Gateway Administrator Guide

Version 5.3

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1 Introduction

Gateway is Vizrt's implementation of the Media Object Server (MOS) Protocol. It enables users of a Newsroom Computer System (NCS) to perform instant updates on running orders (rundown/playlist) in Vizrt content control applications such as Viz Trio and Viz Pilot.

As Gateway supports multiple NCS connections, it allows content control applications to request and monitor multiple running orders from multiple newsroom systems. By supporting the MOS protocol, Vizrt is able to integrate a wide range of its products with Newsroom Computer Systems that supports the MOS Protocol.

The Gateway Controller Client's graphical interface is browser-based.

Important! A 64-bit version of Windows is required to run Gateway.

1.1 Related Documents

Gateway has previously been known as Vizrt Viz Gateway, Viz Gateway or Viz MOS Gateway. As of version 2.0, the preferred name is simply Gateway.

All related documents contain information on how to configure a content control application to request running orders from the newsroom system through the Gateway connection. For complementing information see the following documents:

1. Viz Pilot User Guide: Contains information on how to create content based on templates, how to playout elements in playlists based on these templates, and how to install and configure Viz Pilot as a stand-alone product, and with integrated third-party systems such as newsroom systems and other Vizrt products.
2. Viz Trio User Guide: Contains information on how to use the Vizrt character generator for real-time update of scenes from the operator desk.

Tip: You can find updated documentation for Viz software on the Documentation portal.

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2 Gateway

Gateway is a framework built to help in newsroom integration tasks. Currently, Gateway supports Newsroom Computer Systems (NCSs) based on the Media Object Server (MOS) Protocol that is supported by leading NCS vendors.

This section describes the supported Gateway features and basic workflow from design to playout.

2.1 Features

Gateway's main features are:

- Enables connections to multiple NCSs.
- Enables monitored running orders to be automatically updated by the newsroom system.
- All media objects fetched from Vizrt systems are editable in Vizrt's content control applications to allow last minute edits.
- Last minute edits can also be done in Vizrt's Newsroom Component.
- Enables content control applications to monitor multiple running orders.
- Enables Vizrt's content control applications to take ownership of a running order from another studio in case of a fail situation.
- Easy-to-use interface for configuring and monitoring all connections to NCSs and content control applications.
- Failover support to enable transparent operation, should the main NCS server fail or need to be maintained.
- Control Station Backup automatically updates backup clients, ensuring that both the backup client and main system have the same MOS playlists.
- Sobey Failover System allows the Viz Gateway server to send its messages to more than one NCS system.

2.2 Workflow

The basic workflow is as follows:

- A journalist adds a story to the newsroom system using a newsroom client.
- In the NCS client, a Newsroom Component from Vizrt can be used to fill templates with different media objects containing character-generated text, maps, stills or videos.
- Templates are based on 2D/3D graphics scenes, pre-made to fit a specific concept or style, for example the Nine O'clock News.
- The Newsroom Connect Component allows the user to select a template related to a concept, fill it, and store it as a new media object with a describing name.
- All external media objects, as those created by the Newsroom Connect Component, can be added to a story. When media objects are added to a story, the NCS creates unique placeholders for each media object, called items.
- When the story is saved, it is populated to a story pool. From the story pool, the story is typically added to a running order (also known as a rundown or playlist).

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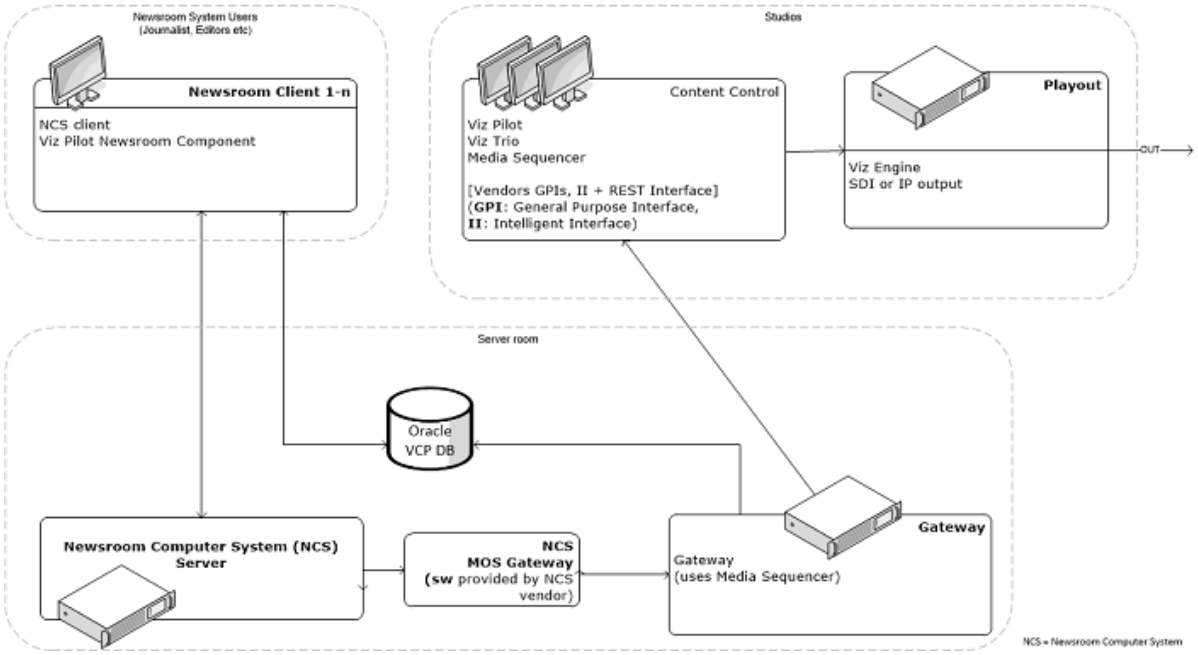
- A running order can contain more than one story, and one story can contain more than one item. Each item keeps track of one media object that is stored on external servers.
- A running order can be requested from a content control application or conversely.
- As stories with new items (data elements) are added to the running orders, the Gateway is notified.
- Gateway passes on running order messages to the content control applications holding the running order for playout, and updates the newsroom system of changes to a data element by the journalist.

Gateway Workflow: Connecting Newsroom Systems to Content Control systems.



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3 Requirements

This section describes the prerequisites such as software and hardware requirements in order to install and run the Gateway server and Gateway Controller Client. It is also recommended to check the Release Notes distributed with the Media Sequencer installer for any late-minute updates.

This page contains the following information:

- Minimum Software Requirements
  - Media Sequencer Installer
  - Operating System
  - Oracle Database 10g or 11g Client
  - Viz Pilot Schema Version
- Minimum Hardware Requirements
  - Oracle Hardware Requirements (11g)

3.1 Minimum Software Requirements

The following software is required to complete a Gateway installation:

3.1.1 Media Sequencer Installer

- The Gateway installer is bundled as a component in the Media Sequencer installer. Refer to the installation chapter in this guide for detailed instructions. Basically, you select the Gateway Component while installing Media Sequencer to enable the gateway functionality.
- The Gateway Controller Client User Interface is browser-based and can run on most PCs with a modern web-browser. Has been tested with Internet Explorer 11 and recent versions of and Opera, Chrome and Firefox web browsers.
- The Media Sequencer installer requires Microsoft .Net framework 3.5 and 4.0 (full) to be installed on the machine. The installer notifies the user if .Net 4.0 is not found.
- Media Sequencer is a 64-bit application that requires a 64-bit version of Windows.

3.1.2 Operating System

Server: Windows Server 2008 and newer versions.

Important! Operating systems that have reached their end of life cycle and are no longer officially supported by their manufacturers are not supported for use with Gateway.

3.1.3 Oracle Database 10g or 11g Client

- The Oracle Client must be the 64-bit client.

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- Either the Full Oracle Client or Oracle Basic Instant client can be used. Oracle XE client is *not* supported.
- It is recommended that the Oracle Client used is the **same version**/release as the Oracle Database itself. Having different Oracle Database and Client versions can lead to subtle errors and are not supported.
- There may be different supported versions for the Oracle 10g and 11g clients. Please refer to separate release notes from Oracle on these program packages. For Windows 7, Oracle 11g should be used.
- On 64-bit platforms, the version of Oracle client must not be lower than 10.2.0.3. Otherwise, it runs into the connection problem *ORA-12560* which was fixed after that version.
- The Oracle client is only required when the direct Oracle alternative is selected as back-end.

> **Note:** If you are using Pilot Data Server you do not need the Oracle client on the Gateway host.

> **Important!** Gateway uses the Media Sequencer in an **exclusive** configuration to operate as a gateway. Hence the server that runs the Gateway cannot operate as a "normal" (non-exclusive) Media Sequencer while functioning as a Gateway.

3.1.4 Viz Pilot Schema Version

If running Gateway version 5.3 or later using Oracle database as back end, the Pilot Database schema should be version 5.2 or newer to avoid a bug with missing package name for the *GET_ALL_ELEMENTS* procedure.

3.2 Minimum Hardware Requirements

The following hardware components are required for the Gateway and Oracle Database Client. The requirements are separate, and only depicts the actual requirements needed to run each of the software installations.

- Gateway
  - There are no specific hardware requirements for Gateway. The hardware required and network interface is depending on how many Newsroom Systems and clients that use the gateway. However, it is strongly recommended that Gateway is installed on its own computer or server. Sharing space with other resource-intensive systems, for example a database, is not recommended.
- Oracle Database Client
  - Currently (for Oracle 11g) the requirements are listed as:

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3.2.1 Oracle Hardware Requirements (11g)

Requirement	Minimum Value
Physical memory (RAM)	1 GB minimum
Virtual memory	Double the amount of RAM
Disk space	Total: 5.22 GB
Processor	AMD64 or Intel EM64T
Video adapter	256 colors
Screen Resolution	1024 X 768 minimum

Important! The values above are correct as of October 2017 and should be read as minimum required, please refer to the official Oracle Documentation at docs.oracle.com for updated information.

Note: The Oracle database client is not necessary if you are connecting to Oracle via the Pilot Data Server.

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4 Installation

This section describes how to install the Gateway system. The installation has the following steps:

1. Install the Gateway software. The Gateway is bundled as an optional component in the Media Sequencer installer.
2. If there is an existing Oracle Database installed, configure the new Gateway installation to use the existing Oracle Database. Otherwise, a new Oracle Database must be installed and configured.
3. Install the Oracle Client on the Gateway server.
4. Use the browser-based Gateway Controller application to configure and start the Gateway.

> ⚠ **Note:** Skip steps two and three if you are using Viz Pilot Data Server. Please see (Back end Configuration) for more information about setting up a Viz Pilot Data Sever connection.

This section contains information on the following topics:

- Installing Gateway
- Install Database Client
- To Repair or Remove the Gateway

4.1 Installing Gateway

1. Gateway is distributed as an optional component in the Media Sequencer installer, so you first need to download the Media Sequencer installer.
2. Fetch the Gateway / Media Sequencer installer from download.vizrt.com. All customers with a valid support contract have access to this area. Please contact your Vizrt Customer Support if you need credentials/password. Either use your preferred FTP Client or the web-based interface at https://download.vizrt.com/ThinClient/Login.aspx When you have logged in to the FTP server, navigate to: */products/VizMediaSequencer/LatestVersion.*

   > ⚠ **Note:** It is recommended to check the MD5 checksum of the downloaded installer before attempting to install.

3. If there is an existing Media Sequencer installed at the server, uninstall the existing Media Sequencer using **Windows > Control Panel > Uninstall a Program**. It is recommended to take a copy of the existing Media Sequencer current state before uninstalling: Backup the current state by copying *%PROGRAMDATA%\Vizrt\Media Sequencer\default.xml* to a safe location.
4. Start the installation by double-clicking the MSI installer from Step 1. The installer is typically named *MediaSequencer-amd64-<VERSION>.msi (64-bit version).* Follow the installation setup instructions. Make sure to **include** the optional **Gateway Component** while installing as

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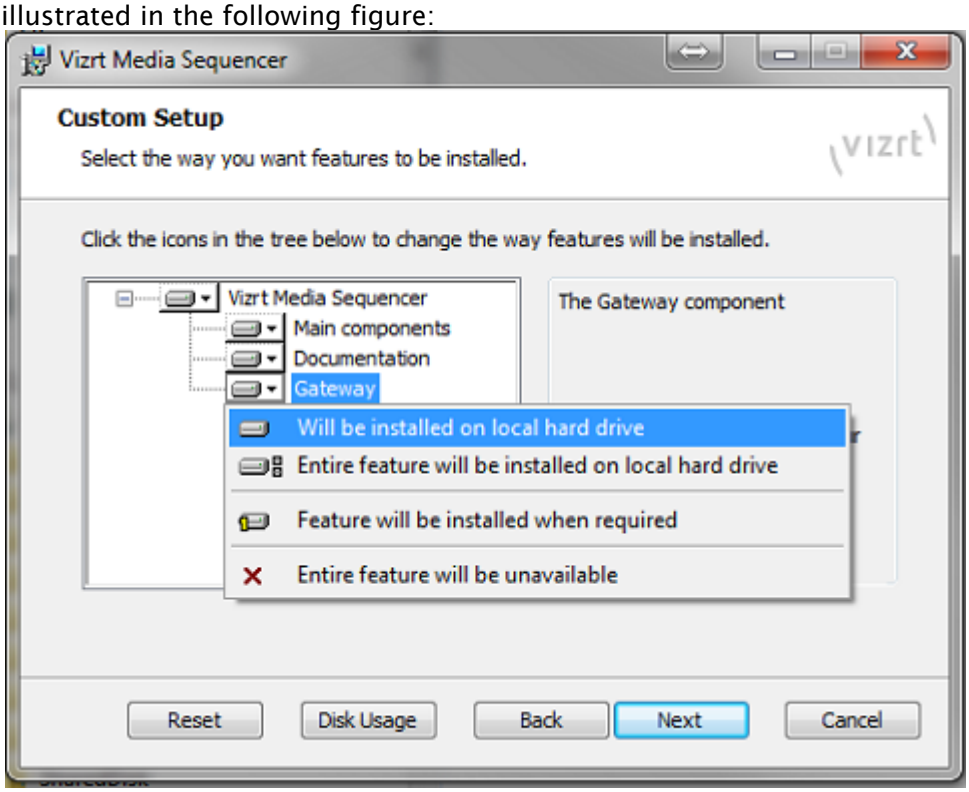
illustrated in the following figure:



5. It is recommended to make sure that the Media Sequencer service is launched and started automatically at system start. After you have installed Media Sequencer, Double-Click the Media Sequencer icon at the Windows Desktop or go to **Windows > Programs > Vizrt > Media Sequencer > Media Sequencer**. In the Media Sequencer Launcher Panel make sure that the option *Launch on system restart* is ticked **on**.
6. You can make sure that the Media Sequencer is correctly installed and working by connecting to the Media Sequencer REST interface: Open your web-browser and connect to port `8580`, for example: http://localhost:8580

4.2 Install Database Client

This section describes how to install and test the Oracle Database 11g Client. For further documentation, please see the Oracle Documentation website:

- http://www.oracle.com/technology/software/products/database/
- http://www.oracle.com/technetwork/indexes/documentation/index.html

> **Note:** Installing the Oracle Database Client is not necessary if you connecting to Oracle or Graphic Hub via the Pilot Data Server.

