USER MANUAL

BXAMGR

BOXILLA® KVM&AV/IT MANAGER

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT BLACKBOX.COM







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SYMBOLS USED IN THIS MANUAL



INSTRUCTIONS



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

DANGEROUS VOLTAGE



This symbol is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

POWER ON



This symbol indicates the principal on/off switch is in the on position.



SYMBOLS USED IN THIS MANUAL



POWER OFF



This symbol indicates the principal on/off switch is in the off position.

PROTECTIVE GROUNDING TERMINAL



This symbol indicates a terminal that must be connected to earth ground prior to making any other connections to the equipment.





TABLE 1-1. SPECIFICATIONS

| SPECIFICATION | DESCRIPTION | |
|---------------------------|--|--|
| Approvals | CE, FCC | |
| Connectors | 10/100/1000 Ethernet (RJ-45) , Serial (DB9), (4) USB 2.0 (USB Type A), DVI | |
| Power | AC input: 120–240 V, 50–60 Hz | |
| Power Dissipation | <75 W (PSU rated for 250 W) | |
| Dimensione | System: 1.73"H x 17.3"W x 10.6"D (4.4 x 44 x 26.8 cm); | |
| Dimensions | Shipping box: 7.2"H x 22.4"W x 15.4"D (18.5 x 57 x 39 cm) | |
| M/aimht | System: 10.96 lb. (4.98 kg); | |
| Weight | Shipping: 14.92 lb. (6.78 kg) | |
| Compatibility | Works with Emerald Unified KVM (EMD4000T, EMD4000R, EMD2002PE-T, EMD2002PE-R, EMD2000PE-T, EMD2000PE-T, EMD2000SE-T, EMD2000SE-R, EMD2002SE-T, EMD2002SE-R), EMD200DV-T, InvisaPC (DTX1002-R, DTX1002-T, DTX1000-R, DTX1000-T) and DKM (multiple part numbers) | |
| Serial Port Configuration | 115,200 baud, 1 Stop bit, No Parity, No Handshake | |
| Default IP Address | 192.168.1.24 | |
| Default Username | admin | |
| Default Password | admin | |





Boxilla[®] is a state-of-the-art KVM and AV/IT Manager designed to provide pro-active support to the System Manager and enable efficient operation of KVM and AV systems. Its core focus is to provide simple mechanisms to discovery, configure, upgrade and monitor the deployed systems. It provides insight into performance of the deployed system and alerts the System Manager to potential performance or security issues. Comprehensive features include:

- automatic search and detection of Black Box products (discovery),
- device configuration across multiple sites,
- configuration backup,
- central upgrades,
- performance and security statistics with user-defined triggers for alerts.

Using the intuitive Boxilla web-based interface, one or more administrators can manage potentially thousands of users who are interacting with an almost unlimited number of devices. Boxilla operates as a self-contained compact server unit that can be located anywhere within your network. Boxilla is supplied pre-loaded and is straightforward to deploy, requiring only a network connection and a power input to begin operation.

The current version of Boxilla provides management of Black Box's Emerald Unified KVM or InvisaPC system, Modular and Compact DKM KVM Matrix Switches, and Black Box IP Network Switches. The Emerald or InvisaPC system provides users with a seamless desktop experience anywhere on a TCP/IP network, while allowing the actual hardware to be securely housed in a corporate data center or in the cloud.

Emerald or InvisaPC enables the same high-fidelity experience of a desktop PC even for media-rich applications, for example, watching videos, photo editing with Photoshop or 3D design with AutoCAD. The remote desktops may be hosted on a physical PC / workstation or may be a virtual desktop hosted on a private server or in the cloud. The Emerald or InvisaPC system provides its users with Receivers that communicate with target compute nodes (whether physical PC or virtual desktop) over a standard TCP/ IP network. Physical PCs/Workstations/Servers have an Emerald or InvisaPC Transmitter unit physically connected to provide communication over the TCP/IP network. The performance of Emerald or InvisaPC allows them to be deployed on standard corporate networks and even across Wide-Area-Networks (WANs).

Desktop users can use remote keyboard, mouse, video, audio, USB mass storage devices, headsets and other USB devices from the Receiver unit to the remote PC/workstations or Virtual Desktop via the Emerald or InvisaPC system.

NOTE: References to the Emerald or InvisaPC system or Modular or Compact DKM KVM Switch systems in this document refer to both Receivers and Transmitters.

An Emerald or InvisaPC system can be composed of just Receivers and Transmitters. In these types of systems—called unmanaged— there is no central management. Each device needs to be configured individually and upgraded individually. Often to keep the system in sync, the admin exports the configuration from one Receiver and imports it to all other Receivers using a USB Flash Drive.

For larger configurations, a central manager is needed—Boxilla. Boxilla operates as a central manager for a "managed domain." A managed domain is a collection of Emerald or InvisaPC Receivers and Transmitters managed by a Boxilla. Once a Receiver or Transmitter has been added to a managed domain, it can only communicate with other Receivers or Transmitters within this managed domain. They are not able to communicate to "unmanaged" devices or devices that are part of a different managed domain (i.e., a domain managed by a different manager). Boxilla is used to configure users, connections, hotkeys and other parameters. The database created on the Boxilla is synchronized to each Receiver on a Boxilla user login. If the Boxilla for the managed domain is not reachable (e.g. powered-down), the Receiver will use the last updated database. This ensures that there is no single point of failure in the managed domain. Users can login and connections can be made even if the manager of the domain is not reachable.

When a Receiver is managed, most of the configuration options on the OSD are disabled (i.e., grayed out). These configuration options can only be updated on the manager.





A Boxilla system can also include IP network switches. Black Box offers the following:

- 48-Port 1G IP Network Switch (EMS1G-48)
- 12-Port 10G IP Network Switch (EMS10G-12)
- 28-Port 10G IP Network Switch (EMS10G-28)
- 32-Port 100G IP Network Switch (EMS100G-32)

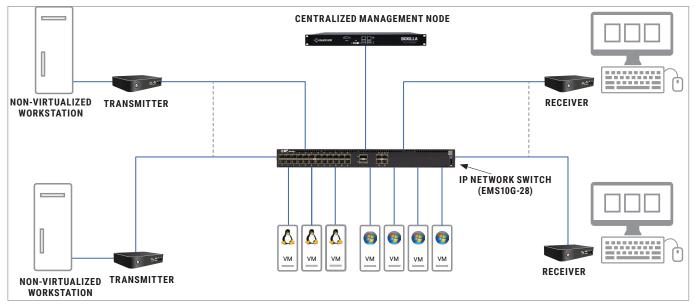


FIGURE 2-1. EMERALD OR INVISAPC SYSTEM EXAMPLE-INCLUDING IP NETWORK SWITCH

2.1 OVERVIEW OF BOXILLA CONCEPTS

The Emerald family is composed of Receivers, Transmitters and Switches. The Emerald or InvisaPC family is composed of Receivers, Transmitters and Managers. Boxilla is the Enterprise class Manager for Emerald or InvisaPC and Modular and Compact DKM KVM Matrix Switches and Black Box IP Network Switches. The core design of the Emerald or InvisaPC architecture is that there is no single point of failure. This means that even if Boxilla goes off-line, the Emerald or InvisaPC system will continue to function-allowing users to login, make connections and operate the system as normal. When the Boxilla manager comes back on line, the various devices will update Boxilla with their performance and security statistics from the period it was offline.





2.2 BOXILLA MANAGED DOMAIN

Boxilla creates a managed domain—a set of devices it manages. Devices that are members of this managed domain can only be managed by this Boxilla unit. Devices in a managed domain can only connect to other devices in the managed domain. No other manager or unmanaged device can configure or connect to devices in this managed domain.

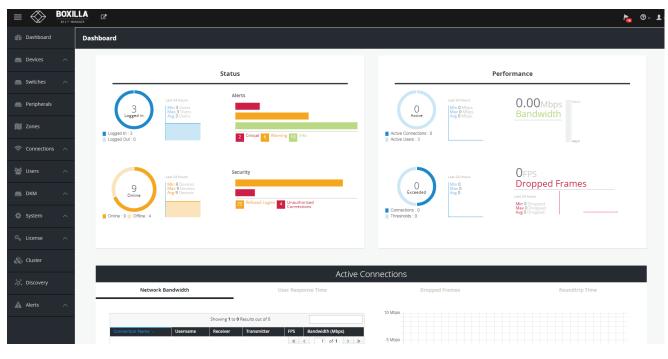
A managed domain is composed of:

- Boxilla Manager-to centrally create, configure and monitor domain;
- Devices—KVM and AV appliances that can communicate with each other. In the current release, Emerald or InvisaPC devices, DKM KVM Matrix Switches, and Black Box IP Network Switches devices are supported;
- Users—provides various login rights for different users such as their access rights (what connections they can make, level of control they have to change configurations);
- Connections—defines how a Receiver can connect to a Transmitter or a Virtual Machine with properties such as private or share mode, USB re-direction enabled or disabled among others;
- Alerts—events detected by Boxilla in the managed domain (such as new device added, firmware upgrade, connection made) and classified as critical, warning or info based on nature of event.

As part of creating a managed domain, the administrator will add Devices to the domain, create Users, define Connections and set Alerts. The following sections will describe how to do this with Boxilla.

Once a domain has been defined (devices, users, connections, etc.) Boxilla monitors the operation of the domain, reports on its performance and indicates any security events detected. The monitoring of the system is presented to the user in advanced graphical and tabular formats. Typically the dashboard is used to get an overview of the domain's operation. An example of the Dashboard is shown in Figure 2-2. From the dashboard the administrator can drill down for more detail on activity, errors and individual devices.







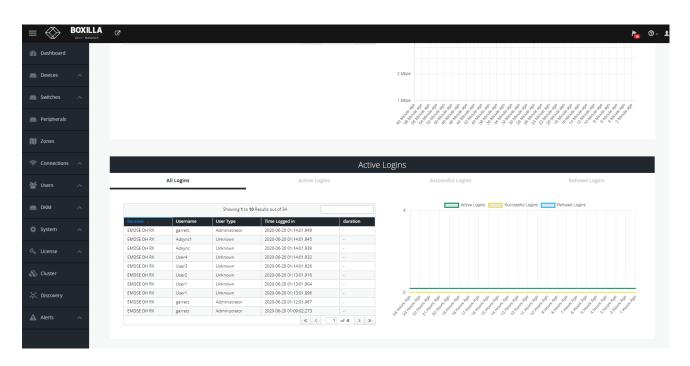


FIGURE 2-2B. BOXILLA BOTTOM DASHBOARD EXAMPLE





A Manager's User Profile is protected by a username and password to permit different users to access the same unit securely. It maintains the central database that is distributed to all Receivers in the "domain" of the Manager (i.e. discovered and added to manager)— called the "managed domain." This distribution ensures that there is no single point of failure in the Emerald or InvisaPC system— each Receiver has a copy of the database. This enables each Receiver to continue operation—log users in, make connections as required—even if the Manager goes off-line.

2.3 BOXILLA SCREEN LAYOUT

Boxilla is designed to provide quick access to key operational functions. This is achieved by the use of the Main Menu and Quick Access Toolbar as shown in Figure 2-3. The Main Menu provides access to:

- Dashboard
- Devices
- Switches
- Peripherals
- Zones
- Connections
- Users
- DKM
- System
- License
- Cluster
- Discovery
- Alerts

The Quick Access toolbar provides access to active Alerts, access to Help and access to Logout.

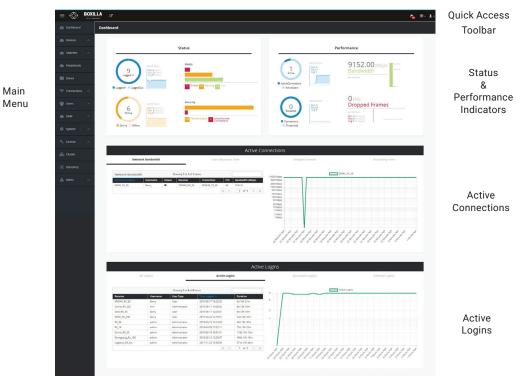


FIGURE 2-3. SCREEN LAYOUT





A common feature of tables in Boxilla is that they can be sorted by each column (alphabetically either ascending or descending). Click on the column's label (e.g. Connection Name) and the table will be sorted by that column in ascending order. Click on the same column label again and the order will be reversed. Also, a filter can be applied to the values in the column to pick out a subset of rows in the table. For example, typing in RnD into the filter box in the Network Bandwidth table in Active Connection section of the Dashboard in Figure 3 would result in three instead of four rows being displayed as shown in Figure 2-4.

| Network Bandwidth | | | User Response Time | | |
|--|------------|--------------|--------------------|-----|---------------------|
| Network Bandwidth Showing 1 to 3 of 3 Items (of 4) RnD | | | | | |
| Connection Name | Username ^ | Receiver | Transmitter | FPS | Bandwidth (Mbps) |
| RnD_3 | Rebecca | R&D_R2 | R&D_T2 | 23 | 9.87 |
| RnD_4 | Robert | Logistics_R5 | R&D_T3 | 30 | 63.33 |
| RnD_1 | Rodrik | R&D_R1 | R&D_T1 | 23 | 30.13 |
| | | | « < | 1 0 | f1 > > |



2.4 MODES OF OPERATION

The Emerald or InvisaPC system has various modes of operation, such as Auto-Login, Auto-Connect, Private Connection and Shared Connection Modes. The Emerald or InvisaPC devices can obtain their IP address data from a DHCP server in any of these modes or use static addresses. For stable operation with Boxilla, we strongly recommend that Static IP addresses are assigned to Emerald or InvisaPC devices or that you use DHCP addresses with "infinite time-outs."

2.4.1 AUTO LOGIN

In Auto-Login Mode, turning on the Emerald or InvisaPC Receiver automatically causes a login as a pre-defined user. The user is presented with the permitted connections that have been predefined.

2.4.2 AUTO CONNECT

In Auto-Connect Mode, when a user logs-in to the Emerald or InvisaPC Receiver, it causes an automatic connection to their pre-allocated workstation or virtual desktop. Auto-Login and Auto-Connect are defined independently of each other.

2.4.3 PRIVATE CONNECTION

In Private Connection Mode, when a user makes a connection to a target workstation/virtual desktop, this connection is only accessible by this user. All other users will receive a "busy" message if they attempt to connect to the same workstation/virtual machine. This is the default mode for connections.

2.4.4 SHARED CONNECTION

In Shared Connection Mode, multiple users can connect to the audio and video of the same target computer over the network. They arbitrate for control of the keyboard and mouse of that computer. Non-keyboard and mice devices are not supported on shared connections.



CHAPTER 3: APPLICATIONS



The Emerald or InvisaPC system is architected to be flexible so that it can be deployed in many different types of applications such as basic extension, switching applications (sometimes called matrix), cloud-based desktops, control rooms, digital signage and kiosk applications among others in banking, financial services, broadcast, network operations, industrial, government and enterprise computing sectors. Emerald or InvisaPC provides the state-of-the art performance by:

- using digital sources for video and audio, hence removing analog noise issues or other potential environmental issues;
- using advanced optimized compression to enable visually lossless video over standard low-bandwidth networks rather than a proprietary connection or dedicated gigabit networks of many systems.

3.1 VIDEO, AUDIO AND USB SWITCHING

Numerous applications require being able to switch between different target PCs or Virtual Desktops. The user wants to be able to change the source of Video, Audio or USB extension (or all three together).

Connections can be made to a target using Emerald or InvisaPC's intuitive On-Screen-Display (OSD). Figure 2-1 in the previous section shows an example of a switching or matrix type of deployment. In this deployment, there are several Receivers and Transmitters and a Boxilla manager as well as virtual desktops.

See www.blackbox.com for the full catalog of available Emerald or InvisaPC products.





4.1 HARDWARE DESCRIPTION

A Boxilla manager is supplied with the items shown in Table 4-1.

TABLE 4-1. WHAT'S INCLUDED

| ITEM | |
|--|--|
| Boxilla Unit | |
| IEC power cord | |
| (4) rubber feet for tabletop deployments | |
| (1) ESD screw | |
| Quick Start Guide | |
| | |

Once the contents of the Boxilla package have been verified, the first task is to configure the IP address of the unit. This can be set in two ways: (1) using the serial port and (2) using the network port via a browser.

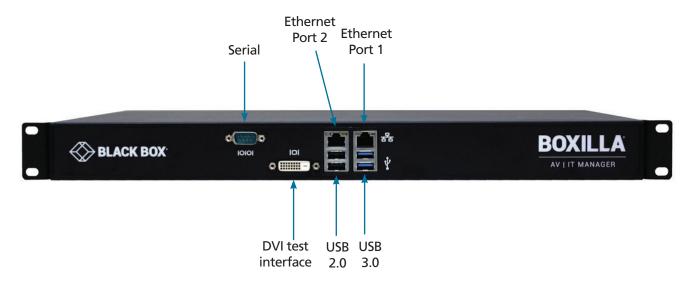


FIGURE 4-1. BOXILLA FRONT PANEL

CONNECTORS NEEDED FOR INSTALLATION

- Serial Port
- Network Ports (2)
- Power connector

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FIGURE 4-2 BOXILLA REAR PANEL

TABLE 4-2. PANEL COMPONENTS

| COMPONENT | DESCRIPTION |
|----------------------|---------------------------------------|
| Serial port | DB9 male console |
| DVI port | Test interface |
| (2) Network ports | 1G Ethernet RJ-45 connectors |
| (2) USB Type A ports | USB 2.0, used for exporting log files |
| (2) USB Type A ports | USB 3.0, used for exporting log files |
| Power switch | ON/OFF switch |
| 3-prong outlet | 100-240 VAC, 50-60 Hz |
| | |

CONNECT THE POWER

1. Locate the AC line cord.

2. Attach the AC line cord to the power supply connector on the rear of the unit.

3. Power up the unit by turning on the power switch on the back of the unit.

4.2 LED IDENTIFICATION

Two LEDs are built into the RJ-45 connectors on the Boxilla Manager. The definition of the operation of these LEDs is shown in Table 4-3.

| LED | INDICATION | MEANING |
|-----------|----------------|---------------|
| | Green ON | 1 Gbps link |
| Speed | Amber ON | 100 Mbps link |
| | OFF | 10 Mbps link |
| A otivity | Amber blinking | Valid link |
| Activity | OFF | No link |
| | | |

TABLE 4-3. RJ-45 CONNECTOR LEDS





4.3 INSTALLATION SAFETY

To avoid a potentially fatal shock hazard and possible damage to equipment, please observe the following precautions:

• Test AC outlets at the workstation and monitor for proper polarity and grounding.

NOTE: The AC inlet is the main disconnect.

4.4 SERIAL CONFIGURATION OF IP ADDRESS

The default IP address for Boxilla on leaving the factory is 192.168.1.24 and needs to be configured to an appropriate address for where it will be deployed. To access the serial menu, connect to the DB9 connector on the front of the unit. The serial port has a fixed configuration of:

- Baud-Rate: 115,200 Baud
- Data: 8 bits
- Stop-Bits: 1
- Parity: None
- XON/XOFF: None

Once the connecting PC has the correct configuration, the following menu should appear when connected to Boxilla's serial port. Make sure you turn echo on for the terminal to see the output.

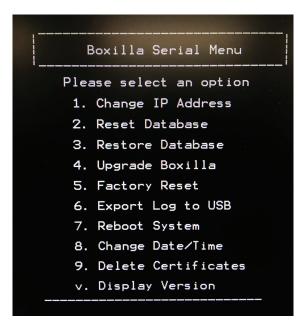


FIGURE 4-3. BOXILLA SERIAL MENU

Select "Change IP address" by entering 1. Then follow the prompts to set the new IP address, Net Mask and Gateway IP address.





4.5 BROWSER CONFIGURATION OF IP ADDRESS

The default IP address for Boxilla on leaving the factory is 192.168.1.24 and needs to be configured to an appropriate address for where it will be deployed. Use a computer located within the local network that can address the default IP address and ensure that Boxilla is connected to this network via its Ethernet Port 1 (RJ-45) as shown in Figure 4-1, open a web-browser and enter the default IP address for the Boxilla AV/IT Manager: 192.168.1.24. This should bring up the Boxilla login screen shown below in Figure 4-4.



FIGURE 4-4. BOXILLA LOGIN SCREEN

When the login screen appears, enter the default username "admin" and the default password "admin." This will bring you to the Boxilla dashboard screen. On the Boxilla menu (see the menu on the left in Figure 10), select the menu item "System" on the left of the screens.

On the tabs that appear on the main section of the screen, click System -> Settings -> Network. Now you will be presented with the current IP settings for the system. Enter the new IP settings into the supplied fields and click "submit." Boxilla will be updated with the new network settings. From now on, you need to point your Browser to the new IP address.

| \bigotimes | | ď | | | | | | | h | @~ 1 ~ |
|--------------|-----------------------|---|---|--|--|---|---|---|---|--|
| Dashboard | S | ettings | | | | | | | | |
| Devices | ^ | | | | | | | | | |
| Switches | ^ | Netwo | 'k | Thresholds | | | Clock | Active Di | rectory | |
| Peripherals | | Network Settings | | | | | | | | |
| | | Network Port Ethernet Port 1 | IP Address 10.8.1.24 | Netmask 255.255.0.0 | Gateway 10.8.1.1 | Hostname boxilla | Primary DN5 8.8.8.8 | Secondary DNS 8.8.4.4 | | |
| | | Ethernet Port 2 | 10.0.0.25 | 255.255.255.0 | 10.0.0.1 | boxilla-c | | | 0 | |
| | ^ | | | | | | | | | |
| | ^ | | | | | | | | | |
| DKM | ^ | | | | | | | | | |
| System | ^ | | | | | | | | | |
| | ^ | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Alerts | ^ | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | hashboard development | hashboard i Si hevices ^ witches ^ herspherails · cones · hers ^ hers ^ hers ^ hers ^ hers · | Letwork Devices ^ Vettories ^ witches ^ kerpharalis | Abshboard Settings Devices A Witches A Witches A Merpheralls Network Settings Gones 1 Connections A Absers A XMM A Kense A Ituster B Notwork B | Settings verdes ^ witches ^ witches ^ verdebrails Network Cones 100.025 conestions 100.025 xxxxx 255.255.255.0 | Settings be/cess ^ witches ^ witches ^ bergheralls Image: Comparison of the compari | Settings Verdes A witches A Verderalls Network Connections A Absers A Verderalls 108.0.14 Etherner Part 1 108.0.25 253255.0.0 108.0.1 Etherner Part 2 108.0.25 Verderalls Verderalls Verderalls Verderalls Etherner Part 2 108.0.25 Verderalls Verderalls Verderalls Verderalls | Settings Network Thresholds Cick Witches A Vergheralls Network Settings Connections A Athresholds 108.1.4 2525253.0 10.0.1 bearline A Vergheralls A Athresholds Connections Athresholds A Athresholds | Settings be/ces A witchs A berghards Image: Construction of the there Per 1 10.8.1.2 253.255.0.1 10.8.1.1 booris 8.8.8.8 8.8.4.4 6.8.4.4 10.8.1.2 10.8.1.1 booris 8.8.8.8 8.8.4.4 10.8.1.4 10.8.1.2 10.8.1.1 booris 8.8.8.8 8.8.4.4 10.8.1.4 10.8.1.4 10.8.1.1 booris 10.8.1.1 booris 10.8.1.1 booris 10.8.1.1 booris 10.8.1.1 booris 10.8.1.1 booris 10.8.1.1 10.8.1.1 10.8.1.1 10.8.1.1 10.8.1.1 10.8.1.1 10.8.1.1 10.8.1.1 10.8.1.1 10. | Settings Network Network Network Settings Convectors Network Not Network Settings Network Settings Network Not Network Settings Network Setti |

FIGURE 4-5. SYSTEM -> SETTINGS -> NETWORK SCREEN





4.6 MOUNTING BOXILLA IN A RACK

The Boxilla unit is designed to be easy to mount within a standard 19" rack. The unit requires just a 1U space within the rack.

- To mount the Boxilla unit within a rack:
- 1. Slide the Boxilla unit into the vacant 1U space within the rack.
- 2. Secure each bracket to the rack using two screws per side as shown below.

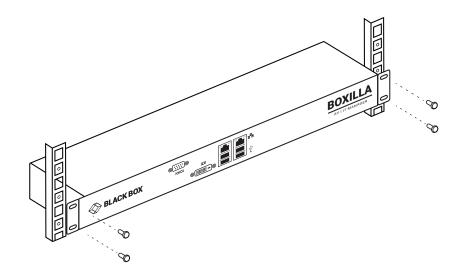


FIGURE 4-6. MOUNTING BOXILLA IN A RACK

To protect the unit, please use the ground point on the Boxilla unit on the rear of the Boxilla unit shown in Figure 4-7 (using the provided screw) for connecting to the ground point of the rack or cabinet.

4.6.1 RACKMOUNT SAFETY CONSIDERATIONS

- Elevated Ambient Temperature: If installed in a closed rack assembly, the operating temperature of the rack environment may be greater than room ambient. Use care not to exceed the rated maximum ambient temperature of the Boxilla unit.
- Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.
- Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition does not exist due to uneven mechanical loading.
- Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Consider equipment ratings for maximum current.
- Reliable Earthing: Reliable earthing of rack mounted equipment should be maintained. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

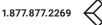








FIGURE 4-7. ESD CONNECTION



CHAPTER 5: BOXILLA CONFIGURATION



This section covers the configuration of Boxilla for administrators.

5.1 SUPPORTED BROWSERS

Boxilla will operate with most modern client browsers. It requires the browser to have JavaScript enabled. The list of supported browsers is as follows:

- Google Chrome
- Internet Explorer
- Firefox
- Safari

NOTE: For the best experience, always use the latest versions of supported browsers.

5.2 LOGIN

Ensure the Boxilla unit is powered up. Wait two minutes after applying power before attempting to access to allow the system to boot up.

Using a computer located anywhere within the network, open a web browser (see supported browsers list above) and enter the default IP address for the Boxilla server: 192.168.1.24.

The Login screen will be displayed as shown in Figure 5-1.



FIGURE 5-1. BOXILLA LOGIN SCREEN

Enter your Username and Password and click the Login button.

Default username: admin

Default password: admin



CHAPTER 5: BOXILLA CONFIGURATION



| ashboard Dasht | ය board | | | | | | h |
|----------------|-------------------------|--|-----------------------|--|----------------------------|---|--|
| evices ^ | | | Status | | | | Performance |
| eripherals | | Last 24 Hours Min 8 Users Max 9 Users Avg 9 Users | Alerts | | | 1 Active | 9152.00 Mbps |
| ones | Logged in | ~~~~~ | 2 | itical 10 Warning 14 Info | | ActiveConnections | Last 24 Hours |
| ers ^ | 6 | Last 24 Hours | Securi | ty | _ | 0 Last 24 Hours Devended As 0 | O FPS Dropped Frames |
| M ^ | Online Online Offine | Min 5 Devices Max 6 Devices Avg 6 Devices | 108 ^{Rr} | fused Logins 5 Unauthorized Connections | | Exceeded Avg 0 Connections | Last 21 Hours Min D Gropped Max O Bropped Avg O Dropped |
| rstem ^ | | | | | | | |
| uster | Network | < Bandwidth | | User Respon | | nnections Dropped Frames | Roundtrip Time |
| scovery | Network Bandwidth | | Showing 1 to 1 of | | | 10000 Mbps | EM4K_TX_36 |
| | | | | ¢ | t 1 of 1 5 >> | 2000 Mitros 1000 Mitros 2000 Mitros 1000 Mitros 2000 | |
| | | | | | Active | Logins | |
| | All | Logins | | Active Lo | | Successful Logins | Refused Logins |
| | | | Showing 1 to 9 of | Pitems | | 9 | Active Logins |
| | Receiver EMD4K_RX_35 | Username Barry | User Type User | Time Logged In 2019-06-17 16:23:02 | Ouration Od 16h 21m | 5 | |
| | Corrib_RX_202 | Ann | Administrator | 2019-06-11 14:26:02 | 6d 18h 18m | | |
| | Deel_RX_33 | Barry | User | 2019-06-11 14:25:01 | 6d 18h 19m | 2 | |
| | EMSE_RX_208 RX_39 | Barry admin | User Administrator | 2019-04-24 12:18:01 2019-04-10 16:14:03 | 54d 20h 26m 68d 16h 30m | 1 | |
| | R0(_39 R0(_19 | admin | Administrator | 2019-04-03 17:22:11 | 75d 15h 22m | | |
| | Corrib_RX_20 | admin | Administrator | 2019-02-19 16:31:01 | 118d 15h 13m | | |
| | Shengyang_Rx_186 | admin | Administrator | 2018-02-12 12:29:07 | 490d 19h 15m | | |
| | | | | | | | |
| | Logistics_R5_NA | admin | Administrator | 2017-11-23 15:58:06 | 571d 15h 46m | | a , a , a , a , a , a , a , a , a , a , |

FIGURE 5-2. BOXILLA INITIAL SCREEN ON LOGIN

| TABLE 5-1 | BOXILLA INITIAL | SCREEN MENU | COMPONENTS |
|------------|------------------------|-------------|------------|
| IADLE 5 1. | | | |

| MENU OPTION | DESCRIPTION |
|-------------|--|
| Dashboard | The dashboard is divided into three main areas: Status & Performance Indicators, Active Connections and Active Logins. |
| Devices | Under the Devices drop-down menu on the left of the Dashboard screen, you will see four options: Settings, Upgrades, Global and Statistics. |
| | The "Switches" menu has two subheadings: Status and Upgrades. These all link to individual pages. |
| Switches | The status page initially shows a list of all the switches in the KVM Network. Clicking on a particular switch then brings you to a page displaying all the ports of that particular switch. This page also allows you to perform certain actions on the switch. |
| | The Upgrades page is similar to the InvisaPC/Emerald Upgrade page. This shows a list of all the switches in the KVM network plus their current firmware version. If there is a mismatch to the activated firmware release, this will be flagged. You can also upload a release from this page. |





TABLE 5-1 (CONTINUED). BOXILLA INITIAL SCREEN MENU COMPONENTS

| DESCRIPTION |
|--|
| Boxilla uses USB Hub bonding to support external USB switching at speeds up to 480 Mbps. |
| Zones enable the administrator to setup unique zones (or groups) of Connections, Physical Receivers, and Users so that a large system can be more easily managed. |
| Connections define the properties for the flow of keyboard, mouse, video, audio and USB traffic between an Emerald or InvisaPC Receiver and an Emerald or InvisaPC Transmitter or Virtual Machine. Connections are created and then allocated to Users to provide them access to Transmitters or Virtual Machines. A connection is a definition and can be allocated to multiple users. When a user logs into an Emerald or InvisaPC Receiver, they are presented with their allocated connections on the Connections Tab of the OSD on that Receiver. |
| Users are defined in the Emerald or InvisaPC system to provide rights to manage the system, rights to connect to different target devices and rights to set parameters for connections. |
| This option enables you to integrate your DKM system with Boxilla. It includes the configuration elements for Boxilla and DKM. |
| The System button in the main menu brings up the System —> Administration —> Upgrade screen. This screen allows the Boxilla unit itself to be managed. |
| The License tab enables you to add/manage licenses for Boxilla and remote applications. |
| Boxilla offers a redundancy feature for fail-safe operation. Your system can contain two Boxilla units, one as the primary Boxilla and one as a backup. If the first Boxilla cannot be found, the system will use a backup Boxilla to get the information. The primary and backup Boxilla are known as a cluster. |
| The process of adding devices to Boxilla to manage is known as discovery. The discovery process can be automatic or can be manual. |
| Alert history is a time-stamped log of events across the system. Active Alerts are alerts that are currently active, e.g. devices that are offline, thresholds that are exceeded, and devices with mis-matched software versions. |
| |

You are strongly recommended to change the default admin password as one of your first actions:

- Click on System button on the main menu and then select the Users tab as shown in Figure 5-3.
- Click the "..." icon on the Admin row and click on the edit option.

| = | | | | | | | | | h 🕫 🕹 |
|--------------------------|----------|------------------|--------------------|------------------|-------------------------------|---------------------|---|-----------|----------|
| 🚯 Dashboard | Administ | ration | | | | | | | Reboot |
| Devices | ^ | | | | | | | | |
| Switches | ^ | Upgr | ade | Backup/Restore | S | ystem Info | Boxilla Users | Certifica | tes |
| Peripherals | | | | | Showin | g 1 to 1 of 1 items | | | |
| 🕅 Zones | | Login ^ admin | Firstname Admin | Lastname User | Email noreply@blackbox.com | | Last Login 2020-01-10 18:39:00 -0500 | Actions | 0 |
| 🛜 Connections | ~ | | | | | | ' | Edit | €1 > » |
| 🐸 Users | ~ | | | | | | | N | lew User |
| 💼 ОКМ | ~ | | | | | | | | |
| 🔅 System | ~ | | | | | | | | |
| a, License | ~ | | | | | | | | |
| 🗞 Cluster | | | | | | | | | |
| ç ^e Discovery | | | | | | | | | |
| Alerts | ~ | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

FIGURE 5-3. CHANGING ADMIN USER PASSWORD

BLACKBOX.COM

1.877.877.2269

CHAPTER 5: BOXILLA CONFIGURATION



This allows the Admin user to be edited. The default password would be changed for security. The other properties can be used as required.

| | | New User | | | | ĸ | | |
|--|-------------------------------|------------------|------------------|----------------|----------------------|-----------------|------------------|-----------------|
| | Users Manage | User Information | Proper | ty Information | Review | + User Template | Edit Template | – User Template |
| | | 0 | | 2 | 3 | | | |
| | | 1. User Info > | Use Template | No Yes | | | | |
| | | | Active Directory | No Yes | | | | |
| | All Users Username ^ Based On | | Username | garrett | | thorized By | Domain AD Status | |
| | admin admin_def | | Password | | | cal cal | | 0 |
| | garrett - merie - | | Confirm Password | | | cal cal | | 0 |
| | | | | | Cancel < Back Next > | | « < <u>1</u> o | 11 > > |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

FIGURE 5-4. EDIT ADMIN USER

5.3 IMPORTANT FIRST CONFIGURATION STEPS

There are several important configuration steps that must be carried out when starting a new Boxilla server for the first time.

