



Media Composer | Cloud

Network Information and Port Usage

Revision History

Date Revised	Changes Made
3/15/2016	Created Media Composer Cloud version and updated ports for Interplay v3.2 and greater. Includes support for remote download.

Purpose and Audience of This Document

This document provides the Interplay Administrator with an overview of the port usage requirements of Media Composer Cloud. The document also provides information on modifying the port usage for Media Composer Cloud clients.

This document is intended for Interplay system administrators and IT administrators. The modifications to the Media Composer Cloud client systems should usually be performed while the client system is still on site in the Interplay environment. Experienced users can also perform these modifications in the field.

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Name Resolution

Depending on how your site decides to implement the connection, the remote Media Composer Cloud computer must be able to resolve the system names and IP addresses of the following systems in the Interplay environment:

- Media Indexers in the High Availability Group (HAG)
- Interplay Engine
- MediaCentral Playback server
- System running Service Framework Lookup Service
- Systems running the Interplay Delivery Receiver service Delivery Provider
- FTP Server (if you are using Interplay Transfer on the Media Composer Cloud system)

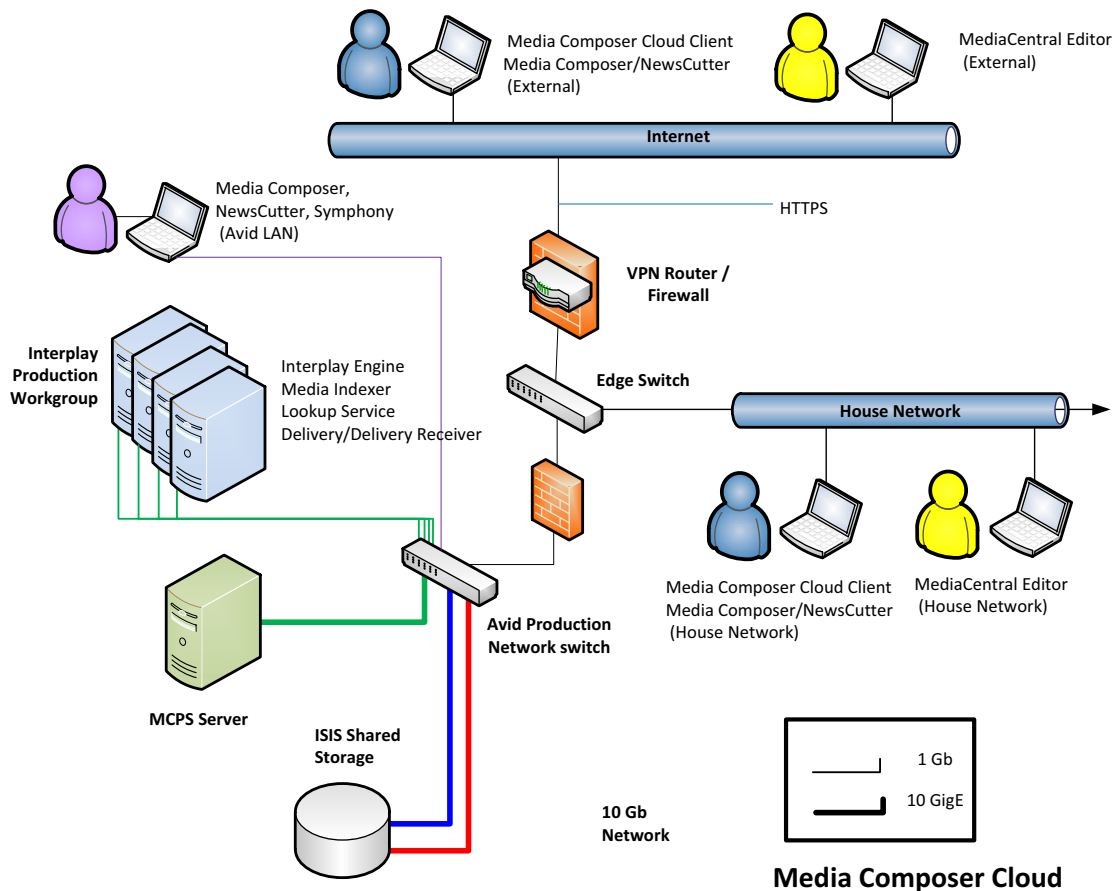
Your Interplay DNS servers need to be integrated with your corporate DNS servers so that name lookup requests will be forwarded to the appropriate authoritative zone servers. Please work with your IT organization to ensure proper DNS configuration.