> **Important!** A 64-bit Oracle Client is required because the Media Sequencer is a 64-bit application.

Before installing Gateway, check the language settings for the Oracle client. The National Language Support (NLS_LANG) parameter must be the same as on the Vizrt database.

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This section has more information about these topics:

- Pre-installation
- To Install the Oracle Client
- To Set the Language Setting for the Oracle Client
- To Test the Installation

Also see the Oracle software and documentation.

4.2.1 Pre-installation

- If there is an existing Oracle Client installed, create a backup of the *tnsnames.ora* file.
- Remove any previous or older versions of the client.
- Download the client from Oracle's web site.
- Click **Downloads**, and follow the instructions to make sure that the correct Oracle Database Client installation executable is selected..

4.2.2 To Install the Oracle Client

> ⚠ **Note:** The installation procedure below is according to Oracle Client version 10.2.0.1.0. For a reference on another version, see the Oracle web site.

1. Log on as a member of the Administrators group to the computer on which to install Oracle components. For installations on a Primary Domain Controller (PDC) or a Backup Domain Controller (BDC), log on as a member of the Domain Administrators group.
2. Double-click the installer (*setup.exe*).
3. In the Welcome screen, click **Next**.
4. In the Select Installation Type screen, select type *Runtime*.
5. In the Specify Home Details screen, click **Next**.
6. In the Product-Specific Prerequisite Checks screen, click **Next**.
7. In the Summary screen, click **Next** to start the actual installation and configuration.

   > ⚠ **Note:** Do not use the Oracle Net Configuration Assistant (NetCA) unless there are specific client connection configuration needs. Using the NetCA is beyond the scope of this guide.

8. Click **Next**.
9. In the End of Installation screen, click **Exit**, then click **Yes** to exit from Oracle Universal Installer.
   - Optionally, delete the *\temp\OraInstalldate_time* directory to remove the temporary files that were created during the installation process. The *OraInstalldate_time* directory holds about 45 MB of files.
   - Restarting the computer also removes the *OraInstalldate_time* directory.

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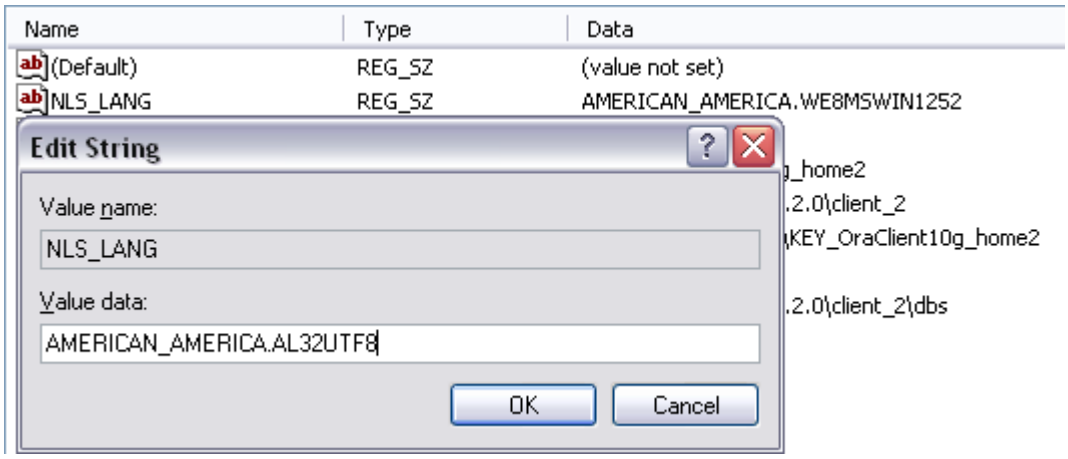
4.2.3 To Set the Language Setting for the Oracle Client

1. Start the Registry Editor (*regedit*) on the Start menu.
   - Click the **Run** menu option, enter *regedit*, and click **OK.**
2. Open the path *\HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ORACLE\KEY...*<version>.



3. Double-click the registry setting for NLS_LANG.
4. Edit the string and change it to *AMERICAN_AMERICA.AL32UTF8*, and click **OK**.

> ⚠ **Note:** To help give Vizrt customers the best possible support, American English is chosen as the default language for log messages.

4.2.4 To Test the Installation

1. Start a command-line tool, and type the following:

```
sqlplus userid/password@tnsname
```

2. It is also possible, if a TNS name alias is not configured, to use an easyconnect string:

```
sqlplus userid/password@hostname/SID
```

3. Check that the output is something like the example output below:

```
C:>sqlplus pilot/pilot@VIZRTDB SQL*Plus: Release 10.2.0.1.0 - Production on Thu
Mar 24 12:17:19 2014 Copyright (c) 1982, 2010, Oracle.  All rights reserved.
Connected to: Oracle Database 10g Release 10.2.0.1.0 - Production SQL>
```

See Also

- Installation

4.3 To Repair Or Remove The Gateway

1. Open the Add or Remove Programs tool, and click the **Change** button to the right for the Viz Media Sequencer program entry.
2. Select **Repair** to repair the installed version or select **Remove** to remove the installed version.
3. Click **Next**.
4. When done, click **Close**.

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5 Running

This section describes how to start the Gateway server and the Gateway Controller Client.

This chapter contains the following topics:

- To Start the Gateway Controller Client
- To Start the Gateway Server
- To Start the Media Sequencer
- To Configure the Media Sequencer Start-mode

5.1 To Start The Gateway Controller Client

Select the program from the Start menu: **All Programs > Vizrt > Media Sequencer> Gateway Controller**.

Important! This shortcut starts the Gateway Controller as a web-application in the users default web-browser. The Media Sequencer must be running before starting the Gateway Controller.

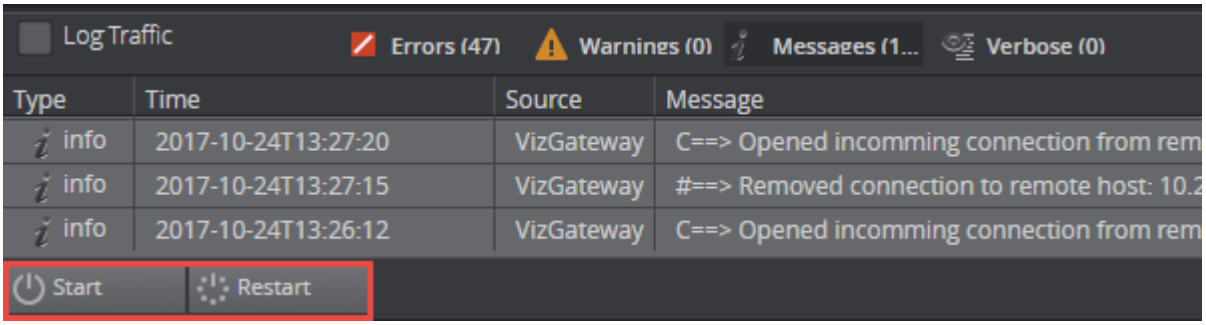
It is also possible to launch the Gateway Controller by browsing to the following web address: *http://<ADDRESS>:8580/app/gatewaycontroller/gatewaycontroller.html*.

Note: It is possible to use one instance of the client to connect to multiple Gateway servers. To do this, simply connect to one server at a time and enter the appropriate connection parameters.

Substitute *<ADDRESS>* above with the actual IP or hostname of the Gateway server.

5.2 To Start The Gateway Server

Use the Gateway Controller Client application to enable the gateway functionality of the Media Sequencer, including starting, stopping and restarting the Gateway.



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> **Note:** The client enables the Media Sequencer to run as a Gateway server. While running as a MOS Gateway, the Media Sequencer runs exclusively as a Gateway and should not be used for any other purpose. It is recommended to enable the automatic launch at system restart option of the Media Sequencer to make sure the Media Sequencer is kept running.

5.3 To Start The Media Sequencer

Select Media Sequencer under the Vizrt program menu, or double-click the desktop shortcut icon:

5.4 To Configure The Media Sequencer Start-Mode

Double-click the Media Sequencer desktop icon to access the Media Sequencer Launcher panel (see figure below). From the Launcher panel click the appropriate Launch Options button to select how the Media Sequencer should start:

- **Service:** Runs the Media Sequencer as a service. This enables the manual operation of the Media Sequencer as a service. Check the *Launch on system startup* if the Media Sequencer should start automatically when the system is (re-)started. This automatic mode (to launch Media Sequencer automatic on system start) is the recommended mode.
- **Console Application:** The service is disabled. The Media Sequencer runs as long as the console is open. If the console is closed, the Media Sequencer stops. This mode is normally only used for testing or debug.

  > **Note:** It is recommended to run the Media Sequencer as an automatic service.

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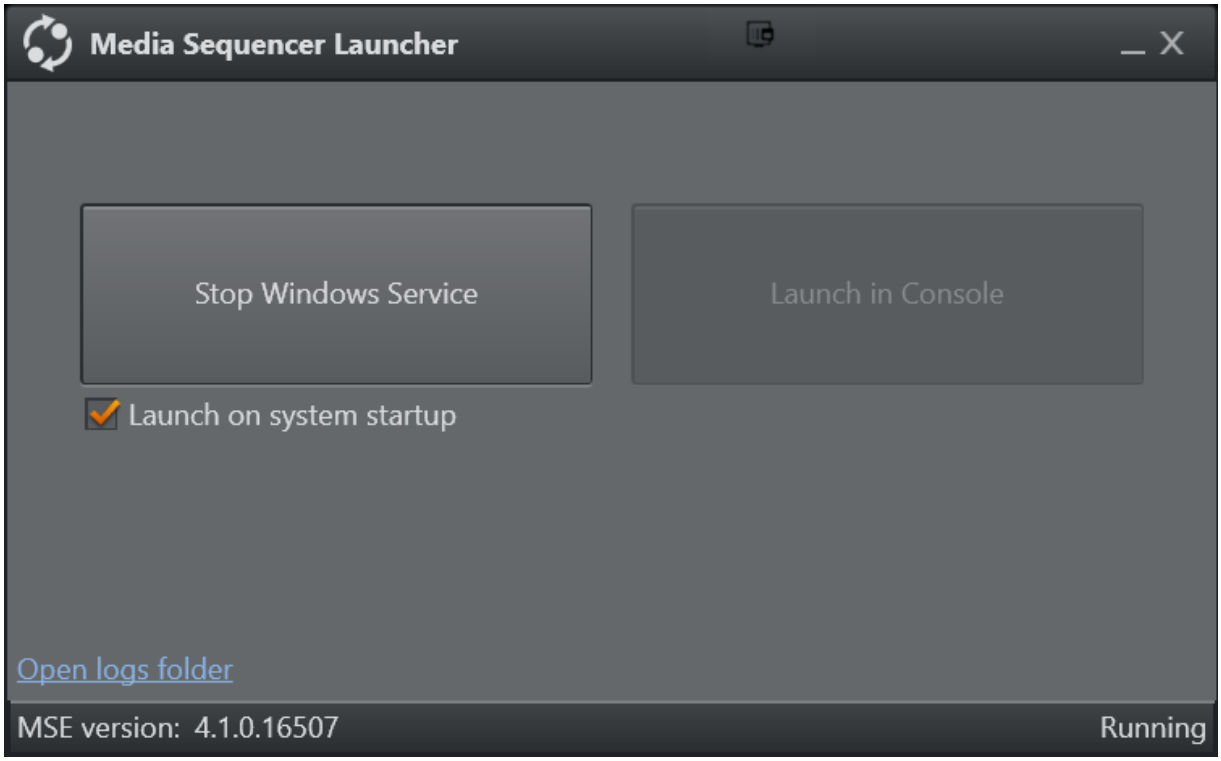
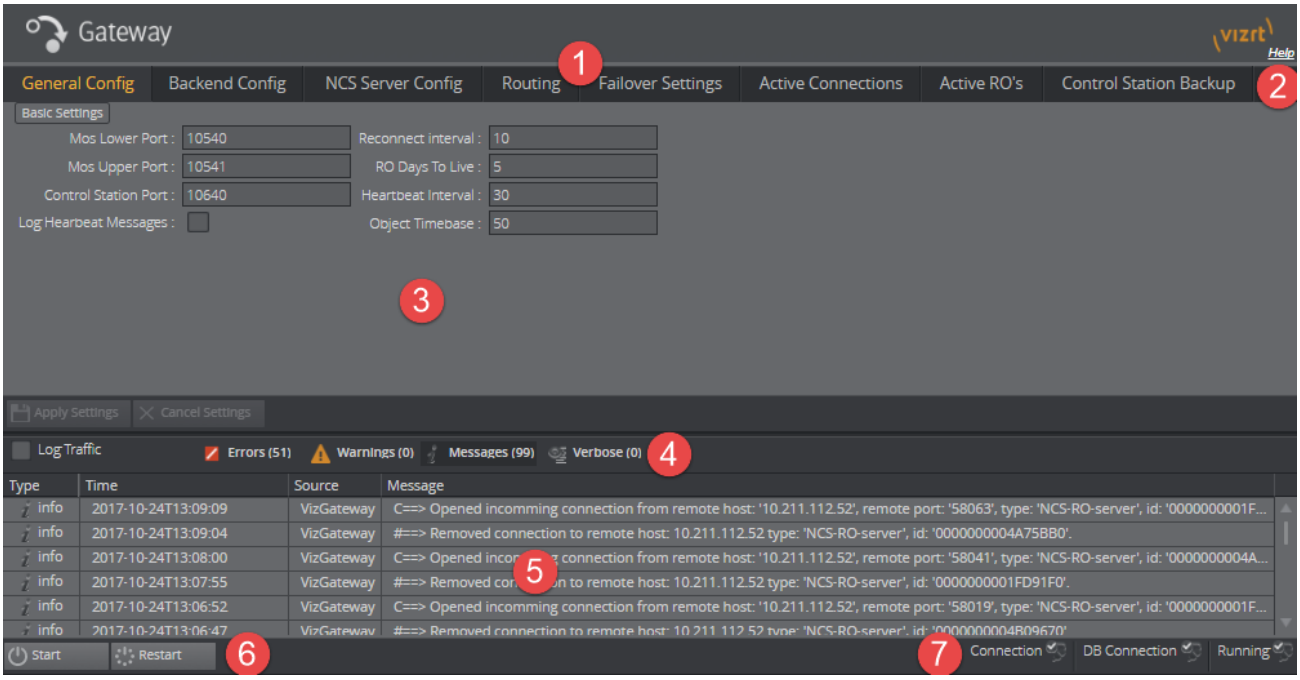

Media Sequencer Launcher
Stop Windows Service
Launch in Console
Launch on system startup
Open logs folder
MSE version: 4.1.0.16507
Running

6 User Interface

This section describes the user interface for the Gateway Controller Client. The client is a configuration and status information tool that enables the user to configure and monitor the traffic on the Gateway server.

