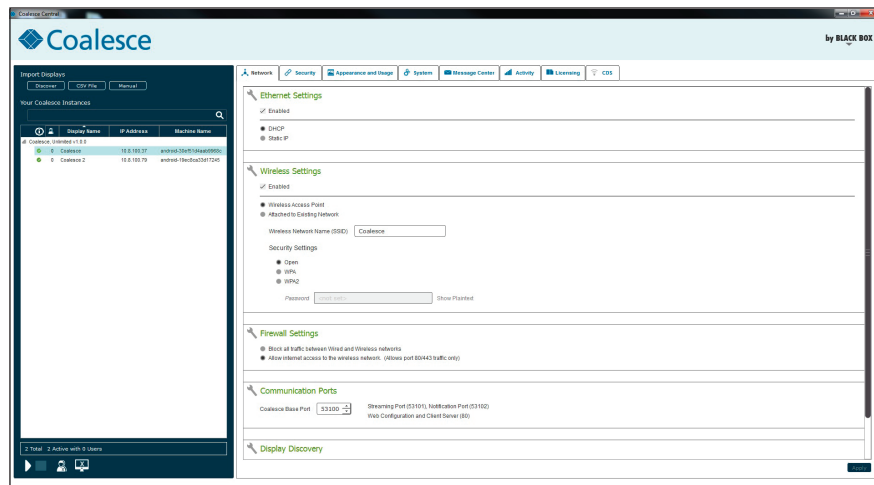


Coalesce Central

User Guide



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You’ll be live with one of our technical experts in less than 60 seconds.

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1. Introduction

Coalesce Central is a centralized management tool that can be used to monitor, configure, and update all instances of Coalesce on a network, including both Coalesce Software (server) installed on Windows host PCs and Coalesce. While each Coalesce display can be configured individually via the local Coalesce Configuration Panel, Coalesce Central allows an IT administrator to manage larger deployments of Coalesce from a central location.

The Coalesce Central software program is available as a separate download at no additional cost, and runs on a Windows 7, 8, or 10 computer that is connected to the same network as the Coalesce and/or Coalesce software instances it will be used to manage. You can access the current Coalesce Central as well as legacy versions at blackbox.com.

This guide serves as a functional overview of Coalesce Central. There are separate Coalesce Directory Service (CDS) and Coalesce user guides available that detail Coalesce configuration options and user features. You can also find additional details about many Coalesce settings by hovering over the setting name in the Coalesce Central interface.

2. Coalesce Central Overview

Coalesce Central should be installed on a Windows computer that the IT administrator uses regularly. Coalesce Central can also be installed on multiple PCs to manage the same Coalesce display. (Access/security is handled through password protection.) Once you have installed and launched Coalesce Central, move to the section below, "Setting up your Coalesce Instances," for how to populate your Coalesce Instance list with the Coalesce and Coalesce software instances that you want to manage.

Figure 1 depicts the Coalesce Central interface once displays have been added to be managed.