VPN Connections and Port Usage

Remote editors using Media Composer Cloud typically access the Interplay environment “back at the station” or “back at the production facility” using a secure VPN connection. Any VPN, firewall, IPS or other network security devices between the Media Composer Cloud clients and Interplay core network need to be configured to allow access to the Interplay Media Composer Cloud servers. These security devices may require access configuration based on IP addresses as well as the TCP and UDP ports used by the Media Composer Cloud services.

It is important to note that, depending on the security at your site, a VPN connection might not guarantee full access to the Interplay servers. The VPN is one layer of security and in many cases internal security devices might also need to be modified.

The following illustration shows an example of an additional firewall between the VPN router/firewall and the Interplay environment.



It is the responsibility of the site network administrators to ensure that the Media Composer Cloud users have access to the Interplay servers. If your site implements additional firewalls or other network security devices between the VPN connection and the Interplay environment, you must open ports on the firewall or security device for successful communication with the remote client.

The following table shows the ports that must be open on the network security device. In some cases both inbound and outbound ports must be open.

Port Usage for Interplay Servers Supporting Media Composer Cloud

Component and Location	Port	Protocol	Inbound/ Outbound	Purpose
Media Services Engine	33325	TCP	Inbound/ Outbound	Communication between Media Services Engine and Delivery for Remote Download.  <i>In order to use port 33325 for Remote Download you must upgrade your Media Services Engine to v3.5. MSE v3.5 is supported in an Interplay v3.2 and higher environment.</i>
Delivery Provider/ Transfer Status Tool	1099	TCP	Inbound/ Outbound	RMI protocol for Interplay Production providers and Transfer Status Tool
	33321	TCP	Inbound/ Outbound	Communication port. The default is 33321 but you can change the value in the Interplay Administrator tool.
	42000-42060	TCP	Inbound/ Outbound	If 1099 not available
Delivery Receiver	33321	TCP	Inbound/ Outbound	Communication port. The default is 33321 but you can change the value in the Interplay Administrator tool.
	20020-21020	TCP	Inbound only	Data ports. The default range is 20020 through 21020 but you can lock down the range to the number of Media Composer Cloud users you have in the field. You need one port for each active delivery job. Each concurrent Media Composer Cloud user requires one port. See “Changing the Delivery Receiver Port Range in the Interplay Environment” on page 8.
	58889	TCP	Inbound only	Web Services. The Web Services implementation used by Media Composer Cloud is automatically installed on the Delivery Receiver system when you check the Delivery Receiver with Media Composer Cloud option.

Port Usage for Interplay Servers Supporting Media Composer Cloud (Continued)

Component and Location	Port	Protocol	Inbound/ Outbound	Purpose
MediaCentral Playback server	7	TCP	Inbound/ Outbound	Jini server verification
	80	TCP	Inbound only	Communication with the MediaCentral Playback service
	5000	TCP	Inbound only	Serving outbound JPEG images to Flash player and Media Composer Cloud clients
	26000	TCP	Inbound only	Inbound MediaCentral data
	843	TCP	Inbound only	Loading the Flash player for playback
System running the DNS server	443	TCP	Inbound only	HTTPS communication
	53	UDP	Inbound only	DNS communication
Interplay Engine	80	TCP	Inbound/ Outbound	Client communication
Media Indexer	7	TCP	Inbound/ Outbound	Jini server verification for Remote Upload.
	6155	TCP	Inbound/ Outbound	Communication between Media Indexer servers in the HAG
	8443	PCP	Inbound/ Outbound	Connection to the Media Indexer web interface. Prior to v3.2, the web user interface used the first available port starting with 8888 and going through 8892. These ports now redirect to 8443.
	24444 through 24450	TCP	Inbound/ Outbound	Media indexer jmx process
	61616	TCP	Inbound/ Outbound	Connection to the Media Indexer server
	61717	TCP	Inbound/ Outbound	Connection to the Media Indexer server for Media Composer Cloud clients

Port Usage for Interplay Servers Supporting Media Composer Cloud (Continued)

Component and Location	Port	Protocol	Inbound/ Outbound	Purpose
Transfer Engine	20	TCP	Inbound/ Outbound	Data port for Active mode. Note that only one transfer at a time is supported on Media Composer Cloud.
	21	TCP	Inbound/ Outbound	Active and Passive mode: control port for communication with ftp server. You can modify this port value. See “Changing the Interplay Transfer Control Port” on page 6.
	All ports higher than 1024	TCP	Inbound/ Outbound	Data ports for Passive mode. Passive mode range is dynamic above 1024.