6.1 User Interface Overview



- **(1):** Top menu containing the active configuration tabs. See Tabs.
- **(2):** Click **Help** to access the Gateway Administrator Guide.
- **(3):** Main configuration window. The content that appears here depends on which configuration tab is selected.
- **(4):** Click to show specific message types in the Message area (5).
- **(5):** Log message window. See Log Message Window.
- **(6):** Start, Stop and Restart buttons. See Start, Stop and Restart Gateway Buttons.
- **(7):** Status indicators. See Status Indicators.

This section contains the following topics:

- Tabs
- Log Message Window
- Start, Stop and Restart Gateway Buttons
- Status Indicators

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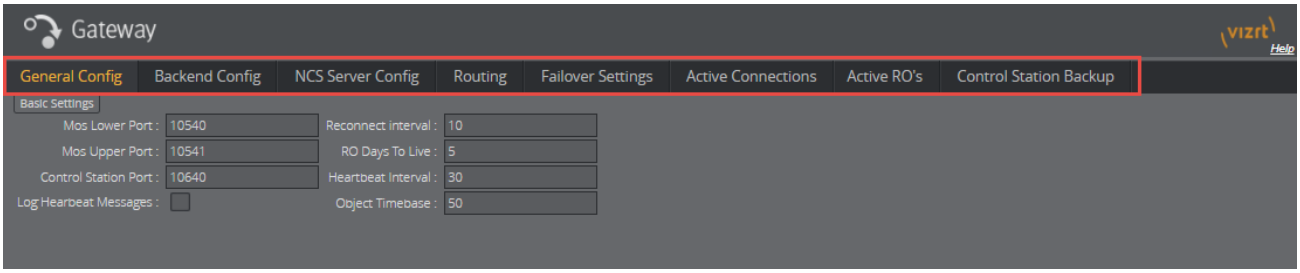
6.2 Tabs

The Gateway Controller Client user interface contains eight top menu tabs.

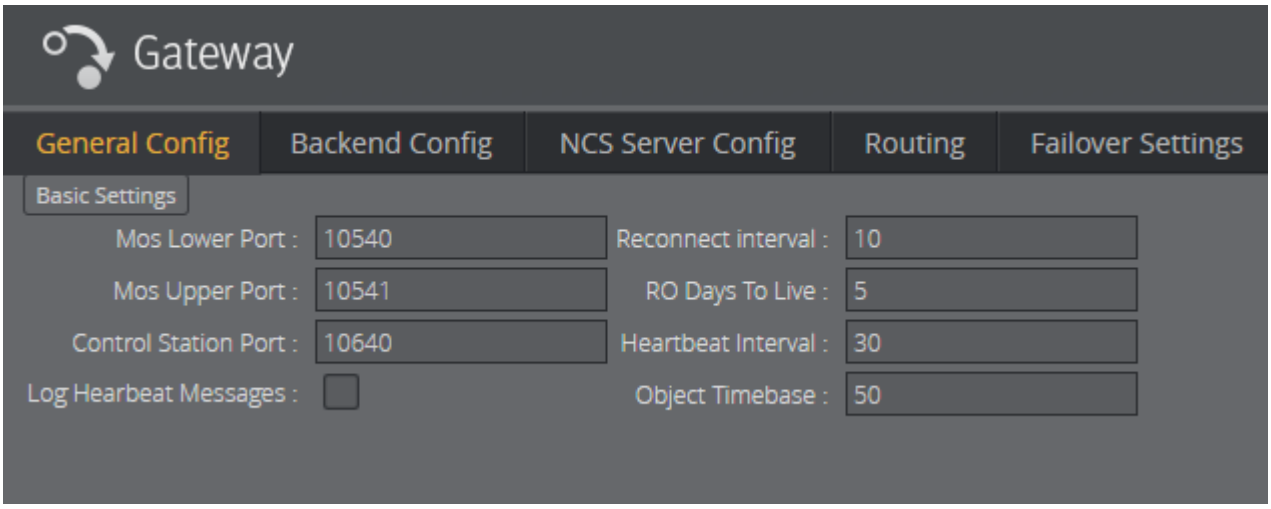


Each tab is explained in its own section listed below. Click the links below to learn about the tabs and how to use them:

- General Configuration
- Backend Configuration
- NCS Server Configuration
- Routing
- Failover Settings
- Active Connections
- Active Running Orders
- Control Station Backup

6.2.1 General Configuration

The General configuration tab contains Gateway's basic settings.



Basic Settings

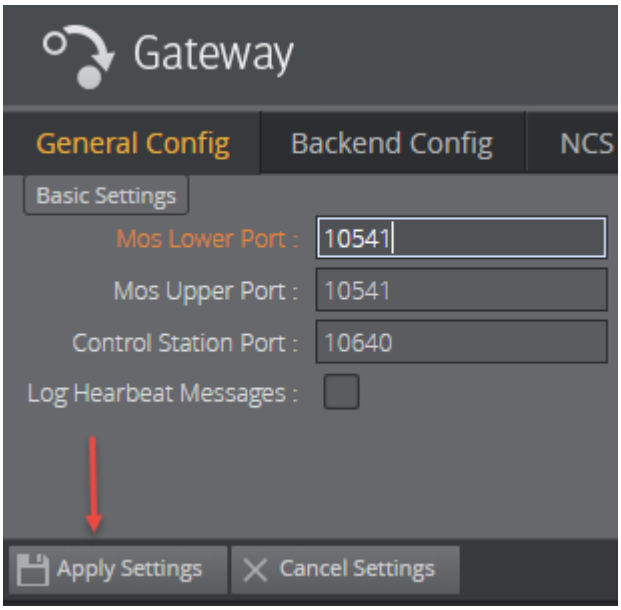
The following settings are global settings used by the Gateway.

- **MOS Lower Port:** A listener port that the NCS connects to for sending media object related messages to the Gateway.
- **MOS Upper Port:** A listener port that the NCS connects to for sending rundown related messages to the Gateway.
- **Control Station Port:** A listener port that the control station Media Sequencer will connect to for communicating with the Gateway.
- **Log Heartbeat Messages:** Adds the heartbeat messages to the Media Sequencer log file. The full MOS message will be logged when this setting is enabled.
- **Reconnect interval (sec):** Specifies the number of seconds that Gateway should wait, when the connection is lost, before trying to reconnect to the newsroom system(s).
- **RO days to live:** Sets the number of days the routing between a running order ID and control station IP should live. Gateway clears out all running orders that have not been updated for a given number of days. For details, see Active Running Orders section on active running order routing.
- **Heartbeat Interval:** Sets the interval for how often heartbeat messages are sent to the NCS. 30 seconds is recommended.
- **Object Time Base:** Sets the sampling rate of the object in samples per second. For PAL Video this would be 50. For NTSC it would be 60.

How to Enable Settings

Enable settings by:

1. Edit a Basic Settings field.
2. Click **Apply Settings**.
3. Restart Gateway.
4. The settings take effect when the Gateway is started.



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6.2.2 Backend Configuration

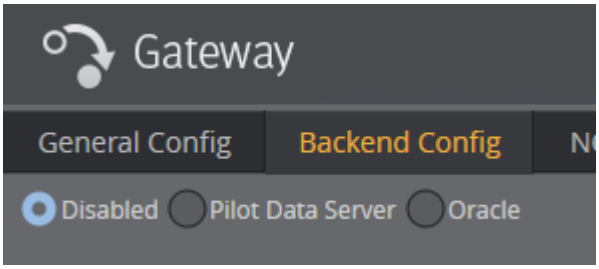
The **Backend Config** tab is where you select which backend to use to send meta information about MOS objects to the newsroom system.

The tab has three options:

- Disabled
- Viz Pilot Data Server
- Oracle

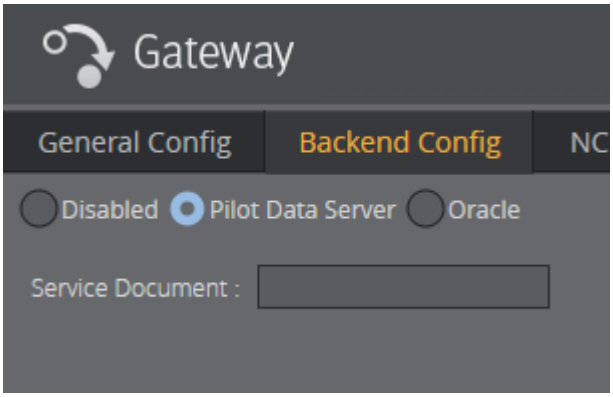
Disabled

When selected, Gateway does not send any information about our MOS objects to the NCS.



Viz Pilot Data Server

Use Viz Pilot Data Server as backend by entering the service document URI.



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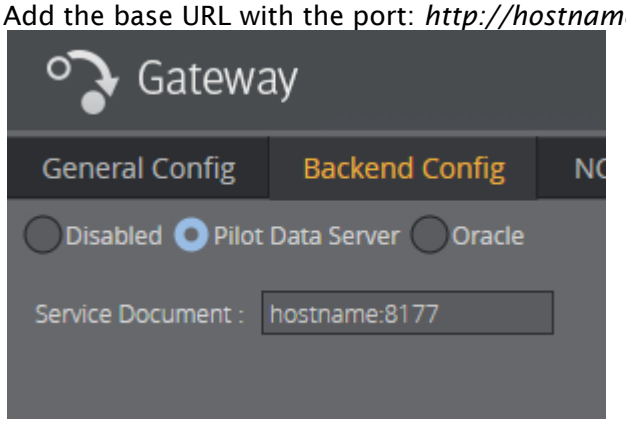
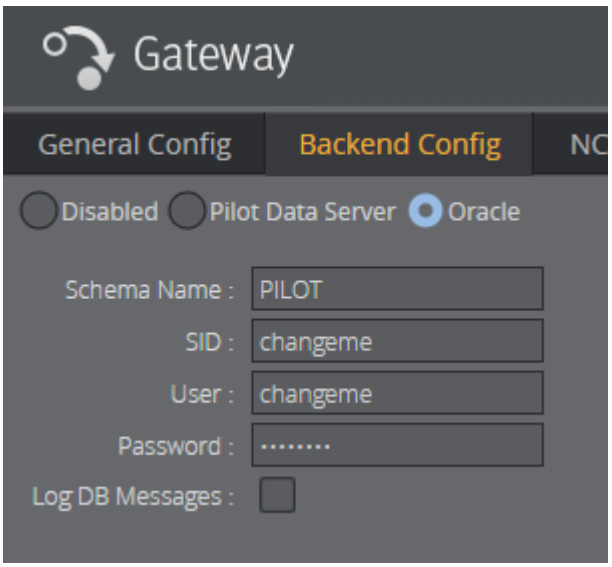
Add the base URL with the port: *http://hostname:8177/*.



> **Note:** Viz Pilot Data Server can be configured to use either Viz Graphic Hub or Oracle. Make this selection when installing Viz Pilot Data Server. For more information see the Viz Pilot User Guide.

Oracle

Select this option to use a direct Oracle connection as backend.



Description of parameters:

- **Schema Name:** Enter the database schema name. Schema name is case sensitive. The default schema name is PILOT and must be upper case.

  > **Note:** Default username, password and schema name for Viz Pilot is *PILOT*. For security reasons, the default password should be changed.

- **SID:** Either enter a TNS name alias or a connection string. For the TNS name alias to work, Oracle's *tnsnames.ora* file must be edited.

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> **Example:** Alternative connection strings are *<hostname>/<SID>* or *<IP address>/<SID>*.

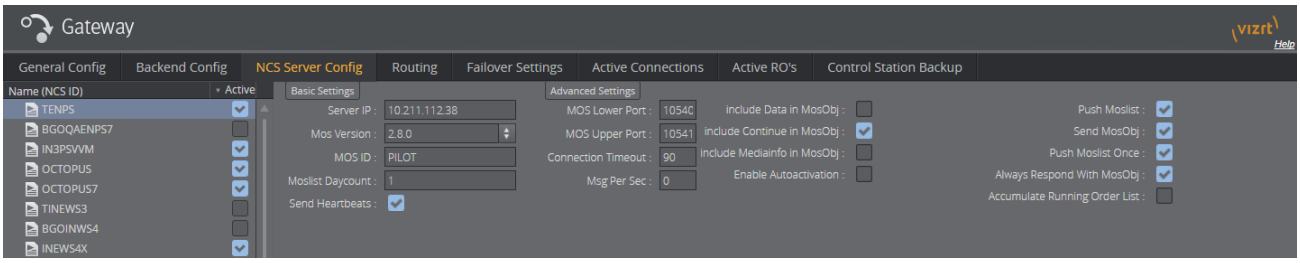
- **User:** Enter the database username. Username is not case sensitive.
- **Password:** Enter the database password. Password is not case sensitive.
- **Log DB Messages:** Check this option to enable DB message logging.

> **Note:** Use of Extended Advanced Queuing (AQ) is automatically checked by Gateway.

6.2.3 NCS Server Configuration

The NCS Server configuration tab is divided into three panels:

- Name (NCS ID) Panel
  - Active NCCs
  - To Add a New NCS
  - To Create Duplicate NCS
  - To Remove an NCS ID
- Basic Settings
- Advanced Settings



> **Tip:** Whenever a setting is changed, click the **Apply Settings** button to enable the new settings. This also requires the Gateway server to be restarted. All settings are individual settings for each Newsroom Computer System.

Name (NCS ID) Panel

The Name (NCS ID) panel contains the list of NCS servers that are configured to be handled by Gateway. Gateway is able to connect to multiple NCSs from different vendors.

