

Shared Storage Best Practices

The following document highlights important information you should keep in mind when working in a shared storage environment. The following topics are discussed:

- [Suggestions for Improving Performance When Working with Shared Bins](#)
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Suggestions for Improving Performance When Working with Shared Bins

The following topics describe some best practices when working in an Avid Unity environment that does *not* use an asset manager or Avid Interplay Transfer.

Understanding Avid Unity

Avid Unity MediaNetwork and Avid Unity ISIS allow you to share bins and projects across the network. When you place your bins and projects on Avid Unity workspaces (drive volumes), several users can work on the same project at the same time.

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For example, an editor can create sequences in one bin while an assistant recaptures media in another bin. At the same time, other users can add audio effects or titles to other bins in the project.

Each user can perform tasks from his or her own computer. Your Avid editing application provides a locking mechanism to help you keep track of who is currently working in a bin. The method allows one user to write to a bin; multiple users can read the files in that bin.



The lock does not prevent you from deleting the media in a locked bin if you have write access to the workspace. It ensures only that you don't overwrite changes to the bin.

In an Avid Unity environment, your Avid editing application creates and stores projects and bins on the client's internal drive. If a user moves or saves these projects and bins to the workspace, only one client can work on the project at a time. If two or more users are working simultaneously on the same project, only one user can update the files. Other users can open and play sequences but cannot make any changes to them.

Sharing Methods

Before you begin copying or creating bins and projects on an Avid Unity workspace, determine the sharing method you are using for the project. You can either share bins alone or you can share bins and projects.

Shared Bins

When you use shared bins, you store the project on your local computer and store bins and media files on the shared workspace. This method allows users in a shared environment to share only selected bins with other users. The system identifies the shared bins as follows:

- Stores the bin in a Unity Bins folder in the Project window. This folder is similar to the Other Bins folder.
- Displays a second column of information for the bin that identifies the computer that currently has the bin locked.
- Uses bold text to identify bins that are locked by another user.

Shared Bins and Projects

If you share bins and projects, you create and store the project folder and bins on the shared workspace (or copy an existing project, bins, and the related media files). Your Avid editing application identifies information from each computer using the shared workspace as follows:

- Creates a project folder for each computer that accesses the project. Your Avid editing application adds the computer's name to the folder name to create a unique name and stores any project-specific information in the folder. This mechanism prevents users from overwriting the project-specific data for other users.

The folder is similar to the folder created when you select New Folder from the Project Window Fast menu.

- Displays an extra column in the Project window that identifies the computer that has the bin locked.
- Uses bold text to identify bins that are locked by other users.
- Creates a folder at the top level of the shared workspace called Unity Attic. This folder contains backup files for each project on the shared volume.



Depending on the number of users sharing a workspace, you might want to increase the number of files that your Avid editing application stores in the Unity Attic folder (using the Bin Settings dialog box).

Shared Bin and Project Limitations

If an editor other than the creator deletes a media file, other editors cannot see that media file go offline immediately. If an editor tries to play that file, “media file not found” messages might appear in a monitor window, and access violation errors might occur.

Each editing application maintains a PMR file in its machine name folder inside the OMFI MediaFiles folder or the Avid MediaFiles folder. The PMR file lists all the online media files. Every editing application consults all the PMR files in all the machine name folders to find out which media files are online. Whenever a media file is created, its name is immediately added to the creating editor application's PMR file, and whenever a media file is deleted by its creator, its name is immediately removed from the PMR file.

However, if an editing application other than the creator deletes a media file, the PMR file that contains the deleted file is NOT updated immediately. Once the creating editor encounters an event that causes its PMR to be updated, then all editing systems know that the deleted media file has gone offline.

There are several ways to force an editing application to update its PMR. The simplest is to switch to the desktop and back.

Avid recommends that you institute policies where media files are deleted by the editor who created them, or if necessary, the deleting editors notify the editor who created the media files that a deletion has occurred. This editor can then switch to the desktop and back, and all other editors can see the deleted file go offline.

Shared Bin Lock Icon Limitation

Occasionally, when two editors attempt to open a shared bin at the same time, both editors get the green lock icon. However, only one editor really has the lock, and that editor's machine name appears beside the bin name in both Project windows.

Both editors can modify their copies of the bin, but only the editor that holds the lock, as indicated in the Project window, can save that bin. The other editor is warned that the bin is locked but is allowed to save a copy of the changed bin.

Avid recommends that you use the “Save Bin Copy As...” button and continue working.