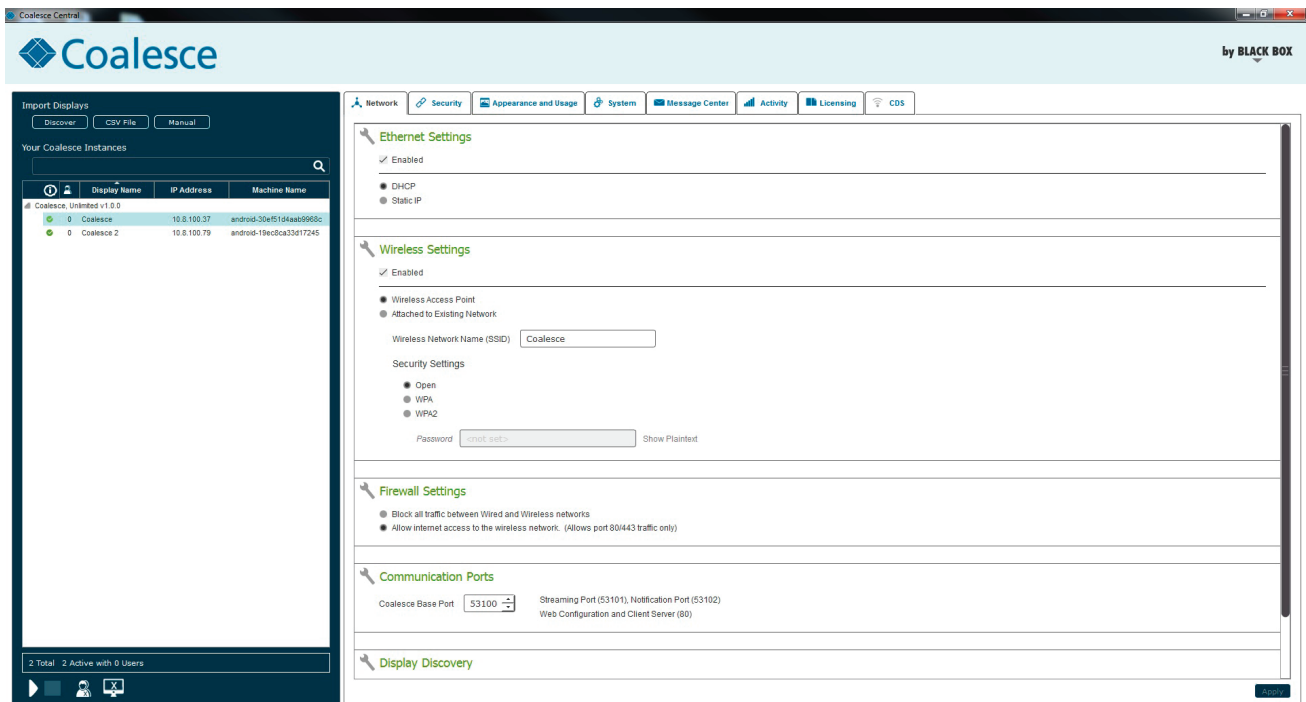


Figure 1. An overview of the Coalesce Central interface. The Coalesce Central is divided into two main panels. At left is the Instances Panel, which is used to select one or more Coalesce displays for configuration. At right is the Coalesce Central Configuration Panel that can be used to customize Coalesce instances to fit your use case.

Coalesce Central enables administrative control of three major components:

- Coalesce Instances – Add or remove Coalesce displays on the network to your Dashboard. Select one or numerous Coalesce displays for configuration, management, and/or monitoring.
- Configuration – Change settings for network setup, security, usage, appearance, activity and licensing for one or more displays.
- CDS – Coalesce Directory Service is free software that is separate from Coalesce Central and resides on the network to resolve IP addresses to display names, enabling display discovery and click-to-connect functionality for users. You can access this component in the rightmost “CDS” tab. To learn more about Coalesce Directory Service (CDS), refer to the Coalesce Directory Service (CDS) User Guide.

3. Setting up Your Coalesce Instances

The Coalesce Instances Panel located along the left side of the Coalesce Central provides a list of Coalesce displays available to be managed. A Coalesce instance is a single Coalesce display on the network, including Coalesce and instances of Coalesce Software for Windows. Figure 2 shows a Coalesce Instances panel that has been populated with two different instances. For each instance, the machine name, an IP address, and the corresponding Coalesce display is shown. This allows the IT administrator to quickly map each Coalesce display name to the corresponding host machine and IP address.