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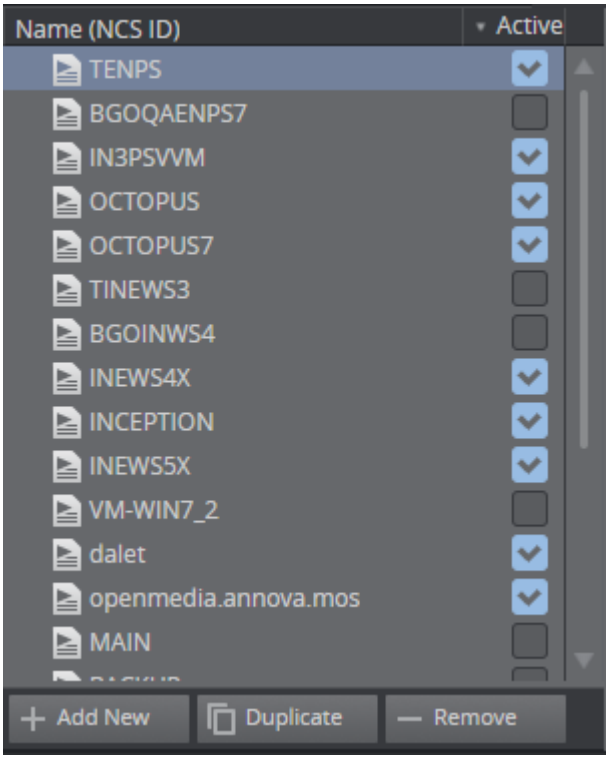

Active NCCs

Click the Active checkbox to decide which NCS configurations take effect.

If an NCS is inactive:

- No connections are established to this NCS.
- Any messages the NCS sends to the Gateway are not recognized.

To Add a New NCS

1. Click the **+ Add New** button.
2. Enter the newsroom system's ID (NCS ID).
3. Click **OK.**

To Create Duplicate NCS

Create a new entry based on the settings of an existing entry.

1. Select the NCS you want to duplicate.
2. Click the Duplicate icon.
3. Enter the NCS ID.
4. Click **OK**.

To Remove an NCS ID

1. Select an item from the NCS Server list.
2. Click the **Remove** button.

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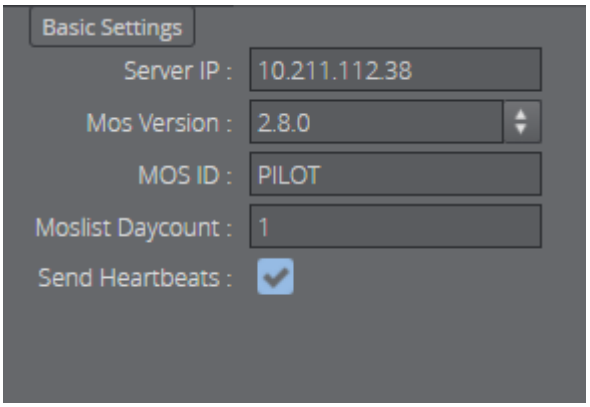
3. Click **OK** to confirm the removal of the NCS.

> ⚠ **Note:** All changes to the NCS Server list require that the Gateway server is restarted.

Basic Settings



This panel contains the following parameters:

- **Server IP:** NCS IP address
- **MOS Version**
  - 2.6 - Gateway supports the MOS Protocol version 2.6.
  - 2.8 - Gateway supports the MOS Protocol version 2.8.
  - In order to support MOS Protocol version 2.8.1 or later, both the Media Sequencer hosting the central Gateway and Media Sequencer clients must be upgraded to version 5.3 or later.

    > ⚠ **Note:** Click the arrow icon to show available MOS versions.
- **MOS ID:** Identifier for the Gateway.
- **Moslist Days Count:** Specifies how old a data element can be in order to be forwarded to the newsroom system and shown in the newsroom client.
- **Send Heartbeats:** Check this option to enable Gateway to send heartbeat messages to the NCS. An error is logged if a response to the heartbeat message is not received within a timeout period.

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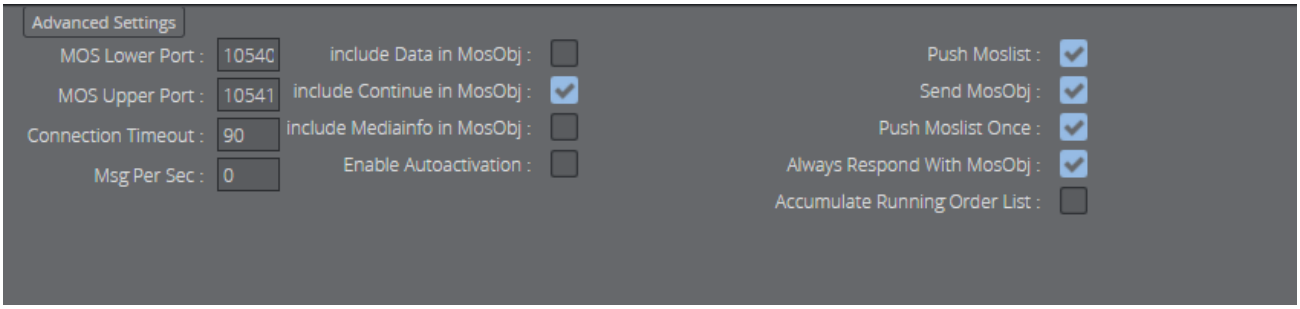
Advanced Settings



- **MOS Lower Port:** Specifies the socket port that the NCS is listening on for MOS Object messages sent from the Gateway. The Gateway automatically establish a connect to this port during startup.
- **MOS Upper Port:** Specifies the socket port that the NCS is listening on for rundown related messages sent from the Gateway. The Gateway automatically establish a connect to this port during startup.
- **Connection Timeout:** Sets the number of seconds Gateway waits for a response to a request. If a response message is not received within a given time, the next message is sent. This prevents messages from *clogging* the system.
- **Msg Per Sec:** The number of messages per second Gateway sends to the NCS. Specify value `0` for free flow of messages.
- **Include data in MosObj:** Check this option to include data field information in a MOS external meta block inside all MOS object messages sent to the NCS.

  > ⚠ **Note:** This information is typically used by NCSs either to present this information in their end-user interface or to deduce key information that may be used for archiving purposes.

- **Include continue in MosObj:** Check this option to include continue count information in a MOS external meta block as part of the MOS Object messages sent to the NCS.

  > ⚠ **Note:** This information is typically used by automation systems to trigger graphics. A continue count tells the graphics operator how many times to press continue to play graphics scenes from start to finish.

- **Include mediainfo in MosObj:** Sends metadata related to data elements containing video clips.

  > ⚠ **Note:** This information is typically used by NCSs either to present this information in their end-user interface or to deduce key information that may be used for archiving purposes. This setting only works for old Viz Link based systems.

- **Enable Autoactivation:** The Enable AutoActivation option for the newsroom system must be enabled in order for Routing to have an effect. This enables the control station to activate a running order without an initial request.
- **Push Moslist:** Check this option to enable sending a MOS Object list message to the NCS to synchronize the list of MOS Objects.

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- **Send MosObj:** Check this option to enable sending of MOS Object messages to the NCS when a MOS object is created, updated or deleted.
- **Push Moslist Once:** If Push Moslist is enabled, check this option to only send the MOS object list once, even if the connection between Gateway and NCS has been down.
- **Always Respond With MosObj:** If the NCS request the MOS Object list, enabling this setting sends individual MOS Object messages in place of a big list of all MOS objects.
- **Accumulate Running Order List:** Check this option to let the Gateway maintain the list of active running orders, in place of asking the NCS for the list each time it is needed.

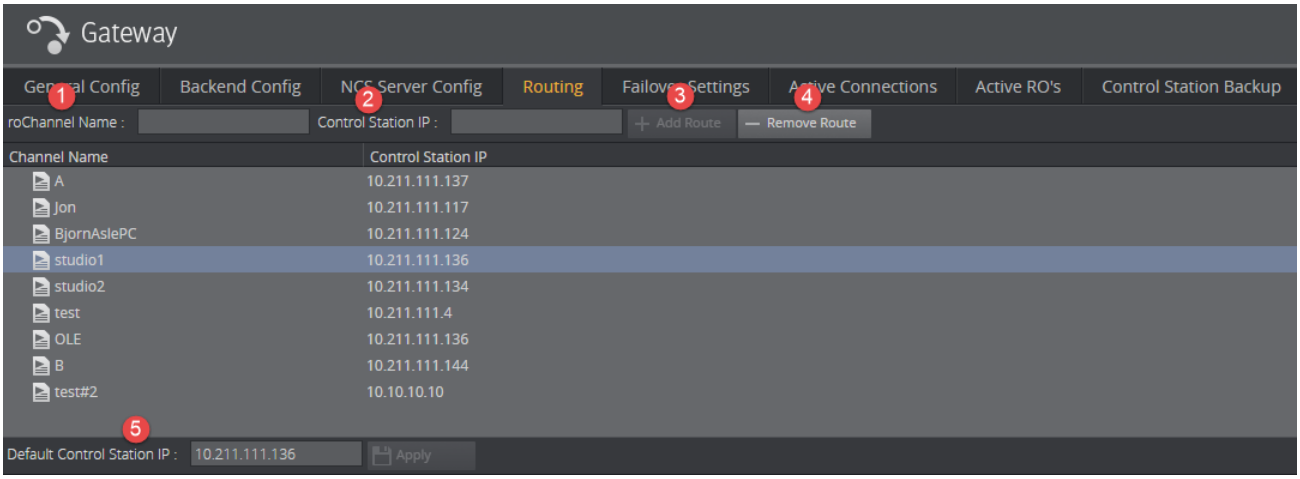
6.2.4 Routing

The Routing configuration enables the user to manually configure Gateway to route messages to a specific control station. Whenever one or several new routings are added or removed, the Gateway server must be restarted for the settings to take effect.

For routing to have an effect, **Enable AutoActivation** must be enabled as part of the NCS Server Configuration (Advanced Settings).

Gateway does a lookup in the mapping table to match the running order channel (roChannel) used by the newsroom system. If the channel name is found, it uses the IP address to forward the message and subsequent messages from the newsroom system to the control station.

Routing



1. **roChannel name:** The roChannel name that identifies the control station.
   The roChannel name is set on the NCS server, often through an NCS client.
2. **Control Station IP:** IP address of the control station.
3. **Add Route:** Fill the text fields, and click the **Add Route** button to add a new route.
4. **Remove Route:** Select a route from the list, and click the **Remove Route** button to remove the route.
5. **Default Control Station IP:** If no roChannel is specified, and the default control station IP is configured, this IP is used.

> ⚠ **Note:** All changes to the Routing table require that the Gateway is restarted.

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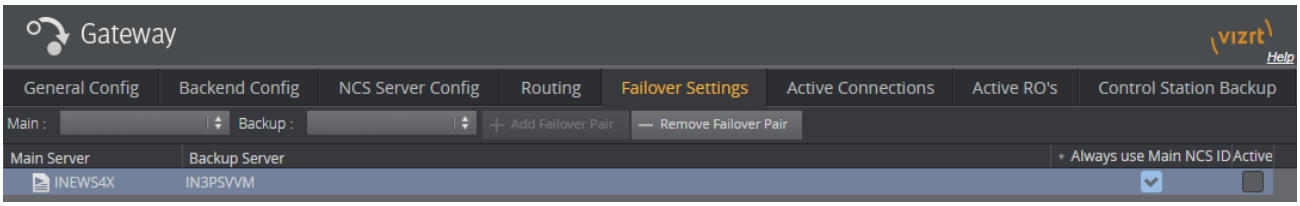
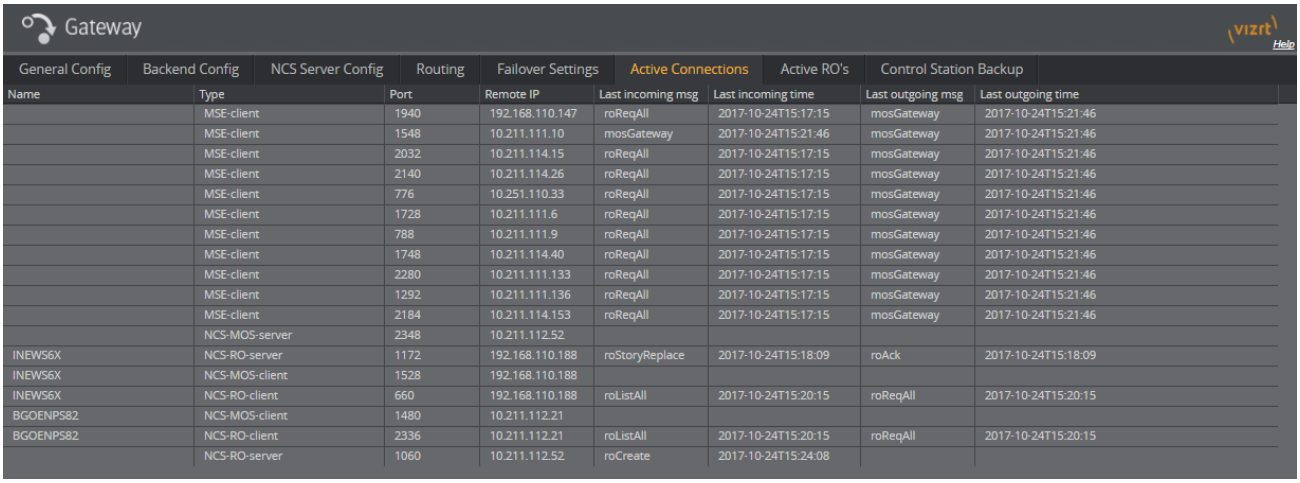
6.2.5 Failover Settings



Failover Settings enable the user to manually configure a failover setup between two NCSs. This means that Viz Gateway routes messages to both NCSs. Whenever one or several new failover pairs are added or removed, the Gateway server must be restarted for the settings to take effect.

> ⚠ **Note:** Gateway's failover setting is only supported by Associated Press's Electronic News Production System (ENPS) and for a limited use case for the Sobey Newsroom System.

6.2.6 Active Connections



There are primarily three kinds of connections:

- Connections from an NCS to Gateway
- Connection from a Control Station to Gateway
- Connection from Gateway to an NCS

Connections from an NCS to Gateway

These are connections that are established by the NCS as a connection to Gateway.

Characteristics of this connection type:

- Only one active connection per type can be made per NCS. Connection types are identified as NCS-RO-server and NCS-MOS-server in the Active Connections window.

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- Most NCSs do not have a permanent or fixed connection to Gateway. Therefore, the connection information is only visible when the NCS sends messages to Gateway, for example when a running order is activated or updated.

Connection from a Control Station to Gateway

These are connections to Vizrt's content control applications.

Characteristics of this connection type:

- Only one active connection per Media Sequencer is connected to a control station. Connection types are identified as MSE-client.
- The Host IP is the property of the Media Sequencer that the control station is using.

Connection from Gateway to an NCS

These are connections that are established by Gateway as a connection to an NCS.