Naming Conventions

Adhere to the following naming conventions to improve performance when working with shared bins in an Avid Unity environment.

- Do *not* use the same name for your editing system machine name and your user name. In fact, do not use the same name for security objects such as machine names, user names, group names, and domain names. If any two security objects have the same name, Windows might become confused and sharing might not work properly.
- **No full name can be a prefix of another name.** If one machine name matches the prefix of another machine name, problems can occur. For example, if an editing system has a machine name ABC and additional editing systems in the shared environment have machine names ABCnn, ABCxx, the following problems could occur:
 - When the system with the machine name ABC is writing to a directory, the systems whose machine names have the same prefix (ABCnn and ABCxx) might not be able to access the directory.
 - When the system with the machine name ABC is rendering, systems whose machine names have the same prefix (ABCnn and ABCxx) might be unable to launch.

If you must use a common prefix, make all the names the same length (ABC01, ABC02, ABC03, etc.).

Shared Bins and Windows Explorer

- Avoid using Windows Explorer to examine, copy, or manipulate shared bin files or shared project folders or their contents when editors are using those files or folders. If you do, editors attempting to access those shared bins or projects may experience delays accompanied by a progress dialog that says, “Filesystem busy, retrying (MESSAGE),” where MESSAGE is replaced by a specific message identifying the action that is being retried.

If the busy condition persists, and the retries are exhausted, a failure message appears. When that happens, ensure that Windows Explorer is not being used on the shared bins you are trying to access, and then try the operation again.

If this persists, and you have closed all Explorer windows, logout and log back in. You might also check to see if someone else has the shared bin in an open window.

Avid Interplay Environment

- When you have an environment where more than five users are sharing bins on Avid Unity, Avid recommends using an Avid Interplay server in the workgroup environment.
- When an Avid Interplay server is available in an Avid Unity system in the workgroup environment, Avid does *not* recommend sharing bins or projects. Use the Avid Interplay server and the Remote Assets feature to share media. All editing systems in a workgroup environment that includes an Avid Interplay server must have the Avid Unity client software installed. The Media Tool might become unreliable if an editor in the Avid Unity workgroup environment does not have the Avid Unity client software installed.

Time Synchronization

Each editing application maintains a PMR file in its machine name folder inside the OMFI MediaFiles folder or the Avid MediaFiles folder. The PMR file lists all the online media files. Every editing application consults all the PMR files in all the machine name folders to find out which media files are online. It is very important to make sure that time synchronization (sync) is set properly in your shared storage environment. If time sync is not set properly between the clients and the server, PMR rescan issues occur and opening bins might take an exceptionally long time.

All clients and all servers in a workgroup must be in time sync. This includes File Managers, Port Servers, Transfer Manager, and any other machine that can put a timestamp on a media directory. Any reliable time service will work; NTP, Windows Time Service, MediaNetwork Time Sync or any other. Avid recommends you only use one time service. Sites that have used multiple time services encounter problems.

- [Setting Chassis Time on Avid Unity ISIS](#)
- [Setting Time Sync Between an Avid Unity ISIS System Director and Clients](#)
- [Setting the Date, Time, Time Zone, and Daylight Saving Time for Avid MediaNetwork Environment](#)
- [Setting the Time Zone, Date, and Time for AirSpeed Systems](#)

Setting Chassis Time on Avid Unity ISIS

You must set the time for all storage elements connected to your chassis switch by using the Switch Blade Agent. You can also use a Network Time Protocol (NTP) server to establish the time for your system. Setting chassis time synchronizes the time for all storage elements and, in systems with multiple chassis, on all switches.

To set the time for a chassis:

1. Open the Switch Blade Agent (see the *Avid Unity ISIS Administration Guide*).
2. Click the System tab if it is not already selected.

The System window opens.

3. Select Configuration > Basic.

The Chassis Configuration dialog box opens.

The screenshot shows the 'Chassis Configuration' dialog box. It is divided into two columns for 'Switch blade 1 (left)' and 'Switch blade 2 (right)'. Each column has input fields for 'Start ip address block', 'End ip address block', 'Subnet Mask', and a checked 'Default gateway'. Below these are three tabs: 'Network', 'Date and Time', and 'Miscellaneous'. The 'Date and Time' tab is selected, showing 'Date' (2000.01.03), 'Time' (01.16.40), and 'Time Zone' (GMT). There are also checkboxes for 'Enable network time protocol' and 'Automatically reset blades after heartbeat timeout'. At the bottom are 'Submit' and 'Reset' buttons.