- 1. Set the IP address for the Boxilla Server.
- 2. Change the default password for the default user "admin" (for security).

NOTE: Make sure that your computer can view the new IP address; otherwise, the Boxilla server will appear to be offline. Depending on your network configuration and that of the computer, you may need to change the computer's configuration to be able to see Boxilla server's new network address.

IMPORTANT NOTE: If an existing Boxilla server must be replaced, follow the important advice given within Appendix A: Swapping Out a Boxilla Server.





The process of adding devices to Boxilla to manage is known as discovery. The discovery process can be automatic or can be manual.

6.1 DISCOVERY-AUTOMATICALLY FINDING DEVICES

Boxilla uses Black Box's discovery protocol to automatically find devices to be managed on the network. This discovery protocol can span across subnets. To allow Black Box's Emerald or InvisaPC automatic discovery protocol to operate across subnets, multicast routing should be enabled in the routers in the network. Black Box's discovery protocol is not required for Emerald or InvisaPC systems to operate but it is recommended to enable Boxilla to search for devices across multiple subnets. If the Emerald or InvisaPC discovery protocol is not enabled, i.e. routers do not have multicast routing enabled, the administrator will have to manually add in devices not on its subnet, i.e. add in each device individually by its IP address.

To start adding devices to Boxilla, click on the Discovery button on the main menu. The Discovery page is displayed as shown in Figure 6-1. The example page already has some devices "discovered." The devices are listed in a table as shown in Figure 6-1.

| | ^ | | | | | |
|-------------|---------------------|---------------------|----------------|---------------|--------------|----------------------|
| Switches | ^ | | | | | Default IPs Ping Dis |
| | | Automatic Discovery | | | Add Manually | |
| Peripherals | | | | | | |
| Zones | | | Showing 1 to 1 | 1 of 11 Items | | |
| 201165 | MAC Address | IP Address | Netmask | Gateway | Model | State |
| | 00-8C-10-1E-D1-B8 | 10.8.60.71 | 255.255.0.0 | 10.8.1.1 | EMD2000SE-R | Managed |
| Connections | 00:8C:10:1E:D6:2E | 10.8.60.48 | 255.255.0.0 | 10.8.1.1 | EMD2000SE-T | Managed |
| | 00:8C:10:1E:E6:07 | 10.8.1.31 | 255.255.0.0 | 10.8.1.1 | EMD2000SE-T | Managed |
| | A 00:8C:10:20:E3:04 | 10.8.60.123 | 255.255.0.0 | 10.8.1.1 | EMD2002SE-R | Managed |
| | 00:8C:10:20:E5:38 | 10.8.60.90 | 255.255.0.0 | 10.8.1.1 | EMD200DV-T | Managed |
| окм | 00:8C:10:20:E5:39 | 10.8.60.91 | 255.255.0.0 | 10.8.1.1 | EMD200DV-T | Managed |
| | 00:8C:10:20:E5:3A | 10.8.60.92 | 255.255.0.0 | 10.8.1.1 | EMD200DV-T | Managed |
| | 00:8C:10:20:E5:3B | 10.8.60.93 | 255.255.0.0 | 10.8.1.1 | EMD200DV-T | Managed |
| System | A 10:37:8F:00:11:6A | 10.8.1.62 | 255.255.0.0 | 10.8.1.1 | EMD4000R | Managed |
| | 1C:37:BF:00:11:70 | 10.8.1.60 | 255.255.0.0 | 10.8.1.1 | EMD4000T | Managed |
| License | 1C:37:BF:00:11:AC | 10.8.1.61 | 255.255.0.0 | 10.8.1.1 | EMD4000R | Managed |
| | | | | | | « < 1 of 1 |

FIGURE 6-1. DISCOVERY PAGE

This table shows all devices "discovered" automatically or manually added. To discover devices automatically, click on the "discover" button on the page. This causes the Black Box Discovery protocol to be run where a "discovery" packet is broadcasted to network and devices respond to Boxilla by sending a UDP unicast back to Boxilla. See Appendix B: Overview of Boxilla and Emerald or InvisaPC Network Protocols for more details on the actual protocol sequence.





CHAPTER 6: DISCOVERY–ADDING DEVICES



The state of a device shown in the table can be one of the following:

- UnManaged—this device is currently not part of any managed domain
- Managed-this device is part of the domain managed by this Boxilla manager
- ManagedOther-this device is part of a domain managed by another Manager-and cannot be managed by this Boxilla manager
- Orphaned—there is a conflict between the reported state on the Manager and that of the device. This may occur where the device was removed from the Manager's database when the device was off-line, or if the Manager was restored to factory default settings. A device in the orphaned state can be set back to "Managed" by selecting the Manage button and following the same process as for unmanaged devices

To edit a discovered device, click on the "•••" icon on the row for the device and select the Edit option. This allows the Network configuration of a device to be changed as shown in Figure 6-2. Typically, this is used to change a device from its default IP address to a unique address.

The administrator should be aware that the IP address should be changed to one reachable by Boxilla (i.e. if moved to a subnet different to Boxilla manager, a router is required to enable communication).

| = 🛞 | BOXIL | LA C | | | Edit Applia | ince Settings | | | | × | | | | | |
|---------|-------|----------------------------------|------------|---------------|--------------|------------------|---------|------------|---------------|------------------|-----------------------|-----------------|---------------|--------------------|---------------|
| | | Devices Settings | | | | Setting Type | Uniqu | e : | | × | System Proj | perties _ | | | + Add Templa |
| Devices | ~ | | | | | Video Quality | Defau | ılt | | ~ | | | | | |
| | | | | | v | ideo Source Opt | Off | | | ~ | | | | | |
| | ^ | | | | н | D Configuration | Basic | | | ~ | | | | | |
| | | | 9 | | Mouse Ke | yboard Timeout | 1 | | | ~ | | | | 14 | Ø |
| | | Se On | -Line Devi | ces | ED | D Settings DVI 1 | 1920 | 1080 | | ~ | ✓ | L | Devi | te Alerts | |
| | | | | Video S | | | | | | | | | | | |
| | ~ | | _ | | | | | | | Close Save | | | | | |
| | | | | | | | | | - | Close Save | | | | | |
| | ~ | Device Name 🧓 | Zone | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Settting | s DVI 2 Cloned Rec | eiver Options |
| | | EMD2002PE-T | | Unique | | EMD2002PE-T | OffLine | Configured | Default | | 1920x1080 | | 1920×1080 | | |
| | ^ | DTX5000_Bridge | | Unique | 10.8.60.90 | EMD200DV-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| | | EMD4K TX with USB 2.0 Icron Unit | | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | Clone | | | | |
| | ^ | EMDSE TX | | Unique | 10.8.60.48 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | | ZeroU-2PC-VID2 | | Unique | 10.8.60.91 | EMD200DV-T | OffLine | Configured | Default | он | 1920×1080 | | | | |
| | ^ | ZeroU-1PC-VID1 | | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| | | ZeroU-1PC-VID2 | | Unique | 10.8.60.93 | EMD200DV-T | OnLine | Configured | Default | DVI Optimised | 1920x1080 | | | | |
| | | EMDSE DKM BRIDGE | | Unique | 10.8.1.31 | EMD2000SE(T | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | | EMDSE RX | | System | 10.8.60.71 | EMD2000SE/R | OnLine | Failed | Default | Off | 1920x1080 | | | | |
| | | EMD4K RX2 with USB 2.0 lcron | | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | |
| | | EMD4K RX1 with USB 2.0 lcron | | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| | | EMDSE RX1 (46) | | Unique | 192.168.1.21 | EMD2000SE-R | OffLine | Configured | | | | | | | |
| | | EMDSE DH RX | | Unique | 10.8.60.123 | EMD2002SE-R | OnLine | Configured | | | | | | | |
| | | EMDSE RX | | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Faled | | | | | | | |
| | | | | | | | | | | | | | | * < - | 1 of 1 > >> |

FIGURE 6-2. EDIT DEVICE SCREEN

Once the IP address has been specified, an unmanaged device can now be set to be part of this Boxilla's managed domain. This is done by clicking on the Manage option. This causes the device's state to change from UnManaged to Managed. The device is given a name as part of the process of making it managed. This name is used to make it easier

for administrators and users to refer to the device (e.g. ControlRoom1 to name a device in Control Room 1). Once managed by Boxilla, this device cannot be managed or configured by any other manager.

CHAPTER 6: DISCOVERY–ADDING DEVICES



6.2 DISCOVERY-MANUALLY ADDING DEVICES

Sometimes an administrator may want to add a device manually, for example, where a device is on a different subnet to the Boxilla Manager and multicast routing is not enabled to this subnet.

To manually add a device, click on the "Add Manually" tab on the discovery page. This brings up the page shown in Figure 6-3. Enter the IP address of the device to be added and click on "Get Information." This causes Boxilla to retrieve the device's information if reachable. If Boxilla has no valid path on the network to the device (or IP address is not for an Emerald or InvisaPC device), the system will return a message of "device not reachable."

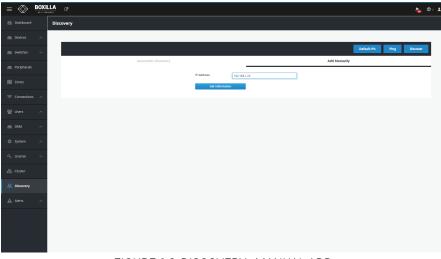


FIGURE 6-3. DISCOVERY-MANUAL ADD

The administrator can give the device a name, check that the device's details are correct if required to ensure it is the correct device (IP address, Serial Number and Model type), and assign the device to a Zone if appropriate. To manage this device, click on "Manage Device" button as shown in Figure 6-4.

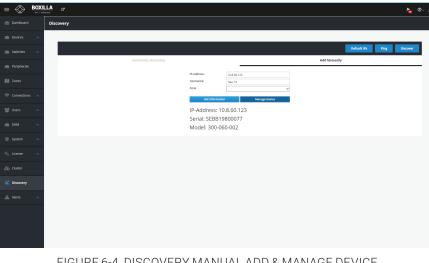


FIGURE 6-4. DISCOVERY MANUAL ADD & MANAGE DEVICE





6.3 DISCOVERY-WHAT HAPPENS TO A DEVICE WHEN MANAGED

Emerald or InvisaPC units can be configured locally when in UnManaged state. When a unit becomes "Managed," its local database is replaced with the database from Boxilla. The IP address of the device is preserved—but can be changed from Boxilla. The administrator can no longer change users, connections and various properties locally on the device—these can only be changed on Boxilla.

Once a device is managed by Boxilla, Boxilla's database is "synchronized" to the device when a user logs in to the device. The following sections outline how to use Boxilla to configure and monitor devices.

There are operating options that can only be configured locally for this current release. These are:

- Power-Mode— whether an Emerald or InvisaPC Receiver powers up automatically when power is applied or needs the power button to be pressed;
- Auto-Login-whether an Emerald or InvisaPC Receiver will automatically login as a specific user on power up;
- OSD Resolution-resolution that the OSD is displayed at when on screen;

See the Emerald or InvisaPC device manual for full details of these options.

6.4 DISCOVERY-IF A DEVICE IS NOT FOUND

There can be several reasons why a device has not been discovered by Boxilla:

- The device may be turned off.
- The device may not be reachable on the network— no valid path to device. This can happen if device is on a different network subnet to Boxilla and no router is between the two subnets. Use PING to verify the device can be reached.
- Automatic discovery may not find the device if it is on a different subnet to Boxilla and the router does not allow Multicast UDP packets to be forwarded to it. The router path to subnet manual addition should work.
- There is a potential cabling problem between the device and the Boxilla Manager. Check and where necessary, replace faulty cables.
- Ethernet port 1 on the Boxilla unit is not connected to the KVM network. Discovery messages are ONLY set on Ethernet port 1. Ethernet Port 2 does not support KVM traffic. All KVM traffic is routed through Ethernet Port 1.
- A device exists on the network with an IP address of 192.168.1.1 All Emerald appliances ship with a default gateway configuration of 192.168.1.1 If there is a device on the network with an IP address of 192.168.1.1, Boxilla will be unable to discover Emerald devices with default IP configurations (e.g. 192.168.1.21, 192.168.1.22). To resolve this issue, please reconfigure the device from 192.168.1.1 to an alternative IP address, e.g. 192.168.1.50





Devices part of the managed domain can be reviewed, upgraded and configured. These actions are performed by clicking the devices' options from the main menu. Figure 7-1 shows the Device—Settings Page. This page shows all the devices that are part of the managed domain.

Boxilla constantly polls devices to determine their state and operational statistics. The state of a device in the table can be:

- Online-means the device is contactable from Boxilla during recent polling cycles;
- Offline—means the device did not respond during any of the last few polling cycles. This can mean the device is powered-down or is not reachable on the network;
- Demo-means the device is a simulated device for demonstration purposes;

Under the Devices drop-down menu on the left of the Dashboard screen, you will see four options: Settings, Upgrades, Global and Statistics. These options are described in the following sections. Click on Settings and the following screen appears.

| \otimes | BOXI | | | | | | | | | | | | | | h 1 |
|-------------|------|--------------------------------|-------------------|---------------|--------------|-------------|---------|------------|-------------------------|------------------|---------------------|----------------|------------------|-------------------|-------------|
| Dashboard | | Devices Settings | | | | | | | | Bulk Update | System Prop | erties - | . Template | Edit Template | + Add Ten |
| Devices | ^ | | | | | | | | | | | | | | |
| Switches | ^ | | | | | | | Dev | vices Settir | ngs | | | | | |
| Peripherals | | ₹ L | 9 On-Line Devi | ces | C | 12 | | , | 0 Active Connections | | 0 1 | 2 | 1 Device | | Ø |
| | | | | Video S | Settings | | | | | | | Misc Set | tings | | |
| Connections | ^ | | | | | | | Shov | ving 1 to 14 Results | out of 14 | | | | | |
| | ~ | Device Name 🗸 | Zone | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receive | r EDID Setttings | DVI 2 Cloned Rece | ver Options |
| | | EMD2002PE-T | • | Unique | 10.8.1.70 | EMD2002PE-T | OffLine | Configured | Default | | 1920×1080 | | 1920x1080 | | • |
| | ^ | DTX5000_Bridge | | Unique | 10.8.60.90 | EMD200DV-T | OnLine | Configured | Default | Off | 1920×1080 | | | | • |
| | | EMD4K TX with USB 2.0 Icron Un | it i | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | Clone | | | | • |
| System | ^ | EMDSE TX | | Unique | 10.8.60.48 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920×1080 | | | | • |
| | | ZeroU-2PC-VID2 | | Unique | 10.8.60.91 | EMD200DV-T | OffLine | Configured | Default | Off | 1920×1080 | | | | • |
| | ^ | ZeroU-1PC-VID1 | | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | • |
| | | ZeroU-1PC-VID2 | | Unique | 10.8.60.93 | EMD200DV-T | OnLine | Configured | Default | DVI Optimised | 1920×1080 | | | | • |
| Cluster | | EMDSE DKM BRIDGE | | Unique | 10.8.1.31 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920×1080 | | | | • |
| Discovery | | EMDSE RX | | System | 10.8.60.71 | EMD2000SE-R | OnLine | Failed | Default | Off | 1920×1080 | | | | • |
| Discovery | | EMD4K RX2 with USB 2.0 Icron | | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | ٠ |
| Alerts | ~ | EMD4K RX1 with USB 2.0 Icron | | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | • |
| | | EMDSE DH RX | | Unique | 10.8.60.123 | EMD2002SE-R | OnLine | Configured | | | | | | | • |
| | | EMDSE RX1 (46) | | Unique | 192.168.1.21 | EMD2000SE-R | OffLine | Configured | | | | | | | • |
| | | EMDSE RX | | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Failed | | | | | | | • |

FIGURE 7-1. DEVICES SETTINGS SCREEN

Click on Video Settings in the middle of this screen to see the Device Name, Configuration, IP Address, Model, State, Status, Video Quality, Video Source Opt, EDID Settings DVI 1, Cloned Receiver, EDID Settings DVI 2, Cloned Receiver and Options for each TX or RX unit.

Click on Misc Settings in the middle of this screen to see the Device Name, Configuration, IP Address, Model, State, Status, HID Configuration, Shared Mouse Timer, Power Mode, HTTP Enabled and Options settings for each TX or RX unit. NOTES:

a) It's not possible to configure the TX settings of an Emerald 4K TX device.

b) A user can configure the HTTP_Enable attribute for Emerald RX devices, but it is not possible to configure the Power Mode setting for Emerald RX devices.

7.1 DEVICES-SETTINGS

You now have the option to configure unique, template or system-wide settings. Here you can:

- Create/edit/delete device templates
- Edit system properties
- Edit individual device settings
- Apply bulk updates to appliances





The configuration of RX and TX settings is managed via an internal workflow reflected in the Status field in the Device Settings screen. Valid values include: Waiting, Configuring, Configured, Failed, Retrieving, Failed_Retrieve and Idle.

Idle – State is pretty much unnoticeable. The appliance gets this state right after it is being managed. Then, after an XML file is pushed to the appliance (as part of the managing process), it changes the state to Retrieving.

Once retrieve is successful, state changes to Configured. Otherwise, it changes to Failed_Retrieve.

When a device is managed, the workflow for the Status field is Retrieving, Configured.

The Configuration field is set to Unique.

You can change the settings of an individual device (to Unique, Template or System) via the Edit Settings option. The workflow for the Status field here is: Waiting, Configuring, Configured | Failed.

If you Edit a Template, the updated template is applied to all devices that use that Template. The workflow for the Status field here is: Waiting, Configuration, Configuring | Failed.

If you Edit the System Properties, the update System Property is applied to all devices that use the System Property. The workflow for the Status field here is: Waiting, Configuring, Configured | Failed.

You can also apply Bulk updates to devices, e.g., you can apply a Template or System Properties to one or more devices at the same time.

NOTE: Updates to Transmitter devices result in the device rebooting.

7.1.1 CREATE/EDIT/DELETE DEVICE TEMPLATES

To create a new device template, click on the blue +Add Template button at the top right of the Devices Settings screen. The Create New Appliance Template screen pops up.

| | | | Create Nr | ew Applianc | e Template | | | × | | | | |
|--------------------|----------------|------------|--------------|-------------|------------|-------------------------|---|---------------------|------------------|--------------------|--------------------|----------|
| Devices Settings | | | | Appliance 1 | Type Sele | ect Type | | - | | | | |
| | | | | Template N | ame | / Template | | | | | | |
| | | | | | | | Clo | se Save | | | | |
| 2 | 8 On-Line D | | (| 9 | 12 | Ad | 4 ive Connections | Ø | 12 | | 17 ice Alerts | Ø |
| | | Vic | deo Settings | | | | | | | | | |
| | | | | | | | _ | | | | | |
| Device Name | Configuration | IP Address | Model | State | Status | Showin Video Quality | g 1 to 12 Results out of 12 Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Setttings DVI | 2 Cloned Receiver | Options |
| ZeroU-2PC-VID1 | Unique | 10.8.60.90 | EMD200DW-T | OnLine | Configured | Default | Off | 1920x1050 | Clothed Receiver | - | 2 Clothed Receiver | () |
| ZeroU-1PC-VID1 | Unique | | | OffLine | Configured | Default | DVI Optimised | 1920x1080 | | | | |
| ZeroU-1PC-VID2 | Unique | 10.8.60.93 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920x1080 | | | | |
| EMD4K TX | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | | | | | |
| TX | Unique | 10.8.1.31 | EMD20005E-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| ZeroU-2PC-VID2 | Unique | 10.8.60.91 | EMD200DV-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| EMD2002SE-R RK1 | Unique | 10.8.60.81 | EMD20025E-R | OffLine | Configured | | | | | | | |
| SE-RX2 | Unique | 10.8.60.71 | EMD20005E-R | OnLine | Configured | | | | | | | |
| EMD2002SE-R RK2 | Unique | 10.8.60.82 | EMD20025E-R | OffLine | Configured | | | | | | | |
| EMDSE TX | Unique | 10.8.60.70 | EMD20005E-R | OnLine | Configured | | | | | | | |
| Emerald4K 2 | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| EMD4K RX | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | |
| | | | | | | | | | | | ≪ < 1 | of 1 > » |



The Create New Device Templates screen fields are described next.

- Appliance Type: Choose Transmitter or Receiver.
- Template Name: Type in a unique name for the template.
- Video Quality: Select from these options: Best Quality, 2, Default, 4, or Best Compression.





- Video Source Opt: Select from Off, DVI Optimized, VGA High-Performance, VGA Optimized, VGA Low Bandwidth (only applied in case of a single-head transmitter).
- HID Configuration: Select from Default, Basic, MAC, Absolute, or Absolute MAC. The Absolute Mouse feature can be used to enable interoperability with KM switches with built-in "Glide & Switch" capability such as ServSwitchTC and Freedom. If the target systems are MAC OS, you can use the Absolute MAC setting for best user experience.

| | | | | Edit Appl | iance Settin | gs | | | × | | | | h 🕫 🕹 🕹 |
|--------------------------|-----------------------------------|---------------|------------|----------------------------|------------------------------|--------------------------|----------------------|----------------------|------------------------|-----------------------|--------------------|-------------------|----------------|
| Dashboard | Devices Settings | | | | Setting 1 | Type Uni | que | | • | System Properties | - Template | Edit Template | + Add Template |
| Devices ^ | | | | | Video Qu | ality Def | ault | | • | | | | |
| Switches 🔨 | | | | | Video Source HD Configura | | olute | | • | _ | _ | _ | |
| Peripherals | Ig. | 8 | | | leyboard Time | Det | ault | | | | | 17 | |
| Zones | -1 | On-Line (| | | DID Settings E | WI 1 MA | c | | | | | ice Alerts | Ű |
| 🗢 Connections 🔨 | | | Vide | to Se | | | iolute iolute MAC | Clo | se Save | | | | |
| · Users · · | Device Name 🤟 | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings | DVI 1 Cloned Receiver | EDID Setttings DVI | 2 Cloned Receiver | |
| DKM 🔨 | ZeroU-2PC-VID1 ZeroU-1PC-VID1 | Unique | 10.8.60.90 | EMD200DV-T EMD200DV-T | OnLine | Configured Configured | Default | Off DVI Optimised | 1920x1080 1920x1080 | | | | |
| 🔆 System 🔨 | ZeroU-1PC-VID2 EMD4K TX | Unique | 10.8.60.93 | EMD200DV-T EMD4000T | OffLine | Configured Configured | Default | DVI Optimised | 1920x1080 | | | | |
| | TX | Unique | 10.8.1.31 | EMD20005E-T | OnLine | Configured | Default | off | 1920x1080 | | | | |
| Q _€ License ∧ | ZeroU-2PC-VID2 EMD2002SE-R RX1 | Unique | 10.8.60.91 | EMD200DV-T EMD20025E-R | OnLine | Configured Configured | Default | он | 1920x1080 | | | | |
| 🛞 Cluster | SE-RO2 | Unique | 10.8.60.71 | EMD20005E-R | OnLine | Configured | | | | | | | |
| ៉ូថ្កុំ Discovery | EMD2002SE-R RK2 EMDSE TX | Unique | 10.8.60.82 | EMD20025E-R EMD20005E-R | OffLine | Configured Configured | | | | | | | |
| 🛕 Alerts 🔷 | Emerald4K 2 EMD4K RX | Unique | 10.8.1.62 | EMD4000R EMD4000R | OnLine | Configured Configured | | | | | | | |
| | | | | | | | | | | | | ≪ < 1 | of 1 > >> |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 7-3. TEMPLATE SETTINGS SCREEN

- Mouse Keyboard Timeout: Choose an option from 0 to 5 seconds.
- EDID Settings DVI 1: Choose from 1920 x 1080, 1920 x 1200, 1680 x 1050, 1280 x 1024, or 1024 x 768.
- EDID Settings DVI 2: Choose from 1920 x 1080, 1920 x 1200, 1680 x 1050, 1280 x 1024, or 1024 x 768.

To save the settings, click the Save button. Otherwise, click the Cancel button.

To edit a device template, click on the blue Edit Template button at the top of the Devices -> Settings screen. The Edit Appliance Template screen pops up. Select the desired template from the drop-down menu, then select the desired options for the Template Name, Video Quality, Video Source Opt, HID Configuration, Mouse Keyboard Timeout, EDID Settings DVI 1 and EDID Settings DVI 2 settings. Click the Save button to save your changes, or click the Cancel button to cancel the settings.

NOTE: The EDID of the remote display can also be copied instead of using the built-in resolutions. This can be done from the receiver menu by connecting to the transmitter and cloning the EDID.







| | | | Edit Appli | iance Templ | late | | | × | | | | |
|--------------------|----------------|------------|-------------|----------------------|------------|---------------|-----------------------------|---------------------|-----------------|----------------------|-----------------|----------|
| Devices Settings | | | | Temp | plate Sei | ect template | | ▼ Sys | | – Template | | |
| | | | | | | | | | | | | |
| | | | | | | | Cla | se Save | | | | |
| | | | | | _ | Devi | tes Settings | _ | | | | |
| 52 | 8 On-Line D | | (| ⊘ 4 Active Connec | | | 4 Ave Connections | Ø | 12 | Devic | ø | |
| - | | a di di | eo Settings | | | | | | | | | |
| _ | | VID | eo seccings | | | | | | | | | |
| | | | | | | | g 1 to 12 Results out of 12 | | | | | |
| Device Name 呈 | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Setttings DVI 2 | Cloned Receiver | Options |
| ZeroU-2PC-VID1 | Unique | 10.8.60.90 | EMD200DV-T | OnLine | Configured | Default | Off | 1920x1080 | | | | 0 |
| ZeroU-1PC-VID1 | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| ZeroU-1PC-VID2 | Unique | 10.8.60.93 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920x1080 | | | | |
| EMD4K TX | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | | | | | |
| TX | Unique | 10.8.1.31 | EMD20005E-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| ZeroU-2PC-VID2 | Unique | 10.8.60.91 | EMD200DV-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| EMD2002SE-R RX1 | Unique | 10.8.60.81 | EMD20025E-R | OffLine | Configured | | | | | | | |
| SE-RX2 | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Configured | | | | | | | |
| EMD2002SE-R RX2 | Unique | 10.8.60.82 | EMD20025E-R | OffLine | Configured | | | | | | | |
| EMDSE TX | Unique | 10.8.60.70 | EMD20005E-R | OnLine | Configured | | | | | | | |
| Emerald4K 2 | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| EMD4K RX | Unique | 10.8.1.61 | EMD-4000R | OnLine | Configured | | | | | | | |
| | | | | | | | | | | | | of 1 > > |

FIGURE 7-4. EDIT TEMPLATE SCREEN

To delete a device template, click on the red -Template button at the top of the Devices -> Settings screen. The Delete Appliance Template screen pops up. Select the template you want to delete from the drop-down menu, then click the Delete button to delete the template, or click the Cancel button to cancel the deletion.