Characteristics of this connection type:

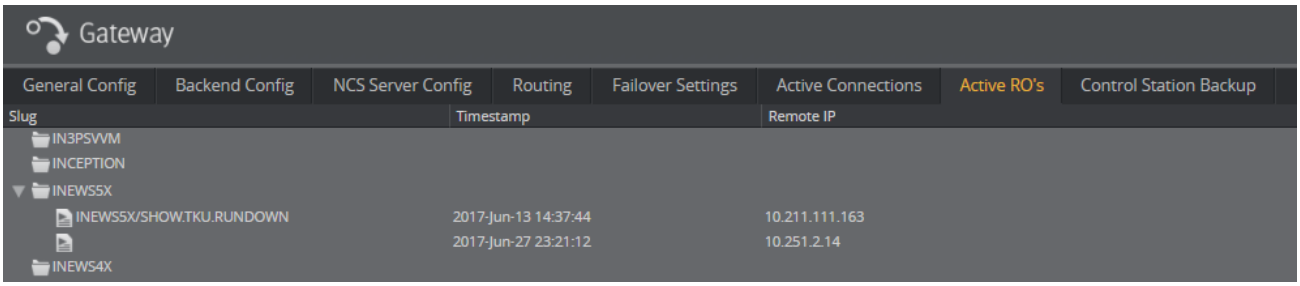
- Only one active connection per type can be made per NCS.
- Connection types are identified as NCS-RO-client and NCS-MOS-client.

This tab contains eight columns that are defined as follows:

- **Name:** Shows the name of the entity that holds the connection.
- **Type:** Type of connection. For details, see the type definitions above.
- **Port:** Port used for an active TCP connection.
- **Remote IP:** IP address identifying the remote system.
- **Last incoming msg:** Type information for the last incoming message.
- **Last incoming time:** Timestamp for the last incoming message.
- **Last outgoing msg:** Type information for the last outgoing message.
- **Last outgoing time:** Timestamp for the last outgoing message.

6.2.7 Active Running Orders

This tab shows which running orders the Gateway knows about, sorted under each NCS.

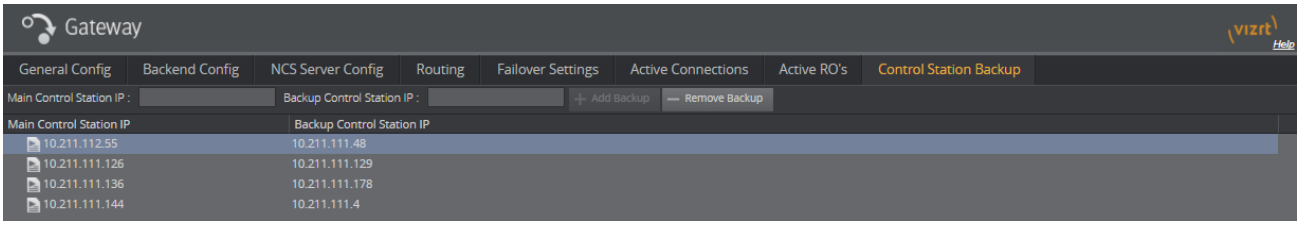


Display Running Orders

Display the running orders for each NCS by clicking the expand arrow icon next to the NCS.

The running order name (also known as a Running Order (RO) slug) appears, along with when the RO was last modified. The timestamp is related to the running order days to live setting under General Configuration.

6.2.8 Control Station Backup



The Control Station Backup panel allows you to manually configure a backup Control Station MSE. The backup Control Station MSE receives the same rundowns (and updates) as the main Control Station MSE receives. This means that changes seen in a client connected to the main Control Station MSE shows up in clients connected to the backup Control Stations MSE, and in turn means that any changes made during a live show are reflected in the backup client. If the Control Station MSEs have been configured to send status information back to NCS, status messages are only sent from the main Control Station.

To Add a Backup Control Station

1. Enter the Main Control Station MSE IP.
2. Enter the Backup Control Station MSE IP.
3. Click **Add Backup**.

To Remove a Backup Control Station

1. Select an item from the Control Station Backup list.
2. Click the **Remove** button.
3. Click **OK** to confirm the removal of the Control Station Backup item.

> ⚠ **Note:** When adding or removing a single or several new backup Control Stations, the Gateway server must be restarted in order for the settings to take effect.

6.3 Log Message Window

The log messages window contains the following areas:

- Log Traffic Checkbox
- Messages Area

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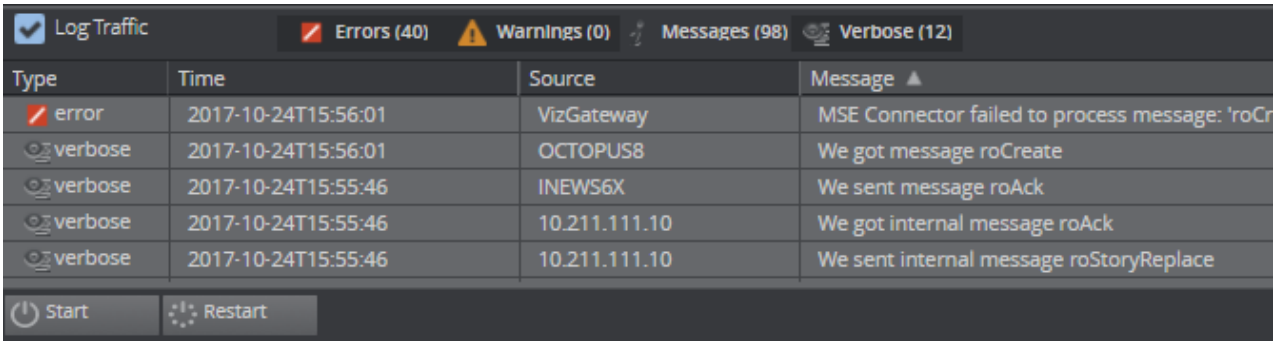
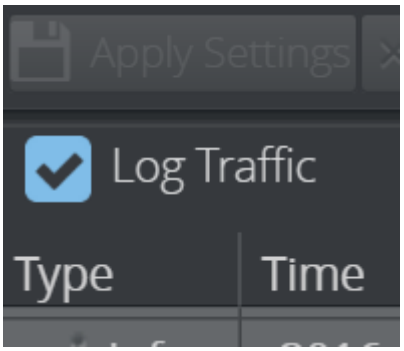


6.3.1 Log Traffic Checkbox



Enable the **Log Traffic** option to log the traffic between the newsroom systems, control stations, and the Viz Pilot database. This setting is disabled by default.

Check this option to log all MOS messages received, sent and forwarded by Gateway. The traffic messages will be part of the media sequencer log file located under: *C:\ProgramData\Vizrt\Media Sequencer*.

6.3.2 Messages Area

The messages area contains four columns containing pieces of information about the message:

- **Time:** Shows a message time stamp (*year-month-day-hour-minute-second*).
- **Type:** Shows the type of log message received.
- **Source:** Shows which system that issued the error, warning, info or notice message.
- **Message:** Displays the content of the message.

> **Tip:** Hover the mouse pointer over a message to see the full content of the message.

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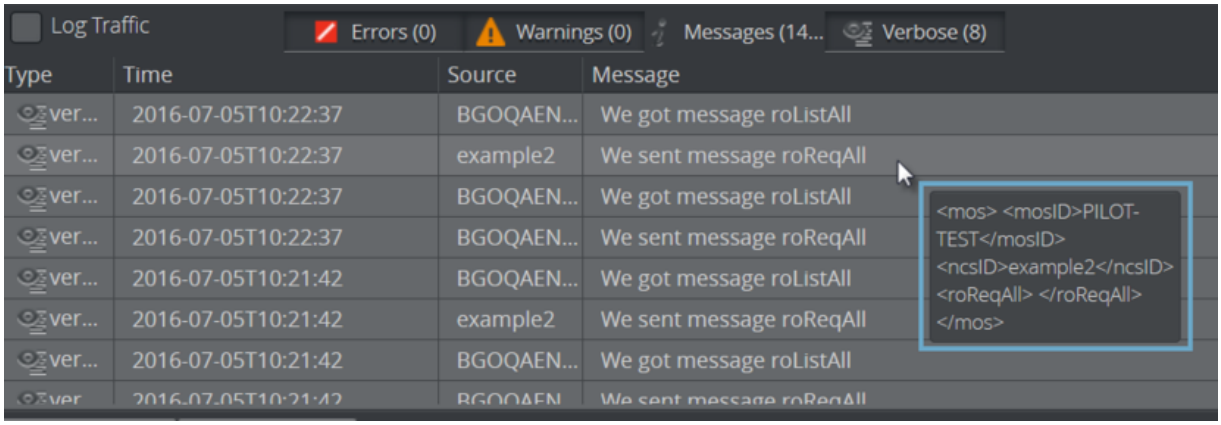
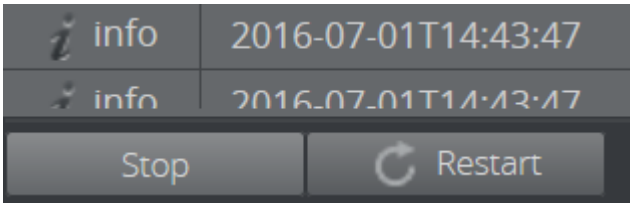


6.4 Start, Stop And Restart Gateway Buttons

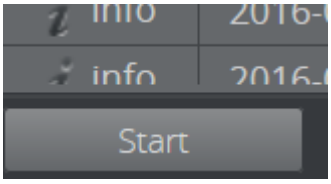
Depending on the current run status you can use the buttons in the lower left corner of the interface to **Start**, **Restart** or **Stop** the Gateway:

- To Start Gateway
- To Stop Gateway
- To Restart Gateway

When Gateway is running, the following buttons are visible and enabled:



When Gateway is stopped, the following button is visible and enabled:



6.4.1 To Start Gateway

Start the Gateway Client when it is stopped.

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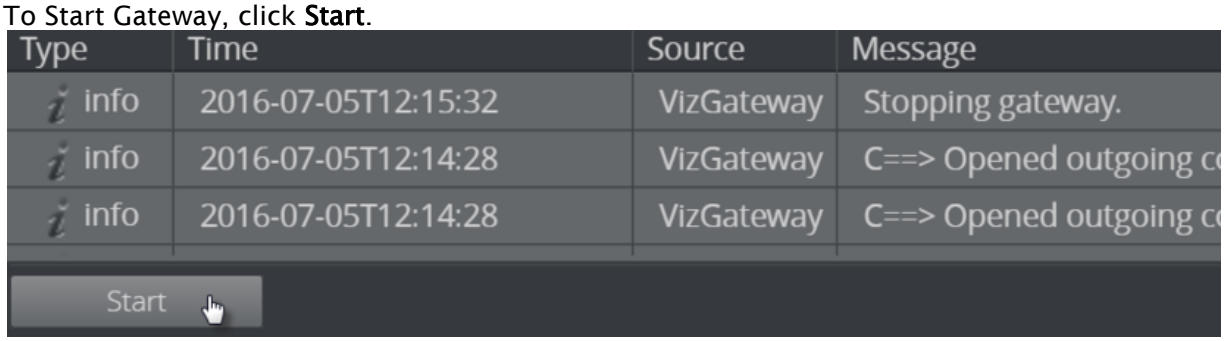
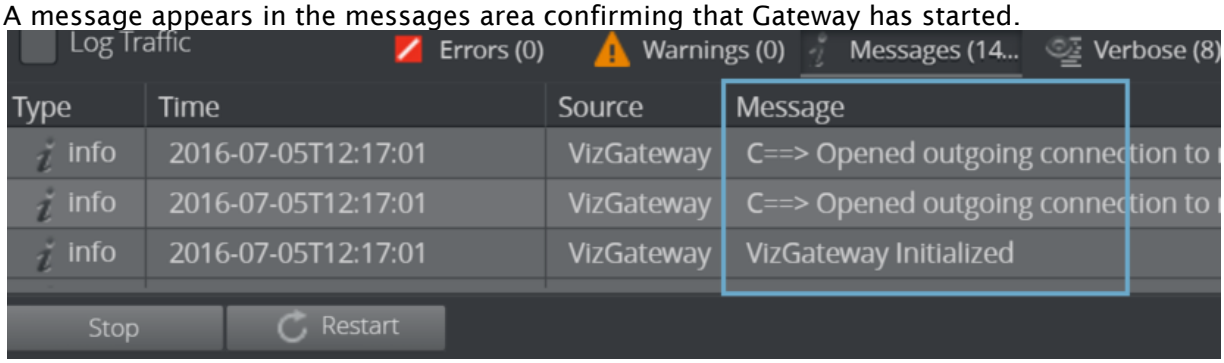
1. To Start Gateway, click **Start**.



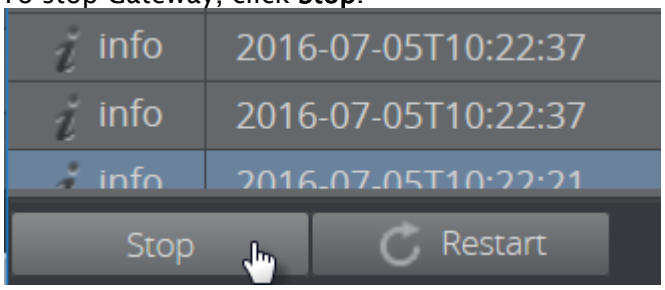
2. A message appears in the messages area confirming that Gateway has started.



6.4.2 To Stop Gateway

Stop the Gateway Client when it is running.

1. To stop Gateway, click **Stop**.



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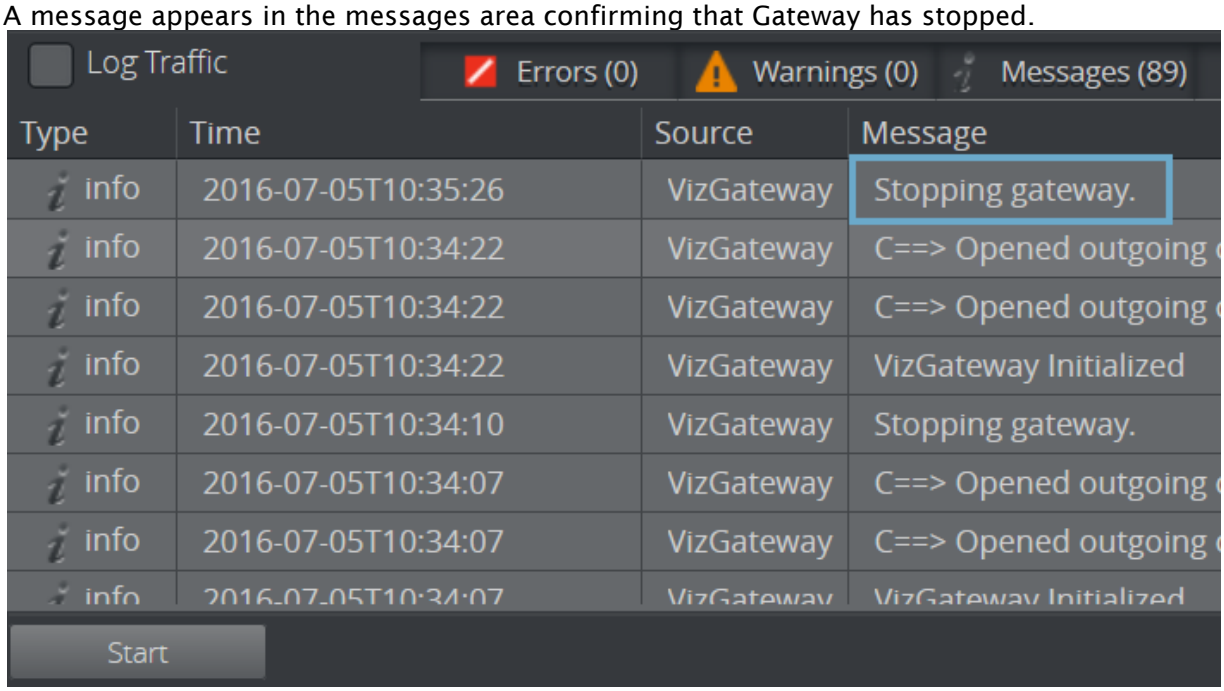
2. A message appears in the messages area confirming that Gateway has stopped.