4. Do one of the following:
 - ▶ To configure your system to use NTP to synchronize storage elements with a network reference, select Enable network time protocol, and then type the IP address of a primary NTP server. You can also type the IP address of a secondary NTP server.
 - ▶ To set the time for a chassis manually, type the date and time in the Date and Time text boxes, and then select a time zone from the Time Zone menu.
5. (Option) Select “Automatically reset blades after heartbeat timeout.”
6. Click the Submit button.

Setting Time Sync Between an Avid Unity ISIS System Director and Clients

To configure the Windows Time service to use an internal hardware clock, you can change the announce flag on the authoritative time server. Changing the announce flag forces the computer to announce itself as a reliable time source and to use the built-in complementary metal oxide semiconductor (CMOS) clock. To configure the Windows Time service to use an internal hardware clock, follow these steps.



Serious problems might occur if you modify the registry incorrectly by using Registry Editor or by using another method. These problems might require that you reinstall your operating system. Microsoft cannot guarantee that these problems can be solved. Modify the registry at your own risk.

To configure Windows Time service to use an internal hardware clock:

1. On the Avid Unity ISIS System Director, click Start, click Run, type regedit, and then click OK.
2. Locate and then click the following registry entry:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\

3. In the right pane, right-click AnnounceFlags, and then click Modify.
4. In the Edit DWORD Value dialog box, under Value data, type 5, and then click OK.
5. Enable the NTPServer by performing the following:
 - a. Locate and then click the following registry subkey:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer\

- b. In the right pane, right-click Enabled, and then click Modify.
 - c. In the Edit DWORD Value dialog box, type 1 under Value data, and then click OK.
6. Exit Registry Editor.
7. At the command prompt, type the following command to restart the Windows Time service, and then press ENTER:

```
net stop w32time && net start w32time
```



You must not configure the time server to synchronize with itself. If you configure the time server to synchronize with itself, the following events are logged in the Application log:

“The time provider NtpClient cannot reach or is currently receiving invalid time data from 192.168.1.1 (ntp.m/0x0/192.168.1.1:123->192.168.1.1:123).”

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“No response has been received from Manual peer 192.168.1.1 after 8 attempts to contact it. This peer will be discarded as a time source and NtpClient will attempt to discover a new peer from which to synchronize.”

“The time provider NtpClient is configured to acquire time from one or more time sources. However, none of the sources are currently accessible. No attempt to contact a source will be made for 960 minutes. NtpClient has no source of accurate time.”



When the time server runs by using an internal time source, the following event is logged in the Application log:

Time Provider NtpClient: This machine is configured to use the domain hierarchy to determine its time source, but it is the PDC emulator for the domain at the root of the forest, so there is no machine above it in the domain hierarchy to use as a time source. We recommend that you either configure a reliable time service in the root domain, or that you manually configure the PDC to synchronize with an external time source. Otherwise, this computer will function as the authoritative time source in the domain hierarchy. If an external time source is not configured or used for this computer, you may choose to disable the NtpClient.

This text notifies you that the time server is configured not to use an external time source and that the time server can be ignored.

8. For more information about the w32tm command, type the following command at a command prompt:
`w32tm /?`
9. On each editing system right click on My Computer, choose Manage and navigate to Windows Time and change it from ‘disabled’ to “automatic”.
10. Change each client’s Internet Time provider to point to the IP address of the System Director.
 - a. Right click on the editing systems clock in the tool bar.
 - b. Choose Adjust Date/Time.
 - c. Choose Internet Time and type in the IP address of the System Director.
 - d. Select Yes when prompted if you want to sync the time now.

Setting the Date, Time, Time Zone, and Daylight Saving Time for Avid MediaNetwork Environment

You must set the correct Date and Time information on the File Manager and the clients in an Avid MediaNetwork environment.

- [Setting Time and Date on the MediaNetwork File Manager](#)

- [Setting the Date, Time, and Time Zone \(Windows Client\)](#)
- [Setting the Date, Time, and Time Zone \(Macintosh Client\)](#)

Setting Time and Date on the MediaNetwork File Manager

You need to set the correct date, time, time zone, and daylight saving time option on the File Manager. This allows the “Synchronize time with File Manager” function on the MediaNetwork clients to work correctly.

To set the date, time, time zone, and daylight saving time option on the File Manager:

1. Double-click the time in the Task bar. The Date/Time Properties dialog box opens.
2. Set the date and time using the Date & Time tab.
3. Click the Time Zone tab.
4. Set the time zone for the location of the File Manager. By default, Windows XP sets the time zone to “(GMT - 8:00) Pacific Time (US & Canada); Tijuana.”
5. Select “Automatically adjust clock for daylight saving changes.”
 - e. Click OK to close the Date/Time Properties dialog box and save the settings.

