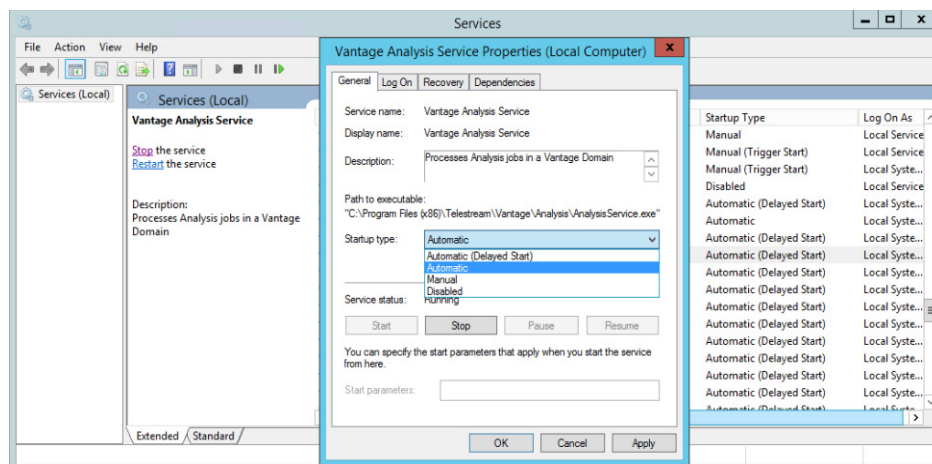
- Verify that all expected services are running (Online) in Vantage Management Console > *Services*. If not, right-click and *Restart Service*.

telestream

Managing the Virtual Node Life Cycle

This section explains how to start up and shut down a Vantage virtual node as part of a Vantage Virtual Domain.

Spinning up a New Virtual Node

As part of the process of bringing a Vantage virtual node fully online in a Vantage domain, verify the following:

- The instance meets the Vantage media processing machine instance requirements. (See *Virtual Domain System Requirements* discussed previously.)

- The services are configured on the virtual node to use the Active Directory user account that was given the sysadmin SQL Server Role so that the Vantage services use implicit authentication with SSPI database connectivity to join the domain. This account must be a local Windows administrator to permit writing to log files.

- Upon boot up, the Vantage services join the Vantage domain with the host name of the cloud server appearing in the Vantage Management Console Services panel.

- The virtual services come fully online and are able to perform processing.

- Upon graceful Windows OS shutdown in the cloud, the services promptly disappear from the Services panel of the Vantage Management Console.

Shutting Down a Virtual Node

The following procedures will help ensure a smooth Vantage Virtual node shutdown.

Use a Virtual Machine Vantage Pre-Shutdown Notification

- Issue a *Pre-Shutdown Notification* by right-clicking the Machine Metrics View in the Vantage Management Console > Status panel.

  Alternatively, you can also signal the Pre-Shutdown Notification via the Vantage SDK.

  This places all services for the virtual machine in *Pending Shutdown* mode as seen in VMC Services. Queued sessions will migrate to other services in the domain, and the selected services will go offline when their active sessions finish.

Note: This step can be skipped if a faster shutdown is desired. Active sessions will be terminated and will restart on other services in the domain.

Shut down Windows

- Ensure that a graceful Windows OS shutdown is performed. Abrupt instance terminations should not be performed.

telestream

Recommendations and Troubleshooting

The following tips may help you resolve issues and get the best performance from a Vantage Virtual Domain.

- After changing the logon of a Vantage service, the service is unable to restart.
  - Make sure the Windows user that the services log on as is a local administrator on the instance so that it has permission to write to log files.
  - If the logon of the service was changed via a script, use the Windows services console GUI at least once to manually change the logon of a service and restart the service. Using the GUI at least once updates the local policy of the machine to allow services to log on as a specified user.
- Virtual server performance may vary depending on the virtual server being used and network traffic. Busier times of day may affect both server performance and transfer speeds.
- Place Vantage Virtual Domains on cloud servers located closest to your physical location, if possible, to minimize latency.
- Amazon, Azure, and other cloud storage interfaces have been added to Vantage for easily moving media in and out of storage. For high speed, high volume transfers, you can use transfer servers, such as Aspera, to move data in and out of the cloud.
- If you use cloud storage for storing media, be aware that these are object storage file systems designed for files to be read and written in their entirety, not updated in place. Therefore, Vantage workflows must localize media files to Vantage Virtual Domain shared storage using Move or Copy actions. Be sure input nicknames for transcoding and analysis actions reference the localized media.
- Because cloud transfer speeds may vary, transfers from the cloud may produce Vantage job failures that can be resolved by a retry. When setting up a Copy action to transfer media from the cloud, set the default number of retries to 3. This ensures transfers repeat until they complete without manual intervention.
- You can have many jobs running at a time with the Vantage Transport service session limit set high. (Session Limits can be set on the Setup tab for each service within the Vantage Management Console when the service is in maintenance mode.)

telestream

Appendix A: Deploying a Virtual Domain in a Windows Workgroup

If necessary, a Vantage Virtual Domain can be deployed within a Windows Workgroup without Active Directory as follows:

1. On the domain database server, use the array installation option to deploy a new instance of SQL Server Express (for larger arrays, consider SQL Server Standard).

2. Copy the ComponentPacs to a shared location accessible to all domain nodes.

3. Use the VMC to install the ComponentPacs from the shared location.

4. On the worker node, do an array installation to install the Vantage services.

5. On the worker node, create the following Key Name:

   `HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Telestream\Soa\Virtualization`

6. In the Virtualization Key Name, create a String Value called HostType and set the value to Transient.

7. Verify that the following Key Name does not exist. If it exists, delete it.

   `HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Telestream\Soa\SSPI`

   (The SSPI Key Name may be present if ServiceVirtualizationConfig.exe was used in the past)

8. Restart the worker node.

9. On the worker node, change the Startup Type of the Vantage services from Automatic (Delayed Start) to Automatic.

10. After the services start, use the Vantage Management Console to manually assign them to the Vantage domain.

When the worker node is shut down, the Transient services automatically leave the domain. When the worker node is turned back on, the Transient services automatically rejoin the domain.

telestream

Notes

The following notes apply to operating in a Windows Workgroup environment:

- A Windows user does not need to be given the sysadmin Server Role within SQL Server.

- It is not necessary to change the logon of the Vantage services to a Windows user because SSPI connectivity is not used when operating in a Windows Workgroup.

- When a worker template is cloned to create a new worker node instance, the worker node does not need to join a Windows domain.

- All machine names within the Vantage domain should be resolvable by host name.

- DHCP is recommended for the ease of adding additional virtual worker nodes.

- All nodes within the Vantage domain must be synchronized by NTP.