6.4.3 To Restart Gateway

Restart the Gateway client when it is running.

> **Note:** Refreshing the browser does not restart the Gateway; it only reloads the page.

1. Click **Restart**.

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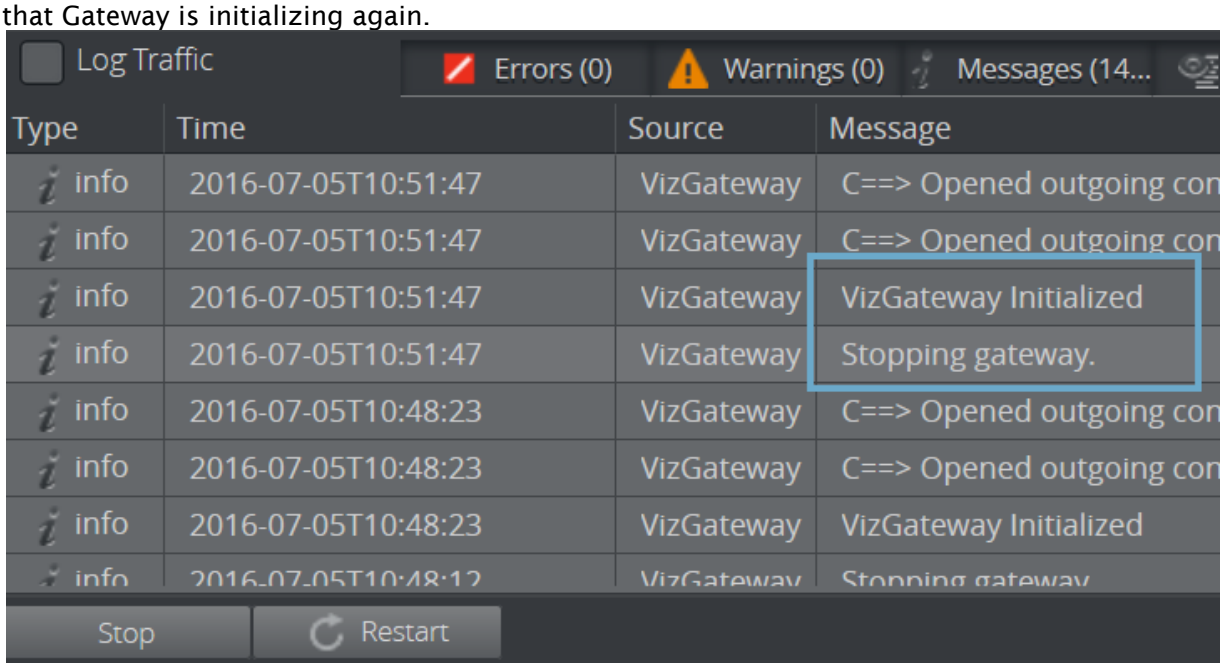
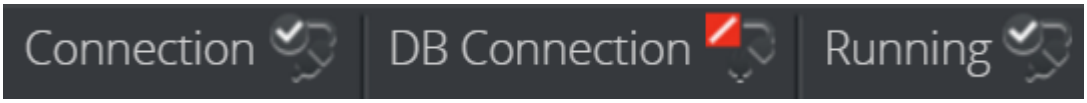
2. You receive a message that Gateway is stopping, followed immediately by another message that Gateway is initializing again.



Tip: Please keep in mind that changing some Gateway configuration settings requires a restart in order for the changes to take effect.

6.5 Status Indicators



The client has three status indicators with visual indicators:

- **Connection:** Indicates if the Gateway Controller Client has a connection to the Gateway server.
- **DB Connection:** Indicates if the Gateway server has a connection to the database.
- **Running:** Indicates if the appointed Media Sequencer is configured and running as a Gateway server.

6.5.1 Visual Indicators

Connected visual indicator.

Not connected visual indicator.

7 Configuration

This section describes how to configure the Gateway server, and the control stations. Before any configuration can be done, information about the NCS servers and database must be obtained.

This section contains information on the following topics:

- Pre-Configuration
- Gateway Server
- Viz Pilot and Viz Trio Gateway Configuration
- NCS Specific Considerations

7.1 Pre-Configuration

From the NCS, obtain the following information:

- NCS ID, NCS server IP, MOS version, and MOS ID.

To use the Oracle database as a backend, obtain the following information:

- Oracle System Identifier (SID), username, password, and UTF-8 character encoding.

To use the Pilot Data Server as a backend, obtain the following information:

- Base URL and the port number for the Pilot Data Server: http://hostname:8177

If the Gateway is installed on another host than the Oracle database, the hostname of the database must be used in addition to the SID (*<hostname>/<SID>*). To test the database connection, try typing *tnsping hostname/SID* on the command-line.

Port numbers used in screen-shots in this document are standard port numbers used in the MOS Protocol. Other port numbers may be used.

7.2 Gateway Server

Configuring the Gateway server can be done locally on the server host, where the Media Sequencer with the MOS gateway functionality is installed, or remotely from a client machine using the Gateway Controller web-application. In both cases, the web interface application is used.

7.2.1 Activate the Gateway Server

Connect to the Gateway at host *<ADDRESS>* (substitute *<ADDRESS>* with the actual hostname or IP address) by browsing to the following web address: *http://<ADDRESS>:8580/app/gatewaycontroller/gatewaycontroller.html*

The first time the Gateway server is used, it needs to be initialized. Click the **Start** button, and the Media Sequencer is enabled as a Gateway server. When the Gateway server is enabled the *Running* indicator indicates connection.

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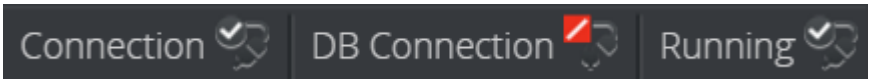


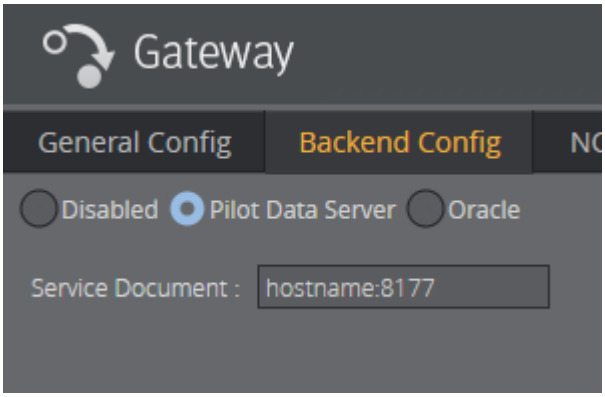
7.2.2 Backend Config

The Viz Pilot database is a key part of any Gateway server installation. The Gateway server forwards the MOS Object messages to the newsroom system to synchronize metadata about Viz Pilot Data elements.

Viz Pilot Data Server

The Viz Pilot Data Server option can be used to connect to both of Viz Pilot's currently supported database backends: Graphic Hub and Oracle.

Viz Pilot Data Server notifies Gateway about changes in the database (using a Stomp based protocol with fallback to doing polling of the Viz Pilot Data Server's change log). Gateway generates the MOS Object messages that are sent to the the NCS to synchronize meta data about the Viz Pilot Data Elements.



1. Click the **Backend Config** tab.
2. Select Pilot Data Server.
3. Enter the base URL with the port number: *hostname:8177*.

Oracle

The Oracle option is mainly to be used with Viz Pilot setups that are not running Viz Pilot Data Server version 7.0 or later.

Stored procedures on the Oracle database backend notifies the Gateway about changes of Viz Pilot Data elements in the database. Gateway generates the MOS Object messages that are sent to the NCS to synchronize meta information about Viz Pilot Data elements.

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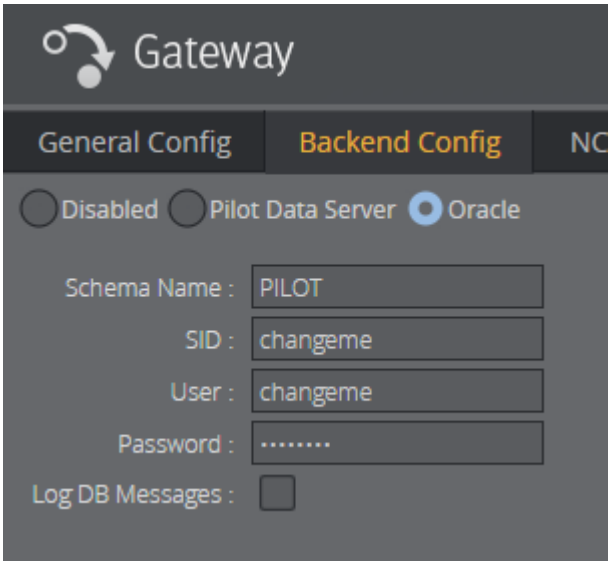

1. Click the **Backend Config** tab.
2. Select Oracle.
3. Enter the SID, Username, Password and Schema Name for the database.

   > **Note:** The database Schema-name is case-sensitive.

4. Check the Log DB Messages (optional).
5. Click **Apply Settings** Button.
6. Click the **Restart** button for changes to take effect on the Gateway server.

The procedure above should connect the Gateway server to the Viz Pilot database, switch the DB connected indicator to green, and enable the Gateway server to receive messages from the database.

> **Important!** Before installing the Gateway Controller Client, make sure an Oracle Database Client is installed and working. The Oracle Client version should match the Oracle Database in use. If using a 64-bit Gateway, the Oracle Client must be 64-bit. Oracle uses the Windows PATH environment variable to select which Client to use if there are several Oracle Clients installed.

7.2.3 Newsroom Servers

Click the NCS Server Config tab to configure the newsroom servers. Configuration is done per newsroom system.

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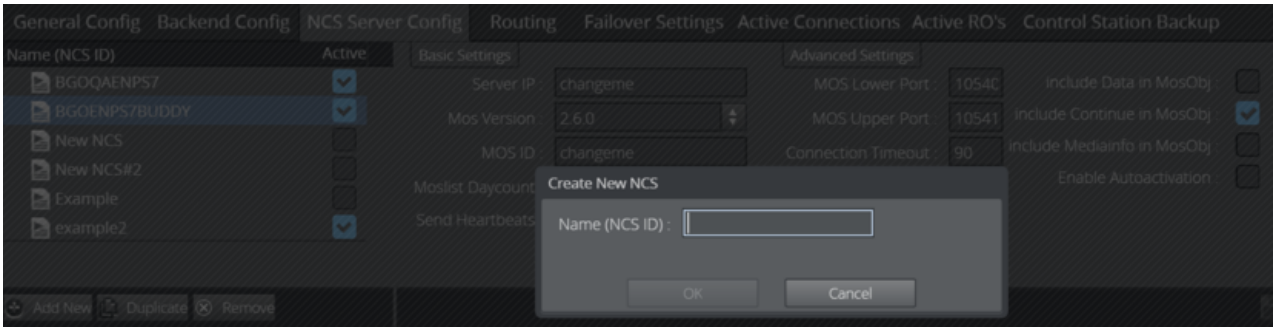


If no newsroom system is added to the Gateway server, do the following:

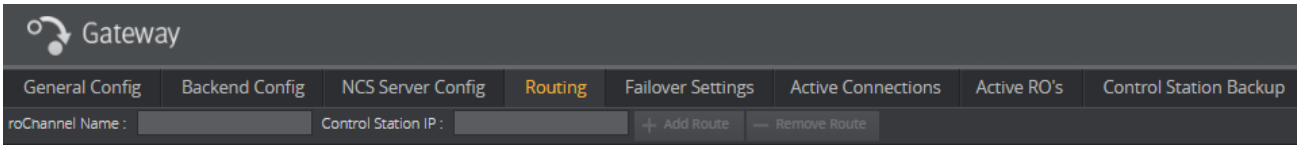
1. Click the **Add New** button and the **Create New NCS** dialog appears.
2. Enter the NCS ID, and click **OK**.
3. Select the newly-added entry from the list of newsroom systems.

In the Basic Settings frame, change the following:

1. Enter the server IP and MOS ID. The rest are optional settings.
2. In the Advanced Settings frame, different settings can be enabled or disabled depending on the newsroom system in use.
3. When done click the **Apply Settings** button.
4. Click the **Restart** button for changes to take effect on the Gateway server.
   Repeat the steps above to add all the needed newsroom systems.

Tip: If the newsroom systems have the same setup, select a newsroom system from the list and click the **Duplicate** button.

7.2.4 Routing



Click the Routing tab to manually configure routing of running orders, also known as rundowns and playlists, to the control station.

1. Add the roChannel name and control station IP and click the **Add Route** button.
2. For the routing to take effect, click the **NCS Server Config** tab and check the **Enable Autoactivation** box for the newsroom system that the running orders are automatically routed from.
3. When done, click the **Apply Settings** button.
4. Click the **Restart** button for changes to take effect on the Gateway server.

