



kaleidescape

Large Systems

Design Guide

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Using This Document

A Kaleidescape installation is considered a large system when it consists of one or more of the following:

- ▶ A system with ten or more players
- ▶ A system with two or more servers
- ▶ A collection of more than 5,000 movies or albums

This document discusses common large system scenarios with suggested strategies for system installation and management.

Large system concepts and terminology

This document uses the following concepts and terms to describe a large system.

Group

A group refers to one or more Kaleidescape components that behave as a single unified system. There can be any number of groups operating on the same local network. Components in the same group are joined together to create a unified movie and music library. When more than one group is present, a player can only import content to, or play content from, a server in the same group.

If there is only one server on the local network, then all components work together as a single group even if the components have not been explicitly placed in same group.

Group settings are configured using the Kaleidescape browser interface.

System

A system refers to all Kaleidescape components in one or more groups operating on a single network.

Zone

A zone is active during playback of a movie or music. An M-Class player can support either one active movie zone, or one active music zone, but not both simultaneously. A Music Player can support up to four music zones that can be active simultaneously. The number of total zones that can be active simultaneously by grouping components depends on the player types and the playback capacity of the servers. A 1U Server or a 3U Server can support a combination of 45 DVD or music zones and 9 Blu-ray zones. Additional servers can be added to support playback to more zones.

Large System Scenarios

The scenarios in this section are presented as guidelines to addressing the needs of customers that require a large system.

A large number of simultaneous playbacks

My customer is building a yacht with 71 staterooms — what kind of system do they need?

When designing a system that provides playback to a large number of rooms it is important to remember that it is not only the number of rooms that must be considered, but the number of simultaneous playbacks the customer is likely to require. Consider the following table.

| | 1U Server | 3U Server |
|---|-----------|-----------|
| Number of simultaneous playbacks | | |
| DVD/CD | 45 | 45 |
| Blu-ray | 9 | 9 |

In this scenario, if the customer is unlikely to have more than a handful of different staterooms playing movies at the same time, they could only require a single server (though another consideration would be the size of the collection). However, if it is likely that a large number of the players will be accessing content simultaneously (especially Blu-ray movies) then more than one server is likely required. See [Playback capacity](#) on page 6 for more information.

A large collection

My customer has 10,000 movies — what can I do to make their entire collection accessible?

Kaleidescape servers are built with large movie and music collections in mind and storage capacity can be added easily, with additional disk cartridges and additional servers. The following table describes server storage capacity.

| | 1U Server | 3U Server |
|----------------------|------------------------------|----------------------------------|
| Capacity | Four 3 TB Disk Cartridges | Fourteen 3 TB Disk Cartridges |
| DVDs | 1,350 | 5,400 |
| Blu-ray Discs | 225 | 900 |

For best user interface performance when browsing a large library, collections of more than 8,000 movie selections or 10,000 music selections should be divided between separate groups.

The number of selections can be different than the number of discs imported. For example, a two-disc CD set may be presented as a single music selection, or a television series box set containing six DVDs would also be presented as a single selection. Alternatively, a DVD containing two different movies appears as two separate selections.

When dividing content, try to ensure that movies and music are evenly distributed among the servers in different groups. To do this, all the servers in a group should have the same storage capacity. When importing content, all the servers must be turned on and be components of the same group. If disk cartridges are added to increase the storage capacity of the group later, add the same number of disk cartridges to each server to maintain the same capacity for each server.

To make managing and viewing content easier, try importing similar content to each group. For example, creating one group for movies and another for concert DVDs, music videos and television series will help take the guesswork out of finding the right movie or music.

Upgrading a large system to play Blu-ray Discs

My customer has a system with 50 players but no Blu-ray capability – how do I ensure a smooth transition to M-Class?

M-Class players support Blu-ray playback and are designed to integrate easily with an existing system. You can remove already connected players and add M-Class players without any server downtime. Both types of players can be part of the same system or group, but only M-Class players can play Blu-ray content.

Additionally, non-M-Class players will display the original onscreen user interface, while M-Class players will display the high-definition version.

Groups with M-Class players can also include a disc vault. The DV700 Disc Vault imports and stores Blu-ray Discs, DVDs and CDs. The M700 Disc Vault has the same functionality, as well as an integrated M-Class player.