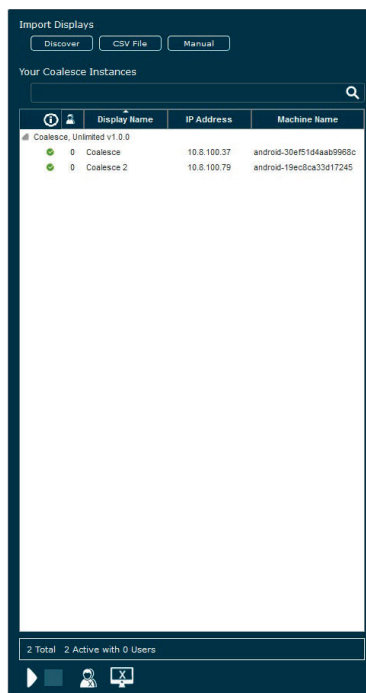


Figure 2: The Coalesce instance panel. The panel provides an at-a-glance status of each Coalesce Instance that has been added to the Dashboard for management.

NOTE: Coalesce Central version 1.0 separates all instances into groups based on software platforms, SGE vs Unlimited versions, Coalesce version numbers, and finally unsupported instances. Each group of instances has slightly different configuration options and thus each group must be updated separately, except the unsupported instances group, which supports only minimal functionality. So, for example, if an admin wished to change a setting for all Coalesce instances on the network, the admin would need to update each group separately. The “Unsupported Versions” group could not be updated.

There are three ways to populate Coalesce Central with Coalesce instances for management.

Discover – Provides a list of Coalesce displays that are currently installed on your network. This import method is useful if you first install a set of Coalesce instances on your network and then simply want to manage those displays once they are already running. The discovery list will include all displays that are either using the Coalesce broadcast discovery mechanism or are listed in the Coalesce Directory Service (see the CDS section of this guide for details).

CSV File Import – Load a list of instances from a comma separated values (CSV) file. This is a quick way to get started using the Dashboard and to give each of your displays names that users will see and connect to. The file can be created by writing an export script from Active Directory, database software, or other management software services. Alternatively, you can create the comma separated values file using a text editor. The format of the file is straightforward:

<display name>, <IP address>, [optional]<port>

Once the file has been created, click the “CSV File” button, browse to that file on the Dashboard host PC, and load the Coalesce Instances list. If no port is supplied in the text file, then the default Coalesce communications port (53100) is assumed and used.

Manual – Create a new Coalesce instance manually. The button will open a dialog box that allows you to type the display name, IP Address, and communication port for a new instance. This is useful if you first want to create a set of instances for host PCs that do not yet have Coalesce Software (server) installed, or if your Coalesce deployment is not using broadcast display discovery or the CDS.

Once a set of displays has been imported into the Coalesce Instances panel, their status is shown in Coalesce Central. By selecting one or more instances, settings can be managed either on an individual or group basis. Use the common Shift+Click and CTRL+Click mechanisms to select multiple displays in the list. You can select and configure any number of Coalesce instances simultaneously; however, you can only simultaneously configure instances in the same group.

Importing and Selecting Displays Example:

After installing Coalesce Software version 1.0 on 100 Windows host PCs, an administrator exports a list of those machines from Active Directory. The export script automatically generates Coalesce display names based on the display host PC machine name. By using the “CSV File” import button, a set of 100 Coalesce Instances is created in the Instances Panel. Using the Shift+Click mechanism, 50 rooms can be selected from the list and configured as a single group. For example, changing the Access Control setting to “Moderated” for 50 classrooms prepares the rooms for professors to lead and moderate the Coalesce sessions.

The Coalesce Instance Panel provides the admin with at-a-glance statuses of all displays being managed. Display status—indicated by a red, green, or blue light—is updated periodically by communicating with each display over the network to learn the display’s state. While each display is being updated, its status icon will temporarily disappear, showing no color/light. The number of users currently connected to the display is shown below the Coalesce Meeple icon. Finally, the display name, IP address, and display host PC “Machine Name” are shown.

The Coalesce Instance list can be sorted based on the different criteria simply by clicking on one of the column headers. The list of instances will then be sorted in either increasing or decreasing order with each group based on the column/feature that is selected. For example, by clicking the “Machine Name” column, the list of instances will be sorted in alphabetical order within each group.