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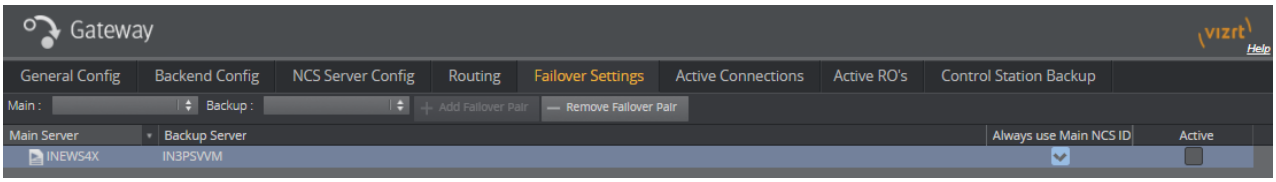
7.2.5 Failover



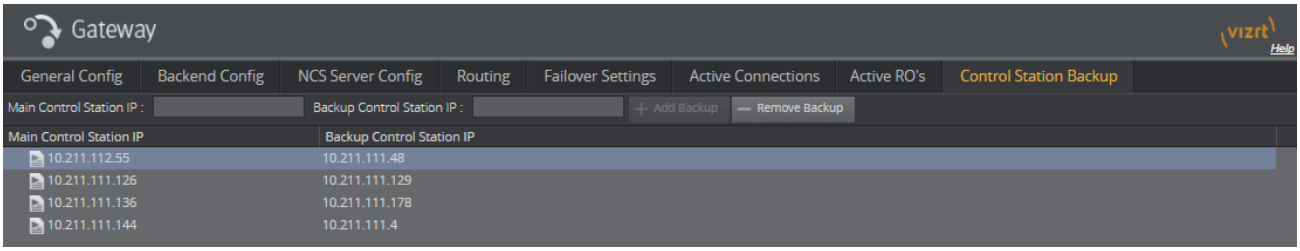
The failover setting allows the Gateway server to send its messages to more than one NCS system. For failover to work, the newsroom system must be setup with a *main* and *backup* server accordingly.

To Set up Main and Backup Servers

1. Add a main and a backup NCS from the drop-lists.
2. Click the **Add Failover Pair** button.
3. The setting is set to Active after adding a pair.
4. The Always use Main NCS ID setting should be left inactive unless using the Sobey NSC system.
5. Click the **Restart** button for changes to take effect on the Gateway server.

> ⚠ **Note:** Currently, this feature is only supported by ENPS and Sobey.

7.2.6 Control Station Backup



The Control Station Backup setting allows Gateway to send each message that has been targeted to both a specific control station and a backup control station simultaneously.

To configure:

1. Add the IP address for the main and Backup Control Station and click the **Add Backup** button.
2. Click the **Restart** button for changes to take effect on the Gateway server.

> ⚠ **Note:** It is possible to configure a system where two control stations are backup for each other.

As an example, let's say we have two Media Sequencers as control stations: servers **A** and **B**. Now we take the actions in the table below:

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Action	Result
Set server **A** as *Main*, **B** as *Backup* using the **Add Backup** button.	A is now Main, B is Backup.
Keep the definitions from the step above, and now add *B as Main* and *A as Backup*.	Both control stations A and B are updated with MOS messages, both are running.
From a Viz client, such as Viz Trio or Viz Pilot, connect to B and request a MOS playlist.	Control station B becomes Main control station now. Whichever control station requests MOS playlist first, becomes Main control station. The MOS playlist becomes available to both of the control stations.
Shut down control station **B.**	Control station **A** becomes **Main** and start receiving and sending all the updates. Gateway does not receive any message from Control station B.

7.3 Viz Pilot And Viz Trio Gateway Configuration

All content control applications use the same settings to connect to the database.

To access these settings use the following menu options:

- Viz Pilot: from the main menu select **Tools > External Interfaces**, and the Viz Pilot Database and MOS tabs.
- Viz Trio: from the main menu select **Config > Connectivity > MOS**.

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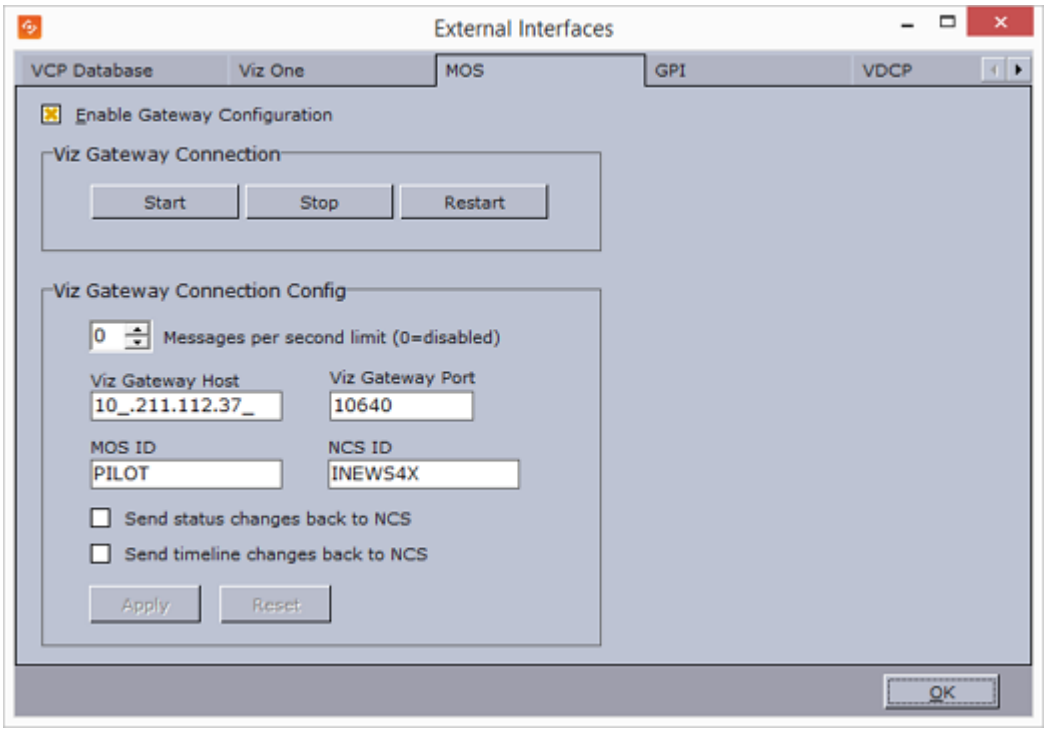
7.3.1 Gateway Configuration for Viz Pilot



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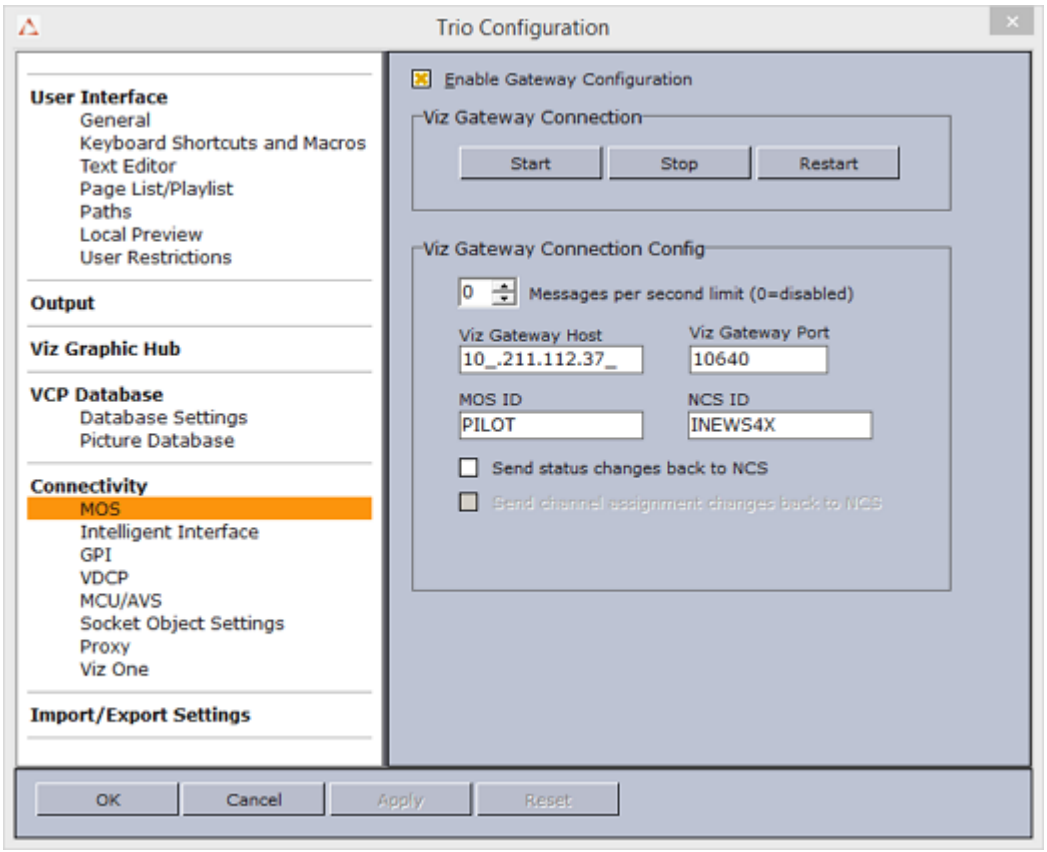
7.3.2 Gateway Configuration for Viz Trio



7.3.3 Database Settings

For Viz Pilot and Viz Trio, these settings are available under the VCP Database tab.

- **Connection string:** Sets the connection to the database.

  > **Note:** Use the following string format: *user-name/password@database*.

- **Schema**: Shows the name of the Oracle schema.

  > **Note:** The Schema name is case-sensitive, typically given in uppercase.

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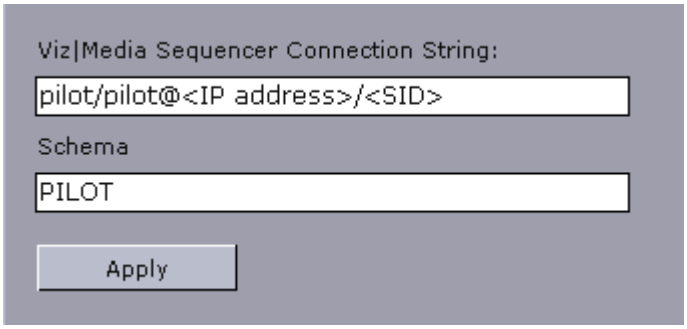

7.3.4 Gateway Connection

For Viz Pilot and Viz Trio, these buttons are available under the MOS tab.

- **Start:** Starts a connection to Gateway server.
- **Stop:** Close a connection to Gateway server.
- **Restart:** Restarts a connection to Gateway server.

7.3.5 Gateway Connection Configuration

For Viz Pilot and Viz Trio, these settings are available under the MOS tab.

- **Automatic reconnect:** Starts the Gateway connection automatically when starting or resetting the Media Sequencer.
- **Reconnect interval (sec):** Specifies the number of seconds that the Media Sequencer should wait, when the connection is lost, before trying to reconnect to Gateway.
- **Gateway Host:** Shows the IP address of the Gateway host.
- **Gateway Port:** Shows the port number on the Gateway host.

  ⚠ **Note:** MOS ID and NCS ID should be left empty for Gateway version 2.0 or newer.

- **Send item stat:** Sends feedback to the NCS via MOS, for example information about the transfer status of elements.

7.4 NCS Specific Considerations

This section describes some NCS specific considerations that must be taken into account when configuring Gateway with an NCS. For other NCSs, than the ones mentioned below, a generic configuration should be sufficient, see the Configuration Section.

7.4.1 ENPS

Gateway supports an ENPS Buddy setup. Use the Failover settings to add a main and backup server.

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Buddy Support

The ENPS NCS can be configured to run with an identical mirror server (called a "buddy") at all times, as a failover. Gateway supports this setup, and offers a failover configuration in the Gateway Controller Client. This enables Gateway to send messages to more than one NCS.

If the primary server fails or is down for maintenance, all messages are sent to the buddy server until the primary comes back on-line. All changes received from the Gateway are queued on the ENPS buddy server, and copied back to the main server automatically when it returns to production.

7.4.2 Avid iNews

> **Note:** Avid iNews version 2.6, and newer, can be used with Gateway. Older versions are not compatible.

There is no need to enable the DB connection for iNews. It does not need metadata about Vizrt MOS objects as it only refers to the MOS object ID and not the entire MOS object.

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8 MOS Protocol Support

8.1 MOS Profile Support

Gateway supports the following MOS profiles:

Profile	Definition	Supported	Vizrt Comment
0	Basic Communications	yes	
1	Basic Object Based Workflow	yes	
2	Basic Running Order/ Content List Workflow	yes	
3	Advanced Object Based Workflow	partly	Only mosItemReplace is used.
4	Advanced RO/Content List Workflow	yes	
5	Item Control	partly	Only roCtrl is supported.
6	MOS Redirection	yes	
7	MOS RO/ Content List Modification	no	

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8.2 MOS Protocol Support

Gateway supports these MOS protocol versions:

Protocol version	Supported
2.6	yes
2.8.0	yes
2.8.1	yes*
2.8.2	yes*
2.8.3	yes*
2.8.4	yes*
2.8.5	yes*
*Both the Media Sequencer hosting the central Gateway and Media Sequencer clients must be upgraded to version 5.3 or later to support MOS Protocol version 2.8.1 or later.	

See Also

- For more information about the MOS protocol, see mosprotocol.com.

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9 Installation Test

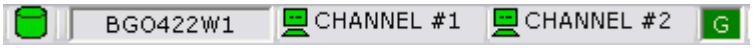
This section describes how to test the installation of Gateway with Vizrt content control applications such as Viz Pilot and Viz Trio.

Content control applications usually do not edit playlists because a content control application is unable to update the NCS. Changes on the control station could cause undesired effects in the playlist when a story is updated from by newsroom system. However, Vizrt content control applications are capable of editing their own MOS Objects (also known as data elements) if needed.

This section contains information on the following topics:

- Viz Pilot
- Viz Trio

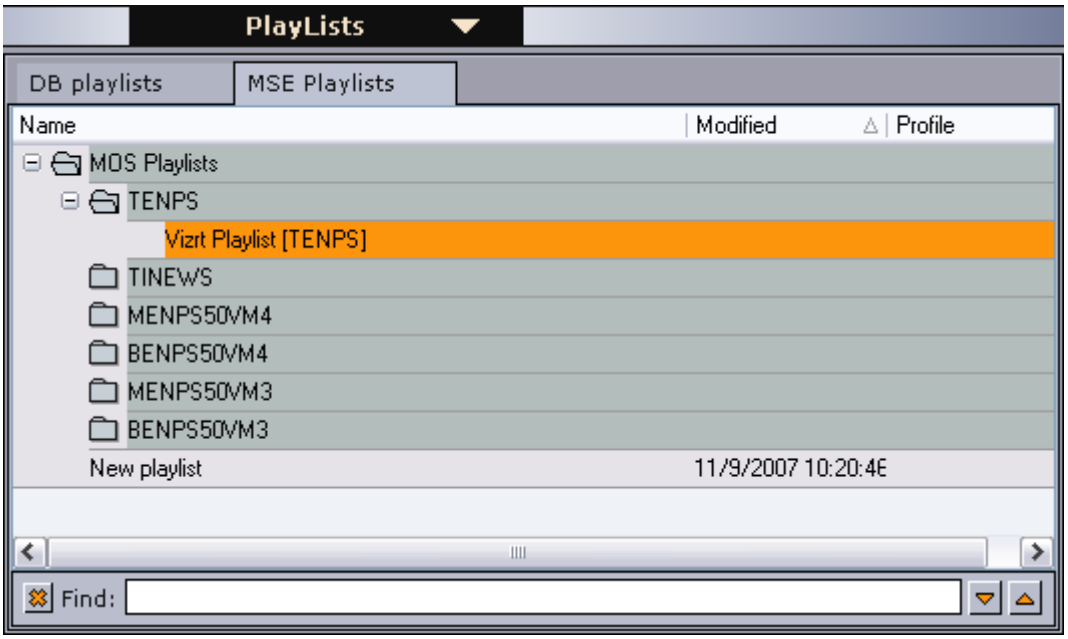
9.1 Viz Pilot



Before running an installation test, check that all settings and see that the connection status in the content control application is good.