Setting the Date, Time, and Time Zone (Windows Client)

You need to set the date, time, time zone, and Daylight Saving Time options correctly on the Windows client.

To set the date, time, time zone, and Daylight Saving Time options on the client:

1. Double-click the time in the taskbar.

The Date/Time Properties dialog box opens.
2. Set the date and time using the Date & Time tab.
3. Click the Time Zone tab.
4. Set the time zone for the location of the Windows Ethernet client. By default, Windows sets the time zone to “(GMT - 8:00) Pacific Time (US & Canada); Tijuana.”
5. If your location observes Daylight Saving Time, select “Automatically adjust clock for daylight saving changes.”
6. Click OK to close the dialog box and save the settings.
7. Reboot the client.

Setting the Date, Time, and Time Zone (Macintosh Client)

The following procedure will vary slightly depending upon your Macintosh OS version. See your Macintosh documentation for information on accessing the Control Panel options.

To set the date, time, time zone, and Daylight Saving Time options on the Macintosh client:

1. Select Apple  menu > Control Panels > Date & Time. The Date & Time Control Panel opens.
2. Set the Current Date and the Current Time options correctly for the Macintosh client location.
3. Select “Set Daylight-Saving Time Automatically” if your location observes Daylight Saving Time.
4. Click Set Time Zone. A dialog box opens, listing cities and countries.
5. Select the name of the city and country closest to the client location.
6. Click OK to set the time zone.
7. Close the Date & Time Control Panel to save the settings.
8. Reboot the Mac client. This ensures that the client software is using the correct time.

Setting the Time Zone, Date, and Time for AirSpeed Systems

AirSpeed supports the use of a Network Time Protocol (NTP) server. By entering the IP address of your NTP server on the network, the AirSpeed gradually synchronizes to the network time. The date and time in AirSpeed operating system is corrected to match the NTP server. For information on configuring the NTP server, see the *Avid AirSpeed Installation and User's Guide*.

AirSpeeds are shipped from Avid with the default time zone set to Greenwich Mean Time (GMT). When setting up the AirSpeed for the first time, you need to select your time zone, then set the date and time.



The AirSpeed must be idle when you set or change the date or time.

To localize the AirSpeed with the date and time.

1. Open a console window by simultaneously pressing **Ctrl+Alt+F1**.
2. Log in using:
 - Login name — **maint**
 - Password — **mars**

- At the command prompt, type `cd /usr/share/zoneinfo`, and press **Enter**.
- Type `ls`, and press **Enter**.

Find the correct continent or zone for your specific locale from the list. The following list is displayed:

Africa	Australia	Etc	MET	WET
America	CET	Europe	MST	posixrules
Antarctica	CST6CDT	Factory	MST7MDT	zone.tab
Arctic	EET	GMT	PST8PDT	
Asia	EST	HST	Pacific	
Atlantic	EST5EDT	Indian	SystemV	



You must type the selection exactly as it appears in the list (upper or lower case). The time zones for North America are listed in the directory with the daylight savings time zones ending with DT.

- At the command prompt, type `cd <region or zone>`, and press **Enter**.

For example, if your continent is America, type `cd America`, and press **Enter**. You are now at the `/usr/share/zoneinfo/America` directory.

- At the command prompt, type `ls` and press **Enter**.

Choose the closest city file to your location.

- At the command prompt, type: `cp <city> /etc/localtime` and press **Enter**.

For example, if your city is New York, type `cp New_York /etc/localtime` at the command prompt.

After pressing **Enter**, the timezone information for the locale that was selected, is applied to the machine for the purposes of local time display functions and time setting operation.



The settings that have been applied here may be lost after a software upgrade to the server. Perform these steps after a software upgrade.

To set the date and time:

- While still in the console window, type `date` and press **Enter** to view the current date and time set.
- To set the date, type `date` and enter the date and time in the following format and press **Enter**.

`yymmddhhmm.ss`



Do not use spaces or any characters between the numbers.

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After pressing enter, the date and time display are displayed. Confirm that the information is correct. If not repeat Step 2.

3. Close the console window by simultaneously pressing **Ctrl+Alt+F3**.
4. Restart the AirSpeed by selecting Shutdown > Restart Entire System in the AirSpeed UI.
5. Click OK.

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