Passive Mode and Interplay Transfer Generic FTP Servers

The above table lists all ports higher than 1024 for passive mode data ports. Note that different firewall vendors may have different ways to handle FTP security. The firewall may not require a static “allow” for all ports 1024 and above. Check with your IT department on the capabilities of the firewall when determining whether to allow the use of Passive mode.

When using passive FTP, during the “control” session over port 21, the server tells the client which port to use for “data” connections. Most firewalls have the ability to automatically allow passive data ports by inspecting the “control” traffic to determine which dynamic ports are being allocated. In these cases, there would not be a need for a static “allow” rule for all ports 1024 and above. Also, most FTP applications have the ability to restrict the passive data port ranges.

Changing the Interplay Transfer Control Port

The following limitations apply to Remote Send to Playback on Media Composer Cloud:

- Supported on Windows Media Composer Cloud clients only
- Requires Interplay v3.2 or later and Media Composer v8.2.x or later. See the *Media Composer / Cloud ReadMe* for editing version support.
- The only transfer method supported is Generic FTP, one transfer at a time
- The following operations are not qualified on a Transfer Engine running on a Media Composer Cloud system as a remote client:
 - Incoming transfers

- Workgroup to workgroup transfers
- Ingest operations
- Play while transfer
- AirSpeed 5000 is only supported using the local Transfer Engine via Generic FTP
- AirSpeed Studio configurations

Active and Passive modes are supported for Generic FTP transfers. However, note that Passive mode uses a dynamic range for data ports and therefore all ports above 1024 must be open. Active mode only requires one data port: 21. Note that Media Composer Cloud only supports one transfer at a time so only one data port is required.

Depending on your security device you may need to make additional changes to enable communication with the ftp server. See the documentation for your security device for additional information. For example, see the following link for Cisco switches:

<http://www.cisco.com/c/en/us/support/docs/ip/access-lists/26448-ACLsamples.html#activeftp>

To modify the control port for Interplay Transfer:

1. Open the Interplay Transfer Engine Configuration tool and click Configure FTP Servers in the bottom left corner.
2. In the FTP Configuration window, select a Generic FTP profile name and click Edit button.
3. The FTP Server window opens.

The screenshot shows the 'FTP Server' configuration window. It is divided into three panes. The left pane, 'Connection Information', contains fields for Profile Name (cet-ftp), Hostname (cet-ftp), Port (21), Username (bsiftp), Password (bsiftp), FTP Mode (Active), and Default Directory (.\Transporters). The middle pane, 'Server Information', contains Server Type (GENERIC_FTP_PROFILE), Playback Format (empty), and Image Aspect Ratio (Default). The right pane, 'Storage', contains a format dropdown (ISIS 4.x) and a Buffer size field (16 MB). OK and Cancel buttons are at the bottom right.

4. The Hostname port identifies the Interplay Transfer control port. Change this as necessary and click OK.
5. Change the port value for any other Generic FTP profiles that will be using the same port.

Changing the Delivery Receiver Port Range in the Interplay Environment

The Media Composer Cloud workflow requires that you register a Delivery Receiver service system within the receiving Interplay workgroup. You can make the following port related changes on the system:

- Change the Command port number using the Interplay Admin tool.
- Change the range of data ports used by the Delivery Receiver.

To register the default Delivery Receiver and set the Command port number:

1. On the system running the Delivery Receiver, click Start and select Programs > Avid > Avid Interplay Access Utilities > Avid Interplay Administrator.
2. Log in to the Interplay Engine.
3. In the Site Settings area, click Server Hostname Settings.
4. In the Interplay Media Services Settings area, type the computer name of the system that you want to register as the default Delivery Receiver.

By default, the command port number is 33321. Use the default port number or enter another port number and ensure that the system can communicate on that port.

5. Click Apply Changes.

To change the Delivery Receiver data port range:

1. Open the following folder on the system where you installed the Avid Interplay Delivery Receiver service software:
C:\Program Files\Avid\Avid Interplay Delivery Receiver\res\conf
2. Open the ftpd.xml file in Notepad.
3. To change the data port numbers, search for passive ports and replace the corresponding port numbers. The default data port numbers are 20020-21020. For example, if you have 10 Media Composer Cloud clients, change the range to 20020-20030.