Status and Troubleshooting: An administrator runs the Coalesce Central to check the status of 100 Coalesce displays on the network and notices a message at the bottom of the instance list that says “2 Displays Unresponsive.” By clicking the heartbeat logo in the header of the status column, the two unresponsive displays are moved to the top of their group. Based on the machine name, the Administrator realizes that those machines have been shut down for repair, causing the unresponsive status.

Figure 3 below shows a graphical overview of the five columns in the Coalesce Instance Panel. By using the sort feature, the list of Coalesce instances can be sorted by any of the five columns, enabling the administrator to view and manage the Coalesce instances more efficiently.

Display Status	Connected Users	Display Name	IP Address	Machine Name
Green: active Blue: inactive/not running Red: unresponsive Lock: password not entered				
		Coalesce, Unlimited v1.0.0		
✓	0	Coalesce	10.8.100.37	android-30ef51d4aab9968c
✓	0	Coalesce 2	10.8.100.79	android-19ec8ca33d17245

Figure 3. The Coalesce Instance Panel Columns.

Additional per-instance options are available by right-clicking on the individual instance. Options include “Browser Look-in,” “Upgrade and Configure” (Coalesce only), “Retry authorization for all displays,” and “Remove selected displays from Coalesce Central Management.” The “Browser Look-in” option must be enabled in order for the admin to select the option, which opens a live view of the display in the Coalesce Central host PC’s web browser. “Upgrade and Configure” is a Coalesce-only option that opens the Coalesce’s web-based configuration tool via a web browser on the Coalesce Central host PC. “Retry authorization for all displays” triggers an immediate attempt for the Coalesce Central to establish network communication with all displays in the Instance Panel. “Remove selected displays from Coalesce Central Management” removes the particular display(s) from the list of Coalesce instances in the Coalesce Central’s Instance Panel. The display/instance can be added back using one of the import options.

The action panel at the bottom of the Coalesce Instance Panel section can be used to control one or more selected displays. The text statuses above the action icons reflect all displays visible in the Instance Panel, so the Administrator understands the number of displays and users that could potentially be impacted by taking an action.

There are four different actions that can be applied to one or more selected displays:

- **Activate a Display (Software-Only):** By pressing this icon, Coalesce Software for Windows will launch and run in the mode for which it is configured. Users can now connect and post to the Coalesce display.
- **Deactivate a Display (Software-Only):** This stops the current Coalesce session (if any), disconnects users, clears the display of posted media, and then closes the Coalesce Software program on the Windows host PC.
- **Disconnect Users:** Any connected users are disconnected from the set of currently-selected displays. If the action impacts one or more users, a warning dialog will first popup. By continuing the action, connected users will be disconnected and all media items will be deleted.
- **Clear items:** All items on the set of selected displays will be deleted from the set of Coalesce displays. Users will remain connected and are free to continue using the Coalesce display.

Figure 4 below depicts the action bar and its corresponding icons. In this example, there are two displays in the Instance Panel, both of which are active. Warning text (not shown in figure below) appears in the top right corner of the screen when a display becomes unresponsive. Displays become unresponsive if the display host machine (or host PC) is removed from the network, shut down, or the Coalesce Software (server) is uninstalled from a managed host PC.