When adding or using vaults as part of a system, ensure the following:

- ▶ The vault is in the same group as the servers from which the M-Class players play Blu-ray content. M-Class players outside of the group will not be able to play that content.
- ▶ Blu-ray Discs are present in a vault or the tray of an M500 Player in the group. Blu-ray Discs not in a vault or tray will appear dimmed and cannot be played.

Note that M-Class players use RCA connectors rather than the BNC connectors used on prior models for component video, composite video, and coaxial digital audio.

Performance Considerations

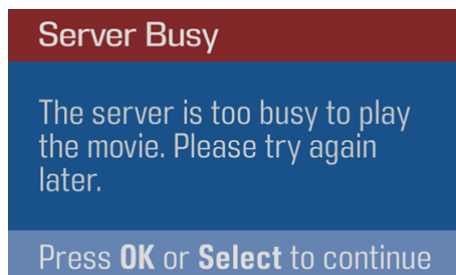
Playback capacity

It is important to understand the playback capacity of Kaleidescape players and servers when configuring a large system:

- ▶ Each movie player can play either a movie or music to one zone.
- ▶ Each Music Player can play music to up to four simultaneous independent music zones.
- ▶ Each server can support simultaneous playback of 45 DVDs or CDs or 9 Blu-ray movies in any combination.

If more playback capacity is required, then movies and music can be distributed across multiple servers. Adding servers generally increases the simultaneous playback capacity of the system. For CD and DVD playback, two or more servers can reliably support most large systems because it is unlikely that more than 45 zones will simultaneously request playback from the same server. While each server supports 9 Blu-ray movie zones, do not expect a system with two servers to support 18 Blu-ray movie zones simultaneously, unless the servers are in two separate groups. Keep in mind that if many zones request Blu-ray movie playback in a system with multiple servers, then it may be likely that 10 or more zones request playback from the same server, which can support only 9 simultaneous Blu-ray playbacks.

Attempting to play too many movies at once will present the following dialog box. Playback in other zones will continue.



HDCP display capacity

Each player can support 37 downstream HDCP devices, which can be relevant in large HDMI® matrix switched installations.

Network considerations

Large systems that will stream seven or more simultaneous DVD movies or two or more simultaneous Blu-ray movies must use a Gigabit network (1000Base-T).

Licensing considerations

Large systems that will stream more than five movies at the same time must have a Kaleidescape Unlimited Movie Streams Playback License.

Configuring a System

The following are the key points to remember when adding players and servers to a system:

- ▶ When there is only one Kaleidescape server on a network, new players and vaults join that system automatically, even though they will not appear as components of the same group in the **GROUPS** tab.
- ▶ Adding a new server on the same network will automatically create a new group which will have no other components.
- ▶ Importing movies and music using a component in a group will store that content on a server that is in the same group.
- ▶ All players in the group will present a single movie and music library comprising the content of all servers in that group.
- ▶ Disc vaults enable playback of Blu-ray movies stored on servers in the same group.

Creating groups

You can use groups to create multiple unified libraries to address the needs of the customer. Use the following procedure to add or remove components from a group.

1. Open the installer pages of the browser interface for any Kaleidescape server in a web browser.
 - ▶ <http://my-kaleidescape/installer> (Windows)
 - ▶ <http://my-kaleidescape.local/installer> (Mac)
2. Click on the **GROUPS** tab.
3. Remove a component from a system by clicking on the **Remove from Group** link. Removed components are added as new groups.
4. Add a component to a particular system by clicking on the **Add to Group** drop-down menu, and selecting the number of that group.



Click to remove component from a group.

Click the drop-down menu to add a component to a group.

Control systems

Kaleidescape recommends that no more than 15 independent zones be controlled at the same time from a single control system processor (like AMX or Crestron) to avoid the possibility of processor overload. If the Kaleidescape system has more than 15 player zones that need to be controlled from the same control system, add processors and subdivide the logic between them.

For more information on best practices when using these control systems, refer to:

- ▶ www.kaleidescape.com/go/programming-amx-controllers
(AMX documentation)
- ▶ www.kaleidescape.com/go/programming-crestron-controllers
(Crestron documentation)

Each server can accept concurrent control connections from up to 20 iPads running the Kaleidescape App for iPad. For installations with more than 20 iPads, configure no more than 20 iPads to connect to each server.

Getting Additional Support

For additional help contact Kaleidescape Support:

- ▶ See online resources at www.kaleidescape.com/support
- ▶ Contact Kaleidescape Support at support@kaleidescape.com or +1 (650) 625-6160

Notices

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