NOTE: You can only delete a template that is currently not in use.

| | Devices Settings | | | | Tem | plate Sele | ct template | | • Sys | tem Properties | - Template | Edit Template | + Add Ten | |
|-----|--------------------|----------------|------------|--------------|---------|------------|---------------|-----------------------------|---------------------|-----------------|----------------------|-----------------|-----------|--|
| ~ | | | | | | | | | _ | | | | | |
| ~ | | | | | | | Devi | close | Delete | | | | | |
| | 12 | 8 On-Line D | evices. | (| ગ ગ | <u>1</u> | Ac | 4 Ive Connections | 0 | | | | | |
| | | | | leo Settings | | | | | | | | | | |
| | | | vic | ieo seccings | | | | _ | | | | | | |
| | | | | | | | Showle | g 1 to 12 Results out of 12 | | | | | | |
| ~ | Device Name 🤟 | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Setttings DVI 2 | Cloned Receiver | Options | |
| | ZeroU-2PC-VID1 | Unique | 10.8.60.90 | EMD200DV/T | OnLine | Configured | Default | Off | 1920x1080 | | | | | |
| ~ | ZeroU-1PC-VID1 | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | | |
| | ZeroU-1PC-VID2 | Unique | 10.8.60.93 | EMD200DV/T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | | |
| ~ | EMD4K TX | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | | | | | | |
| | тх | Unique | 10.8.1.31 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920x1080 | | | | | |
| × 1 | ZeroU-2PC-VID2 | Unique | 10.8.60.91 | EMD200DV-T | OnLine | Configured | Default | CH | 1920×1030 | | | | | |
| | EMD2002SE-R RX1 | Unique | 10.8.60.81 | EMD20025E-R | OffLine | Configured | | | | | | | | |
| | SE-RX2 | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Configured | | | | | | | | |
| | EMD2002SE-R RX2 | Unique | 10.8.60.82 | EMD20025E-R | OffLine | Configured | | | | | | | | |
| | EMDSE TX | Unique | 10.8.60.70 | EMD2000SE-R | OnLine | Configured | | | | | | | | |
| | Emerald4K2 | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | | |
| | EMD4K RX | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | | |
| | | | | | | | | | | | | « < 1 | of 1 > >> | |

FIGURE 7-5. DELETE TEMPLATE SCREEN



7.1.2 EDIT SYSTEM PROPERTIES

To edit the system properties, click on the blue System Properties button at the top right of the Devices Settings screen. The System Properties Settings screen with editable options pops up. Changes can be saved or canceled.

| | | | | System Pr | roperties Se | ttings | | | × | | | | |
|--|-----------------------------------|---------------|------------|----------------------------|----------------|------------|---------|---------------|-----------|--------------------|-------------------|------------------|-----------|
| | Devices Settings | | | | Video Qua | ality De | fault | | · · · | | | | |
| | | | | | Video Source | Opt Of | r | | • | | | | |
| | _ | | | | IID Configura | tion De | fault | | | | | | |
| | | | | Mouse K | eyboard Time | eout 1 | | | | | | | |
| | | - | | | DID Settings D | | 20x1080 | | | | | 17 | |
| | 12 | On-Line I | | | | | | | 0 | <u>1</u> | De | vice Alerts | \odot |
| | | | | | DID Settings D | IVI 2 19 | 20x1080 | | | | | | |
| | | | Vid | leo Se | Power M | lode M | anual | | | | | | |
| | | | | | HTTP Enal | bled Di | sabled | | | | | | |
| | Device Name | Configuration | IP Address | Mo | | | | | es DV | 11 Cloned Receiver | EDID Setttings DV | 2 Cloned Receive | r Options |
| | ZeroU-2PC-VID1 | Unique | 10.8.60.90 | EM | | | | Cle | | | | · · · · · · · | 0 |
| | ZeroU-1PC-VID1 | Unique | 10.8.60.92 | EM | _ | | _ | | | | | | |
| | ZeroU-1PC-VID2 | Unique | 10.8.60.93 | EMD200DV/T | OffLine | Configured | Default | DVI Optimised | 1920x1080 | | | | |
| | EMD4K TX | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | | | | | |
| | TX | Unique | 10.8.1.31 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| | ZeroU-2PC-VID2 EMD2002SE-R RX1 | Unique | 10.8.60.91 | EMD200DV-T | OnLine | Configured | | Off | 1920x1080 | | | | |
| | | Unique | | EMD20025E-R EMD20005E-R | OffLine | Configured | | | | | | | |
| | | Unique | | EMD20025E-R | OffLine | Configured | | | | | | | |
| | EMDSE TX | Unique | 10.8.60.70 | EMD20005E-R | OnLine | Configured | | | | | | | |
| | Emerald4K 2 | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| | EMD4K RX | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | |
| | | | | | | | | | | | | « < 1 | of 1 > >> |

FIGURE 7-6. EDIT SYSTEM PROPERTIES SCREEN

- Video Quality: Select from these options: Best Quality, 2, Default, 4, or Best Compression.
- Video Source Opt: Select from Off, DVI Optimized, VGA High-Performance, VGA Optimized, VGA Low Bandwidth (only applied in the case of a single-head transmitter).
- + HID Configuration: Select from Default, Basic, MAC, Absolute, or Absolute MAC.





Absolute mouse:

This feature can be used to enable interoperability with KM switches with built-in "Glide & Switch" capability such as ServSwitchTC and Freedom. For normal usage, where mouse is directly connected to Receiver, then the Default or Basic options should be used. If the target computers are MAC OS, you can use the Absolute MAC HID configuration for the best user experience. OSD option:

| = 🛞 | BOXI | | | | Edit Appliance S | ettings | | | | × | | | | h 🗇 - 1 |
|-----|------|---------------------------|----------------------|------------|------------------|------------|------------------|---------------|------------------|---------------------|----------------|--------------------|---------------------|-----------|
| | | Devices Settings | | | Se | tting Type | Unique | | | • Sys | | | | |
| | | | | | Vide | eo Quality | Default | | | • | | | | |
| | | | | | Video S | ource Opt | Off | | | • | | | | _ |
| | | | _ | | | figuration | Besic Default | | | - | _ | | | |
| | | <u>12</u> | 7 On-Line Devices | | Mouse Keyboan | d Timeout | Basic | | | ⊘ | 12 | | 20 ice Alerts | Ø |
| | | | | Video Se | EDID Self | ings ovi 1 | MAC Absolute | | | | | | | |
| | | _ | | | | | Absolute I | MAC | Close | Save | | | | |
| | | Device Name 👾 | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receive | r EDID Setttings D | /I 2 Cloned Receive | r Options |
| | | ZeroU-1PC-VID1 | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | OVI Optimised | 1920×1080 | | | | |
| | | ZeroU-2PC-V/D1 | Unique | 10.8.60.90 | EMD200DV/T | OffLine | Configured | Default | Off | 1920x1080 | | | | |
| | | EMD4K TX | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | | | | | |
| | | ZeroU-2PC-VID2 | Unique | 10.8.60.91 | EMD200DV-T | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | | ZeroU-1PC-VID2 | Unique | 10.8.60.93 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| | | EmeraldSE Transmitter USB | Unique | 10.8.1.31 | | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | | EMD2002SE-R RX2 | Unique | 10.8.60.82 | EMD2002SE/R | OffLine | Configured | | | | | | | |
| | | Emerald4K2 | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| | | EMDSE RX2 (47) | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Configured | | | | | | | |
| | | EMD4K RX with USB 2.0 | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | |
| | | EMDSE RK1 (46) | Unique | 10.8.60.70 | EMD20005E-R | OnLine | Configured | | | | | | | |
| | | | Unique | | EMD2002SE-R | OffLine | Configured | | | | | | | |

FIGURE 7-7. ABSOLUTE MOUSE SCREEN

- Mouse Keyboard Timeout: Choose an option from 0 to 5 seconds.
- EDID Settings DVI 1: Choose from 1920 x 1080, 1920 x 1200, 1680 x 1050, 1280 x 1024, or 1024 x 768.
- EDID Settings DVI 2: Choose from 1920 x 1080, 1920 x 1200, 1680 x 1050, 1280 x 1024, or 1024 x 768.
- Power Mode: Choose Manual or Auto.
- HTTP Enabled: Choose Enabled or Disabled.

To save the settings, click the Save button. Otherwise, click the Cancel button.



7.1.3 EDIT INDIVIDUAL DEVICE SETTINGS

To edit the individual device settings, click on the Video Settings or Misc Settings in the middle of the Devices —> Network Settings screen. Then click on the Device Name that you want to edit. Select each of the settings you want to change from the drop-down boxes. Options include Setting Type, Video Quality, Video Source, HID Configuration, Mouse Keyboard Timeout, EDID Settings DVI 1 and EDID Settings DVI 2. Click Save, or click Cancel to cancel the changes without saving.

| | Devices Settings | | | | | | | | | | | Margaret and | | |
|--|----------------------------------|------------------|---------------|--------------|-------------------|---------|------------|---------------|------------------|---------------------|-----------------|---------------|--------------------|-------------|
| | Devices Settings | | | | Setting Type | Uniqu | ie . | | * | System Pro | perties - | Template | | |
| | | | | | Video Quality | Defau | it: | | ¥ | | | | | |
| | | | | × | rideo Source Opt | Off | | | v | | | | | |
| | | | | н | ID Configuration | Besic | | | ~ | | | | | |
| | | | _ | | | | | | | | | | | |
| | <u>1</u> | 8 Dn-Line Dev | tes | Mouse Ke | ryboard Timeout | 1 | | | × | 0 | Ł | | 1 3 e Alerts | \odot |
| | | | | ED | ID Settings DVI 1 | 1920 | 1080 | | Ŷ | | | | | |
| | | | Video S | e | | | | | | | | | | |
| | | | | | | | | | Close Save | | | | | |
| | | | | | | _ | | _ | | | | | | |
| | Device Name 🗟 | Zone | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Settting | DVI 2 Cloned Recei | ver Options |
| | EMD2002PE-T | | Unique | 10.8.1.70 | EMD2002PE-T | OffLine | Configured | Default | | 1920x1080 | | 1920x1080 | | |
| | DTX5000_Bridge | | Unique | 10.8.60.90 | EMD200DV-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| | EMD4K TX with USB 2.0 Icron Unit | | Unique | 10.8.1.60 | EMD4000T | | Configured | | | Clone | | | | |
| | EMDSE TX | | Unique | 10.8.60.48 | EMD20005E-T | OnLine | Configured | Default | Off | 1920x1080 | | | | |
| | ZeroU-2PC-VID2 | | Unique | 10.8.60.91 | EMD200DV-T | OffLine | Configured | Default | Off | 1920x1080 | | | | |
| | ZeroU-1PC-VID1 | | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| | ZeroU-1PC-VID2 | | Unique | 10.8.60.93 | EMD200DV-T | OnLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| | EMDSE DKM BRIDGE | | Unique | 10.8.1.31 | EMD2000SE-T | OnLine | Configured | Default | он | 1920×1080 | | | | |
| | EMDSE RK | | System | 10.8.60.71 | EMD2000SE-R | OnLine | Failed | Default | Off | 1920×1080 | | | | |
| | EMD4K RX2 with USB 2.0 lcron | | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | |
| | EMD4K RX1 with USB 2.0 leron | | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| | EMDSE RX1 (46) | | Unique | 192.168.1.21 | EMD2000SE-R | OffLine | Configured | | | | | | | |
| | EMDSE RK | | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Falled | | | | | | | |
| | | | | | | | | | | | | | « < 1 | of 1 > >> |

FIGURE 7-8. EDIT INDIVIDUAL DEVICE SETTINGS SCREEN

An individual device can have various operations performed on it by clicking on the "•••" icon on the row for the device as shown in Figure 7-9. These are:

- Details—get summary details on the device, including its Network configuration, Operational Status, Firmware Version and Serial Number
- Ping-tests the reachability of the device on the network
- Edit Settings—Edit device settings
- Retrieve—Retrieve device settings
- Force Logout-logs out the current user attached to this unit (if any)
- UnManage- removes the device from the managed domain and restores the device back to factory defaults
- Change Device Name allows the network settings to be changed
- Change Device Zone allows the Zone setting to be changed or removed from this unit.
- Reboot-power cycles the device



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| | | | | | | | | | | | | | | | ه ا |
|----------|---|----------------------------------|-----------------|---------------|--------------|-------------|---------|------------|-------------------------|------------------|---------------------|-----------------|--------------------|-----------------|-----------|
| hboard | | Devices Settings | | | | | | | | Bulk Update | System Prop | erties – | Template E | dit Template | + Add Ten |
| vices | ^ | | | | | | | | | | | | | | |
| itches | ^ | | | | | | | Dev | ices Setti | ngs | | | | | |
| ipherals | | Se On | 9 -Line Devi | ces | Ø | 1 | | , | 0 Active Connections | | © 1 | L | 18 Device Ale | rts | Ø |
| ies | | | | Video | Settings | | | | | | | Misc Settir | ıgs | | |
| nections | ^ | | | | | | | Shov | ving 1 to 14 Result | s out of 14 | | | | | |
| | ~ | Device Name 🗸 | Zone | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Setttings DVI | 2 Cloned Receiv | r Options |
| | | EMD2002PE-T | • | Unique | 10.8.1.70 | EMD2002PE-T | OffLine | Configured | Default | | 1920×1080 | • | 1920×1080 | | • |
| | ~ | DTX5000_Bridge | | Unique | 10.8.60.90 | EMD200DV-T | OnLine | Configured | Default | Off | 1920×1080 | | | | • |
| | | EMD4K TX with USB 2.0 Icron Unit | | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | Clone | | | | • |
| em | ^ | EMDSE TX | | Unique | 10.8.60.48 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920×1080 | | | | • |
| | | ZeroU-2PC-VID2 | | Unique | 10.8.60.91 | EMD200DV-T | OffLine | Configured | Default | Off | 1920×1080 | | | | • |
| | ^ | ZeroU-1PC-VID1 | | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | • |
| | | ZeroU-1PC-VID2 | | Unique | 10.8.60.93 | EMD200DV-T | OnLine | Configured | Default | DVI Optimised | 1920×1080 | + | | - | • |
| ter | | EMDSE DKM BRIDGE | - | Unique | 10.8.1.31 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920×1080 | | | - | • |
| overy | | EMDSE RX | - | System | 10.8.60.71 | EMD2000SE-R | OnLine | Failed | Default | Off | 1920×1080 | ÷ | | | • |
| overy | | EMD4K RX2 with USB 2.0 lcron | - | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | • |
| ts | ~ | EMD4K RX1 with USB 2.0 lcron | | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | • |
| | | EMDSE DH RX | | Unique | 10.8.60.123 | EMD2002SE-R | OnLine | Configured | | | | | | | • |
| | | EMDSE RX1 (46) | | Unique | 192.168.1.21 | EMD2000SE-R | OffLine | Configured | | | | | | | • |
| | | EMDSE RX | | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Failed | | | | | | | • |

FIGURE 7-9. DEVICE OPTIONS





7.1.4 APPLY BULK UPDATE SETTINGS

To update the individual device settings all at once, click on the Bulk Update button in the middle of the Devices -> Settings screen. From the drop-down menu, select the appliance type: Transmitter or Receiver. Click the Save button to apply the updates to all Transmitters or all Receivers, or click cancel to Cancel without saving.

| | | | | Bulk Opd | ate Settings | | | | × | | | | |
|--|--------------------|---------------|------------|--------------|--------------|------------|--------------------|------------------------------|---------------------|-----------------|--------------------|-------------------|----------|
| | Devices Settings | | | | Appliance | | ect Appliance Type | | • | | | | |
| | | | | | | | ect Appliance Type | | | | | | |
| | | | | | | | eiver | | | | | | |
| | | | | | | | Devi | ces Settings | | | | | |
| | <u>1</u> | 8 | | | | <u>1</u> | | 4 | | 4 | | 17 | |
| | - | On-Line E |)evices | | | - | Ac | tive Connections | | - | Dev | ice Alerts | |
| | | | Vid | leo Settings | | | | | | | | | |
| | | | | | | | | _ | | | | | |
| | | | | | | | Showin | ng 1 to 12 Results out of 12 | | | | | |
| | Device Name 😞 | Configuration | IP Address | Model | State | Status | Video Quality | Video Source Opt | EDID Settings DVI 1 | Cloned Receiver | EDID Setttings DVI | 2 Cloned Receiver | Options |
| | ZeroU-2PC-VID1 | Unique | 10.8.60.90 | EMD200DV-T | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | ZeroU-1PC-VID1 | Unique | 10.8.60.92 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| | ZeroU-1PC-VID2 | Unique | 10.8.60.93 | EMD200DV-T | OffLine | Configured | Default | DVI Optimised | 1920×1080 | | | | |
| | EMD4K TX | Unique | 10.8.1.60 | EMD4000T | OnLine | Configured | | | | | | | |
| | тх | Unique | 10.8.1.31 | EMD2000SE-T | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | ZeroU-2PC-VID2 | Unique | 10.8.60.91 | EMD200DV-T | OnLine | Configured | Default | Off | 1920×1080 | | | | |
| | EMD2002SE-R RX1 | Unique | 10.8.60.81 | EMD2002SE-R | OffLine | Configured | | | | | | | |
| | SE-RX2 | Unique | 10.8.60.71 | EMD2000SE-R | OnLine | Configured | | | | | | | |
| | EMD2002SE-R RX2 | Unique | 10.8.60.82 | EMD2002SE-R | OffLine | Configured | | | | | | | |
| | EMDSE TX | Unique | 10.8.60.70 | EMD2000SE-R | OnLine | Configured | | | | | | | |
| | Emerald4K 2 | Unique | 10.8.1.62 | EMD4000R | OnLine | Configured | | | | | | | |
| | EMD4K RX | Unique | 10.8.1.61 | EMD4000R | OnLine | Configured | | | | | | | |
| | | | | | | | | | | | | « < <u>1</u> | of 1 > » |

FIGURE 7-10. BULK UPDATE SETTINGS SCREEN





7.2 DEVICES-UPGRADE

Boxilla centrally upgrades devices that are part of its managed domain. The administrator performs this via the Devices– Upgrade page shown in Figure 7-11.

7.2.1 DEVICES-UPGRADE-RELEASES

The Releases tab shows the list of available versions of firmware that can be used to upgrade devices. The administration selects the firmware to be used for upgrades. To select a specific firmware release, click the "Activate" button for the specific version of firmware from the Release options ("•••" icon). For Emerald or InvisaPC, this needs to be done for both Receivers (DTX-R, EMD4K-R, or EMDSE-R) and Transmitters (DTX-T, EMD4K-T, EMDSE-T, or EMDDV-T).

| | \bigotimes | | LLA NAGER | ď | | | | | | | | | | | | | | h (| 9 ~ |
|-------------|--------------|---|--------------|-----------|-------|---------|-----------|-------------|---------|------------|---------|--------------|--------------|--------------|---------|-------------|---------|-----------|-----|
| 🏤 Da | ashboard | | Device | es Upgr | rades | | | | | | | | | | | | | | |
| E De | evices | ^ | | | | | | | | | | | | | | | | | |
| 💻 Sv | witches | ^ | | | | | | | | | | | | | | Set Timeout | Upgrade | Upload | |
| 🚍 Pe | eripherals | | | | | | | Select Devi | ces | | | | | | Release | S | | | - |
| M Za | ones | | | DTX-R | DTX-T | EMD4K-R | EMD4K-T | EMDSE-R | EMDSE-T | EMDDV-T | EMDPE-R | EMDPE-T | | | | | | | |
| | | | | | | | | | | | | Showing 1 to | 1 of 1 Items | _ | | | | | |
| ∲ Co | onnections | - | | Version ^ | | V5. | 2.1_r6549 | | | Build Date | | 2019-18-06 | | Active Image | Yes | | | • | |
| 嶜 U: | sers | ^ | | | | | | | | | | | | | | | « < 1 | of 1 > >> | |
| 💻 DI | км | ^ | | | | | | | | | | | | | | | | | |
| 🔅 Sy | /stem | ^ | | | | | | | | | | | | | | | | | |
| a, Li | cense | ^ | | | | | | | | | | | | | | | | | |
| 🖧 ci | uster | | | | | | | | | | | | | | | | | | |
| ç, Di | iscovery | | | | | | | | | | | | | | | | | | |
| A AI | erts | ^ | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

FIGURE 7-11. DEVICE UPGRADE PAGE

The Administrator loads a new version of firmware by clicking on the "Upload" button on the page and choosing the file to be uploaded. The upload file can be stored anywhere the client browser can access (on local hard-drive, USB thumb-drive, a network file, etc.). This new firmware version will be added to appropriate Device list (i.e. Receiver or Transmitter list).

To delete a firmware version, the administrator just needs to click on the "delete" option for that release.





7.2.2 DEVICES- UPGRADE-SELECT DEVICES

The administrator needs to select devices to be upgraded to the active firmware versions. The "Select Devices" tab provides a table of all managed devices and allows the administrator to define devices to be upgraded.

The State column shows which devices do not match the active firmware version selected—by showing "Mis-match to Active Firmware Version." Devices with firmware that match the active firmware version selection will show a "No Upgrade Required" state. The "Idle" state refers to devices that have recently been managed, where no version information has been retrieved from the devices for upgrade purposes.

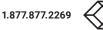
| Devices ^ | | | | | |
|---------------|------------------------------------|--------------|---------------------------|------------------------------|-----------------------------|
| Switches | | | | | Set Timeout Upgrade Upload |
| Switches ^ | Select Devices | | | Relea | 105 |
| Peripherals | Strett Devices | | | | |
| | | | | | |
| Zones | | Sho | owing 1 to 13 of 13 Items | | |
| | Device Name | IP Address | Model | Firmware Version | State |
| Connections ^ | EMD2002PE-T | 10.8.1.70 | EMD2002PE-T | V5.5.3_r7228 | No Upgrade Required |
| | EMD4K RX2 with USB 2.0 Icron | 10.8.1.61 | EMD4000R | V1.4.0_r6644 | No Upgrade Required |
| Users 🔨 | DTX5000_Bridge | 10.8.60.90 | EMD200DV-T | V5.2.9_r6703 | No Upgrade Required |
| | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | EMD4000R | V1.4.0_r6644 | No Upgrade Required |
| DKM ^ | EMD4K TX with USB 2.0 Icron Unit | 10.8.1.60 | EMD4000T | V1.4.0_r6644 | No Upgrade Required |
| | EMDSE DH RX | 10.8.60.123 | EMD2002SE-R | V5.6.0_r7363 | No Upgrade Required |
| | EMDSE RX1 (46) | 192.168.1.21 | EMD2000SE-R | V5.3.1_r5666 | Mis-match to Active Version |
| System ^ | EMDSE TX | 10.8.60.48 | EMD2000SE-T | V5.6.0_r7363 | No Upgrade Required |
| | ZeroU-2PC-VID2 | 10.8.60.91 | EMD200DV-T | V5.2.9_r6703 | No Upgrade Required |
| License ^ | ZeroU-1PC-VID1 | 10.8.60.92 | EMD200DV-T | V5.2.9_r6703 | No Upgrade Required |
| | ZeroU-1PC-VID2 EMDSE DKM BRIDGE | 10.8.60.93 | EMD200DV-T EMD20005E-T | V5.2.9_r6703 V5.6.0_r7363 | No Upgrade Required |
| Cluster | EMDSE RX | 10.8.60.71 | EMD2000SE-R | V5.6.0_r7363 | No Upgrade Required |
| | EMDSERA | 10.0.00.71 | EMD20003ER | 10.0.017303 | <pre></pre> |
| Discovery | | | | | « < 1 of 1 > |

FIGURE 7-12. DEVICE UPGRADE SELECTION

Once the administrator has selected devices to be upgraded (typically all devices that mis-match the active firmware version), the administrator clicks the Upgrade button on the page to initiate the upgrade. All devices can be selected by clicking the tick-box on the top of the column.

The Upgrade button is clicked to initiate the upgrade of all selected devices. Devices that match the "active" firmware version will return "No Upgrade Required" and no upgrade will take place. The rest of the selected devices will be upgraded with various "states" of upgrade being communicated to the administrator during the upgrade process.

NOTE: We recommend that the administrator not move to a different page once starting an upgrade to allow the upgrade process to be monitored. It the administrator does change to a different page, the upgrade will continue in the background. What is mandatory is that Boxilla and devices being upgraded stay powered up.





7.2.3 DEVICES- UPGRADE-TIMEOUT

Set Timeout button provides the option to configure the Upgrade Timeout period for appliances. This option is useful when upgrading appliances over slow network links where the Upgrade Timeout value may need to be extended. The default Upgrade Timeout Value is set to 300 seconds while the maximum configurable value is 1800 seconds.

| | Upgrade Timeout | | | × | |
|---------------|----------------------------------|------------|---------------------------|------------------|-----------------------------|
| es Upgrades | Timeout | 300 | | \$ | |
| | | | Close | Save | |
| | | | | | Set Timeout Upgrade Upload |
| | Select Devices | | | Rele | ases |
| | | St | owing 1 to 14 of 14 items | | |
| | Device Name | IP Address | Model | Firmware Version | State |
| | EMDSE RX1 (46) | 10.8.60.70 | EMD2000SE-R | V5.3.1_r5666 | No Upgrade Required |
| | EMD4K TX with USB 2.0 Icron Unit | 10.8.1.60 | EMD4000T | V1.4.0_r6644 | No Upgrade Required |
| | EMD4K RX2 with USB 2.0 Icron | 10.8.1.61 | EMD4000R | V1.4.0_r6644 | No Upgrade Required |
| | EMDSE RX | 10.8.60.71 | EMD2000SE-R | V5.3.1_r5666 | No Upgrade Required |
| | EMDSE TX | 10.8.1.31 | EMD2000SE-T | V5.3.1_r5666 | No Upgrade Required |
| | ZeroU-2PC-VID2 | 10.8.60.91 | EMD200DV-T | V5.4.0_r6090 | No Upgrade Required |
| | ZeroU-1PC-VID1 | 10.8.60.92 | EMD200DV-T | V5.4.0_r6090 | No Upgrade Required |
| | ZeroU-1PC-VID2 | 10.8.60.93 | EMD200DV-T | V5.4.0_r6090 | No Upgrade Required |
| | EMD2002SE-R RX1 | 10.8.60.81 | EMD2002SE-R | V5.4.0_r6090 | Mis-match to Active Version |
| | DTX5000_Bridge | 10.8.60.90 | EMD200DV-T | V5.4.0_r6090 | No Upgrade Required |
| | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | EMD4000R | V1.4.0_r6644 | No Upgrade Required |
| | EMD2002SE-R RX2 | 10.8.60.82 | EMD2002SE-R | V5.4.0_r6090 | Mis-match to Active Version |
| | | | EMD2002SE-R | V5.2.1_r6549 | Mis-match to Active Version |
| | EMDSE SH RX1 | 10.0.00.49 | | | |

FIGURE 7-13. DEVICE UPGRADE TIMEOUT





7.3 DEVICES-GLOBAL

Boxilla controls global configuration settings for the managed domain. These are settings that apply across all devices in the same way. The administrator changes the parameters to the desired settings and clicks apply to have the changes take effect. This is done on the Devices-Settings page as shown in Figure 7-13. The admin changes the settings and then clicks "Apply." Changes only take effect when "Apply" is clicked. The properties that can be changed are described in the following sections.

The Emerald or InvisaPC devices only pick up the changes to the settings when a user logs in to the device. To ensure global settings are changed on all units at the same time, the Administrator should log out all Users.

| ≡ 🛞 | BOX | | ha i a chuir a | |
|-------------|-----|---|--|--|
| 🚯 Dashboar | d | Devices Global Settings | | |
| Devices | | | | |
| Switches | | | Configuration Settings | |
| Eriphera 💭 | ls | Global Settings | | |
| 🕅 Zones | | System Operation | | |
| 奈 Connectio | | Hot Key Functional Hot Key | PrintScm | |
| 🐮 Users | | RDP Connection Resolution | 1920x1080 V | |
| 💼 ОКМ | | Timers Connection Inactivity Timer | Click to Enable | |
| 🔅 System | | | | |
| ۹، License | | OSD Inactivity Timer | Click to Enable | |
| 🗞 Cluster | | RDP Connection Broker Details Broker Connection Type | None | |
| . Discovery | | Web Access Address Connection Broker Name/IP | | |
| Alerts | | Domain | | |
| | | Load Balance Info | | |
| | | | | |

FIGURE 7-14. DEVICE SETTINGS-CONFIGURATION SETTINGS

7.3.1 HOTKEY

The hotkey is used with the "o" key to terminate the current connection and bring up the OSD on an Emerald or InvisaPC Receiver. The hotkey with "p" key is used to switch to the previous connection without loading the OSD.

The default hotkey is Print-Screen (PrntScrn). The alternatives are shown in the table below.

| SEQUENCE | DESCRIPTION |
|------------------------|---|
| Print Screen (Default) | press Prnt Scrn key |
| Ctrl + Ctrl | press Ctrl key twice within 1 second |
| Alt + Alt | press Alt key twice within 1 second |
| Shift + Shift | press Shift key twice within 1 second |
| Mouse-Left + Right | press mouse left and right buttons at the same time for 2 seconds |
| | |

TABLE 7-1. HOTKEY SEQUENCES





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Open OSD: "Hotkey" O Switch to previous target: "Hotkey" P

The "Functional Hot-Key" is used to enable or disable the use of function keys after the hot-key. When the Functional Hot-key is disabled, only the Hot-Key is required to bring up the OSD on an Emerald or InvisaPC Receiver. This means only CTRL-CTRL needed to bring up OSD if CTRL-CTRL selected as hot-key rather than CTRL-CTRL-O when Functional Hot-Key is enabled. It also means the "Hotkey" P, switch to previous target, is no longer is enabled.

The Enable Function key is set by default.

7.3.2 RDP CONNECTION RESOLUTION

This defines the resolution to be requested from the Server when a connection is defined to be to a virtual machine. The actual resolution that the connection actually uses will depend on the Server configuration (see Microsoft documentation).

7.3.3 TIMER SETTINGS

There are two timer settings available. By default they are turned off. The Administrator clicks enable to turn them on and set the timer value required. The two timer settings are:

- 1. OSD Inactivity Timer—This sets a limit on how long a user can be logged on to the Emerald or InvisaPC OSD without any keyboard or mouse activity. Once the user reaches the inactivity timer limit, the user will be logged out of the OSD.
- 2. Connection Inactivity Timer—This sets a limit on how long a user can be connected to a source (Transmitter) without any keyboard or mouse activity. Once the session reaches the inactivity timer limit, the user will be logged out of the connection and return to the OSD on Emerald or InvisaPC.

NOTE: Inactivity occurs when the mouse or keyboard is not pressed or moved for a set period of time.

7.3.4 RDP BROKER SETTINGS

There are two types of Broker types—Connection Broker Server and Web Access Server. The default is none, which means the system uses a connection broker. The Broker type is used to validate the User Credentials (username and password) and determine where the user will be connected to.

The Connection Broker type causes the User Credentials to be sent to the specified Connection Broker. If accepted, then the broker will return the IP address of a local VM from the pool, and this is the IP address used for a connection from the Emerald or InvisaPC Receiver.

NOTE: We currently do not cater for hostnames, so use the IP of the connection broker server.

When "Connection Broker Server" type is selected, the following settings should be set by the Administrator:

1. Enter in the domain name as defined on the local network.

2. Enter in your load balance address as defined in the local server configured, e.g. tsv://VMResource.1.Win7Pool.

The "Web Access Server" setting is used to allow access to a local copy of Active Domain server. If this setting is configured correctly, then if a user who is not configured in the local database attempts to login, the device will redirect the username and password to the local active directory installation and validate the user credentials.



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If the user is validated, the Active Directory Server will return a valid VM pool-name to the device. The device sends this pool-name information to the Connection Broker which then allocates a Virtual Machine to the User provided a VM is available.

The following settings need to be set when "Web Access Server" is selected as Broker Connection Type:

1. The Web Access Address should be the login page of the local RD Web Access Server using its IP address, e.g. https://192.168.10.7/RDWeb/Pages/en-US/login.aspx.

NOTE: We currently do not cater for hostnames in the web address, so please use the IP of the Web Access server. You must place the full address in the login page of the RD Web Access server (https://*********.apsx).

- 2. Enter the local Connection Broker IP address.
- 3. Enter the local domain name.