The number of ports listed must correspond to the maximum number of concurrent remote upload jobs that will be sent to this receiver. For example, you can set the range to include the number of remote editors you have in the field. The system starts at the lowest available port number (20020 by default) when acquiring ports.

4. Save the file and close Notepad.
5. Restart the Avid Service Framework services using the Avid Workgroup Properties tool.

Optimizing Media Composer Cloud Remote Upload Speeds for 4G or Fast LAN

By default, the Avid Interplay Media Composer Cloud Delivery service on the Media Composer Cloud client is optimized for a 4G connection. This uses relatively small internal cache sizes for gathering and sending data across the 4G network. If your Media Composer Cloud client is connected to the Interplay environment via a fast LAN, you can increase the internal cache sizes that the Media Composer Cloud Delivery Service uses for Remote Uploads in order to speed up the process.



These optimizations are for Remote Uploads. They do not affect Remote Playback speeds.

Refer to the illustration in “[VPN Connections and Port Usage](#)” on page 2. The Media Composer Cloud client on the Internet uses a 4G connection. The Media Composer Cloud client on the House Network uses a fast LAN connection.

Update your Network Interface Card

If you use a LAN connection for remote uploads, check the following on your NIC.

To update your network interface card for Media Composer Cloud Uploads (need more info here):

1. Make sure you have the latest driver for your NIC.
2. Set the following options on your NIC:
 - Set the receive and transmit buffers to 1024 bytes. Depending on the NIC card, the default might be as low as 256 bytes.



The version of the drivers for your particular NIC card may provide other options for increasing your network speed. Note that these procedures should be performed by your IT department or other qualified personnel

Modify the FTPFileTransfer.properties File

You can replace the default FTPFileTransfer.properties file with a version that can be more easily modified. Besides making it easy to switch between fast LAN and 4G speeds, it gives you the opportunity to fine tune the settings for your own network. You can experiment with the medium LAN speeds until you find one that works best for your network. The process works as follows.

During a remote upload, one thread continually reads data from disk and writes it into an internal cache while a second thread removes data from the cache and sends it across the network. The following variable names are used in the file:

- `bufferSize`: The amount of memory to reserve for the internal cache.
For example, 64 MB = $64 \times 1024 \times 1024 = 67108864$ bytes
- `isisReadSize`: The amount of data to read from disk and place in the internal cache.
For example, 16 MB = $16 \times 1024 \times 1024 = 16777216$ bytes
- `networkSize`: The amount of data to remove from the internal cache and send across the network.

Using a larger internal cache and sending larger chunks of data can increase the speed as long as the network is optimized for the larger chunk size. If the network is not optimized for the larger chunks of data it can have a negative effect on performance.

To modify the contents of the `FTPTransfer.properties` file:

1. Navigate to the following directory on the Windows Media Composer Cloud client:

C:\Program Files\Avid\Media Composer Cloud Delivery

2. Open `FTPFileTransfer.properties` in an editor such as Notepad and replace the contents with the following:

```
#
# Note that values must be based on 1024.
# For example, 64 MB = 64 x 1024 x 1024 = 67108864
# Incorrect values can affect performance.
#
# Use this setting for fast LAN
#
bufferSize=67108864
isisReadSize=16777216
netWriteSize=16777216
#
#
# Use this setting for medium LAN
#
#bufferSize=67108864
#isisReadSize=8388608
#netWriteSize=8388608
#
# Use this setting for 4G connection
#
#bufferSize=8192
#isisReadSize=8192
#netWriteSize=4096
#
```



The above file uses the fast LAN settings. Other settings are commented out with hash marks (#).

3. Open Services and Applications > Services, and restart the following service:

Media Composer Cloud Delivery

To reset the system for a 4G or Medium LAN connection:

1. Edit the file and do the following:
 - a. Add hash marks (#) to the start of the variable lines for fast LAN.
 - b. Remove hash marks from the three variables for 4G connections or Medium LAN.
 - c. Save and close the file.
2. Restart the following service:

Media Composer Cloud Delivery



If the Media Composer Cloud users at your site frequently switch between 4G and fast LAN connections, you can write a script that changes the values depending on the network you are working on.

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