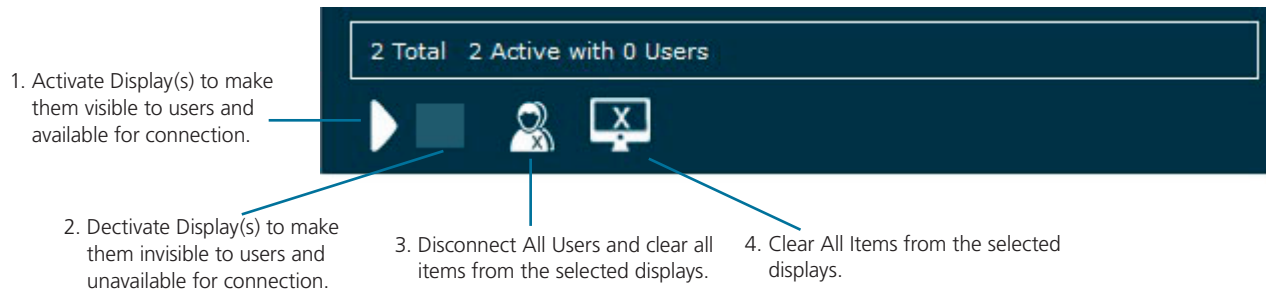


Figure 4: The Coalesce Action bar is situated at the bottom of the Coalesce Instance panel and allows an Administrator to remotely control one or more selected displays.

4. Configuring Coalesce Displays

Once one or more displays have been selected, the right-hand Dashboard Configuration Panel interface will display the current settings for those displays and allow them to be modified. Note that the Dashboard Configuration Panel is very similar to the local Configuration Panel available from the Coalesce Software interface and the local or web-based Configuration Panel on the Coalesce . The Coalesce Central Configuration Panel enables almost the exact same control/management capabilities. The two major differences are 1) the Coalesce Central Configuration Panel provides Bulletin and Emergency messaging capabilities not available from the local Coalesce Configuration Panels and 2) the Coalesce Central allows changes to be applied to multiple displays simultaneously. If multiple displays are selected but their existing settings are different for a given configuration option, this ambiguity will be shown as a dash “-” in text fields and selection boxes. For example, if an administrator selects 10 displays that have different security modes set, both the “Open” and “Screen Key” checkboxes may be filled with a dash. By selecting multiple displays and then changing a setting for those displays, that setting will be applied to all displays at once. This is a convenient way to set up a group of displays to have a class of settings that best fits how those displays will be used.

Configuring Classes of Displays: An administrator is managing 100 displays throughout an enterprise. 50 of those displays are in traditional lecture halls that will mostly be used for presentations with some media sharing from the audience, while the other 50 are deployed in conference rooms for group collaboration. The Administrator selects the 50 displays that will be used for presentations. Under the “Configuration and Security” tab, the “Access Control” is set to “Moderated” by clicking the check box and selecting Apply. The administrator can select the 50 conference room displays and set them to “Open” in the same way. If the displays span multiple instance groups, each instance group will have to be updated separately.

The Coalesce Central will remind you when changes have been made that need to be applied to the selected displays. Any section that has unapplied changes will highlight the tool icon corresponding to that section. This is useful when modifying several parameters at once to remind the administrator what changes have been made before they are applied. If you try to close the Coalesce Central with unapplied changes, you will be prompted to take one of these actions: Apply Changes, Discard Changes, or Cancel. Figure 5 below shows how the tool icon transitions to green, indicating that there are unapplied changes.

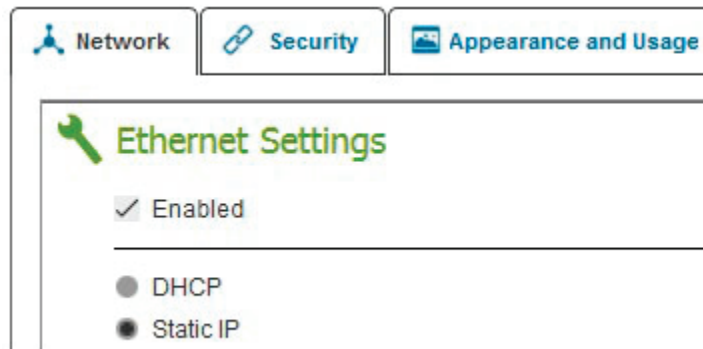


Figure 5: When there is an unapplied change, the tool icon at the top left of the section with the unapplied change will turn green. Change indicators for each section denote that there is an unapplied change to that section.

There are eight tabs across the top of the configuration section of the Coalesce Central: Network, Security, Appearance & Usage, System, Message Center, Activity, Licensing, and CDS. Despite those standard tabs, however, the configuration and management options available for Coalesce and Coalesce Software differ slightly. Therefore, only instances in the same instance group can be selected simultaneously to apply changes (e.g. an admin can't select both Coalesce and Software instances at the same time to apply changes). The next section provides a detailed overview of the configuration options available.