On the Emerald or InvisaPC Receiver, when the user attempts to log in, the login will now take the following steps in this order:

- 1. The login credentials are checked to see if the user is configured locally on the Receiver. If the user exists, they will be logged in as normal. If not, then step two will occur. If Broker Connection Type is set to "None," the Emerald or InvisaPC Receiver at login will only attempt to authenticate the user locally. This is the default setting.
- 2. If the Broker Connection Type is set to "Web Access Server," the Receiver will attempt to launch a connection to an RD Web Access server. This will allow the user to be Authenticated against the Domain Controller (Active Directory), allowing the user to access Virtual Desktop Pools and Personal Virtual desktops.

7.4 DEVICES-STATISTICS

The Device Statistics page provides an overview of the operation of the managed domain as shown in Figure 7-14. It provides an overview of the device on-line and off-line (not contactable). Then a table of devices is displayed showing what user is logged in to what device, when they logged in and how long they were logged in.

| | | | | | | | | | | b |
|---------------|-------------------------------------|---------------------|-------------|--------------|---------------------|------------------------------|-------------------------------|---------------------|-----------------------------|------------|
| Dashboard | Devices Statistics | | | | | | | | | |
| Devices 🔨 | | | | | | | | | | |
| Switches ^ | | | | | Device Sta | tistics | | | | |
| Peripherals | <u>19</u> | 9 | | 12 | 4 | | <u>با</u> | | 18 | |
| Zones | 4 | KVM Devices On-Line | | -1 | KVM Devices O | ff-Line | ° 4 | | KVM Device Alerts | |
| Connections A | | | | | Showing 1 to 13 of | | | | | |
| | Device Name 🔿 | IP Address | Model | Current User | Connected to Device | Time Connection Initiated | Duration Connection Active | Last User Logged-In | Duration Last Connection | Up Time |
| Users ^ | DTX5000_Bridge | 10.8.60.90 | EMD200DV-T | | | | | | 0m | 16d 3h 51m |
| | EMD2002PE-T | 10.8.1.70 | EMD2002PE-T | | | | | | | |
| DKM ^ | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | EMD4000R | admin | • | • | | • | | 16d 3h 52m |
| System ^ | EMD4K RX2 with USB 2.0 Icron | 10.8.1.61 | EMD4000R | admin | • | - | • | | · | 16d 3h 52m |
| | EMD4K TX with USB 2.0 Icron Unit | 10.8.1.60 | EMD4000T | | | | | | | 16d 3h 52m |
| License ^ | EMDSE DH RX | 10.8.60.123 | EMD2002SE-R | garrett | | | | garrett | 3m | 4d 2h 27m |
| | EMDSE DKM BRIDGE | 10.8.1.31 | EMD2000SE-T | | ÷ . | | - | - | 3m | 3d 23h 56m |
| Cluster | EMDSE RX | 10.8.60.71 | EMD2000SE-R | | · · · · | | • | | | 4d 2h 29m |
| | EMDSE RX1 (46) | 192.168.1.21 | EMD2000SE-R | | ÷ | | | | | - |
| | EMDSE TX | 10.8.60.48 | EMD2000SE-T | | • | | • | • | | 4d 2h 28m |
| Discovery | ZeroU-1PC-VID1 | 10.8.60.92 | EMD200DV-T | | • | | | • | | - |
| | ZeroU-1PC-VID2 | 10.8.60.93 | EMD200DV-T | | | - | | • | • | 4d 2h 28m |
| Alerts ^ | ZeroU-2PC-VID2 | 10.8.60.91 | EMD200DV-T | | | | | | | |

FIGURE 7-15. DEVICE STATISTICS

BLACKBOX.COM





8.1 SWITCHES

The "Switches" menu has two subheadings:

- Status
- Upgrades

These all link to individual pages.

The status page initially shows a list of all the Black Box branded switches in the KVM Network. Clicking on a particular switch brings you to a page displaying all the ports of that particular switch. This page also allows you perform certain actions on the switch as detailed below.

Black Box offers the following IP Network Switches:

- 48-Port 1G IP Network Switch (EMS1G-48)
- 12-Port 10G IP Network Switch (EMS10G-12)
- 28-Port 10G IP Network Switch (EMS10G-28)
- 32-Port 100G IP Network Switch (EMS100G-32)

The Upgrades page is similar to the InvisaPC/Emerald Upgrade page. This shows a list of all the Black Box branded switches in the KVM network plus their current firmware version. If there is a mismatch to the activated firmware release, this is flagged. You can also upload a release from this page. NOTE: Uploading a release takes about 15 minutes to reboot.

8.1.1 STATUS PAGE - SWITCH VIEW

The status page when clicked shows a list of the active switches in the KVM network. This has three summary info cards on the top of the screen that detail the number of switches currently online managed by Boxilla, how many ports have a cable connected and are active, and how many alerts are across the whole Boxilla system relating to switches. In the table, we display the Switch Name, Switch Status, Model, IP Address, how many ports online per switch, whether or not Shared Mode is enabled, the bandwidth in and out figures/graph, the number of alerts on that switch and an option menu. The switch names will be hyperlinks that take you to another page where you get a drill-down of the ports on that switch.

| ≡ ⊗ | BOXIL | LA C | | | | | | | | h @ |
|-------------|-------|--------------------------------|------------------------|-------------------|----------------------------|---|-------------|--------------------------------|---------------------------------|------------|
| 🚯 Dashboard | | Switch Status | | | | | | | | + Add Swit |
| Devices | ^ | | | | | | | | | |
| Switches | ^ | | | | | Switch Sta | tus | | | |
| Peripherals | 8 | | 1 | | ę | 3 | G | • | 6 | 0 |
| 🔰 Zones | | | Switches On-Line | 0 | | Ports Online | | | Alerts | 0 |
| Connection | s A | | | | | | | | | |
| Users | ^ | Switch Name NetworkSwitch01 | Switch Status OnUne | Model EMS10528 | IP Address 192.168.1.26 | Showing 1 to 1 of 1 i Ports Online 3 Online | Shared Mode | Bandwidth In 9100.0 MBI/Sec | Bandwidth Out 9100.0 MBibSec | Alerts |
| DKM | ^ | The struct represented to | Conditie | CH J TOLLO | 192,100,120 | Jonne | DISEDIEU | 1 COMMONDE | | < 1 of 1 > |
| | ^ | | | | | | | | | |
| | ^ | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | ~ | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

FIGURE 8-1. SWITCH STATUS SCREEN





8.1.2 ADDING A SWITCH

There are two ways you can add a switch to be managed. You can automatically discover it by clicking on the Discovery tab in the main menu, or you can click on the + Switch button on the top of the switch status page to add it manually into the Boxilla system.

AUTOMATIC DISCOVERY

Click on the Discovery tab from the main menu. A screen showing the Automatic Discovery tab appears. On this screen an UnManaged switch appears shaded in pink and a managed switch appears in green.

| ~ | | | | | | | | 6 |
|-------------|-----------|--|------------------------------|----------------------------|----------------------------|----------------------|----------------------|----------|
| Dashboard | Discovery | | | | | | | |
| Devices | ^ | | | | | | | |
| Switches | ~ | | | | | | Ping | Discover |
| Peripherals | | | Automatic Discovery | | | Add Manuall | Y. | |
| | Disco | ivery Table | | Showing 1 to | 4 of 4 items | | | |
| | MAC A | ddress 🔿 | IP Address | Netmask | Gateway | Model | State | |
| Connections | ~ | 00:8C:10:1E:CA:42 | 192.168.1.22 | 255.255.255.0 | 192.168.1.1 | DTX10005A-T | ManagedOther | |
| | | 1C:37:8F:00:11:70 1C:37:8F:00:11:AC | 192,168,1.50 192,168,1.51 | 255.255.0.0 255.255.0.0 | 192.168.1.1 192.168.1.1 | EMD4000T EMD4000R | Managed | |
| | ~ | E4:F0:04:9B:72:5C | 192.168.1.51 | 255.255.000 | 0.0.0.0 | EMD4000R EMS10G28 | Managed UnManaged | 0 |
| | ^ | | | | | | Manage | - |
| License | ^ | | | | | | | |
| | | | | | | | | |
| | ^ | | | | | | | |

FIGURE 8-2. AUTOMATIC DISCOVERY TAB

Click on the ellipsis "..." icon and the drop-down menu to Edit or Manage the switch.





If you select Edit, the Edit Device screen appears.

| | XILLA C | h <mark>a</mark> 0- 1- |
|--------------------------|--|---|
| Dashboard | | |
| Devices ^ | Edit | it Switch Network |
| Switches ^ | Current Network Settings | Enter New Network Settings |
| Peripherals | MAC IP Model Status exf0:04:d7:fe:86 10.8.1.125 EMS10528 OffLine | IP Address 10.8.1125 Netmask 255,555.00 |
| 🕅 Zones | | Gateway |
| 🛜 Connections 🛛 🔨 | | Cancel Assir |
| 嶜 Users 🛛 🔨 | | |
| 💼 DKM 🔷 | | |
| 🔅 System 🔨 | | |
| Q _€ License ∧ | | |
| 🗞 Cluster | | |
| ံ့တို့ Discovery | | |
| 🛦 Alerts 🔨 | | |
| | | |
| | | |
| | | |

FIGURE 8-4. EDIT DEVICE SCREEN

Enter the IP address and net mask.

Click on Apply to confirm the changes or Cancel to cancel the changes.

When you click on Apply, a popup box tells you that editing network settings will reboot the device.

NOTE: The switch takes about 5 minutes to reboot.



| = | » • | | ß | | 10.8.1.24 says Changing Switch IP. Are y | rou sure? | | han 🖉 - 🛓 |
|---------------|--------|---|--------------------------|-----------|---|------------------|--------------|------------------|
| 🚯 Dashi | | | | | | | OK Cancel | |
| 🚐 Devic | | ^ | | | | Edit Swite | ch Network | |
| 🛋 Switc | | ^ | Current Network Settings | | | | Enter New N | letwork Settings |
| 👝 Perip | herals | | MAC e4:f0:04:d7:fe:86 | | Model EMS10G28 | Status OnLine | IP Address | 10.8.60.125 |
| | | | | | | | Netmask | 255.255.0.0 |
| 🗎 Zone: | | | | | | | Gateway | |
| 🤿 Conn | | ^ | | | | | Cancel Apply | |
| 쌸 Users | | ^ | | | | | | |
| 📖 ОКМ | | ^ | | | | | | |
| Syste | | ^ | | | | | | |
| a, Licen | | ^ | | | | | | |
| 👶 Clusti | | | | | | | | |
| ့်ငှင့် Disco | | | | | | | | |
| Alerts | | ^ | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | FIGURE 8- | 5. CONFI | RM CHA | NGES (| ON DEVICE |

Manage

If you select Manage, the Manage Device screen appears.

| | ß | 192.168.1.240 says Are you sure you want to manage this device? | h 0. T. |
|-------------------|---|--|---------|
| Dashboard | | OK Cancel | |
| Devices ^ | | Manage Device | |
| Switches | MAC 64:F0:04:98:72:5C | | |
| m Peripherals | IP Address 192.168.1.26 Model EM510G28 | | |
| 🕅 Zones | Managed Name NetworkGwitch01 | | |
| 🛜 Connections 🛛 🔨 | Cancel Apply | | |
| 🔮 Users 🛛 🔿 | | | |
| 💼 DKM 🔷 | | | |
| 🔅 System 🔨 | | | |
| 🔍 License 🔨 | | | |
| 🗞 Cluster | | | |
| ໍ່ຜູ້, Discovery | | | |
| 🛕 Alerts 🔷 | | | |
| | | | |
| | | | |
| | | | |
| | FICUD | 8-6 MANAGE DEVICE SODEEN | |

FIGURE 8-6. MANAGE DEVICE SCREEN

Enter the Managed Name and click on Apply.

A popup box asks: Are you sure you want to manage this device? Click on OK.





ADDING A SWITCH VIA THE +SWITCH BUTTON

Clicking the blue "+ Switch" button on the top right corner of the Switch status page pops up a modal window with the following editing options for the details of the switch to be added:

| \equiv | | | | Add New Switch | to Boxilla | | × | | | h 🕫 - 1 |
|----------|---|-------------------------|-------------------------|----------------|--------------------------|------------------|-------------------------|------------------------------|------------|-------------|
| | | Switch Status | | Switch Nam | e EMS1G48 | | | | | |
| | ^ | | | IP Addres | s 10.8.1.1 | | | | | |
| | ~ | | | | | | Cancel Apply | | | |
| | | | 1 | | ((; | 1 | | ☑ ▲ | | |
| | | | Switches On-Line | U | | Ports On | line | | Alerts | • |
| | ~ | | | | | Showing 1 to 1 o | | | | |
| | ~ | Switch Name EMS10G28 | Switch Status OnLine | | IP Address 10.8.1.125 | Ports Online | Shared Mode Disabled | Bandwidth In 0.0 MBit/Sec | | Alerts |
| | ^ | | | | | | | | « < | 1 of 1 > >> |
| | ^ | | | | | | | | | |
| | ~ | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | ~ | | | | | | | | | |
| | | | | | | | | | | |

FIGURE 8-7. ADD NEW SWITCH TO THE BOXILLA SCREEN

Clicking "Apply" adds the switch into the table on the status page. As part of the manage process, we first ensure that it is a Black Box switch by studying the bbx.info file to ensure it has the correct data. You then query the switch and get the port information and switch properties and populate our database with the new information. You also copy our domain token to the switch so the switch is then managed by that Boxilla.

Switch Actions/Options menu

Clicking the "options" ellipsis button on the right-hand side of each switch row will give you a drop-down with some options. These are as below:

• Details: This retrieves details about the switch. Example display below.



| | | | | ⊳ ∂~ . |
|-------------------|---|---|------------------------------------|---------------|
| Dashboard Swi | tch Details | | | |
| Devices ^ | | | | |
| Switches ^ | | | Back | |
| Peripherals | | | | |
| Zones | Switch Details Switch Name NetworkSwitch01 | System Details Description 28x10GbE, 2x100GbE QSFP28 Interface Module | Operational Details Up Time 557 | |
| 🛜 Connections 🛛 🔨 | Model Number EMS10G28 MPN Number 300-053-001 | Service Tag 12ZDXC2 PPID CN0NY9FP2829682D0028 | Temperature(Celsius) 41 | |
| Users ^ | MAC E4:F0:04:9B:72:5C | 5/W Version 10.4.2.0 OS Version 10.4.2.0 | | |
| ркм л | Configuration Version 1.0 | | | |
| 🗘 System 🔨 | | | | |
| License ^ | | | | |
| Cluster | | | | |
| A Alerts | | | | |
| | | | | |

FIGURE 8-8. SWITCH ACTIONS/OPTIONS MENU

- Ping: This pings the management port of the network switch to verify it is powered up and connected.
- Enable/Disable Shared Mode: If you enable shared mode, Boxilla creates VLAN 1003, Boxilla moves all ports into that VLAN
 and globally enables IGMP Snooping on the switch. Shared analog audio is enabled when shared mode is enabled. When
 disabling shared mode, Boxilla disables IGMP Snooping and removes VLAN 1003 which moves all ports back into VLAN 1. This
 functionality is automatically completed once the Enable/Disable Share Mode option is selected. By enabling Shared Mode,
 Boxilla performs these operations in the background automatically.
- Change Name: Change the name of the switch in the Boxilla database. This also renames all alerts to the new name.
- Edit Network: This allows the user to change the IP address of the switch.
- Reboot: Reboot the switch.
- Unmanage: This disables IGMP Snooping, MRouter details and the custom VLAN 1003 and moves all ports back to VLAN 1 and then deletes the switch from our database. It also removes the domain token from the switch. If you lose communication with the switch but still wish to unmanage it, you have the option to locally unmanage. Unmanaging also sets the switch in a factory default state. If you wish to keep the switch settings but remove it from Boxilla, you will need to disconnect the network switch first completely from the setup and then in Boxilla you can Unmanage it.





PING SWITCH

To ping this switch, click on the ellipsis "•••" icon and a drop-down menu appears.

| | | | | | | | | | h 🕑 - 1 |
|-----------------|-------------------------|-------------------------|-------------------|--------------------------|-----------------------|-------------------------|------------------------------|-------------------------------|---|
| Dashboard | Switch Status | | | | | | | | + Add Switches |
| 🛋 Devices 🛛 🔨 | | | | | | | | | |
| Switches ^ | | | | | Switch S | itatus | | | |
| Peripherals | | 1 | | ŝ | 1 | | ⊙ ▲ | 0 | |
| Zones | | Switches On-Line | 0 | ÷ | Ports On | line | ⊌ ₽ | Alerts | Ø |
| 🛜 Connections 🗠 | | | | | Showing 1 to 1 o | of 1 items | | | |
| 嶜 Users 🛛 🔨 | Switch Name EMS10628 | Switch Status OnLine | Model EMS10G28 | IP Address 10.8.1.125 | Ports Online 1 Online | Shared Mode Disabled | Bandwidth In 0.0 MBit/Sec | Bandwidth Out 0.0 MBit/Sec | Alerts |
| E DKM ^ | | | | | | | | | Ping Switch Details Ping |
| 🔅 System 🔨 | | | | | | | | | Enable Shared Mode Change Name Edit Network |
| a, License 🔨 | | | | | | | | | Reboot Unmanage |
| 🗞 Cluster | | | | | | | | | |
| ំជុំ Discovery | | | | | | | | | |
| Alerts ^ | | | | | | | | | |
| | | | | | | | | | |

FIGURE 8-9. PING SWITCH

= 🛞 BOXILLA 🛛 A Dashboard Switch | Status Switches 1 Switches On-Line 0 Alerts 1 Ports Online A \odot Ş \odot 0 ing 1 to 1 of 1 Iten IP Address « < 1 of 1 > »

Select ping and the following confirmation screen appears.





EDIT NETWORK

To Edit the Switch Network switch, click on the ellipsis "---" icon and a drop-down menu appears.

| | | | | | | | | | ħ | ®∽ ⊥ |
|-----------------|-----------------|------------------|----------|--------------|--|-------------|-----------------|-----------------|----------|----------|
| 🚯 Dashboard | Switch Status | | | | | | | | + Add | Switches |
| Evices 🔨 | | | | | | | | | | |
| Switches 🔨 | | | | | Switch Status | S | | | | |
| Peripherals | | 1 | Ø | ê | 3 | | A | 6 | | Ø |
| 🚺 Zones | | Switches On-Line | U | * | Ports Online | 0 | - | Alerts | | |
| 🛜 Connections 🔨 | | | | | | | | | | |
| 曫 Users 🛛 🔿 | Switch Name | Switch Status | Model | IP Address | Showing 1 to 1 of 1 items Ports Online | Shared Mode | Bandwidth In | Bandwidth Out | Alerts | |
| DKM ^ | NetworkSwitch01 | OnLine | EMS10G28 | 192.168.1.26 | 3 Online | Disabled | 9100.0 MBit/Sec | 9100.0 MBit/Sec | 2 Alerts | 0 |
| 🔅 System 🔨 | | | | | | | | « | < 1 of 1 | > >> |
| a, License 🔨 | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | |
| o, Discovery | | | | | | | | | | |
| 🛦 Alerts 🔨 | | | | | | | | | | |
| | | | | | | | | | | |

FIGURE 8-11. SWITCH VIEW STATUS

Click on the Edit Network option.

The Edit Switch Network screen appears.

| | a a 👌 📩 | @~ 1 ~ |
|------------------|--|---------------|
| 🚯 Dashboard | | |
| Devices 🔨 | Edit Switch Network | |
| Switches ^ | Current Network Settings Enter New Network Settings | |
| Peripherals | MAC IP Model Status IP Address e440pbedz/zleaš 10.8.1.25 EMS10228 OnLine Netmask | |
| 🕅 Zones | Gateway | |
| 🛜 Connections 🗠 | Cancel Apply | |
| 🐸 Users 🛛 🔿 | | |
| 💼 DKM 🔨 | | |
| 🌣 System 🔨 | | |
| 🔍 License 🔨 | | |
| 🗞 Cluster | | |
| ູ່ຜູ້, Discovery | | |
| 🛕 Alerts 🔷 | | |
| | | |
| | | |
| | | |
| | FIGURE 8-12. EDIT SWITCH NETWORK SCREEN | |





The screen shows the current network settings and has fields where you can type in the new network settings. Enter the IP Address and Netmask.

Click Apply to save your changes.

The following popup box appears.

| | <u>A</u> | 10.8.1.24 says Changing Switch IP. Are you sure? | / ₀ |
|--------------------------|--|---|------------------|
| Dashboard | | OK Cancel | |
| 💻 Devices 🛛 🔨 | | Edit Switch Network | |
| Switches 🔨 | Current Network Settings | Enter New I | Network Settings |
| 🚐 Peripherals | MAC IP e4:f0:04:d7:fe:86 10.8.1.125 | Model Status IP Address EMS10G28 OnLine | 10.8.60.125 |
| | | Netmask | 255.255.0.0 |
| Zones | | Gateway | |
| 奈 Connections 🔨 | | Cancel Apply | |
| 😻 Users 🔨 🧥 | | | |
| 🔅 System 🔨 | | | |
| a _e License A | | | |
| 🗞 Cluster | | | |
| ៉ុជ្ | | | |
| Alerts ^ | | | |
| | | | |

FIGURE 8-13. CONFIRM CHANGES ON DEVICE

Click OK to confirm your changes. The switch takes about 5 minutes to reboot.





UPDATE SWITCH

To update the network switch, see the screen below.

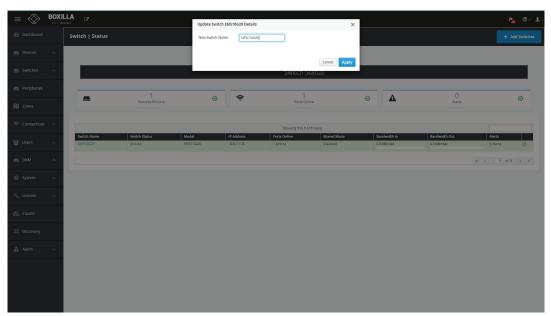


FIGURE 8-14. UPDATE NETWORK SWITCH

Type in the new switch name and click Apply.





SHARED MODE

To enable Shared mode on a switch from the Switch Status screen, click on Enable Shared Mode from the drop-down menu. Shared analog audio is enabled when shared mode is enabled.

| Dashboard | Switch Status | | | | | | | | + Add Switch |
|-------------|-------------------------|--------------------------|-------------------|--------------------------|--------------------------|-------------------------|----------------------------|-----------------------------|---------------------|
| Devices ^ | | | | | | | | | |
| Switches 🔨 | | | | | Switch Sta | atus | | | |
| Peripherals | | 0 Switches On-Line | Ø | ŝ | 3 Ports Onlin | | ⊘ ▲ | 0 Alerts | |
| Zones | ~ | | | | Showing 1 to 1 of 1 | Items | | | |
| Users ^ | Switch Name EM510G28 | Switch Status OffLine | Model EMS10G28 | IP Address 10.8.1.125 | Ports Online 3 Online | Shared Mode Disabled | Bandwidth In 0 MBit/Sec | Bandwidth Out 0 MBit/Sec | Alerts O Alerts O |
| рки 🦯 | | | | | | | | | « < 1 of 1 > |
| System ^ | | | | | | | | | |
| | × - | | | | | | | | |
| Cluster | | | | | | | | | |
| | | | | | | | | | |
| Alerts ^ | | | | | | | | | |

FIGURE 8-15. ENABLE SHARED MODE

The set of operations are performed automatically once the option has been selected.





8.1.3 STATUS PAGE - PORTS VIEW

Once you click a switch name, you are presented with a table view of all the ports on that particular switch. This shows some summary information of that port similar to the active connection table today. This table tells you the following:

- PortName
- The status of the switch. Green means it's online. Grey means it's offline. Red means it's disabled.
- The Media type as reported by the Black Box Switch.
- The Bandwidth In and Out (integer and bar chart)
- Packets In and Out (integer and bar chart)
- Line Usage in and Out (integer and chart)
- Port Errors
- Port Options
 - Enable/Disable Port
 - Enable MRouter

| | | | | | | | - | | | | | | | |
|-------------|-----|----------------|--------|----------------|------------|-----------------------|----------------------------|--|----------------------|-----------------------|-------------------|--------------------|--------|---|
| | ~ | Port Name | Status | Charts MRouter | Line Speed | Media | Sho Bandwidth In (Mbos) | wing 1 to 20 of 30 Items Bandwidth Out (Mbos) | Packets in (/Second) | Packets Out (/Second) | Line Usage In (%) | Line Usage Out (%) | Errors | |
| | | ethernet1/1/1 | Status | | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | |
| Switches | ^ | ethernet1/1/2 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| Peripherals | X | ethernet1/1/3 | | ₩ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | C |
| | | ethernet1/1/4 | | ₩ | 10 GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | C |
| | | ethernet1/1/5 | | ₩ | 10 GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٥ |
| Connection | | ethernet1/1/6 | | 2 | 10 GIGE | AR_SEPPLUS_10GBASE_LR | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | · ^ | ethernet1/1/7 | | ₩ | 10 GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | Q |
| | ~ | ethernet1/1/8 | | 2 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | Q |
| | | ethernet1/1/9 | | 2 | 10GIGE | SFP_T | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | ^ | ethernet1/1/10 | | <u>⊷</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | Q |
| System | ~ | ethernet1/1/11 | | Ŀ~ | 10GIGE | SEP_T | 0.0 | 0.0 | 3 | 0 | 0.0 | 0.0 | 0 | G |
| | | ethernet1/1/12 | | <u>₩</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | ~ | ethernet1/1/13 | | ₩ | 10GIGE | AR_SEPPLUS_10GBASE_LR | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٩ |
| | | ethernet1/1/14 | | <u>∼</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٩ |
| Cluster | | ethemet1/1/15 | | 2 | 10 GIGE | AR_SEPPLUS_10GBASE_UR | 0.0 | 0.0 | <u>e</u> | 0 | 0.0 | 0.0 | 0 | ٩ |
| Discovery | | ethernet1/1/16 | | <u>⊷</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | C |
| | | ethemet1/1/17 | | L~2 | 10GIGE | AR_SEPPLUS_10GBASE_LR | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | G |
| | ^ | ethernet1/1/18 | | ₩ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | G |
| | | ethernet1/1/19 | | ₩ | 10 GIGE | AR_SEPPLUS_10GBASE_LR | 583.0 | 10530.0 | 868927 | 868951 | 5.0 | 100.0 | 0 | C |
| | | ethernet1/1/20 | | 12° | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | C |

FIGURE 8-16. SWITCH STATUS PORTS VIEW

This information is polled every minute and the page updates on the next page refresh.





PORT OPTIONS-ENABLE/DISABLE PORTS

To get to the Ports screen, click on a switch. A list of ports in the system appears.

| ≡ ↔ | AV LIT WA | NASCA | | | | | | | | | | | ····· | ® ~ |
|---------|-----------|----------------|--------|------------|------------------|-----------------------|---------------------|----------------------------|----------------------|---------------------|--------------------|-----------------|--------------|---------|
| | | Switch Statu | s | | | | | | | | | | + Add s | witches |
| | | | | | | | | | | | | | | |
| | | | | | | | | Switch Status | | | | | | |
| | | | | 4 | | | | 1 | | | | | | _ |
| Zones | | | | Switches (| n-Line | © 🤶 | | Ports Online | Ø | A | (Ale | | 6 | ર |
| j zones | | | | | | | | | | | | | | |
| | | Back | | | | | | | | | | | | |
| Users | | | | | | | | howing 1 to 20 of 30 Items | | | | | | |
| | | Port Name | Status | Charts MR | outer Line Speed | Media | Bandwidth In (Mbps) | | Packets In (/Second) | Packets Out (/Secon | d) Line Usage In (| 6) Line Usage O | ut (%) Error | 5 |
| | | ethernet1/1/1 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | • |
| | | ethernet1/1/2 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | • |
| | | ethernet1/1/3 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| License | | ethernet1/1/4 | | ₩ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | | ethernet1/1/5 | | <u>12</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | • | 0 | 0.0 | 0.0 | 0 | 0 |
| | | ethernet1/1/6 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | | ethernet1/1/7 | | 122 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | | ethernet1/1/8 | | <u>~</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| Alerts | | ethernet1/1/9 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | | ethernet1/1/10 | | 12™ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ |
| | | ethernet1/1/11 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ۰ | 0 | 0.0 | 0.0 | 0 | • |
| | | ethernet1/1/12 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ٥ | 0 | 0.0 | 0.0 | 0 | ٠ |
| | | ethernet1/1/13 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | | ethernet1/1/14 | | 12 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | | | | lo. | | AR PORTICS NOTRRESENT | 0.0 | 0.0 | | | | | | |

FIGURE 8-17. PORTS CONFIGURATION OVERVIEW

Click on the ellipsis "•••" icon and a drop-down menu appears.

| | | * | | | | | | | | | | Port 4 on switch EMS10 disabled. | |
|---|--------|---|--------|----------------------------|--------------------------------------|--|---------------------|--------------------------|----------------------|-----------------------|-------------------|-------------------------------------|-------------|
| Dashboard | | Switch Status | | | | | | | | | | disabled. | |
| Devices | ^ | | | | | | | | | | | | |
| Switches | ^ | | | | | | S | witch Status | | | | | |
| Peripherals | | | | 1 | | ⊘ | | 1 | | A | 0 | | Ø |
| Zones | | | | Switches (| On-Line | • • | | Ports Online | ۲ | 4 | Alerts | | ٢ |
| | ^ | Back | | | | | | | | | | | |
| | ^ | | | | | | | wing 1 to 20 of 30 Items | | | | | |
| | | Port Name ethernet1/1/1 | Status | Charts MR | outer Line Speed | Media AR_POPTICS_NOTPRESENT | Bandwidth In (Mbps) | Bandwidth Out (Mbps) | Packets In (/Second) | Packets Out (/Second) | Line Usage In (%) | Line Usage Out (%) | Errors 0 |
| | ^ | | | | | | | | | | | | |
| | | ethernet1/1/2 | | <u>⊷</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 |
| Ductom | | | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 |
| | ~ | ethernet1/1/3 | | | | | | | | | | | |
| | | ethernet1/1/3 ethernet1/1/4 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 (|
| | ^ | | | 2 | 10GIGE 10GIGE | AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 0 |
| | ^ | ethernet1/1/4 | | | | | | | | | | | |
| License Cluster | ^ | ethernet1/1/4 ethernet1/1/5 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 |
| License | ^ | ethernet1/1/4 ethernet1/1/5 ethernet1/1/6 | | 2 | 10GIGE 10GIGE | AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 |
| License Cluster Discovery | ^ | ethernet1/1/4 ethernet1/1/5 ethernet1/1/6 ethernet1/1/7 | | 진 진 진 | 10GIGE 10GIGE 10GIGE | AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 0 0 | 0.0 | 0.0 | 0 |
| System License Cluster Cluster Discovery Alerts | ^ ^ | ethernet1/1/4 ethernet1/1/5 ethernet1/1/6 ethernet1/1/7 ethernet1/1/8 | | 2 2 2 2 2 2 | 10GIGE 10GIGE 10GIGE 10GIGE | AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 0 0 | 0.0 | 0.0 0.0 0.0 0.0 | |

FIGURE 8-18. PORT OPTIONS



The drop-down menu has two options: Disable Port and Enable MRouter.