- Connection to the database is good.
- Connection to the Viz Engine renderer is good (program or preview).
- Connection to the Gateway is good.

9.1.1 Request Running Order



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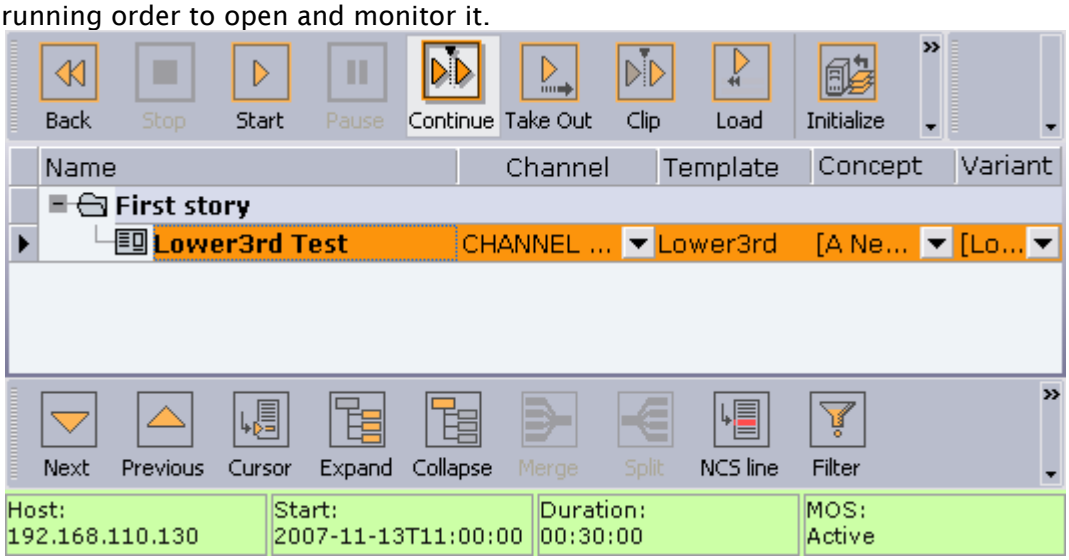
> **Note:** In Viz Pilot, a running order is called a playlist.

1. Click the Playlists button on the control panel to the left.
2. Select the MSE Playlists tab.

   > **Information:** All newsroom systems, represented by the NCS ID, that are connected to Gateway can be seen in the list.

3. Select the newsroom system, and then select one of its running orders. Double-click the running order to open and monitor it.



4. Verify that the status bar is green indicating the the playlist is MOS active. If not, right click on the status bar, and select request.
5. Check that the playlist has the same story and items as the one created in the NCS.

6. Add a new story and see that Viz Pilot receives the update.

   > **Note:** All items in a running order need a MOS Object, created in the NCS client, to be visible in the Viz Pilot playlist.

This concludes the installation test for Viz Pilot. For more information on how to use Viz Pilot with newsroom systems and Gateway, see the Viz Pilot documentation.

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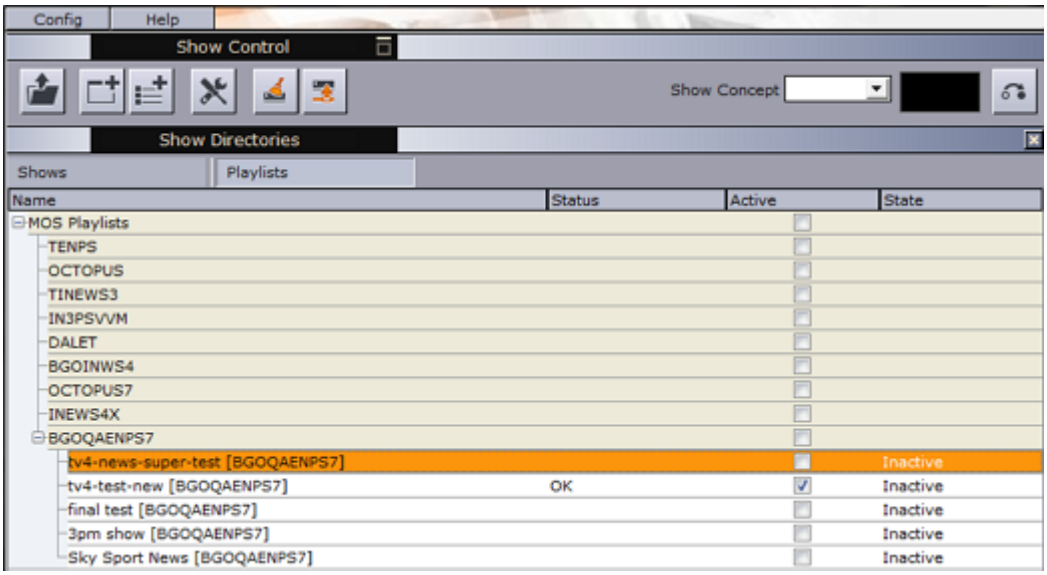
9.2 Viz Trio

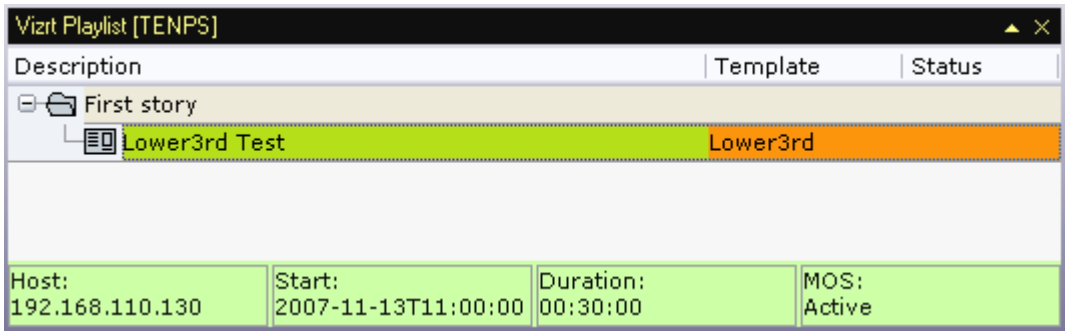
Before running an installation test, check that all settings and see that the connection status in the content control application is good.

- Connection to the Viz Engine renderer is good (program or preview).
- Connection to the Gateway is good (third rectangle from the left).
- Connection to the database is good.

9.2.1 Request Running Order



1. Click the Change Show button (depicted as a folder).
2. Click the MOS Playlists tab. If all settings are correct the running order from the NCS should be visible.



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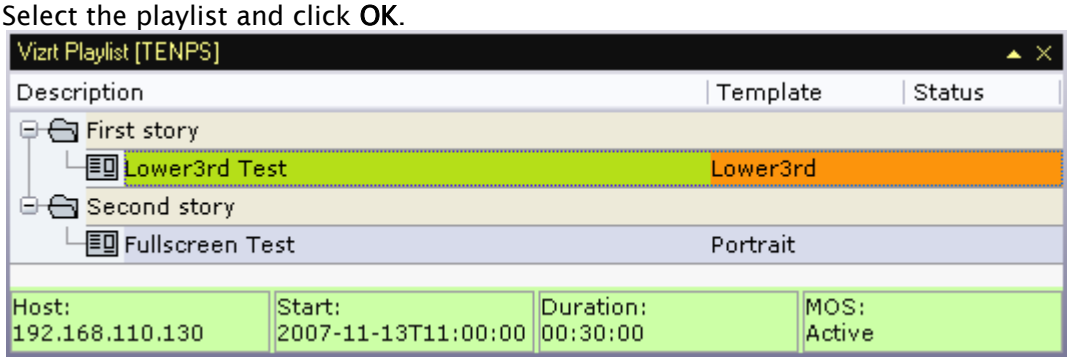
3. Select the playlist and click **OK**.



4. Verify that the status bar is green indicating the the playlist is MOS active. If not, right click on the status bar, and select request.
5. Add a new story and see that Viz Trio receives the update.

> ⚠ **Note:** All items in a running order need a MOS Object, created in the NCS client, to be visible in the Viz Trio playlist.

This concludes the installation test for Viz Trio. For more information on how to use Viz Trio with newsroom systems and Gateway, see the Viz Trio Documentation.

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10 Troubleshooting

This section explains some common challenges users have when configuring and running the Gateway server with connections to newsroom systems, Viz Pilot databases and content control applications like Viz Pilot and Viz Trio.

10.1 Common Sources Of Error

- NCS and MOS IDs are case-sensitive (check the newsroom system and Gateway).
- Gateway must be restarted after configuration changes.
- Software or hardware firewalls are blocking connections. Verify that the gateway has connections to all newsroom systems and control stations.

10.2 Running Orders From The Newsroom System Are Not Visible In Viz Pilot Or Viz Trio

- Check the configuration on the newsroom system. Is the Gateway configured with the correct IP and MOS/NCD-id? Remember that these ID's are case-sensitive.
- Check the logs on the newsroom system. Is the system sending anything to the Gateway when a new running order is created? If not, make sure that no firewall (software or hardware) is blocking the connections, and that the configurations are correct.
- In the Gateway Controller Client, check that there are at least two connections to the newsroom system. If no connections are shown, verify that the IP address entered for the system is correct, and that no firewall (software or hardware) is blocking the connections. Check the log-window for errors and warnings.
- In the Gateway Controller client, check that there is exactly one connection to each control station (media sequencer) that you wish to use.
- Enable logging of traffic, and set the log level to "notice" in the controller client:
    - Is the gateway receiving any traffic from the newsroom system? If not, the source of the problem is likely to be the communication between the newsroom system and the gateway.
    - If the gateway is receiving traffic (like a "roCreate" when creating a rundown and MOS activating it), is the gateway sending any traffic to the control stations after receiving such a message?
    - If messages are sent to the correct IP (control station), check the media sequencer logs on this computer for errors.

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10.3 Auto Activation (Routing) Enabled For Running Orders, But Are Not Automatically Enabled Or Forwarded To The Control Station

If routing is used, either based on roChannel or “default routing”, make sure that every newsroom system the control stations should receive running orders from, check the *enable autoactivation* checkbox in **Advanced Settings**.

10.4 Data Elements (MOS Objects) Are Not Showing Up In The Newsroom System

- The Gateway pushes a list of MOS objects to each connected newsroom system, only if the checkbox *pushmoslist* is checked.
- The Gateway sends MOS object messages each time a Viz Pilot data element is created, modified or deleted, only if the checkbox *send mosObj* is checked.
- The Viz Pilot Database section of the Gateway must be enabled in order to send MOS objects, and the “DB connected” indicator must be green. If the indicator is red, and the “enable Viz Pilot Database” is checked, check for errors and warnings in the log window.
- Some common errors:
  - Is an Oracle 10g client installed on the computer running Gateway?
  - Is it possible to log onto the Oracle server using the same credentials as entered in Gateway Controller Client, using the SQL Plus interface?
- Check Gateway’s log messages to see if MOS messages are sent to the newsroom system.
- Database schema names are case sensitive. The default Viz Pilot database schema name is *PILOT* (all upper case). Check the database installation to see if this is correct, or if another schema name is used.
- Check that the database is running by logging onto the database using SQL Plus.
- Check that the Oracle client’s environment path is correctly set. Run the Media Sequencer in console mode and check the console’s output for problems related to the Oracle Call Interface (OCI) library.
- See also Advanced Queuing (AQ) is not working properly.

10.5 Gateway Server Is Not Running (Running Status Is Red)

- Check for error and warning messages in the log window.
- Gateway fails to start if another Gateway is running on the same computer, for example an old Gateway version 1.x.

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> **Note:** A Gateway server must not be used by control stations as a regular Media Sequencer. If so the Media Sequencer will not run as a Gateway server. If this has been done, re-activate the Media Sequencer to run as a Gateway by clicking the **Start** button.

10.6 Ports And Connections Are Irregularly Opened And Closed

- Check firewall settings for ports that need to be open.
- Check typical router and routing issues.

10.7 Advanced Queuing (AQ) Is Not Working Properly

- An XML parser failure may be an indicator that the wrong AQ protocol is in use on the database.
- Check if the Extended AQ is in use on the database. Gateway should detect if AQ is in use or not and set the correct parameters.

10.8 Changes Are Not Taking Effect

Most changes on the Gateway server require a restart of the server. Use the Gateway Controller Client to check the settings again, and restart the Gateway server by clicking the **Restart** button.

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11 Glossary

This section explains some of the expressions and acronyms used in this manual.

Expression	Acronym	Description
Media Object Server	MOS	MOS is an evolving protocol for communications between Newsroom Computer Systems (NCS) and Media Object Servers (MOS) such as Video Servers, Audio Servers, Still Stores, and Character Generators. For more information, please see the MOS Protocol website: http://www.mosprotocol.com.
MOS Lower Port		MOS Lower Port (`10540`) is defined as the default TCP/IP port on which the NCS accepts connections from MOS devices. Multiple simultaneous connections are supported. This socket is referred to as *Media Object Metadata* port in the Message Types section.
MOS Upper Port		MOS Upper Port (`10541`) is defined as the default TCP/IP port on which the MOS accepts connections from the NCS. Multiple simultaneous connections are supported. This socket is referred to as *Running Order* port in the Message Types section.
Running Order	RO	To Viz Pilot and Viz Trio, a running order is the same as a playlist. It contains objects that reference the information about graphics elements created by the journalist using the Newsroom Connect Component. A Running Order consists of zero or multiple stories, which again contains one or multiple items. Objects can appear multiple times in a story, but only once in an item.
Viz Content Pilot	VCP	This product is now re-named Viz Pilot, but you can still find references to its old name.
Accumulate Running Order List		When this setting is enabled, Gateway keeps an internal list of available rundowns. Less traffic is generated to and from the NCS when the list is accumulated internally.

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