The Network tab options include:

Ethernet Settings (Coalesce only) allows an administrator to enable/disable the Coalesce's Ethernet port. When the Coalesce's Ethernet is enabled, configuration options include designating DHCP vs Static IP address. When a Static IP address is enabled, additional configuration options include IP Address, Gateway, Network Prefix Length, DNS 1, and DNS 2. Contact your network IT admin for questions about settings for Static IP address. DHCP is recommended for small deployments and those companies/networks with no dedicated IT admin.

Wireless Settings (Coalesce only) allows an administrator to enable/disable the Coalesce's wireless capabilities, either as a stand-alone Wireless Access Point (WAP)—enabling users to connect direct to an SSID generated by the Coalesce—or attached to a separate existing network as a wireless client—providing users with access to the existing network the ability to connect to the Coalesce.

Additional configuration options are exposed for each of the two wireless modes once that wireless mode is selected. In WAP mode, a wireless network name (SSID) can be designated, as well we security options for users who want to connect to the via the WAP. When the Coalesce is set to wirelessly attached to an existing network, options to scan/add wireless networks and input network password appear. Then, the option to designate DHCP vs Static IP address appears again in this mode.

Firewall Settings (Coalesce only) allows an administrator to block all traffic between the Coalesce's Ethernet and wireless connections or to allow Internet access from the Ethernet port through to the wireless network via ports 80 and 443. This is useful when, for example, the Coalesce is connected via Ethernet to a corporate network and guest users join a meeting to collaborate alongside corporate users. The guest users can connect to the Coalesce's WAP and be granted Internet access without the guests ever accessing the corporate network.

Communication Ports allows an administrator to specify the base ports over which Coalesce traffic will be transported. Coalesce will use the port defined in this field as well as the next two in sequential order, plus port 80 for web configuration and client-server traffic.

Display Discovery allows the administrator to designate how the Coalesce display names are shared on the network and thus discovered by Coalesce users. Options include "Broadcast display name on the network" via UDP broadcast/multicast traffic or "List display to Coalesce Directory Service," which facilitates enterprise-compliant, non-UDP-broadcast/multicast display discovery. This requires CDS to be installed and configured on a Windows PC connected to the network. For more information about CDS, refer to the Coalesce Directory Service (CDS) User Guide.

The Security tab options include:

Administration allows an admin password to be set for Coalesce Central configuration of the selected display(s). Additionally, local configuration can be enabled or disabled, as well as web-based configuration for the Coalesce.

Access Control allows an admin to designate the user access/security mode which regulates how users access the Coalesce display in order to post content. Options include:

Users Pick Security Policy allows the users in the room to select the Access Control mode for each session from their client apps or from the Coalesce display menu accessed by clicking the Coalesce icon in the bottom right corner of the Coalesce display interface.

Open allows anyone to join the session, share an item and control the display.

Screen Key allows only those who can see the Screen Key in the bottom left corner of the Coalesce display to connect to the session by entering the alphanumeric key.

Global Password allows only those with the display password, set in the Coalesce Configuration Panel or via the Coalesce Central, to connect to the session.

Moderated allows users to connect as Hosts or Guests. Host users must enter the Moderator Password, set in the Coalesce Configuration Panel or via the Coalesce Central, and have full sharing rights and control of the display once connected. Non-moderator "Guest" users can request to join the session, but both requests to join the session and requests to share media items must be approved by a Moderator. Further and Guest users do not have control of items on the display.

Encryption allows for Coalesce network traffic between the or Windows host PC and user devices (clients) to be encrypted using a standard RSA/SHA cipher with a 2048 bit private key. The encryption feature includes network traffic related to remote configuration via the Coalesce Central and the 's web-based configuration (when enabled).