If you click on Disable Port, the relevant port is disabled and you get a confirmation screen.

To enable a port again, click on the ellipsis "..." icon next to a port that has status red in the following screen.

| | | Switch Statu | s | | | | | | | | | | + Ada | d Switche | |
|---------|------|----------------------------|--------|-----------------|---------------------------|--------------------------------|-----------------|---------------------------------|--------------------------|-------------------|------------------------------|----------------------|---------------------|-----------|--|
| | ^ | | | | | | | | | | | | | | |
| | ^ | | | | | | | Switch Status | | | | | | | |
| | | | | | | | | | | | | | | _ | |
| Zones | | | | 1 Switches O | n-Line | 0 | • | 1 Ports Online | Ø | A | 0 Alerts | | | Ø | |
| | | | | | | | | | | | | | | | |
| | \$ ^ | Back | | | | | | | | | | | | | |
| | ^ | | | | | | | Showing 1 to 20 of 30 Items | | | | | | | |
| DKM | ~ | Port Name ethernet1/1/1 | Status | Charts MRo | uter Line Speed 10GIGE | Media AR_POPTICS_NOTPRESENT | Bandwidth In (I | Mbps) Bandwidth Out (Mbp 0.0 | ps) Packets In (/Second) | Packets Out (/Sec | ond) Line Usage In (9 0.0 | 6) Line Usage 0.0 | • Out (%) Erro 0 | 013 | |
| | | ethernet1/1/2 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 | |
| | ^ | ethernet1/1/3 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | • | |
| License | ~ | ethernet1/1/4 | | 12ª | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | • | |
| | | ethernet1/1/5 | | .~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | Enable Port | | |
| | | ethernet1/1/6 | | 12 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | • | 0 | 0.0 | 0.0 | Enable MRoute | - | |
| | | ethernet1/1/7 | | 12 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ٥ | 0 | 0.0 | 0.0 | 0 | ٠ | |
| | | ethernet1/1/8 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ | |
| | ~ | ethernet1/1/9 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ | |
| | | ethernet1/1/10 | | ~ | 10G/GE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ۰ | |
| | | ethernet1/1/11 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ۰ | |
| | | ethernet1/1/12 | | 12° | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ۰ | 0 | 0.0 | 0.0 | 0 | 0 | |
| | | ethernet1/1/13 | | ~ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ | |
| | | | | | | | | | | | | | | | |

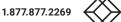
FIGURE 8-19. ENABLE PORT AGAIN

A drop-down menu appears. This menu has two options: Enable Port and Enable MRouter.

If you click on Enable Port, the following screen appears. Click on this option to enable the port.

| | | | | | 10.8.1.24 say Enabling port. | | | | | | | 6 | ® ~ |
|---------------------------|----------------|--------|-------------|-----------------|---------------------------------|-----------------|-----------------------------|-------------------------|--------------------|----------------------|-------------|-----------------|------------|
| | Switch Sta | tus | | | | | OK Can | cel . | | | | + Add | Switches |
| | | | | | | | | | | | | | |
| | | | | | | | Switch Status | | | | | | |
| | | | 1 | | | | 1 | | | (| 2 | | _ |
| | | | Switches C | in-Line | ⊙ ^{\$} | • | Ports Online | Ø | A | | J erts | | 0 |
| | _ | | | | | | | | | | | | |
| | Back | | | | | | | | | | | | |
| | | | | | | | Showing 1 to 20 of 30 Items | | | | | | |
| | Port Name | Status | Charts MRc | uter Line Speed | Media | Bandwidth In (I | Mbps) Bandwidth Out (Mbp | s) Packets In (/Second) | Packets Out (/Seco | and) Line Usage In (| %) Line Usa | ge Out (%) Erro | rs |
| | ethernet1/1/1 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ |
| | ethernet1/1/2 | | <u>∼</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | C |
| | ethernet1/1/3 | | <u>⊷</u> | 10G/GE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ |
| | ethernet1/1/4 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | ethernet1/1/5 | | <u>⊷</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ٥ | 0 | 0.0 | 0.0 | Enable Port | |
| | ethernet1/1/6 | | <u>12</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | Enable MRouter | - |
| Discovery | ethernet1/1/7 | | <u>⊷</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٩ |
| , Discovery | ethernet1/1/8 | | <u>⊷</u> | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ۲ |
| | ethernet1/1/9 | | ₩. | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ۲ |
| | ethernet1/1/1/ | | <u>~</u> | 10G/GE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ٥ | 0 | 0.0 | 0.0 | 0 | 0 |
| | ethernet1/1/1 | | ₩ | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ۰ | 0 | 0.0 | 0.0 | 0 | ۰ |
| | ethernet1/1/1 | | 2 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | ٥ | 0 | 0.0 | 0.0 | 0 | 0 |
| | ethernet1/1/1 | | 2 | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| | ethernet1/1/1- | | <u>1~</u> " | 10GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |
| 10.8.1.24/dell/switches/9 | arherner1/1/1 | | la.I | 105/55 | AB DODTICS NOTBRESENT | 0.0 | 0.0 | | • | 0.0 | 0.0 | 0 | - |

FIGURE 8-20. ENABLE PORT CONFIRM





MROUTER

When you select MRouter it goes to the switch and issues the MRouter command. You only want one port to be the MRouter at any time on the switch, so any time the user selects an MRouter, you remove the current MRouter and select the new one.

If you click on Enable MRouter, the popup shown next appears. Click on this option then OK to confirm.

| | | | | | | 10.8.1.24 say Are you sure y | s ou want to set this port | as the MRouter? | | | | | 1 | ? ~ |
|----------------|----------------|--------|--------|-------------------|----------|---------------------------------|-------------------------------|---|----------------------|-----------------------|-------------------|----------------|---------------|------------|
| Dashboard | Switch Statu | 5 | | | | | | OK Cancel | | | | | + Add S | Switches |
| | | | | | | | | | | | | | | |
| Switches 🔨 | | | | | | | | Switch Status | | | | | | |
| Reripherals | | | Swite | 1 thes On-Line | | 0 | • | 1 Ports Online | | A | 0 Alerts | | 6 | <u>ગ</u> |
| Zones | Back | | | | | | | | | | | | | |
| Connections A | Detk | | | | | | | | | | | | | |
| Sers A | Port Name | Status | Charts | MRouter Li | ne Speed | Media | Bandwidth In (Mb) | Showing 1 to 20 of 30 Items () Bandwidth Out (Mbps) | Packets In (/Second) | Packets Out (/Second) | Line Usage In (%) | Line Usage Out | (%) Errors | |
| | ethernet1/1/1 | | | | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | • |
| | ethernet1/1/2 | | ~ | 10 | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٢ |
| 🔅 System 🔨 🔨 | ethernet1/1/3 | | ~ | 10 | OGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ |
| | ethernet1/1/4 | | ~ | 10 | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | • |
| | ethernet1/1/5 | | ~ | 10 | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | | Enable MRou | ater |
| 🗞 Cluster | ethernet1/1/6 | | ~ | 10 | OGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | hable MRouter | |
| | ethernet1/1/7 | | ~" | 10 | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | ٠ |
| .ç. Discorci y | ethernet1/1/8 | | ~ | 10 | OGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | Θ |
| 🛦 Alerts 🛛 🔨 | ethernet1/1/9 | | ~ | | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | ō | 0.0 | 0.0 | 0 | ٢ |
| | ethernet1/1/10 | | ~ | 10 | DGIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | Θ |
| | ethernet1/1/11 | | ~ | 10 | GIGE | AR_POPTICS_NOTPRESENT | 0.0 | 0.0 | 0 | 0 | 0.0 | 0.0 | 0 | 0 |

FIGURE 8-21. ENABLE MROUTER

8.2 SWITCHES - UPGRADES

The upgrades page is similar to the appliance upgrades page. It lists the switches currently in the database and also indicates "active release" in the database. Any switch that does not match this release is highlighted in red. You can then select multiple switches and upgrade them in parallel. The upgrade state changes dynamically as the switch goes through different stages of the upgrade process. It transfers the file to the switch, upgrades the switch, then reboots and verifies the upgrade. If all is successful, the switch is now be highlighted in green. If there has been an error, the switch row is highlighted in red with the error state displaying. NOTE: The switch takes about 15 minutes to upgrade and restart.

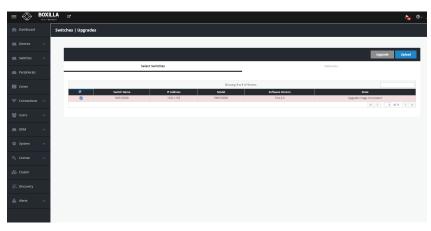


FIGURE 8-22. SWITCH UPGRADES PAGE



Activate Release

Click on the Releases tab, then click on the drop-down menu item and Activate the release.

| | | | | | han 🕫 🕹 🖌 |
|--------------------------|----------------------------|-----------------|--------------------------------|----------|----------------|
| 🚯 Dashboard 🛛 St | vitches Upgrades | | | | |
| 👝 Devices 🛛 🔨 | | | | | |
| Switches 🔨 | | | | | Upgrade Upload |
| E Peripherals | | Select Switches | | Releases | |
| 🕅 Zones | Filename 11 | Version | Showing 0 Results Active Image | | |
| 🗢 Connections 🔨 | No data available in table | | | | ≪ < 1 of 0 > ≫ |
| 👹 Users 🔨 🔿 | | | | | |
| 👝 DKM 🔷 | | | | | |
| 🖨 System 🔨 | | | | | |
| Q _€ License ∧ | | | | | |
| 🚓 Cluster | | | | | |
| ៉ីជុះ Discovery | | | | | |
| 🛕 Alerts 🔨 | | | | | |
| | | | | | |
| | | | | | |

FIGURE 8-23. ACTIVATE RELEASE

You can also delete this release.

Upload Release

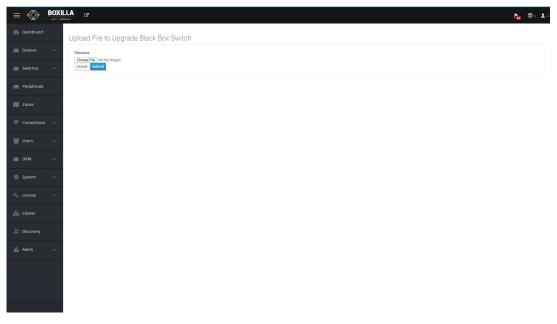


FIGURE 8-24. UPLOAD RELEASE

BLACKBOX.COM





To support external USB switching that can handle speeds up to 480 Mbps (USB High Speed), additional USB hubs can be bonded with the Emerald technology. To configure the USB Hub bonding, the Boxilla will need to be part of the application.

Connect the USB 2.0 Transmitters and Receivers to the Emerald/Boxilla network. In Boxilla, the administrator can navigate to the "Peripherals" tab and discover the USB 2.0 Transmitters and Receivers. The EMD100USB extenders are the only USB 2.0 devices that are supported for Boxilla bonding.

9.1 PERIPHERALS - DISCOVERY TAB

| ≡ 🛞 | BOXI | | ß | | | | | | | | | ha 🕲 | 1~ |
|---------|------|-----|-----------|-------------|----------------------|----------------|----------|----------------------------|--------------|----------|----------------------|----------|----|
| | | USB | Extende | irs | | | | | | | | Discover | |
| | ^ | | | | | | | | | | | | |
| | ^ | | | | | | | Discovery | | | | | |
| | | | 12 | | 0 On-Line Devices | Ø | <u>I</u> | 0 Active Connections | Ø | <u>1</u> | 0 Device Alerts | Ø | |
| 🔰 Zones | | | | | Discovery | | | Settings | | | Extender Connections | | |
| | s ^ | | Discovery | | | | | Showing 1 to 0 Results out | c of 0 | | | | |
| 👑 Users | ^ | | Туре - | MAC Address | IP Addres | s IP Acquisiti | 'n | Supported Protocol Version | Product Name | Re | vision Number State | Options | |
| | ^ | | | | | | | | | | | | |
| | ^ | | | | | | | | | | | | |
| | ^ | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | ^ | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 9-1. DISCOVERY TAB

| ≡ 🛞 | BOX | | ď | | | | | | | | ~ | Success Discovery comple | ted. |
|-------------|-----|-----|------------------|----------------------------------|---------------------------|---------------|----|---------------------------------|----------------------------------|------------|--------------------|-----------------------------|----------|
| Dashboard | | USB | Extenders | ; | | | | | | | | | Dis |
| Devices | | | | | | | | | | | | | |
| Switches | | | | | | | | Discovery | | | | | |
| Peripherals | | | 12 | 3 On-Line De | vices | Ø | 12 | O Active Connections | Ø | 12 | 0 Device Alerts | | Ø |
| Zones | | | | Discovery | , | | | Settings | | | Extender Connec | tions | |
| | | | | | | | | | | | | | |
| | | | Discovery | | | | | Showing 1 to 3 Results out of 3 | | | | | |
| 🕍 Users | | | Type v Remote | MAC Address 00:18:13:02:DD:46 | IP Address 10.8.100.46 | IP Acquisitio | on | Supported Protocol Version | Product Name USB Over Network | Revision I | | | Options |
| DKM | | | Remote | 00:18:13:02:DD:47 | 10.8.100.45 | DHCP | | 3 | USB Over Network | 1.9.4 | | | 0 |
| | | | Local | 00:1B:13:02:DD:45 | 10.8.100.47 | DHCP | | 3 | USB Over Network | 1.9.4 | Unbo | | • |
| | | | | | | | | | | | | « < 1 | of 1 > » |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 🙈 Cluster | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Alerts | | | | | | | | | | | | | |
| Alerts | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 9-2. DISCOVERY SUCCESS

CHAPTER 9: PERIPHERALS



Once discovered, the DHCP IP address will need to change to Static by using the "Edit Network" option, so be sure to configure the devices with Static IP addresses that are part of the same subnet as the Emerald technology.

| ≡ 🛞 | BOXIL | | | | | | | | | | ا 🔓 |
|-------------|-------|---------------|-------------------|-------------|-------------|-----------|-------------------------------|------------------|--------------|----------------------|---------|
| Dashboard | | USB Extende | rs | | | | | | | | Disc |
| Devices | ^ | | | | | | | | | | |
| Switches | ^ | | | | | | Discovery | | | | |
| Peripherals | | <u>19</u> | 3 On-Line De | vices | Ø | <u>19</u> | 0 Active Connections | Ø | 12 | 0 Device Alerts | Ø |
| 🔰 Zones | | | Discovery | r | | | Settings | | | Extender Connections | |
| | ^ | Discovery | | | | | Showing 1 to 3 Results out of | 3 | | | |
| 🐮 Users | ~ | Type . | MAC Address | IP Address | IP Acquisit | ion Suj | oported Protocol Version | Product Name | Revision Nun | nber State | Options |
| | | Remote | 00:1B:13:02:DD:46 | 10.8.60.110 | Static IP | 3 | | USB Over Network | 1.9.4 | Bonded | • |
| DKM | ~ | Local | 00:1B:13:02:DD:45 | 10.8.60.111 | Static IP | 3 | | USB Over Network | 1.9.4 | Bonded | • |
| | | Remote | 00:1B:13:02:DD:47 | 10.8.60.112 | Static IP | 3 | | USB Over Network | 1.9.4 | Unbonded | ٠ |
| | ^ | | | | | | | | | Edit Ne Edit Bo | |
| | ^ | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Alerts | ^ | | | | | | | | | | |
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FIGURE 9-3. EDIT NETWORK OPTION

| | | | G Edit ICRON USB Exte | nder Network | | | × | | ha 🕫 - 1 |
|-----------------|-------------------|----------------------|---|--------------|-----------|-------------|---------------------------|--------------------|-------------|
| 🚯 Dashboard | USB Extenders | | MA | c 00:1B:13:0 | (2:DD)45 | | | | |
| 👝 Devices 🗠 | | _ | IP Acquisition | n Static IP | | | | | |
| | | | IP Addres | is 10.8.60.1 | 11 | | | | |
| Switches 🗠 | | | Mode | el EMD100US | SB-LOCAL | | | | |
| | - | | Gatewa | y 10.8.1.1 | | | | | |
| Peripherals | 12 | 3 On-Line Devices | Netmas | k 255.255.0 | 0.0 | | Set € | O Device Alerts | \odot |
| 🕅 Zones | | | Stat | e Online | | | | | |
| 🤶 Connections 🗠 | | | | | | Close | Save | | |
| | Settings | Туре МАС | Address | State | Config | IP Address | Bonded Device | Bonded Device IP | Options |
| 曫 Users 🛛 🔨 | USB 2.0 TX | | and the second se | | Static IP | 10.8.60.111 | EmeraldSE Transmitter USB | 10.8.1.31 | 0 |
| 👝 DKM 🔷 | USB Hub RX1 | | | | Static IP | 10.8.60.110 | EmeraldSE Receiver1 | 10.8.60.70 | |
| | USB 2.0 Hub 4K RX | Remote 00:1 | B:13:02:DD:47 | Online | Static IP | 10.8.60.112 | EMD4K RX with USB 2.0 | 10.8.1.61 | |
| 🔅 System 🔨 | | | | | | | | « < | 1 of 1 > >> |
| a, License 🔨 | | | | | | | | | |
| 🖧 Cluster | | | | | | | | | |
| ိုင်္ | | | | | | | | | |
| 🛕 Alerts 🔷 | | | | | | | | | |
| | | | | | | | | | |

FIGURE 9-4. EDIT USB EXTENDER NETWORK SCREEN



CHAPTER 9: PERIPHERALS



You can now Bond the USB 2.0 Transmitters and Receivers to the Emerald Transmitters and Receivers by choosing "Edit Bonding" and giving the device a name and selecting which Emerald device it is bonded with.

| = | | C* | | Edit Extender Nar | ne | | | × | | k <u>s</u> @- ⊥- |
|-------------|----------|-------------------|----------------------|-------------------|------------|-----------|--|---------------------------|--------------------|------------------|
| 🚯 Dashboar | | SB Extenders | | Extende | er Name US | B Hub RX1 | | | | |
| Devices | < | | | | | | cit | ose Save | | |
| Switches | | | | | | | Setungs | | | |
| Periphera | | <u>12</u> | 3 On-Line Devices | 0 | 19 | Ac | 0 tive Connections | <u>به</u> ا | 0 Device Alerts | 0 |
| D Zones | | | | | | | Settings | | | |
| 🔶 Connectio | | Settings | | | | Showin | ng 1 to 3 Results out of 3 | | | |
| | | Extender Name | Туре | MAC Address | State | Config | IP Address | Bonded Device | Bonded Device IP | Options |
| 曫 Users | | USB Hub RX1 | | 00:1B:13:02:DD:46 | Online | Static IP | 10.8.60.110 | EmeraldSE Receiver1 | 10.8.60.70 | 0 |
| | | USB 2.0 Hub 4K RX | | 00:18:13:02:DD:47 | Online | Static IP | | | 10.8.1.61 | |
| DKM | ` | USB 2.0 TX | | 00:18:13:02:DD:45 | Online | Static IP | | EmeraldSE Transmitter USB | | |
| 🔅 System | | | | | | | | | « < | |
| we system | | | | | | | | | | |
| | <u>.</u> | | | | | | | | | |
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| | | | | | | | | | | |

FIGURE 9-5. ENTER EXTENDER NAME SCREEN



Repeat the bonding for additional extenders.

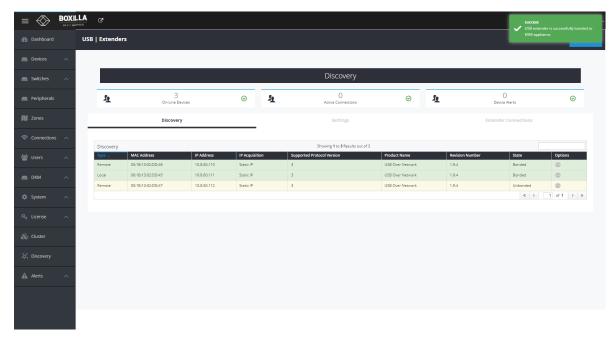


FIGURE 9-6. BONDING SUCCESS, DEVICE 2 SCREEN

Once the USB 2.0 Transmitters and Receivers are bonded with Emerald hardware, they can be used during the connection. When establishing a new connection or breaking a connection, the USB 2.0 Transmitters and Receivers will switch with their respective bonded Emerald connection.



9.2 PERIPHERALS - SETTINGS TAB

Additional functions can be used with the USB 2.0 Transmitter and Receivers hubs by navigating to Peripherals>>Settings.

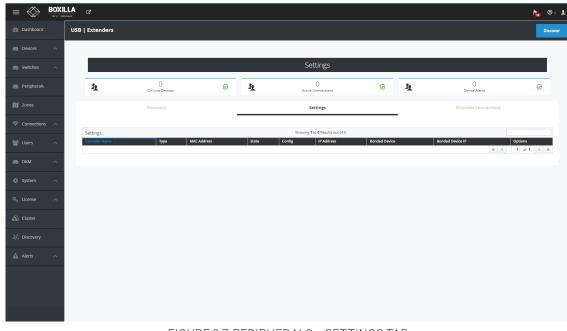


FIGURE 9-7. PERIPHERALS>>SETTINGS TAB

These functions include:

• Getting Details of the devices such as IP and Mac Address

| 9 ° 1 |
|----------|
| Discover |
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FIGURE 9-8. DEVICE DETAILS

CHAPTER 9: PERIPHERALS



• Pinging devices

| ≡ 🛞 | | ß | | | | | | | | | | te - | |
|------------------------------------|--------|-------------------|----------------------|-------------------|--------|-----------|----------------------------|---------------------|----------|-----------------|---|---------|---------|
| 🚯 Dashboard | US | 5B Extenders | | | | | | | | | | Di | iscover |
| E Devices | ^ | | | | | | | | | | | | |
| Switches | ^ | | | | | 1 | Settings | | | | | | |
| Peripherals | | 12 | 3 On-Line Devices | Ø | 12 | Ac | 0 tive Connections | Ø | <u>1</u> | O Device Ale | rts | Ø | |
| 🕅 Zones | | | Discovery | _ | | | Settings | | | Extender Co | nnections | | |
| 🛜 Connections | ^ | Settings | | | | Showi | rg 1 to 3 Results out of 3 | | | | | | |
| 🐸 Users | ~ | Extender Name 🗸 | Туре | MAC Address | State | Config | IP Address | Bonded Device | | Bonded Device | IP | Options | |
| _ | | USB 2.0 TX | Local | 00:1B:13:02:DD:45 | Online | Static IP | 10.8.60.111 | EmeraldSE Transmit | ter USB | 10.8.1.31 | | • | |
| 📖 ОКМ | ^ | USB Hub RX1 | Remote | 00:1B:13:02:DD:46 | Online | Static IP | 10.8.60.110 | EmeraldSE Receiver1 | | 10.8.60.70 | Details | | |
| 🔅 System ९ _२ License | ^ ^ | USB 2.0 Hub 4K RX | Remote | 00:18:13:02:DD:47 | Online | Static IP | 10.8.60.112 | EMD4K RX with USB | 2.0 | 10.8.1.61 | Ping Edit Network Toggle LED Edit Bonding Unbond Change Extended | r Name | > |
| 🗞 Cluster | | | | | | | | | | | O Reset | | |
| o ^c Discovery | | | | | | | | | | | | | |
| Alerts | ^ | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 9-9. OPTIONS MENU

| | | | | | | | | | 🗸 🙀 | ng OK. |
|--------|---|-------------------|----------------------|-------------------|--------|-----------|--|---------------------------|---------------------|--------------|
| | | USB Extenders | | | | | | | | Dis |
| | ^ | | | | | | | | | |
| | ^ | | | | | : | Settings | | | |
| | | ĩ | 3 On-Line Devices | 0 | 12 | Ac | 0 ctive Connections | · · | () Device Alerts | Ø |
| | | | Discovery | | | | Settings | | Extender Connectio | ıs |
| | ^ | Settings | | | | Shawi | ng 1 to 3 Results out of 3 | | | |
| | ~ | Extender Name 🗸 | Туре | MAC Address | State | Config | IP Address | Bonded Device | Bonded Device IP | Options |
| | | USB 2.0 TX | Local | 00:1B:13:02:DD:45 | Online | Static IP | 10.8.60.111 | EmeraldSE Transmitter USB | 10.8.1.31 | • |
| | ~ | USB Hub RX1 | Remote | 00:1B:13:02:DD:46 | Online | Static IP | 10.8.60.110 | EmeraldSE Receiver1 | 10.8.60.70 | • |
| | | USB 2.0 Hub 4K RX | Remote | 00:1B:13:02:DD:47 | Online | Static IP | 10.8.60.112 | EMD4K RX with USB 2.0 | 10.8.1.61 | • |
| System | ~ | | | | | | | | « | < 1 of 1 > > |
| | ^ | | | | | | | | | |
| | | | | | | | | | | |
| | ^ | | | | | | | | | |
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FIGURE 9-10. PING OK SCREEN





• Edit Network Settings

| = | BOXIL | LA C | | | Edit ICRO | IN USB Extende | er Network | | | × | | | |
|------------------|-------|------------------------|--------|----------------------|--|------------------------------|-----------------------|------------------------|---------------------------|--|-----------------------------|------------|--|
| Dashboard | | USB Exten | ders | | | MAC | 00:1B:13/ | 02:DD:45 | | | | | |
| Devices | ~ | | | | | IP Acquisition IP Address | Static IP 10.8.60. | 111 | | | | | |
| Switches | ~ | | | | | Model | | ISB-LOCAL | | | | | |
| Reripheral | 5 | 12 | | 3 On-Line Devices | | Gateway Netmask | 10.8.1.1 | | | · 1 | O Device Alerts | Ø | |
| D Zones | | | | | | State | Online | | | | | | |
| 🛜 Connection | 15 ^ | Settings | | | | | | | Close | Save | | | |
| 曫 Users | ^ | Extender USB 2.0 T | Name 🤟 | Type Local | MAC Address 00:18:13:02:DD:45 | Stal | | Config Static IP | IP Address 10.8.60.111 | Bonded Device EmeraldSE Transmitter USB | onded Device IP 0.8.1.31 | Options | |
| DKM | ~ | USB Hub I USB 2.0 H | RX1 | Remote | 00:18:13:02:DD:46 00:18:13:02:DD:47 | | | Static IP Static IP | 10.8.60.110 | EmeraldSE Receiver1 EMD4K RX with USB 2.0 | 0.8.60.70 | | |
| 🔅 System | ~ | | | | | | | | | | | 1 of 1 > > | |
| ्र License | ~ | | | | | | | | | | | | |
| 🖧 Cluster | | | | | | | | | | | | | |
| .°ç0°, Discovery | | | | | | | | | | | | | |
| Alerts | ~ | | | | | | | | | | | | |
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FIGURE 9-11. EDIT NETWORK SETTINGS SCREEN

• Toggle LED for identification

| ≡ 🛞 | | ď | | | | | | | | Success | s illy enabled LED. |
|-------------|----|-----------------------------|----------------------|-------------------|-----------|-----------|--|--------------------|----|----------------------|------------------------|
| 🚯 Dashboard | US | 5B Extenders | | | | | | | | | Di |
| Devices | ~ | | | | | | | | | | |
| Switches | ~ | | | | | | Settings | | | | |
| Peripherals | | 12 | 3 On-Line Devices | Ø | <u>Ie</u> | Ac | 0 tive Connections | Ø | 19 | 0 Device Alerts | Ø |
| 🔰 Zones | | | Discovery | | | | Settings | | | Extender Connections | |
| | ^ | | | | | | ng 1 to 3 Results out of 3 | | - | | |
| | | Settings Extender Name 🗸 | Туре | MAC Address | State | Config | IP Address | Bonded Device | | Bonded Device IP | Options |
| 🔮 Users | ^ | USB Hub RX1 | Remote | 00:1B:13:02:DD:46 | Online | Static IP | 10.8.60.110 | EmeraldSE Receiver | 1 | 10.8.60.70 | |
| DKM | ~ | USB 2.0 Hub 4K RX | Remote | 00:1B:13:02:DD:47 | Online | Static IP | 10.8.60.112 | EMD4K RX with USB | | 10.8.1.61 | 0 |
| UNM | | USB 2.0 TX | Local | 00:18:13:02:DD:45 | Online | Static IP | 10.8.60.111 | EmeraldSE Transmit | | 10.8.1.31 | 0 |
| 🔅 System | ~ | | | | | | | | | | 1 of 1 > > |
| | | | | | | | | | | | |
| | ~ | | | | | | | | | | |
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| Alerts | ^ | | | | | | | | | | |
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FIGURE 9-12. TOGGLE LED SUCCESS SCREEN

CHAPTER 9: PERIPHERALS



• Edit Bonding Settings

| $\equiv \bigotimes$ | BOXIL | LA C [®] | | % Edit ICR | ON USB Extender Ne | twork | | × | | |
|---------------------|-------|---------------------------|----------------------|----------------------------------|--------------------|---------------------|----------------------------|--------------------------------------|--------------------------------|---------|
| Dashboard | | USB Extenders | | | MAC 0 | 0:18:13:02:DD:47 | | | | |
| | | | _ | | IP Address 11 | 0.8.60.112 | | | | |
| Devices | ^ | | | | Model El | MD100USB-REMOTE | | | | |
| Switches | ~ | | | E | Extender Name | USB 2.0 Hub 4K RX | | | | |
| Peripherals | | <u>1</u> | 3 On-Line Devices | | Destinations | Select Destination | | · <u>1</u> | 0 Device Alerts | |
| Zones | | | | | | | Cl | save | | |
| Connections | 5 ^ | | | | _ | | | | | |
| | _ | Settings | | | | | ng 1 to 3 Results out of 3 | | | |
| 管 Users | ^ | Extender Name USB Hub RX1 | Type Remote | MAC Address 00:1B:13:02:DD:46 | State | Config Static IP | IP Address 10.8.60.110 | Bonded Device EmeraldSE Receiver1 | Bonded Device IP 10.8.60.70 | Options |
| | | USB 2.0 Hub 4K RX | Remote | | Online | Static IP | | | 10.8.1.61 | |
| DKM | ^ | | Local | 00:18:13:02:DD:45 | Online | Static IP | | EmeraldSE Transmitter USB | | |
| System | ~ | | | | | | | | « < | |
| Cluster | ~ | | | | | | | | | |
| end cruster | | | | | | | | | | |
| ៉ុថ្លុំ Discovery | | | | | | | | | | |
| Alerts | ~ | | | | | | | | | |
| | | | | | | | | | | |

FIGURE 9-13. EDIT BONDING SETTINGSSCREEN

- Unbond the USB hub
- Change extender name
- Reset the unit

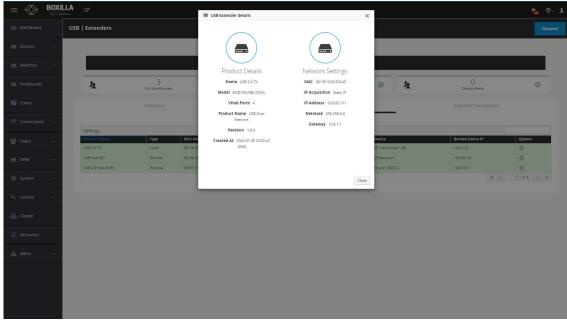


FIGURE 9-14. EXTENDER DETAILS SCREEN



9.3 PERIPHERALS - EXTENDER CONNECTIONS TAB

Additionally, you can see the active connections under Peripherals>>Extender Connections.

| | | | | | | | | | ا • © 📩 |
|-------------------|------------------|----------------------|----------------|----------|-------------------------|---------|----------|----------------------|----------|
| 🚯 Dashboard | USB Extenders | | | | | | | | Discover |
| Evices 🔨 | | | | | | | | | |
| 📾 Switches 🗠 | | | | | Extender Connections | | | | |
| Peripherals | 7 | 3 On-Line Devices | Ø | <u>1</u> | 1 Active Connections | ø | <u>1</u> | 0 Device Alerts | ø |
| 🕅 Zones | | Discovery | | | Settings | _ | | Extender Connections | |
| < Connections | Q Search Sources | i | Q Search Desti | nations | | | | | _ |
| 曫 Users 🛛 🔨 | | | | | | | | | |
| 💼 ОКМ 🔨 | USB 2.0 TX1 | | > USB 2.0 RX2 | | | | | | |
| 🔅 System 🔨 | | | | | | | | | |
| a, License 🔨 | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | |
| ៉ូថ្កុំ Discovery | | | | | | | | | |
| 🛦 Alerts 🧄 | | | | | | | | | ÷ |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | FIGU | RE 9-15. I | EXTENI | DER CONNECT | IONS TA | В | | |





10.1 EMERALD ZONING FEATURE

Background:

Emerald users can have access to Emerald devices from multiple locations. These locations can be on different rooms, floors, buildings, or even cities. The concept is that users in different locations are required to use their login, but may have different security access depending on locations or simply different access requirements based on location.

Zoning in Emerald is used to associate each Physical Receiver and each connection (physical or virtual) with a zone; the zone is typically a location.

Feature Description/Use Case:

The System can set up each Receiver and each connection to be in a zone. The user will receive Targets on their OSD list that are dependent on the Location/zone they currently working in. For Example in Room A, which is classed as secure, the user can access relevant secure targets. When the same user moves out to his office desk, he will not be allowed to even see the secure targets on his OSD list even though he logged in with exactly the same user name and password.

You can find Zones in the left menu bar of the Boxilla interface, between Peripherals and Connections. See the screen shown next.

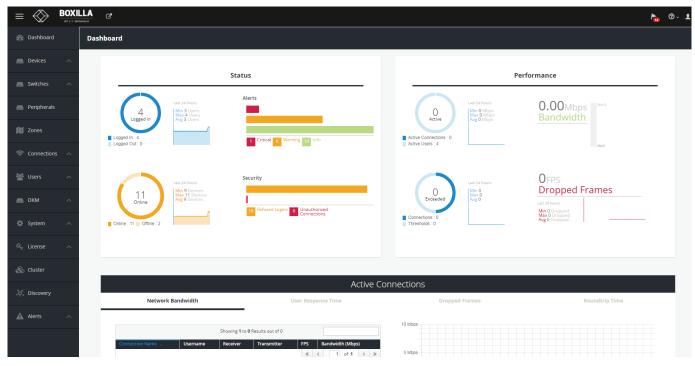


FIGURE 10-1. DASHBOARD WITH ZONES



CHAPTER 10: ZONES



When you click on Zones, the following screen appears.

| es Dashboard | | | | | | |
|----------------------|----------------------|----------------------|----------------------|------------|--|--|
| 🔳 Details | | | Available zones | + Add zone | | |
| | Please select a zone | | | | | |
| ♥ Connections | 🛋 Devices | 5 | 🐸 User Favorites | | | |
| Please select a zone | | Please select a zone | Please select a zone | | | |
| | | | | | | |
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FIGURE 10-2. ZONES UNPOPULATED

To get started with setting up Zones, go to the top right hand corner of the page and click on "Add Zone." Once you add a zone, give it a name and description.

| $= \bigotimes$ | BOXI | | Add new zone | | × | |
|------------------------------|--------|----------------------|--------------|----------------------|----------------------|----------------------|
| Dashboard | | Zones Dashboard | Name | New Zone | | |
| Devices | · ^; | 朣 Details | Description | New Zone | Available zones | + Add zone |
| Switches | \sim | | | | 1 N Engineering | |
| Peripherals | | | L | Close | Save 2 N Credit | |
| | | | | | 3 🕅 Sales | |
| Zones | | | | | 4 🕅 Management | 0 / 0 |
| - | | | | | 5 🕅 Legal | |
| Connections | | | | | <u>6</u> N IT | |
| Users DKM | ~ | ♥ Connections | Dev | vices | 🔮 User Favorite | 15 |
| Entry Dian | | Please select a zone | | Please select a zone | | Please select a zone |
| 🔅 System | ~ | | | | | |
| 🔍 License | ^ | | | | | |
| 🛞 Cluster | | | | | | |
| ៉ូជុ ^{ខ្} Discovery | | | | | | |
| Alerts | ^ | | | | | |
| | | | | | | |

FIGURE 10-3. ADD NEW ZONE

CHAPTER 10: ZONES



When the zone is created, you can now click on it under "Available Zones" to begin configuring the zone details.

| Dashboard | Zones Dashboard | | |
|----------------|---------------------------------------|--|-----------------------------------|
| Evices 🔨 | ■ Details - Engineering | | Available zones + Add zone |
| 🚍 Switches 🛛 🔨 | | Edit 🖉 | |
| neripherals | Name Engineering | 🔮 Users: 1 | 2. № Credit 0 / 3. № Sales 0 / |
| Zones | Description Engineering users only | Connections: 2 Devices: 0 | 4 🕅 Management |
| < Connections | | | 5 NJ Legal 0 / |
| 嶜 Users 🛛 🔿 | | | |
| 📠 DKM 🔷 | Connections - Engineering | Devices - Engineering | 😁 User Favorites - Engineering |
| 🔅 System 🔨 | | Active Available | 🛦 dean 🛛 🗛 🖉 |
| a, License 🔨 | | 2 BMDSE RX1 (46) EMD4K RX2 with USB 2.0 Icron 2 | |
| 🗞 Cluster | 🗢 DTX5000 Bridge | 4 5 6 | |
| ំថុំ Discovery | ▼ EMD2002PE-T_default ▼ | ····· | |
| 🛦 Alerts 🔨 | Show unassigned Ap | Show unassigned Apply | |
| | | | |

FIGURE 10-4. ZONES DASHBOARD

When the zone is selected, the administrator can place connections and devices within that zone. Once the device/connection is assigned to a zone, it cannot be used in any other zone. If you need to modify the connections/devices for a zone, you can easily do so by clicking on the assigned device and it will move it back to available. Once all changes are made, you can use the "Apply" button to save your changes. You can only delete a Zone if there are no Connections and Devices assigned to the Zone. When the "Show unassigned" button is selected, it shows the Connections OR Devices that are not assigned to any Zone.

When a zone is established, you can now assign new devices/connections to the zone. Boxilla supports up to 10 zones maximum.

User Favorites

×

You can also link any user's favorites to the zone to help adding shortcut keys to specific systems for that zone.

Additional Information:

- The user can also have a different set of Favorites when they login from different zones.
- This feature requires Boxilla and is set up via Boxilla.

| | | Choose Favorites for User | | | | | |
|----------------|--------------|---------------------------|-----------------------------------|-------------|------------|--|--|
| User Favorites | | × | Engineering | | ✓ Reset | | |
| Hotkey + 0 | EMDSE (USBR) | ~ | <global> Engineering</global> | | | | |
| Hotkey + 1 | unallocated | ~ | Hotkey + 1 | unallocated | | | |
| Hotkey + 2 | unallocated | ~ | , i | | | | |
| Hotkey + 3 | unallocated | ~ | Hotkey + 2 | unallocated | ~ | | |
| Hotkey + 4 | unallocated | ~ | Hotkey + 3 | unallocated | ~ | | |
| · · | | | Hotkey + 4 | unallocated | ~ | | |
| Hotkey + 5 | unallocated | ~ | Hotkey + 5 | unallocated | ~ | | |
| Hotkey + 6 | unallocated | ~ | Hotkey + 6 | unallocated | ~ | | |
| Hotkey + 7 | unallocated | ~ | Hotkey + 7 | unallocated | ~ | | |
| Hotkey + 8 | unallocated | ~ | Hotkey + 8 | unallocated | ~ | | |
| Hotkey + 9 | unallocated | ~ | | | | | |
| | | | Hotkey + 9 | unallocated | ~ | | |
| | | Close Save | | | | | |
| JSo | | UHK KAZ WITH USB Z.U | | | Close Save | | |

FIGURE 10-5. USER FAVORITES AND USER FAVORITES WITH ZONES







Connections define the properties for the flow of keyboard, mouse, video, audio and USB traffic between an Emerald or InvisaPC Receiver and an Emerald or InvisaPC Transmitter or Virtual Machine. Connections are created and then allocated to Users to provide them access to Transmitters or Virtual Machines. A connection is a definition and can be allocated to multiple users. When a user logs into an Emerald or InvisaPC Receiver, they are presented with their allocated connections on the Connections Tab of the OSD on that Receiver.

11.1 CONNECTIONS-MANAGE

The Connections – Manage page lists the currently defined connections and allows them to be edited, deleted or new connections to be added. The connections are listed shown in Figure 11-1.

| | | | | | | | | | ha 🕫 - | | | | |
|-----------------|----------------------------------|-------------------|------------------------|--------------|-------------|---------------------|-----------------------|--------------------------|---|--|--|--|--|
| 🚳 Dashboard | Connections Manage | | | | | + Connection | + Connection Template | Edit Connection Template | Connection Template | | | | |
| 🚍 Devices 🛛 🔨 | | | | | | | | | | | | | |
| Switches 🔨 | | | | A | l Connecti | ons | | | | | | | |
| Peripherals | | All Connections | | | | | | | | | | | |
| Zones | | | Showing 1 to 8 of 8 It | ems | | | | | | | | | |
| P P | Connection Name | Based On Template | Connection Type | Connect Via | Zone | Options | | | | | | | |
| 🛜 Connections 🔨 | DTX5000 Bridge | · | Private | ConnectViaTx | • | | O | | | | | | |
| eonnections of | EMD2002PE-T_default | | Private | ConnectViaTx | • | | • | | | | | | |
| 🐮 Users 🛛 🔨 | EMDSE DKM Link | • | Private | ConnectViaTx | Engineering | | (*) | | | | | | |
| | EMDSE TX | · | Private | ConnectViaTx | • | | O | | | | | | |
| 👝 DKM 🛛 🔨 | EMDSE TX1 | • | Private | ConnectViaTx | - | _ | ۲ | | | | | | |
| | test tx | | Private | ConnectViaTx | | _ •) • • • • | O | | | | | | |
| 🔅 System 🔨 | Z4K TX | · | Private | ConnectViaTx | Engineering | _ | O | | | | | | |
| 🔍 License 🛛 🔨 | ZeroU TX Private (USB and Audio) | | Private | ConnectViaTx | | | ۰ | | | | | | |
| ` | | | | | | « < 1 | of 1 > >> | | | | | | |
| 🗞 Cluster | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| ុំជុំ Discovery | | | | | | | | | | | | | |
| Alerts ^ | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 11-1. CONNECTIONS MANAGE SCREEN

The table shows the connection name, whether the connection is linked to a connection template (see section 9.1.2), connection type (private or shared), what/how the connection is made (via Tx, Direct to VM, via VM Pool or via Connection Broker or TX pair, what Zone the connection is in, and the connection options. The options for connections are the parameters that can be defined for the connection. The icons represent the parameters—when enabled the icon is Green and when disabled it is Grey. Hovering over the icon provides details of the parameter status. The icon definitions are:

Q

Extend desktop: On a dual-video head Emerald or InvisaPC, when set it enables the secondary video interface (by default it is disabled). This setting has no effect on a single-video head Emerald or InvisaPC.

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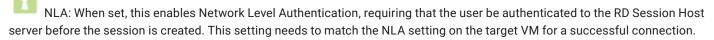
Audio: When set, this enables analog audio to be supplied to the remote audio connectors.

View only: When enabled, users can only view connections with no keyboard and mouse controls during the connection.



USB Redirection: When set, this enables non-keyboard and non-mice devices to be redirected for this connection.

Persistent Connection: When turned on, Persistent Connection will constantly try to connect to the Transmitter until successful. This is useful when using Emerald or InvisaPC for digital signage or applications with no keyboard/mouse that need to stay connected to a defined source.



Emerald 1.0 has NLA set to "disabled" by default and user doesnt have option to change. On VM, the NLA setting has to be set to "disabled".

The administrator can edit the connections parameters or delete the connection using the ellipsis "•••" icon on the specific connection row. The parameters for a connection are defined in more detail in section 9.1.1.

When you left-click on a connection name, a popup box appears that tells you details about the connection and gives you the option to disconnect.

NLA Note: If connecting to a Windows 10VM and you encounter NLA issues, you can use the steps below to fix it.

1. Open RegEdit

ഷ

2. Navigate to this Key:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\RDP-Tcp

- 3. Change "SecurityLayer" to a zero
- 4. Reboot and done!

11.1.1 CONNECTIONS-ADD CONNECTION

To allow an Emerald or InvisaPC Receiver to connect to a target Emerald, ZeroU or InvisaPC Transmitter or Virtual Machine, an administrator must create a connection. This is done on the Connections – Manage page from the main menu as shown in Figure 9-1.

Clicking on the +Connection button launches a wizard that takes the Administrator step-by-step through the creation of a new connection.

On the first screen of the wizard the Administrator selects the type of connection. This can be one of four types (as set by Connect Via parameter):

- Tx-connect to an Emerald, ZeroU or InvisaPC Transmitter;
- Direct to RDP VM-connect directly to a virtual machine using its IP address or hostname;
- VM Horizon View connect to a VM Horizon server;
- TX Pair for paired connections (i.e. two paired single head EMD200DV-T connecting to one EMD2002SE-R).





| | | New 0 | Connection | | | | × | | http://www.com/action/a |
|-----------------|------------------------|--------------|------------------------|------------------------------|-------------------------|-----------------------------------|-----|---|--|
| Dashboard | Connections Manage | | Connection Information | Propert | ty Information | Review | | | - Connection Template |
| Devices 🔨 | | | 0 | | 2 | 3 | -1 | | |
| switches 🧄 | | 1 | Connection Info > | Connect Via | TX RDP VM RDP Pool | DP Broker VM Horizon View TX Pair | | | |
| Peripherals | | | | Use Template | No Yes | | | _ | |
| Zones | Connection Name * | Based On Te | | Connection Name Zone | Email Server 2K | | | | |
| 🤶 Connections 🔨 | | • | | IP Address / Hostname | 10.0.0.200 | | | | |
| 🔮 Users 🛛 🔨 | | • | | Compression Mode | Optimized Lossless | | | | |
| DKM ^ | EMD2000PE-T (A) Shared | | | | | Cancel < Back Ne | _ | | |
| 🔅 System 🔿 | | | Private | ConnectViaTx | - Optimized | Cancel A Back Ne | | | |
| ۹. License ۸ | | Transmitters | Shared Shared | ConnectViaTx ConnectViaTx | Optimized Optimized | Q 4)~~~~© | 0 0 | | |

FIGURE 11-2. ADD CONNECTION-TX

The other parameters on this screen are:

- Connection Name: this is a unique name for the new connection. The name can be between 1 and 32 characters. The name can be composed of any Alphanumeric characters and special characters except for ""/ \[]:; | = , + *? <> ``.
- Zone: allows the Zone setting to be changed. Zones enable the administrator to setup unique zones (or groups) of Connections, Physical Receivers, and Users so that a large system can be more easily managed.
- IP Address/Hostname: the IP address of the Emerald or InvisaPC Transmitter or the Virtual Desktop in IP v4 format.
- Compression Mode: To allow users to connect from a 4K Receiver to Emerald SE, PE and ZeroU transmitters: The connection on the 2K transmitter must be set to Optimized. Go to Connections and create a new connection (or Edit an existing connection). Enter all of the connection details (or confirm they are correct) and a new option can be selected for Compression Mode. Use the information below to set the right compression mode.

4K RX to 4K TX: Compression Mode = Lossless

4K RX to 2K TX: Compression Mode = Optimized

NOTE: Currently you cannot connect a 2K RX to a 4K TX

If the TX Pair is set, you can set how many targets will be used in the connection. See the TX Pairing section in the Emerald user manual for more details.

| \equiv | BOXI | | New Connection | | | × | | ha 🕫 - 1 |
|------------------------|------|---------------------------------------|------------------------|----------------------------|-----------------------------------|------------------|-------|----------|
| Dashboard | | Connections Manage | Connection Information | Proper | ty Information | Review | plate | |
| Devices | | | 0 | | | 3 | | |
| Switches | | | 1. Connection Info > | Connect Via | TX RDP VM VM Horizon View TX Pair | | | |
| eripherals | | | | Use Template | No Yes | | | |
| 🚺 Zones | | Connection Name | | Targets Connection Name | 1 2 Email Server | | | |
| 奈 Connection | | DTX5000 Bridge EMD2002PE-T_default | | Zone | IT. | ~ | | |
| Users | | EMDSE DKM Link | | IP Address 1 | 10.8.60.50 | | | |
| DKM | | EMDSE TX EMDSE TX1 | | | 10000031 | | | |
| 🔅 System | | test tx Z4K TX | | | Cance | el < Back Next > | | |
| Q _₹ License | | ZeroU TX Private (USB and Audio) | - Priv | ate Conne | | | | |
| 🙈 Cluster | | | | | « < | 1 of 1 > >> | | |

FIGURE 11-3. ADD CONNECTION-TX PAIR

| = | | 3 | New Connection | | | | × | | h 🕲 - 💵 - |
|------------------------|-------|---|-------------------------------|-----------------------|------------------|--------------------------------------|-------|--------------------------|-----------------------|
| Dashboard | Conne | ctions Manage | Connection Information | Property In | formation | Review | plate | Edit Connection Template | - Connection Template |
| Devices | ^ | | (1) | 2 |) | 3 | | | |
| Switches | ^ | | 2. Property Info > | Connection Type | Private Shar | ed | | | _ |
| Peripherals | | | | Extended Desktop | | | | | |
| Zones | _ | Connection Name 10 | | USB Redirection | | | | | |
| 🔶 Connections | ^ | 1PC Dual Head 4K Audio USB | | Persistent Connection | | | | | |
| 曫 Users | ^ | 4K Private 4K Shared | | | | | | | |
| DKM | ^ | EMDSE (USB Test) Private EMDSE (USB Test) Shared | | Shared | Connect/VaTx | Cancel < Back Next | | | |
| 🕼 System | ^ | Template 1PC Paired | 1PC Pairing Template_template | Private | TXPair | (1)····;⊂ ↓)·;··· ↓)·;··· ● | | | |
| Q _₹ License | ~ | TEST: 1 PC DH TEST: Dual Targets | | Shared Shared | TXPair TXPair | . | | | |
| 🖧 Cluster | | | | | | < (1 of 1 > >> | | | |
| ្លុះ Discovery | | | | | | | | | |
| Alerts | ~ | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

FIGURE 11-4. ADD CONNECTIONS-PROPERTIES

The extra parameters that can be defined are:

- Connection Type: This defines the connection as being private to this user when the connection is made or is open to be shared with other users. A shared connection allows the keyboard, video and mouse to be shared to all users that join the connection. Audio and USB re-direction disabled on shared connections.
- Extended Desktop: On a dual-video head Emerald or InvisaPC, this enables the second video head to operate if connected to a source that supports dual-head operation (e.g. Dual-head Emerald or InvisaPC Transmitter). This setting has no effect on a single-video head Emerald or InvisaPC.
- USB Redirection: When set, this enables non-keyboard and non-mice devices to be redirected for this connection.
- Audio: When set, this enables analog audio to be supplied to the remote audio connectors.
- Persistent Connection: When turned on, Persistent Connection will constantly try to connect to the Receiver until successful. This is useful when using Emerald or InvisaPC for digital signage or an application with no keyboard/mouse that needs to stay connected to a defined source.
- Enable View Only mode: View only setting for a connection allows user to monitor what is been transmitted from a source without being able to interact with the source. This feature allows a user or administrator to monitor the actions on the network without accidentally interacting with other users. View only connection is available in both private and shared mode connections with or without analog audio.

Orientation: When using TX Paired with two different targets you can select how the displays will be layed out. You can currently have them side by side or on top of each other.

When Connect Via is set to VM (i.e. connect directly to a VM), there is an extra parameter to define:

• NLA: When set, this enables Network Level Authentication, requiring that the user be authenticated to the RD Session Host server before the session is created. This setting needs to match the NLA setting on the target VM for a successful connection. If you are having issues connecting to a Windows 10 VM, read section 11.1 about NLA for Windows 10.







When Connection Type is Private, the following parameters are shown in the New Connection screen: Connection Type (Private), Connection Name, Host IP address, Extended Desktop, USB Redirection, Audio, and Persistent Connection. When using the shared connection, the USB Re-direction will not be available to support transparent USB devices that require USB Re-direction.

| = | | A . | New Connection | | | × | | | |
|----------------|---|--|------------------------|--------------------------------|------------|----------------------|-------|--------------------------|-----------------------|
| Dashboard | | Connections Manage | Connection Information | Property Info | rmation | Review | plate | Edit Connection Template | – Connection Template |
| Devices | ^ | | 1 | 2 | | | | | |
| Switches | ^ | | 3. Summary > | Connection Type | Private | | _ | | _ |
| Peripherals | _ | _ | | Connection Name | connection | | | | |
| JUJ Zones | | Connection Name 11 | | Host Extended Desktop | No | | | | |
| Connections | | 4K Audio USB 4K Private | | USB Re-direction | Yes | | | | |
| Users | | 4K Shared | | Audio Persistent Connection | No | | | | |
| E DKM | | EMDSE (US8 Test) Private EMDSE (US8 Test) Shared | | View Only | No | | | | |
| Q License | | Template 1PC Paired TEST: 1 PC DH | | | | Cancel < Back Save > | | | |
| 🚓 Cluster | | TEST: Dual Targets | | | | < 1 of 1 > >> | | | |
| ំជុំ Discovery | | | | | | | | | |
| Alerts | ^ | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

FIGURE 11-5. CONNECTION TYPE - PRIVATE

11.1.2 CONNECTIONS-EDIT CONNECTIONS

To edit connections, click on the Edit Connections button.

| $\equiv \bigotimes$ | LLA C ^a | New Connection | | | × | | | |
|---------------------|---------------------------------------|------------------------|--------------------------------|--|------|-------|--------------------------|---|
| Dashboard | Connections Manage | Connection Information | Property | Information Rev | riew | plate | Edit Connection Template | Connection Template |
| Devices | | 0 | | 2 | 3) | | | |
| Switches | | 1. Connection Info > | Connect Via | TX RDP VM VM Horizon View TX Pair | | | | |
| Peripherals | | | Use Template | No Yes | | _ | _ | |
| Diff Zones | Connection Name * | | Connection Name Zone | Email Server | ~ | | | |
| 🤶 Connection | DTX5000 Bridge EMD2002PE-T_default | | IP Address / Hostname | Engineering | | | | |
| 警 Users | EMDSE DKM Link EMDSE TX | | | Credit Sales | | | | |
| DKM | EMDSE TX1 | | | Management | > | | | |
| 🔅 System | test tx Z4K TX | | ivate Connect ivate Connect | п | | | | |
| a, License | ZeroU TX Private (USB and Audio) | · Pr | ivate Connect | AaTx · · · · · · · · · · · · · · · · · · · | | | | |
| 🖧 Cluster | | | | | | | | |
| ç. Discovery | | | | | | | | |
| Alerts | | | | | | | | |
| | | | | | | | | |

FIGURE 11-6. EDIT CONNECTIONS

| BOXILLA | C | | | | | | | | ha 🕫 🗸 | | |
|---------|----------------------------------|-------------------|-------------------------|------------------------------|-------------|---|-----------------------|--------------------------|---|--|--|
| Co | onnections Manage | | | | | + Connection | + Connection Template | Edit Connection Template | Connection Template | | |
| ` | | | | | | | | | | | |
| ^ | | | | A | l Connectio | ons | | | | | |
| | All Connections | | | | | | | | | | |
| | | | Showing 1 to 8 of 8 It | ems | | | | | | | |
| | Connection Name DTX5000 Bridge | Based On Template | Connection Type Private | Connect Via ConnectViaTx | Zone | Options | () | | | | |
| | EMD2002PE-T_default | | Private | ConnectViaTx | | | • | | | | |
| | EMDSE DKM Link EMDSE TX | • | Private | ConnectViaTx ConnectViaTx | Engineering | _ | | | | | |
| | EMDSE TX1 | • | Private | ConnectViaTx | - | □ •••••••••••••••••••••••••••••••••••• | | | | | |
| | test tx | | Private | ConnectViaTx | | | ۲ ۲ | | | | |
| | Z4K TX | | Private | ConnectViaTx | Engineering | _ | | | | | |
| | ZeroU TX Private (USB and Audio) | | Private | ConnectViaTx | | □4)≪ ⊙ | of 1 > >> | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| ^ | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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FIGURE 11-7. CONNECTIONS

The next step is to enter the Property Information.

| = 🛞 | BOXIL | LA C ^a | Edit Connection | | | | × | | |
|----------------|-------|--------------------------------------|-------------------------------|---------------------|------------------|---------------|--------|--------------------------|---|
| Dashboard | | Connections Manage | Connection Information | Property | Information | Review | plate | Edit Connection Template | Connection Template |
| Devices | ~ | | 1 | | 2 | 3 | | | |
| Switches | ~ | | 2. Property Info > | Connection Ty | pe Private Shar | nd | | | |
| Peripherals | | | _ | Extended Deskt | | | | | |
| JU Zones | | Connection Name | | USB Redirecti | | | | | |
| 🛜 Connections | ~ | 1PC Dual Head | | Persistent Connecti | on OFF | | | | |
| 🐸 Users | ~ | 4K Private | | View Or | nly OFF | | | | |
| DKM | ~ | 4K Shared EMDSE | - | | | Cancel < Back | Next > | | |
| 🔅 System | ~ | Template 1PC Paired TEST: 1 PC DH | 1PC Pairing Template_template | Private | TXPair TXPair | 400 | • | | |
| Q. License | ~ | | | Shared | TXPair | | • | | |
| 🖧 Cluster | | | | | | ≪ < 1 of 1 > | | | |
| ්දේ, Discovery | | | | | | | | | |
| | | | | | | | | | |
| Alerts | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |







After configuring the connection, you will be able to review the final connection parameters to make sure it is properly configured.

| $\equiv \bigotimes$ | | | Edit Connection | | | × | | ha 🕑 - 上 - |
|------------------------|-------|---------------------|------------------------|--------------------------------------|-----------|----------------------|-------|---|
| Dashboard | Conne | ections Manage | Connection Information | Property Info | rmation | Review | plate | Connection Template |
| Devices | ^ | | 1 | 2 | | | | |
| Switches | | | 3. Summary > | Connection Type | Private | | | |
| Peripherals | | _ | | Connection Name | EMDSE | | _ | |
| Zones | | Connection Name ^ 1 | 8 | Host | 10.8.1.31 | | | |
| Connections | ^ | 1PC Dual Head | | Extended Desktop USB Re-direction | No Yes | | | |
| 曫 Users | ~ | 4K Private | | Audio | No | | | |
| 👝 ОКМ | ~ | 4K Shared - | | Persistent Connection View Only | No | | | |
| 🔅 System | ~ | Template 1PC Paired | | view only | | | | |
| Q _₹ License | ~ | TEST: Dual Targets | | | | Cancel < Back Save > | | |
| 🖧 Cluster | | | | | | | | |
| ໍ່ດີ, Discovery | | | | | | | | |
| Alerts | ~ | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

FIGURE 11-9. EDIT CONNECTION3

11.1.3 CONNECTIONS-ADD CONNECTION TEMPLATE

Connection Templates are used to aid in the creation of connections. Templates define a set of properties as shown in Figure 9-6. The template can be used when creating a connection to ensure that the same properties are attached to a group of the connection. Clicking on +Connection Template launches the screen to set these properties.

| = 🛞 | BOXI | | | New Connection Te | mplate | | × | | | ha 🗇 - 1 |
|-----|------|--------------------------|------------------------|-------------------|-----------------|-------------------|---------------------------|-----------------------|--------------------------|-----------------------|
| | | Connections Manage | | Template Name | | | | + Connection Template | Edit Connection Template | - Connection Template |
| | | | _ | Connect Via | Via TX RDP VM R | DP Pool RDP Broke | r VM Horizon View TX Pair | | | |
| | | | | Connection Type | Private Shared | | | | | |
| | | | | Extended Desktop | OFF | | | | | |
| | | | | USB Redirection | OFF | | | | | |
| | | | _ | Audio | OFF | | | | | |
| | | | | Persistent | OFF | | | | | |
| | | Connection Name: ^ | Based On Template | View Only | OFF | | | | | |
| | | 4K Audio USB | | | | | | 0 | | |
| | | 4K Private | | | | | Close Save Template | 0 | | |
| | | 4K Shared | | | Shared | ConnectViaTx | | 0 | | |
| | | EMDSE (USB Test) Private | | | Private | ConnectViaTx | | | | |
| | | EMDSE (USB Test) Shared | | | Shared | ConnectViaTx | | • | | |
| | | Template 1PC Paired | 1PC Pairing Template_t | template | Private | TXPair | 4000 | 0 | | |
| | | TEST: 1 PC DH | | | Shared | TXPair | | 0 | | |
| | | TEST: Dual Targets | | | Shared | TXPair | 4000 | • | | |
| | | | | | | | « < <u>1</u> | of 1 > » | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |

FIGURE 11-10. ADD CONNECTION TEMPLATE



11.1.4 CONNECTIONS-DELETE CONNECTION TEMPLATE

To delete a connection template, click -Connection Template and this launches a screen that shows a list of connection templates. Select the template(s) to be deleted and click on delete.

Boxilla will only display the list of connection templates that are not currently assigned to connections. If you wish to delete a template that is associated with a connection, you will first need to remove the template from the connection.

11.2 CONNECTIONS-GROUPS

Boxilla supports the creation of a connection group to make it easier to allocate a common set of resources to user. If a connection group gets changed, it will be reflected on all users allocated to this Connection Group.

Connections option can be found on left side pane of the Boxilla user interface.

There are two new Connection Groups for the Active Directory feature updates:

1) OU Not Found.

2) OU Undefined.