The Appearance and Usage tab options include:

On Screen Information allows the admin to designate the display name and what identifying info is visible on the display. Options include display name, IP address, or both.

Appearance provides numerous appearance configuration options, including the ability to enable, disable, and change the Coalesce splash screen background image. Coalesce Software instances feature additional appearance options, including how the Coalesce display application will appear. Coalesce can run in full screen, in an adjustable application window, or in a fixed-size window that the administrator specifies. When set to open in Windowed mode, pressing "ESC" on the display host PC will toggle the Coalesce Software application window between full screen and windowed.

Usage and Feature Management enables customization of client sharing options, configuration of Browser Look-in settings, and the ability to set restrictions on usage to preserve network resources. Additionally, "Advanced Rendering" can be enabled or disabled for Coalesce Software instances only.

Disabling any given client sharing option means the users in the room won't see that specific sharing option for the given display(s) the option is disabled for. Browser look-in can likewise be enabled or disabled, or it can be left up to users in the room to determine by selecting "Determine at Runtime." Resource restrictions can be set for number of connections, number of items, and designate the size at which Coalesce will automatically resize images. For Coalesce Small Group Edition (SGE), the maximum number of connections (devices) is limited to four. The advanced rendering option is a resources/performance trade off and requires a high-quality graphics card. For questions about the setting, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com.

NOTE: The option to "Enable AirPlay Discovery Proxy" in the Client Sharing Options section allows mirroring of iOS devices on networks that do not allow UDP broadcast traffic or Apple's Bonjour protocol. Refer to the Coalesce Network Deployment Guide from <http://www.blackbox.com> for more information.

Launch Options (Software-Only) lets the administrator configure Coalesce to launch at login to Windows or at client connect. It can also be configured to hide on last client disconnect. Deselect all launch options to disable all automatic launching/hiding.

Display Side Video Folder (Software-Only) is where the administrator can designate and enable or disable users' access to a video folder on the Coalesce host PC. When this function is enabled, users can access and play video content in the folder designated here from their client devices during Coalesce sessions.

Video Feeds (Software-Only) allows the admin to configure live Video Feeds. To enable a Video Feed, select the box labeled "Capture Source Feature Enabled" and click Apply. Then a list of attached video sources will appear. Attached source included native web cams, as well as external video feed from USB cameras, etc. Use the list of attached video sources to enable and change settings for one or multiple Video Feed sources. See "External Video Feeds aka Attached Sources & Using Frame Grabber" in the Coalesce User Guide to learn more.

The System tab options include:

System settings include language (English and Japanese languages currently supported) as well as options to automatically set time and date from an Internet time server (Coalesce only), designate a different time server (Coalesce only), or set time zone, date, and time manually (Coalesce only), and designate a machine "Hostname" (Coalesce only).

Tools provides a link to download Coalesce Directory Service (CDS) for enterprise-compliant display discovery, as well as an option to reboot Coalesce.

The Message Center tab includes the ability to share two distinct types of messages from the Coalesce Central to any/all display on the network, including Emergency Broadcast and Bulletin messages.

Message Bulletin allows the Coalesce Central admin to designate lightweight text bulletins that will be messaged across the top of any Coalesce display the bulletin message is applied to when the Coalesce display's splash screen is showing (i.e. when no content is shared to the display). This feature provides lightweight digital signage functionality via the Coalesce Central and the Coalesce displays on a network.

Emergency Broadcast messaging will display an emergency message to any or all displays on a network. Unlike the bulletin messaging, emergency broadcast messages will interrupt a Coalesce session in progress, displaying the emergency messaging on a bright red banner across the display, regardless what is visible on the display before the message is broadcasted. The feature provides an option to apply the emergency message to all displays, or that option can be deselected and the emergency message can be broadcast to a specific set of displays designated in the Instance Panel.

The Activity tab shows real-time usage analytics for all displays in the Instance Panel, including number of software version and platform information, number of users, number of items, bandwidth usage, and live sources in use. Each column in the tab is sortable.