These 2 Connection Groups are created by default on upgrade to Boxilla 3.6.0.

| | | | | | | b |
|---------------|----------------------|------------------------------------|---------------------------|-----------------------|--------------|----------|
| 🚯 Dashboard 🕻 | Connections Groups | | | | | |
| Devices A | | | | | | |
| Switches A | | | All Groups | | | |
| Peripherals | All Connections | | Showing 1 to 7 of 7 Items | | | |
| | Group Name 🔿 | Description | Creat | ed at | | |
| Zones | Credit | Credit | | -02-05 23:38:40 -0500 | • | |
| | Engineering | Engineering | 2020- | -02-05 23:37:57 -0500 | • | |
| Connections | Legal | Legal | 2020- | -02-05 23:38:44 -0500 | 0 | |
| | Management | Management | 2020- | -02-05 23:38:09 -0500 | 0 | |
| Users ^ | NewYork Group | by | 2020- | -06-16 22:37:54 -0400 | • |) |
| | OU Undefined | No Connection Groups match this OU | 2020- | -06-19 20:12:07 -0400 | • | |
| DKM ^ | Sales | Sales | 2020- | -02-05 23:38:01 -0500 | • | |
| | | | | | ≪ < 1 of 1 > | > |
| System 🔨 | | | | | | |
| Elicense A | | | | | | |
| 🐮 License 🔨 | | | | | | |
| Cluster | | | | | | |
| | | | | | | |
| 2° Discovery | | | | | | |
| | | | | | | |
| | | | | | | |

FIGURE 11-11. CONNECTIONS OPTION

To add a connection group:

| New Group | × | |
|---------------------------|---------------------------------------|---|
| Group Name Description | | |
| | Cancel Add > Showing 1 to 1 of 1 lems | l |

FIGURE 11-12. ADD CONNECTION GROUP SCREEN





Once a connection group has been added, you will see the following screen.

| | onnections Groups | | | |
|---------------|---------------------|------------------------------------|-----------------------------|---------------------------------------|
| Devices ^ | | | | |
| Switches ^ | | | All Groups | |
| Peripherals | All Connections | | Showing 1 to 14 of 14 Items | |
| | Group Name 🔿 | Description | Created at | |
| Zones | 1 | 1 | 2020-02-05 23:37:57 | |
| | 10 | 10 | 2020-02-05 23:38:40 - | |
| Connections ^ | 11 | 11 | 2020-02-05 23:38:44 | |
| | 2 | 2 | 2020-02-05 23:38:01 | · · · · · · · · · · · · · · · · · · · |
| Jsers ^ | 3 | 3 | 2020-02-05 23:38:09 - | |
| | 4 | 4 | 2020-02-05 23:38:14 - | |
| окм ^ | 5 | 5 | 2020-02-05 23:38:19 | |
| | 6 | 6 | 2020-02-05 23:38:24 - | |
| System 🔨 | 7 | 7 | 2020-02-05 23:38:28 | · · · · · · · · · · · · · · · · · · · |
| system | 8 | 8 | 2020-02-05 23:38:32 | |
| License A | 9 | 9 | 2020-02-05 23:38:35 - | |
| icense ~ | NewYork Group | by | 2020-06-16 22:37:54 - | |
| | OU Undefined | No Connection Groups match this OU | 2020-06-19 20:12:07 | |
| luster | testAD | 123 | 2019-07-01 15:49:17 | 0400 |

FIGURE 11-13. UPDATED CONNECTION GROUP SCREEN

You can manage connections by adding or removing connections to or from the connections group.

| | | Group Connection Allocation for group test | AD × | - Pine | ୕ୖୢ୰ୖୢୢୢୢୢୢୢୢୢୢୢୢୢୢୢୖୢୢୢୢୢୢୢ |
|------------------------------|-------------------------------|---|-----------------------------------|---------------------------------------|------------------------------|
| Dashboard | Connections Groups | Connection List Showing all 8 | Belongs to group Showing all 1 | | |
| Devices 🔨 | | Filter →→ → | Filter + ++ | | |
| Switches 🔨 | | 4K Audio USB A 4K Private TEST: Dual Targets TEST: 1 PC DH | 4K Shared | | |
| Peripherals | All Connections Group Name | Template 1PC Paired | * | | |
| Zones | testAD | | Cancel Save | • • • • • • • • • • • • • • • • • • • | |
| 🛜 Connections 🛛 🔨 | | | | | |
| 🐸 Users 🛛 🔨 | | | | | |
| DKM ^ | | | | | |
| System ^ | | | | | |
| a, License 🔨 | | | | | |
| 🗞 Cluster | | | | | |
| ្លំជុ ² Discovery | | | | | |
| 🛕 Alerts 🧄 | | | | | |
| | | | | | |

FIGURE 11-14. MANAGE CONNECTIONS SCREEN



You can add / manage groups from individual Users under Users -> Manage. Once a user logs in at the appliance GUI, all the assigned connections (both individual and group connections) with be visible to the user.

| | | | | | | | | | | ha 🕅 🖓 🗸 |
|--------------------------|-----------|------------|-------------------|-----------------------|--------------|---------------------------|---------------|---------------------|-----------------|---------------|
| 🚯 Dashboard | Users N | lanage | | | | | + | User 🕂 User Templat | e Edit Template | – User Templa |
| Devices ^ | | | | | | | | | | |
| 🚐 Switches 🛛 🔨 | | | | | | All Users | | | | |
| Peripherals | | | | | | All Users | | | | |
| Zones | | All Users | | | | Showing 1 to 4 of 4 Items | | | | |
| | | Username 🔿 | Based On Template | Privilege | Auto Connect | Auto Connect Name | Remote Access | Authorized By | Domain AD Statu | 5 |
| 🛜 Connections 🛛 🔨 | | admin | admin_default | Administrator | no | | No | Local | | • |
| | | dean | - | Administrator | No | • | No | Local | | ٠ |
| 📑 Users 🛛 🔿 | | garrett | | Administrator User | No | · · | Yes | Local | | 0 |
| | | mene | | USE! | NO | | NO | Local | « < 1 | |
| System ^ | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | |
| g ^o Discovery | | | | | | | | | | |
| Alerts ^ | | | | | | | | | | |

FIGURE 11-15. MANAGE USERS SCREEN

Active connections will be listed under Connections -> Active.

| | | | | | | | | | ha 🕲 - 🛛 |
|------------------|--------------------------|-------------------------|-----------------|-------------|---|---|--------------------|---------------|-------------------|
| Dashboard | Connections Active | | | | | | | | |
| 👝 Devices 🛛 🔨 | | | | | | | | | |
| 🚍 Switches 🔨 | | | | | Active Connections | | | | |
| Peripherals | | 9 | Ø | ê | 0 | 0 | A | 18 | |
| 🕅 Zones | | Devices On-Line | 0 | ÷ | Active Connections | Ū | 4 | Active Alerts | U |
| < Connections 🗸 | | Performance | | | Frame Rate | | | Configuration | |
| Manage | All Active Connections - | Performance | | | Showing 1 to 0 Results out of 0 | | | | |
| Active Groups | Connection Name 🗸 | Receiver User Logged-in | Connection Type | Transmitter | Total Conn Connection Active Network | | 1bps) Audio B/W (N | | User Latency (ms) |
| Viewer | | | | | | | | × × | 1 of 1 > >> |
| 警 Users 🛛 🔿 | | | | | | | | | |
| 👝 DKM 🛛 🔨 | | | | | | | | | |
| 🔅 System 🔨 | | | | | | | | | |
| a, License 🔨 | | | | | | | | | |
| 🚓 Cluster | | | | | | | | | |
| ្លំ¢្ល Discovery | , | | | | | | | | |

FIGURE 11-16. ACTIVE CONNECTIONS SCREEN



To dissolve a connection group (Map Connections from Connection Group to Individual Connections):

| = 🛞 B | OXILLA | 3 | | | ا ∘ ® ⊀ |
|------------------|--------|----------------------|--------------------|---|---|
| Dashboard | Conne | ctions Groups | | | + Group |
| Devices | ^ | | | | |
| Switches | ^ | | | All Groups | |
| Peripherals | | All Connections | | Showing 1 to 1 of 1 Items | |
| 🚺 Zones | | Group Name in testAD | Description 123 | Created at 2019-07-01 15:49:17 -0400 | |
| 🛜 Connections | ~ | | | | Manage Connections >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> |
| 🚰 Users | ^ | | | | Delete Dissolve |
| 🚔 DKM | ^ | | | | |
| System | ^ | | | | |
| a, License | ^ | | | | |
| 🗞 Cluster | | | | | |
| ံ့တို့ Discovery | | | | | |
| Alerts | ^ | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

FIGURE 11-17. DISSOLVE CONNECTION GROUP SCREEN

Once you confirm with OK, a success message will be prompted.

By dissolving a group, the group no longer appear under Connections-Groups but the active connections are retained with the users logged in.

Unlike Delete groups, Dissolve Groups doesn't leave any impact on connections.

After dissolving a Connection Group, all Connections from the Connection Group are moved to the list of Managed Connections for each User that was assigned to the Connection Group.

Delete Connection Group: Delete the Connection Group and everywhere it is used.

Confirm with OK and a confirmation message about deletion is displayed.

The maximum number of connection groups is 100 and once it is reached, the add group button gets disabled.



| Dashboard | Co | nnections Groups | | | |
|-------------|----|--------------------|------------------------------------|---------------------------|--------------|
| Devices | ^ | | | | |
| Switches | ^ | | All Gr | roups | |
| Peripherals | | All Connections | Showing 1 to | 14 of 14 Items | |
| | | Group Name | Description | Created at | |
| 🔰 Zones | | 1 | 1 | 2020-02-05 23:37:57 -0500 | • |
| | | 10 | 10 | 2020-02-05 23:38:40 -0500 | • |
| Connections | ~ | 11 | 11 | 2020-02-05 23:38:44 -0500 | ٠ |
| | | 2 | 2 | 2020-02-05 23:38:01 -0500 | ٢ |
| Users | ~ | 3 | 3 | 2020-02-05 23:38:09 -0500 | ٠ |
| - OSCIS | | 4 | 4 | 2020-02-05 23:38:14 -0500 | • |
| | | 5 | 5 | 2020-02-05 23:38:19 -0500 | 0 |
| DKM | ^ | 6 | 6 | 2020-02-05 23:38:24 -0500 | 0 |
| | | 7 | 7 | 2020-02-05 23:38:28 -0500 | 0 |
| 🔅 System | ^ | 8 | 8 | 2020-02-05 23:38:32 -0500 | • |
| | | 9 | 9 | 2020-02-05 23:38:35 -0500 | • |
| 💫 License | ^ | NewYork Group | by | 2020-06-16 22:37:54 -0400 | • |
| | | OU Undefined | No Connection Groups match this OU | 2020-06-19 20:12:07 -0400 | • |
| 🗞 Cluster | | testAD | 123 | 2019-07-01 15:49:17 -0400 | ٠ |
| | | | | | < 1 of 1 > > |

FIGURE 11-18. MAXIMUM NUMBER OF CONNECTION GROUPS

IMPORTANT NOTE: Boxilla restricts the total number of User Connections across the system to 22500 unique User Connections. Boxilla supports:

- 150 users, each supporting a maximum of 150 unique connections
- 150 users, each supporting a maximum of 10 Connection Groups each group supporting a maximum of 15 unique connections
- 200 users, each supporting a maximum of 112 unique connections
- 200 users, each supporting a maximum of 10 Connection Groups each group supporting a maximum of 11 unique connections
- 250 users, each supporting a maximum of 90 unique connections
- 250 users each supporting a maximum of 10 Connection Groups each group supporting a maximum of 9 unique connections





11.3 CONNECTIONS-ACTIVE

The Connections—Active page lists the currently active connections—a live connection between a Receiver and a Transmitter. There are three tabs on this page: Performance, Frame-Rate and Configuration. These pages provide information on all active connections: the name of the connection, the Receiver in the connection, the user who is logged into the Receiver, the type of connection (e.g. private or shared), the Transmitter in the connection and then statistics on the connection. The statistics include:

- On the Performance tab:
- Connection Active: the total time the connection has been established
- Connection Bandwidth: network traffic generated on the connection during the last polling interval
- Video/Audio/vUSB Bandwidth: a breakdown of connection bandwidth into its individual components of video, audio and vUSB
- Round-trip time: the round-trip latency between Receiver and Transmitter on the network during last polling interval
- User Latency: the latency a user experiences on video/mouse during the last polling interval
- On the Frame-Rate tab:
- Frame-per-Second: active frames sent from Transmitter to Receiver (typically will be 60 fps)
- Dropped-Frames-per-Second : number of frames dropped on the Transmitter. Normally this should be 0. Frames can be dropped for reasons such as network congestion.
- On the Connection tab:
- Shows the properties active on the connection: USB and Audio (i.e., is USB and Audio enabled or disabled on the connection)
- If a statistic exceeds a threshold, the color changes from green to amber to red.

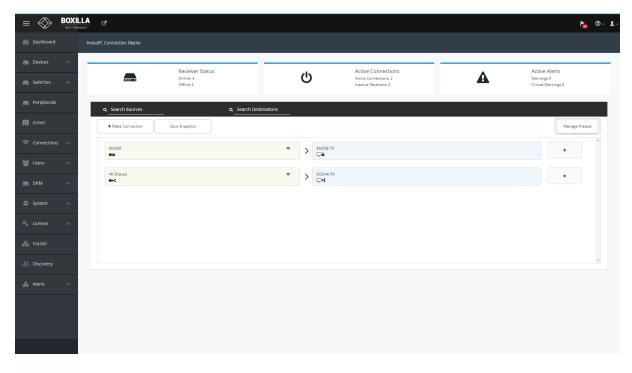
| | | | | | | ha 🕅 🗸 |
|------------------|---|-----------------|--|------------------------|-------------------------------------|-------------------|
| Dashboard | Connections Active | | | | | |
| 🛋 Devices 🛛 🔨 | | | | | | |
| 🚐 Switches 🔨 | | | Active Connections | | | |
| Peripherals | 9 Devices On-Line | | € Active Connections | ⊘ ▲ | 18 Active Alerts | ⊘ |
| 🕅 Zones | Devices on fune | | Active connections | | Active Alerts | |
| < Connections 🗸 | Performance | | Frame Rate | | Configuration | |
| Manage | All Active Connections - Performance | | Showing 1 to 0 Results out of 0 | | | |
| Active Groups | Connection Name Receiver User Logged-in | Connection Type | Total Connection Transmitter Connection Active Network B/W | Video B/W (Mbps) Audio | B/W (Mbps) vUSB B/W (Mbps) RTT (ms) | User Latency (ms) |
| Viewer | | | | | | 1 of 1 > >> |
| iei Users ^ | | | | | | |
| 🚍 DKM 🔷 | | | | | | |
| 🕸 System 🔨 | | | | | | |
| 🔍 License 🔨 | | | | | | |
| 🖧 Cluster | | | | | | |
| ុជ្ជ Discovery | | | | | | |

FIGURE 11-19. ACTIVE CONNECTIONS



11.4 CONNECTIONS-VIEWER

On the Connections drop-down menu, click on Viewer. The Emerald or InvisaPC Connection Matrix screen appears.





NOTE: For instructions on how to bond two Emerald ZeroU Transmitters to one Dual-Head Emerald SE Receiver, refer to the Emerald SE manual.





11.4.1 MAKE CONNECTIONS

Click on the Make Connections button, and the Add Source screen pops up.

NOTE: It is only possible to connect InvisaPC Receivers to InvisaPC Transmitters and Emerald Receivers to Emerald Transmitters. Boxilla does not support connection interoperablity between Emerald and InvisaPC devices.

| | Add Source × | r |
|---|--|---|
| InvisaPC Connection Matrix | Available Sources : 6 Q | |
| Receiver Status | 4K Audio USB | Active Alerts |
| Online: 4 Offline 2 | 4K Private | Active Alerts Warnings 0 Croteal Warnings 0 |
| Q Search Sources | Template 1PC Paired TEST: Dual Targets | |
| Acardin Sources Make Connection Save Snapshot | E TEST: 1 PC DH | Manage Presets |
| EMDSE | IPC Dual Head | |
| | * * | |
| 4K Shared | | • |
| | | |
| | | |
| | | |
| | Activate Selected | |
| | | |
| | | |
| | | |
| | | |



Select a source from the list and press Activate Selected. Once the source connection is added successfully, add a destination (RX) from the available destinations to the selected source and activate by clicking the "Add Destination" button. To detach a destination, click on "X."

Once you have a connection established, you will see the Connection Viewer page reflect this by displaying the connection name alongside all the attached receivers. To detach one of the receivers, move your mouse over that receiver tile and you will see an 'X' appear on the button. Clicking this X detaches only that receiver from the connection and leaves the rest of them intact.

By moving your mouse over the connection name tile you will also see an X appear. Clicking this will break all connections from any receiver connected with this connection name.

To revert, select Delete from the dropdown list to delete the source entry. This should show the "X" button, which is the Delete button.

If you click to 'add destination' to a private connection, you will only have the option to select one receiver. This is the receiver that is then used in the connection. If you wish to establish to the same connection from another receiver you will have to break this connection and establish the new one.





| Available Destinations : 4 | E. | | |
|----------------------------|---------|--------|----------|
| | RX_19 ~ | | |
| | | Cancel | Activate |

11.4.2 MANAGE PRESETS

Click on the Manage Presets button, and the Manage Presets screen pops up. Under this page all the existing presets will be listed. In Emerald or InvisaPC Viewer – Preset Manage, you can rearrange the preset priority to change what presets display on th main Viewer screen. Essentially, you can pick your top three presets.

| | KILLA C | Manage Presets × | r <u>s</u> ⊙- ±- |
|-----------------|---|---|---|
| Dashboard | InvisaPC Connection Matrix | Available Presets () Q | |
| Devices ^ | Receiver Status | · · · · · · · · · · · · · · · · · · · | Active Alerts |
| Switches ^ | Online: 4 Offline 2 | | Warnings 0 Critical Warnings 0 |
| Peripherals | Q Search Sources | | |
| Zones Zones | + Make Connection | | Manage Presets |
| 🤝 Connections 🗠 | Non Active Connections : 9 | | |
| 曫 Users 🛛 🔿 | 4K Shared 4K Audio USB 4K Private Template | | D4K RX with US9 2.0 Emerald4K 2 EMD20025E-R RX2 EMD20025E-R RX1 |
| ркм 🥎 | 1PC Duel Head EMDSE (USB Test) Private EMDSE (U | 3 | |
| 🍄 System 🔨 | | Save Snapshot Create Custom Activate Selected | |
| a License 🧄 | | | |

FIGURE 11-23. MANAGE PRESETS SCREEN



FIGURE 11-22. CONNECTIONS-ADD DESTINATION TO A PRIVATE CONNECTION



To create a new / custom template , click on " Create Custom" and select the required sources from the available list.

| | | Create Preset | | × |
|--------------------------|-------------------|---------------------|--|--|
| Dashboard | | Adding Sources | Adding & Setup Destinations Preset Details | |
| Devices . | | 0 | 3 | Active Alerts |
| Switches . | | 1. Select Sources > | | Accuracy to a Warryings 0 Crisical Warryings 0 |
| Peripherals | Q Search Sources | | | |
| 🚺 Zones | + Make Connection | | Available Sources : Q | Manage Presets |
| 🛜 Connections | | | 4K Audio USB | |
| 🔠 Users 🗸 | | | 4K Private Template 1PC Paired | Emerald4K 2 EM020025E-R R42 EM020025E-R R41 |
| DKM . | | fe . | TEST: Dual Targets | |
| 🔅 System | | | B TEST: 1 PC DH | |
| ۹ _e License . | | | 1PC Dual Head | |
| 🗞 Cluster | | | | ^ |
| ့်ုံ Discovery | | | | |
| 🛕 Alerts | | | | <u> </u> |
| | | | | |
| | | | Cancel < Back | Next > |
| | | | | |

FIGURE 11-24. SELECT SOURCES SCREEN

Click next and select the destinations per source. Save the preset with a name and type (Partial or Full). The icons on the sources screen are:

| lcon | Meaning | |
|------|--------------|--|
| | Source | |
| Ţ | Destination | |
| ۲ | View Only | |
| 4 | Shared Mode | |
| | Private Mode | |

FIGURE 11-25. ICONS ON THE SOURCES SCREEN



| | | Create Preset | | × | h. 🕫 🕹 🖉 |
|-------------------|-------------------|-----------------|--------------------------------|-----------------|---|
| Dashboard | | Adding Sources | Adding & Setup Destinations | Preset Details | |
| E Devices | | 1 | 0 | 3 | Active Alerts |
| Switches 🗸 | | 1PC Dual Head > | | | Warnings 0 Critical Warnings 0 |
| Peripherals | Q Search Sources | | Available Destinations : Q | | |
| 🚺 Zones | + Make Connection | | Available Destinations : Q | A | Manage Presets |
| 🗢 Connections 🗸 | | | EMD4K RX with USB 2.0 | | |
| 🔠 Users 🗸 | | | Emerald4K 2 EMD20025E-R RX2 | | Emerald4K 2 EMD20025E-R RK2 EMD20025E-R RK1 |
| E DKM - | | • | EMD20025E-R RX1 | | |
| 🔅 System 🗸 | | | EMDSE RX1 (46) | | |
| م License / | | | | v. | |
| 🗞 Cluster | | | | * | |
| ៉ូថ្កុំ Discovery | | | | | |
| Alerts | | | | ×. | |
| | | | | | |
| | | | Cance | el 🛛 🕹 🕹 Next > | |
| | | | | | |

FIGURE 11-26. SELECT DESTINATIONS SCREEN

The icons on the destination screen are:

| lcon | Meaning |
|------|--------------|
| | Source |
| | Destination |
| ۲ | View Only |
| 4 | Shared Mode |
| | Private Mode |

FIGURE 11-27. ICONS ON THE DESTINATIONS SCREEN

Both preset types will forcibly take any source and destinations required to establish their configuration, i.e., if those TX / VM and RX are already in active connections then these connections will be broken.

The partial type applies only to the specific Tx/Vm and RX that are selected in this preset type.

The full type is applied to all the Tx/Vm and RX. Any Tx/Vm and RX not selected in this preset type will become inactive when this preset is launched.

Click "Complete" to save the preset.





| KILLA C' | Create Preset | | | | × | |
|-------------------|----------------|------------|----------------------------|----------------|-----------------|----------------|
| | Adding Sources | Addi | ng & Setup Destinations | Preset Details | | |
| | (1) | | 2 | 0 | | |
| _ | 3A. Summary > | | | | | |
| Q Search Sources | | Name | NAME | | | |
| + Make Connection | | Туре | Select Type Select Type | | * | Manage Presets |
| | | | Partial Full | | | |
| | <u>10</u> | | | | Emerald4K 2 EMD | |
| | st) Private | | | | | |
| | | Save Snaps | not Create Custom Act | ivate Selected | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

FIGURE 11-28. SAVE PRESET SCREEN

The following methods are available to activate presets:

- 1. Direct preset activation in the Viewer: The first three presets (ordered by creation) are presented directly in the Viewer and can be activated with a direct click.
- 2. Activation via Manage Presets: All presets can be activated with the "Activate Selected" option in "Manage Presets." This is mandatory for any preset that is the fourth or later one created, as there is no other method to activate these presets from within Boxilla.

Under manage presets, we have a snapshot option, which will automatically save the current active connections as a "Preset".





Users are defined in the Emerald or InvisaPC system to provide rights to manage the system, rights to connect to different target devices and rights to set parameters for connections.

12.1 USER TYPES

There are three types of users that can be created in an Emerald or InvisaPC system:

- 1. Administrator: Users of this class have full rights to configure the system. They can create/modify/delete users and connection, change network settings, etc.
- 2. Power User: Users of this class can modify resolution for connections to virtual desktops and change his/her local password.
- 3. Standard Users: Users of this class can only select from a list of pre-defined connections to access and view system information. They cannot change any configuration settings.

The Boxilla has one default user – admin, which is a member of the administrator group. This user is defined by default and cannot be deleted. Boxilla currently supports up to 1,000 individual users.

To manage users, an administrator selects the Users button on the main menu.

12.2 USER-MANAGE

The User-Manage screen is used to create, edit and delete users as shown in Figure 12-1. It provides a list of the currently created users.

| | | | | | | | | | | | | 6 | |
|-------------|--------|---------------|-------------------|---------------|--------------|-------------------|---------------|--------------------|-------------------|-----------|-----------|--------|-----|
|) Dashboard | Users | Manage | | | | | | + User | + User Template | Edit Temp | late | - User | Tei |
| Devices | ^ | | | | | | | | | | | | |
| Switches | ^ | | | | | All Use | ers | | | | | | |
| Peripherals | | | | | | All Use | rs | | | | | | Ī |
| | | | | | | | | | | | | | |
| | | All Users | | | | Showing 1 to 5 of | | | | | | | |
| | | Username 🔿 | Based On Template | Privilege | Auto Connect | Auto Connect Name | Remote Access | Authorized By | Domain | | OU Status | | |
| Connections | ~ | admin dean | admin_default | Administrator | No | | No | Local | | | | 0 | |
| | _ | garrett | | Administrator | No | • | Yes | Local | | | | 0 | |
| Users | ~ | merle | | User | No | | No | Local | | | | 0 | 4 |
| | | User1 | | Administrator | No | | No | Active Directory 0 | bbnsengineering.k | val | ~ | 0 | |
| DKM | ~ | 0.000 | | 10111120001 | | | | neare breeday o | borbergineeringin | | 1 of 1 | | |
| System | ^ ^ | | | | | | | | | | | | |
| Cluster | | | | | | | | | | | | | |
| Discovery | | | | | | | | | | | | | |
| Alerts | ^ | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 12-1. USERS-MANAGE







12.2.1 ADD USER

To create a user, click on the +User button at the top of the page and this opens up the new user wizard. The initial page of this wizard is shown in Figure 12-2.

| $\equiv \bigotimes$ | BOXIL | LA (| 3 | | New User | | | | × | | | ► ⑦· ±· |
|------------------------------|-------|-------|-------------------------|---------------|------------------|------------------------------|----------------|--------|---------------|--------------------|---------------|-----------------|
| 🚯 Dashboard | | Users | Manage | | User Information | Proper | ty Information | R | eview | + User Template | Edit Template | – User Template |
| Devices | ~ | | | | 0 | | 2 | | -3 | | | |
| Switches | ~ | | | | 1. User Info > | Use Template | No Yes | | | | | |
| Peripherals | | - | | _ | | Active Directory | No Yes | | | | | |
| 🕅 Zones | | | All Users Username ^ | Based On Terr | | Username | | | | Domain | AD Stat | us |
| 🛜 Connections | ~ | | admin dean | admin_default | | Password Confirm Password | | | | | | 0 |
| 🐸 Users | ^ | | garrett merie | | | | | | | | | 0 |
| 💼 ркм | ~ | | User1 | | | | | Cancel | < Back Next > | bbnsengineering.lo | cal | ✓ ◎ (1 > » |
| 🔅 System | ~ | | | | | | | | | | | |
| a, License | ~ | | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | | | |
| ំថ្ ² ូ Discovery | | | | | | | | | | | | |
| Alerts | ~ | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

FIGURE 12-2. NEW USER WIZARD

The administrator can use a template to follow a common set of properties for a user as described in the next section. The definitions of the properties of a user are:

- User Name: This is a unique name that uses 1–32 characters. The username can be any valid username for a Microsoft O/S. This means the username cannot contain ""/ \[]:; | = , + *? <> ``.
- Active Directory: Select "Yes" if the user belongs to Active Directory that is enabled on Boxilla.
- Password: This field can be a minimum of 0 characters (i.e. blank) and a maximum of 32 characters. The password can be any valid password for a Microsoft O/S. This means the password cannot contain ""/ \[]:; | = , + *? <> `'
- User Privilege: This field defines the type of user the new user will be: Administrator, General User or Power User.
- Auto-Connect: This enable/disable whether the Emerald or InvisaPC Receiver attempts to connect immediately to the selected connection after a logon by this user. This automatic connection only occurs after a logon. If a user exits the connection, the connection tab is displayed to the user for selection of a connection.

Once the new user fields have been filled out, you must click the Save button to create the new user. Clicking the Save button causes the validation of the new username, checking that it is unique and that the two password entries match. If this validation fails, a pop-up window displays the reason for the failure, and the new user is not created. After dismissing the pop-up window, the user can fix the error and click Save again.