The Licensing tab presents licensing info for all displays in the Instance Panel, including status, display name, software version and platform information, maintenance plan expiration date/status, and addition device info including display name, device ID, Ethernet Mac Address, Wireless Mac Address, and/or fulfillment ID.

The box at the top of the licensing tab allows the administrator to trigger a check for software updates available. The text immediately beneath the button provides a summary of versions and updates available for all the displays on the list.

The three boxes on the bottom of the licensing tab allow an administrator to select one or multiple displays and install software updates, push a Coalesce license to host PC by entering an activation key (Coalesce Software only), and recall licenses that are installed on host PCs to use on a different host PC later (Coalesce Software only).

NOTE: Software updates can be completed 100% remotely via the "Install Updates" button; however, for Coalesce Software, the button only links to the Coalesce Download Center where the software update can be downloaded. Once downloaded, it must then be installed on the in-room Coalesce host PCs.

The CDS tab shows options for Coalesce Directory Service (CDS), which provides an IT-friendly mechanism for display discovery (i.e. click-to-connect capability) throughout an enterprise. CDS is a complimentary software program that runs in tandem with Coalesce display software on the network. See the Coalesce Directory Service (CDS) User Guide for more details about how to setup and configure CDS.

5. Coalesce Central Management Best Practices

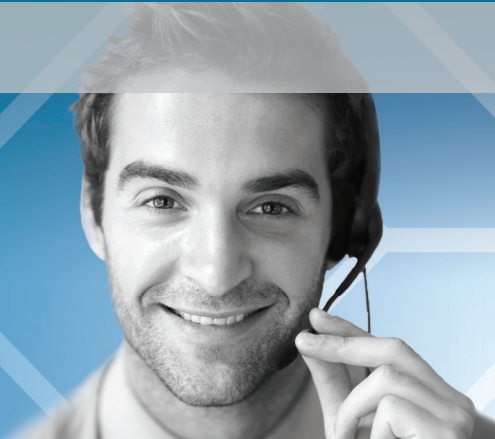
- To manage your Coalesce instances via the Coalesce Central only—and prevent changes from being made by users in the room with your Coalesce wireless displays—disable the “Allow Local Configuration” for all Coalesce instances in the Security tab of the Coalesce Central, and disable “Allow Browsers to Configure” for all instances. This disables the local and web-based Coalesce Configuration Panels, which are otherwise accessible via the Coalesce, host PC, or web browser.
- Black Box recommends password-protecting the ability to change configuration options for all of your Coalesce displays. To do this, select all of your displays in the Coalesce Central and then set the “Administration Password” in the Security tab and click Apply.

NOTE: If you have multiple instance groups, you will have to apply the change to each group. Once applied, anytime that you (or someone else) opens the Coalesce Central, you will be required to type the password in order to change any configuration settings. It is also recommended that you set the same administrator password for all your Coalesce instances/groups. Otherwise, you will need to type multiple passwords to access all the displays from the Coalesce Central.

- If your corporate or campus network does not allow broadcast traffic, turn it off. In the “Display Discovery” section under the “Network” tab, disable the option labeled “Broadcast display name on the network.” Make sure “List display to Coalesce Directory Service” remains enabled. To enable iOS users to mirror to the Coalesce display(s) via AirPlay when broadcast traffic is disabled, select “Enable AirPlay Discovery Proxy” in the “Usage and Feature Management” section of the “Appearance and Usage” tab.
- Keep in mind that nearly everything that can be configured in the Coalesce Central is also available via each individual Coalesce display’s local or web Configuration Panel (unless local/web configuration are disabled). If you are in the room with the display and don’t have the Coalesce Central handy, access the local Coalesce Configuration Panel by clicking the Coalesce icon in the lower right of the display, selecting “System” and then “Configure,” or access the web configuration for any Coalesce by entering the Coalesce’s IP address into the web browser of any network-connected device and then selecting “Configure” from the bottom left corner of the browser page.

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