12.2.2 MANAGE USER CONNECTIONS

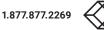
The new user must be allocated Connections that he/she can access. This is done by clicking on "Manage Connection" option on the ellipsis "•••" icon in the required user row. The required connections are selected from the available Connections—click on the connection in the Non-Selected List and then click the "->" button). This causes the selected connections to be "added" to a user's selected connection window as shown in Figure 12-3. Click Save to complete the selection. It is a similar process to edit an existing users list of connections. To remove a connection from a user, select the specific connection in the Selected list (i.e. current connections allocated to the user) and click on the "<-" button. Click Save to complete the task.

| = | | A c' | | Manage | Connections | | | × | | | | | ه 🕫 |
|---|----------|----------------|-------------------|---------------|------------------|---|---|-------------|--------------------|-----------------------|-------------|-----------|---------------|
| | - L | Jsers Manage | | | g all 1 → → → | | Selected Showing all 7 Alter | ++ | + User | + User Template | Edit Templa | te – | User Template |
| | ^ | | _ | 1PC D | ual Head | * | EMDSE 4K Shared 4K Audio USB 4K Private TEST: Dual Targets TEST: 1 pC DH | • | _ | _ | | _ | |
| | | All Users | Based On Template | Privile | | | | Cancel Save | Authorized By | Domain | | AD Status | |
| | | admin | admin_default | Administrator | no | | | No | (0.50) | Domain | | ND Status | 0 |
| | <u>^</u> | dean | - | Administrator | No | | | No | Local | | | | 0 |
| | | garrett | | Administrator | No | | | Yes | Local | | | | 0 |
| | ~ | merle | | User | No | | | No | Local | | | | 0 |
| | _ | User1 | | Administrator | No | | | Yes | Active Directory 0 | bbnsengineering.local | | ~ | 0 |
| | ~ | | | | | | | | | | « < | 1 of 1 0 | |
| | ^ | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | * | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

FIGURE 12-3. MANAGE USER CONNECTIONS

12.2.3 ACTIVE DIRECTORY USER MANAGEMENT

When you create a new Boxilla user and save it as an Active Directory user, you will see the "OU Status" change to a spinner. This means Boxilla is attempting to retrieve the DN string for the user that contains the OU and CN information. If the retrieve was successful, the spinner will change to a "tick" or check mark and we will store the new OU tree information in our database. If the retrieve was not successful, then the spinner will change to an X. If the Boxilla administrator wishes to manually specify an OU for this user, then they can manually "edit" the user and they will then be presented with the text fields to enter the OU information manually. In Boxilla 3.6.0, the administrator no longer needs to configure AD users in Boxilla.





| | | | | | | | | | | | | ۵~ 🍋 |
|-------------------|-----------|------------|------------------------------------|----------------------------|--------------|---------------------------|---------------|--------|-----------------|----------|-----------|-----------------|
| Dashboard | Users I | Manage | | | | | | + User | + User Template | Edit Tem | plate | – User Template |
| Devices ^ | | | | | | | | | | | | |
| 🙈 Switches 🛛 🔨 | | | | | | All Users | | | | | | |
| Peripherals | - | | | | | All Users | | | | | | |
| 🔰 Zones | | All Users | | | | Showing 1 to 4 of 4 Items | | | | | | |
| | | Username ^ | Based On Template admin_default | Privilege Administrator | Auto Connect | Auto Connect Name | Remote Access | | uthorized By | Domain | AD Status | • |
| 🛜 Connections 🛛 🔨 | | dean | | Administrator | No | | No | | ocal | | | 0 |
| | | garrett | | Administrator | No | | Yes | Lo | ocal | | | • |
| 嶜 Users 🛛 🔨 | | merle | | User | No | | No | Lo | ocal | | | • |
| DKM ^ | | | | | | | | | | « < | 1 07 1 | I > » |
| | | | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | | | |
| .ç°, Discovery | | | | | | | | | | | | |
| Alerts A | | | | | | | | | | | | |

FIGURE 12-4. USERS -> MANAGE

| | LLA C ^a | New User | | | × | | | |
|--------------------------|---------------------------------|------------------|------------------------------|----------------|----------------------|---------------------|---------------|-----------------|
| 🚯 Dashboard | Users Manage | User Information | Proper | ty Information | Review | + User Template | Edit Template | - User Template |
| Devices 🔨 | | 0 | | 2 | 3 | | | |
| Switches 🔨 | | 1. User Info > | Use Template | No Yes | | | | |
| Peripherals | | | Active Directory | No Yes | | | | |
| 🔰 Zones | All Users Username Based On Te | | Username | garrett | | Domain | AD Sta | itus |
| 🗢 Connections 🗠 | admin admin_defau dean - | it. | Password Confirm Password | | | | | 0 |
| 🐸 Users 🛛 🔨 | garrett | | Committagenera | | | | | 0 |
| 👝 DKM 🔨 | User1 | | | | Cancel < Back Next > | bbnsengineering.los | al « < 1 | ✓ |
| 🔅 System 🔨 | | | | | | | | |
| Q _€ License ∧ | | | | | | | | |
| 🗞 Cluster | | | | | | | | |
| ំជុះ Discovery | | | | | | | | |
| 🛦 Alerts 🔨 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

FIGURE 12-5. EDIT USER DETAILS



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| = | BOXILLA | A C. | | New User | | | × | | | h 🕫 🕹 |
|------------------------|---------|--------------------------|--------------|------------------|------------------------------|----------------|----------------------|--------------------|--|-------|
| Dashboard | | Jsers Manage | | User Information | Proper | ty Information | Review | + User Template | | |
| Devices | ~ | | | 0 | | 2 | 3 | | | |
| Switches | ~ | | | 1. User Info > | Use Template | No Yes | | | | |
| Peripherals | | | _ | | Active Directory | No Yes | | _ | | |
| 🚺 Zones | | All Users Username 11 | Based On Ter | | Username | | | Domain | AD Stat | ıs |
| Connections | ^ | admin dean | admin_defaul | | Password Confirm Password | | | | | 0 |
| 🖀 Users | ^ | garrett | | | | | | | | 0 |
| 👝 ОКМ | * | User1 | | | | | Cancel < Back Next > | bbnsengineering.lo | (a) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2 | |
| System | ~ | | | | | | | | | |
| Q _₹ License | × | | | | | | | | | |
| 🙈 Cluster | | | | | | | | | | |
| ៉ុជុំ Discovery | | | | | | | | | | |
| Alerts | ~ | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

FIGURE 12-6. CREATE AD USER

ACTIVE DIRECTORY USER LOGGING INTO RECEIVER

When a user logs onto the receiver as an AD user, Boxilla queries Active Directory server for authentication. When the Active Directory returns the result, the local user is allowed to log into the device.

12.2.4 CONNECTION FAVORITES

Connection favorites provide a quick convenient mechanism for users to switch between their pre-defined connections. Favorites are configured by the administrator where a maximum of 10 favorites can be assigned to users using a combination of hotkey and [0-9].

Assigning Connection Favorites

A pre-requiste is that the user exists and has connections assigned.

The following screenshot demonstrates the administrator assigning connections for the user to the available hotkeys. Favorites do not need to be allocated sequentially and hotkeys can be skipped.





| | KILLA I MANASER | 2 | | | User Favorite | 25 | × | | | | 10 | @~ 1 ~ |
|-----------------|--------------------|-----------------|-------------------|----------------|-----------------------------|----------------------------------|-----------|---------------------------|--------------------|---------------|------------|---------------|
| Dashboard | Users | Manage | | | | Choose Favorites for User | | + User | + User Template | Edit Template | – User Tei | mplate |
| Devices ^ | | | | | Engineering Select Zone. | v | Reset | | | | | |
| Switches 🔨 | | | | | Hotkey + 0 | ZeroU TX Private (USB and Audio) | * | _ | | | | |
| Peripherals | | | | | Hotkey + 1 | EMDSE TX1 | ~ | | | | | |
| Periprierais | | | | | Hotkey + 2 | EMDSE DKM Link | ~ | | | | | |
| Zones | | All Users | Based On Template | Privile | Hotkey + 3 | test br | * | Authorized By | Domain | AD S | atus | |
| 🗢 Connections 🗠 | | admin | admin_default | Admii | Hotkey + 4 | Z4K TX | ~ | Local | | | • | |
| | | dean garrett | | Admii Admii | Hotkey + 5 | DTX5000 Bridge | ~ | Local | | | 0 | |
| 👕 Users 🛛 🔿 | | merle User1 | | User Admir | Hotkey + 6 | EMD2002PE-T_default | ~ | Local Active Directory | bbnsengineering.lo | | · 0 | |
| DKM ^ | | | | | Hotkey + 7 | unallocated | ~ | State Directory C | Consergineering.co | « < 1 | | |
| 🚯 System 🔿 | | | | | Hotkey + 8 | unallocated | ~ | | | | | |
| | | | | | Hotkey + 9 | unallocated | ~ | | | | | |
| | | | | | | | | | | | | |
| 🙈 Cluster | | | | | | C | lose Save | | | | | |
| o, Discovery | | | | | | | | | | | | |
| sys biscovery | | | | | | | | | | | | |
| 🛕 Alerts 🔷 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

FIGURE 12-7. CONNECTION FAVORITES SCREEN

Listing Connection Favorites:

When a user logs in they can view their assigned favorites.

| | ŝ | |
|-----------------------|---------------------------|--|
| | | |
| My Fa | vorites | Managed: Ton |
| | Comms Creative_Team_VM | Connections Constitution Constitution My Favorites |
| | | log us |
| BLACK BOX DIGITAL DES | | |

FIGURE 12-8. CONNECTION FAVORITES SCREEN

12.2.5 DELETE USER

To remove a user from the system, click on the ellipsis "•••" icon on the row of the user to be deleted and click on the delete option.



12.3 USER-ACTIVE

The User–Active page shows a list of all the users logged in to an Emerald or InvisaPC Receiver. The page provides information on what Receiver the user is logged in on and details on any active connection as shown in Figure 12-6.

| | DXILLA TIT MANAGER | | | | | | | | ار 🕲 ե |
|-----------------|-----------------------|--------------------------------|-----------------|-------------------|---------------------------|-----|-------------------|-----------------|---------------|
| Dashboard | Users Active | | | | | | | | |
| Devices 🗸 | ^ | | | | | | | | |
| Switches | ^ | | | | Active User | S | | | |
| Peripherals | * | | 4 otal Users | | ⊘ 🖀 | • | 3 Users Logged | In | |
| 🔰 Zones | | | | | | | - | | |
| < Connections | Active Users | Privilege | Auto Connect | Auto Connect Name | Showing 1 to 3 Results of | | Target | Connection Type | Group Name |
| 👑 Users 🗸 | ~ | Administrator Administrator | No | Auto Connect Name | • | · · | • | • | • |
| 🚍 DKM 🧳 | · · | Administrator | no | | - | - | | - | < 1 of 1 > >> |
| 🏟 System 🧳 | ^ | | | | | | | | |
| م License 🗸 | ^ | | | | | | | | |
| 🗞 Cluster | | | | | | | | | |
| ့တို့ Discovery | | | | | | | | | |
| Alerts | ^ | | | | | | | | |
| | | | | | | | | | |

FIGURE 12-9. ACTIVE USERS







12.4 MANAGE GROUPS

Once a user is registered in Boxilla, the administrator can assign the user to a User Group by using the Manage Groups option. Once the group profile is assigned to a user, that user will be able to make a connection to the targets found in that group. There are two default Connection Groups:

1) OU Undefined.

2) OU Not Found.

| | | | | Use | r Group All | ocation | | | | × | | | | | | h 🛛 🗸 |
|--------------------------|-----------|-----------------------|-------------------|-----------------------|-------------|----------|---|------------------------------|---------|-------------|--------------------|---------------|--------|------------|-------------|---------------|
| | Users I | Manage | | | Froup List | | | User belongs t Empty list | o group | | + User | + User Templa | te Edi | : Template | - | User Template |
| Devices 🔨 | | | | | Filter | → | | Filter | | ← ← | | | | | | |
| Switches 🔨 | | | | τ | estAD | | - | | | * | | | | | | |
| Peripherals | _ | | | | | | Ŧ | | | v | | | | | | |
| 🚺 Zones | | All Users Username | Based On Template | Privile | | | | | | Cancel Save | Authorized By | Domain | - | AD St. | itus | |
| 🛜 Connections 🛛 🔨 | | admin dean | admin_default | Administrator | r | No | | | 1 | 10 10 | Local Local | | | | | 0 |
| 曫 Users 🛛 🔨 | | merle | | Administrator User | | | | | 1 | ies Io | Local Local | | | | | 0 |
| DKM ^ | | User1 | | Administrator | | No | | | ľ | es | Active Directory 0 | bbnsengin | | < 1 | ✓ of 1 → | • |
| 🔅 System 🔨 | | | | | | | | | | | | | | | | |
| a _e License 🔨 | | | | | | | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | | | | | | | |
| ံ့ဝှိ့ Discovery | | | | | | | | | | | | | | | | |
| 🛕 Alerts 🔨 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

FIGURE 12-10. MANAGE GROUPS

| | 15 | R 12: USE | PC | | | | | | | | VE 24/7 CHNICAL |
|-----|------|----------------|------------------------|-----------------------------|----------|-------------------------------------|-------------|--------------------|--------------------|----------|--|
| | | N 12. USL | NJ | | | | | | | SU | PPORT |
| | | | | | | | | | | 1.8 | 77.877.2269 |
| : | BOXI | LLA 🗳 | | | | | | | | | b 0 • |
| · 🛛 | | | | User Group All | location | | × | | | | ▶ |
| | | Users Manage | | Group List Showing all 1 | | User belongs to group Empty list | | | | | User Template |
| | ~ | | | Filter | → | Filter | ** | | | | |
| | ~ | | | testAD | | | * | | | | |
| | | | _ | | | | w. | _ | | | |
| | | All Users | | | | | | | | | |
| | | Username 👌 🛛 🖪 | ased On Template Privi | | | | Cancel Save | Authorized By | Domain | AD Statu | is in the second s |
| | × - | admin ac | dmin_default Adm | | No - | | No | Local | | | 0 |
| | | garrett - | | | No - | | Yes | Local | | | 0 |
| | ^ | merle - | User | | No - | | No | Local | | | 0 |
| | | User1 · | Adm | ninistrator | No · | | Yes | Active Directory 0 | bbnsengineering.lo | cal | / @ |
| | ^ | | | | | | | | | « < 1 of | f1 > » |
| | | | | | | | | | | | |
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FIGURE 12-11. USER GROUP ALLOCATION SCREEN





13.1 INTRODUCTION

This chapter considers integration aspects of Boxilla. The chapter is divided into two main sections, which include activities on the DKM end and on the Boxilla side. The chapter describes the configuration elements for Boxilla and DKM.

Boxilla manages DKM connections towards Emerald and InvisaPC appliances by means of Virtual CPUs. The VirtualCPU name must match the Emerald/InvisaPC Connection name. When the DKM Connection (vCPU to CON) is established, the DKM switch will echo this operation onto the network. This will be picked up by Boxilla and Boxilla will initiate the desired connections between the InvisaPC Receiver and the InvisaPC Transmitter/VM.

Follow these steps:

- 1. Create desired InvisaPC Connection.
- 2. Add a DKM Switch under Boxilla -> DKM -> Switches.
- 3. Create a Virtual CPU on the DKM JavaTool (named the same name as the Emerald/InvisaPC Connection). Physically attach this to the Emerald/InvisaPC Receiver. When the DKM CON is then connected to the VirtualCPU, the connection name will be picked up and the Emerald/InvisaPC leg of the connection will be set up.

13.2 STEPS TO CREATE AND MANAGE VCPU CONNECTIONS ON THE UTILITY

Assumed: You have the desired Emerald/InvisaPC connection setup.

Open the Java Tool and select "Activate Online Configuration," which is found in the toolbar of the DKM FX Tool. Select Yes when you are asked to confirm. NOTE: The screen you see depends on the version of the DKM Java Tool used.

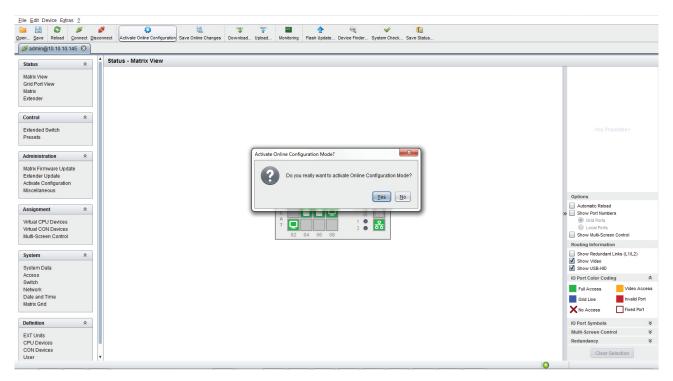


FIGURE 13-1. JAVA TOOL SCREEN

Click "CPU Devices," which is a menu item under "Definition" on the lower left side. Next, select the "New Device" button on the lower right side of the screen. Select "Create a virtual CPU."



| New CPU | x |
|---------|---|
| ? | What type of CPU do you want to create? |
| | Create a real CPU. |
| | Create a virtual CPU. |
| | Choose template: 01001 DKM_TX2 |
| | OK Cancel |

FIGURE 13-2. CREATE A VIRTUAL CPU OPTION

You will then have the option to name your Virtual CPU.

IMPORTANT: This name must be the same as the Emerald/InvisaPC Connection name that you want it to be associated with.

| Eile Edit Device Extras 3 | ¢ 🕺 | | 0 | | | ¥ T | 22 | ee and a start and a start a s | ~ | | | | | | | | | |
|--|-----|-------|------------|-------------------------------|------------------|----------------|------------------------|--|------------------|----------|----|----|------|------------|----------------|----------------|-------------|----------------|
| ørn <u>save</u> keload <u>c</u> on ørn@10.10.10.145 | | inect | Deactivate | e Online Configuration Save O | nine changes Dov | vnioad opioad | Monitoring Plash opdat | e Device Finder | System Check Sav | e Status | | | | | | | | |
| Matrix View | | Defi | nition - | CPU Devices | | | | | | | | | | | (| Online Configu | ration Mode | activated |
| Grid Port View | | | | | 7 | | | | | | | | | | | | | |
| Matrix Extender | | # | ID | Name | | ID | 2003 | C | PU Assigned | | | | | | | | | |
| Extender | | 01 | | DKM TX2 | | Name | InvisaPC_Conn | 0 | ON Connected | | | | | | | | | |
| Control | â | | | INVISAPC_TX14 | | Virtual Device | \checkmark | | | | | | | | | | | |
| | | | | TX3 | | Allow Private | | | | | | | | | | | | |
| Extended Switch Presets | | | | INVISAPC_TX188 | | Force Private | | | | | | | | | | | | |
| T Tebelo | | _ | | InvisaPC_Conn | | | | | | | | | | | | | | |
| Administration | * | | 02000 | million o_oomi | | Fix Frame | | | | | | | | | | | | |
| | ~ | | | | | Reference | | | | | | | | | | | | |
| Matrix Firmware Update Extender Update | | | | | | Extender Apple | anment CON Access | | ess Control | | | | | | | | | |
| Activate Configuration | | | | | | Extender Assig | | | ess control | | | | | | | | | _ |
| Miscellaneous | | | | | | | Extender | available | | | | | | | Extender assig | ned | | _ |
| | | | | | | ID Name | Port Red. Port | | | _ | # | ID | Name | Port | Red. Port | | | 4 |
| Assignment | * | | | | | n | | | 1 | | 01 | | | | | | | * |
| Virtual CPU Devices | | | | | | | | | | | 02 | | | | | | | |
| Virtual CON Devices | | | | | | | | | | | 03 | | | | | | | |
| Multi-Screen Control | | | | | | | | | | • | 04 | | | | | | | - |
| | | | | | | | | | | | 05 | | | | | | | |
| System | * | | | | | | | | | | 06 | | | | | | | |
| System Data | | | | | | | | | | | 07 | | | | | | | |
| Access Switch | | | | | | | | | | • | 08 | | | | | | | - |
| Network | | | | | | | | | | 44 | | | | | | | | × |
| Date and Time | | | | | | | | | | | | | | | | | | |
| Matrix Grid | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Definition | * | | | | | | | | | | | | | | | | | |
| EXT Units | | | | | | | | | | | | | | | | | | 1. |
| CPU Devices | | | | | | | | | • | | | | | Use keys « | <+> and <-> to | move extender | | |
| CON Devices User | | Assi | ign Settin | ngs to Copy Settings | from | | | | | | | | | | New Device | Delete Device | Apply | <u>C</u> ancel |
| | - | | | | | | | | | | | | | | | | | |
| | 1. | | | | | | | | | | | | | | 0 | /03.04 | | |



Press "Apply."



Next, navigate to "Virtual CPU Devices," which appears under the "Assignment" tab on the main menu on the left side of the application window. Here you can assign your new Virtual CPU to the real CPU that's physically connected into your Emerald/InvisaPC receiver. This is done by clicking the empty space in the "Name" column and seeing the drop down of available Real CPUs.

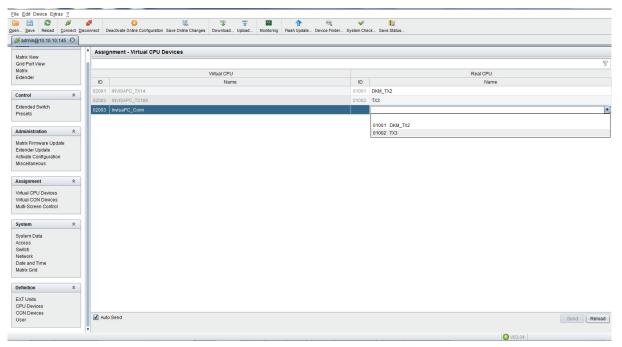


FIGURE 13-4. DROP DOWN LIST OF AVAILABLE REAL CPUS





Next, click "Save Online Changes." This pushes the changes down to the DKM switch so even if it reboots it will hold onto the new settings.

| Eile Edit Device Extras 2 | | | | | | | | | | | |
|--|------------|------------------------|-----------|------------------------|----------|------------------------|----------|---------|----------|------|--------|
| | Š | ä | |) 🐺 🌴 | | 수 🔍 | v | | | | |
| Open Save Reload Connect D | | | | | | Update Device Finder S | | | | | |
| 🖋 admin@10.10.10.145 🔞 | | | Save co | infiguration changes o | n device | | | | | | |
| | As: | signment - Virtual CPI | J Devices | | | | | | | | |
| Matrix View Grid Port View | | - | | | | | | | | | 7 |
| Matrix | | | | Virtual CPU | | | | | Real CPU | | v |
| Extender | ID | | | Name | | | ID | | Name | | |
| | · | 1 INVISAPC_TX14 | | | | | 01001 | DKM_TX2 | | | |
| Control * | 0200 | 2 INVISAPC_TX188 | | | | | 01002 | TX3 | | | |
| Extended Switch | 0200 | 3 InvisaPC_Conn | | | | | 01002 | TX3 | | | |
| Presets | | | | | | | | | | | |
| Administration | 1 | | | | | | | | | | |
| | | | | | | | | | | | |
| Matrix Firmware Update Extender Update | | | | | | | | | | | |
| Activate Configuration | | | | | | | | | | | |
| Miscellaneous | | | | | | | | | | | |
| Assignment | | | | | | | | | | | |
| | | | | | | | | | | | |
| Virtual CPU Devices Virtual CON Devices | | | | | | | | | | | |
| Multi-Screen Control | | | | | | | | | | | |
| | | | | | | | | | | | |
| System ☆ | | | | | | | | | | | |
| System Data | 1 | | | | | | | | | | |
| Access | | | | | | | | | | | |
| Switch Network | | | | | | | | | | | |
| Date and Time | | | | | | | | | | | |
| Matrix Grid | | | | | | | | | | | |
| | | | | | | | | | | | |
| Definition | | | | | | | | | | | |
| EXT Units | | | | | | | | | | | |
| CPU Devices CON Devices | | | | | | | | | | | |
| User | V / | uto Send | | | | | | | | Send | Reload |
| | | | | | | | | | | | |
| | | | | | | | | | O V03.04 | | |

FIGURE 13-5. SAVED CHANGES







HOW TO ENABLE LAN ECHO

Next, you must Enable LAN Echo. This will enable the switch to echo the results of the connection initiations to the network, where Boxilla can put them up and set up the corresponding Emerald/InvisaPC Connections.

| Eile Edit Device Extras ? | | | |
|--|---------------------------------------|---|---------------------------------------|
| | <i>8</i> 0 | 🗓 🐺 🊏 🌆 🔶 🔫 🖌 🎼 | |
| | · · · · · · · · · · · · · · · · · · · | ation Save Online Changes Download Upload Montoring Flash Update Device Finder System Check Save Status | |
| 🖋 admin@10.10.10.145 🛞 | | | |
| | | | |
| Matrix View | System - System Data | | Online Configuration Mode activated |
| Grid Port View | General Automatic ID | | A |
| Matrix Extender | | | Show Help |
| Excitaci | | | |
| Control * | Device | SWITCH_01 | |
| | | Host name for network environment (recommended characters: a-z, A-Z, 0-9,) | |
| Extended Switch | Name | Standard | |
| Presets | | Name of current matrix configuration | |
| [| Info | Factory settings | |
| Administration | | | |
| Matrix Firmware Update | | Description of current matrix configuration | |
| Extender Update Activate Configuration | Sub Matrix | | |
| Miscellaneous | | Allow hotkey control in cascaded environment | |
| | Load Default | | |
| Assignment | | When performing a cold start or a restart of the matrix, the configuration stored in Default will be always activated | |
| | Auto Save | | |
| Virtual CPU Devices Virtual CON Devices | | Save matrix status automatically | |
| Multi-Screen Control | Enable COM Echo | | |
| | | Echo all switch commands via communication ports | |
| System | Enable LAN Echo | \checkmark | |
| - | | Echo all switch commands via LAN ports | |
| System Data Access | Enable Redundancy | V | |
| Switch | | Enable automatic switching for redundant extenders | |
| Network | Synchronize | | • |
| Date and Time Matrix Grid | | Synchronize matrix with master matrix | |
| Maux Grid | Echo Only | | |
| | | Synchronize matrix with echo only | |
| Definition | Master IP Address | 0.0.0 | |
| EXT Units | | Set the network address of the master matrix | |
| CPU Devices CON Devices | Invalid I/O Boards | | · · · · · · · · · · · · · · · · · · · |
| User | | | Apply Cancel |
| | . | | |
| | | | O V03.04 |

FIGURE 13-6. ENABLE LAN ECHO

If you encounter issues with the configuration not staying in place, you will need to save the DKM DTC file on a local computer, then using the Java Tool go to File>>Upload and activate the configuration which also requires a DKM switch reboot.





13.3 STEPS TO ADD SWITCHES

Under Boxilla, to add the DKM switch, navigate to DKM –Switches and click the blue "Add Switch" button on the top right of the screen.

| $\equiv \bigotimes$ | BOXIL | | | | | | | h. 0 - |
|---------------------|-------|------------------------------|-------------------------|--------------------|---------------------------|-----------------------|-------------------|------------|
| 🚳 Dashboard | | Devices Ports | | | | | | |
| E Devices | ^ | | | | | | | |
| Switches | ^ | | | | | | | Add Switch |
| eripherals | | | Ports | | | S | witches | |
| Zones | | | | | Showing 1 to 1 of 1 Items | | | |
| 0.0000 | | Switch Name A DKM 48-Port | IP Address 10.8.1.99 | Switch Type DKM FX | Num of Ports 48 | Serial No 12345678 | Status OffLine | Options |
| Connections | • ^ | | | | | | | < 1 of 1 > |
| 警 Users | ^ | | | | | | | |
| 👝 ОКМ | ^ | | | | | | | |
| 🔅 System | ^ | | | | | | | |
| ୟ License | ^ | | | | | | | |
| 🗞 Cluster | | | | | | | | |
| ් Discovery | | | | | | | | |
| | | | | | | | | |
| Alerts | ^ | | | | | | | |
| | | | | | | | | |

FIGURE 13-7. ADD SWITCH SCREEN

The Add new switch box will appear on the page. The only critical detail here is the IP address. Fill in the details and press Save.

| | Add New DKM Switch Matrix to Boxilla | × 🛛 👌 🕉 🕹 |
|---|--------------------------------------|--------------------------|
| Devices Ports | Switch Name | |
| | IP Address Switch Type | |
| | Number of Ports | Add Switch |
| PC | Serial Number | Switches |
| | Cancel | Apply |
| Switch Name ^ IP Address No data available in table | | Serial No Status Options |
| | | « < 1 of 0 > » |
| | | |
| | | |
| | | |
| | | |
| | | |
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Once the switch is added successfully, it gets listed with an online status.

| 🛞 Dashboard | | | | | | | han 👌 🖉 🗸 |
|----------------|-----------------|------------|-------------|--|-----------|----------|-------------|
| | Devices Ports | | | | | | |
| | | | | | | | |
| 📾 Switches 🛛 🔨 | | | | | | | Add Switch |
| Peripherals | | Ports | | | | Switches | |
| 🕅 Zones | Switch Name 🔿 | IP Address | Switch Type | Showing 1 to 1 of 1 Items Num of Ports | Serial No | Status | Options |
| | DKM 48-Port | 10.8.1.99 | DKM FX | 48 | 12345678 | OnLine | <pre></pre> |
| 📸 Users 🛛 🔨 | | | | | | | |
| | | | | | | | |
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FIGURE 13-9. ONLINE STATUS OF SWITCH

If you wish to revert, select Delete from the dropdown list within options to delete the switch entry.

| Dashboard | Devices Ports | | | | | | |
|-----------------------|-----------------|------------|-------------|---------------------------|-----------|----------|------------------|
| | | | | | | | |
| Switches A | | | | | | | Add Switch |
| Peripherals | | Ports | | | | Switches | |
| Zones | | | | Showing 1 to 1 of 1 items | | | |
| J Zones | Switch Name 11 | IP Address | Switch Type | Num of Ports | Serial No | Status | Options |
| Connections | DKM 48-Port | 10.8.1.99 | DKM FX | 48 | 12345678 | OnLine | ٢ |
| | | | | | | Edit | vitch 1 of 1 > > |
| users 🔨 | | | | | | Delete | |
| 0303 | | | | | | | |
| ркм 🔨 | | | | | | | |
| | | | | | | | |
| System 🔨 | | | | | | | |
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| 4 Litense 🔨 | | | | | | | |
| 👌 Cluster | | | | | | | |
| © Cluster | | | | | | | |
| | | | | | | | |
| Discovery | | | | | | | |
| Alerts ^ | | | | | | | |
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| | | | | | | | |
| | | | | | | | |
| //10.8.1.24/dkm/home# | | | | | | | |
| | | | | | | | |





If using multiple DKM switches, you can search for a switch by entering the switch name into quick search box at the right corner.

| | | | | | | | 🍗 ®~ 🛓 |
|--------------------------|-----------------|------------|-------------|---------------------------|-----------|----------|----------------|
| 🚯 Dashboard | Devices Ports | | | | | | |
| E Devices | | | | | | | |
| Switches 🔨 | | | | | | | Add Switch |
| Peripherals | | Ports | | | | Switches | |
| Zones | | | | Showing 1 to 1 of 1 Items | | | DKM |
| | Switch Name 11 | IP Address | Switch Type | Num of Ports | Serial No | Status | Options |
| | DKM 48-Port | 10.8.1.99 | DKM FX | 48 | 12345678 | OnLine | • |
| 🤝 Connections 🗠 | | | | | | | « < 1 of 1 > » |
| 嶜 Users 🛛 🔿 | | | | | | | |
| | | | | | | | |
| 🚍 DKM 🛛 🔨 | | | | | | | |
| 🔅 System 🔨 | | | | | | | |
| ද _ී License ^ | | | | | | | |
| 🗞 Cluster | | | | | | | |
| ុំជុំ Discovery | | | | | | | |
| 🛦 Alerts 🔨 | | | | | | | |
| | | | | | | | |

FIGURE 13-11. SEARCH FOR A SWITCH

Once the switch is added successfully, all DKM CONs and DKM CPUs (physical) connected will be listed on Boxilla. Also any Virtual CPUs configured on the DKM switch will be listed. Boxilla will automatically update with any new DKM CONs, DKM CPUs and Virtual CPUs that may be added in the future. Follow the next steps to create a new connection.

The DKM Ports Table displays ports based on the DKM switch that has been added.

| | | | | | | | 🦰 ®~ 1. |
|-----------------|---|-----------|---------|-------------|-----------------------|-----------------|-------------|
| 🛞 Dashboard | Devices Ports | | | | | | |
| 🛲 Devices 🛛 🔿 | | | | | | | |
| 🛋 Switches 🔨 | | | | | | | Add Switch |
| Peripherals | | Ports | | | _ | Switches | |
| 🕅 Zones | DKM Ports Table | | | | | | |
| | | | | Showin | g 1 to 2 of 2 Items | | |
| 🧟 Connections 🗠 | Port Name 🔿 | Port Type | Port ID | Switch Name | Linked to Rx Hostname | Linked to Rx IP | Options |
| | CON_010252038 | CON | 3001 | DKM 48-Port | | | |
| 嶜 Users 🛛 🔿 | CPU_010198312 | Real CPU | 1001 | DKM 48-Port | | | <pre></pre> |
| 📾 DKM 🛛 🔨 | Last Updated: 2020-01-14 04:55:07 +0000 | | | | | | |
| 🕸 System 🔨 | | | | | | | |
| a, License 🔨 | | | | | | | |
| 🗞 Cluster | | | | | | | |
| aça, Discovery | | | | | | | |
| Alerts ^ | | | | | | | |
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The "Last Updated" text at the bottom of the screen is the last time Boxilla audited the DKM switch.

Find the Virtual CPU in the "Ports" list on the DKM-Switches page. Click the options button on the right hand side to "Attach to InvisaPC Connection."

| | ®∽ ⊥∽ |
|------------|-------|
| | |
| | |
| Add Switch | |
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| | 15 |

FIGURE 13-13. ATTACH TO INVISAPC CONNECTION

If you wish to search for a specific port, enter the Port ID at the search box within ports table.

| | | | | | | | الله 🕲 📩 الم |
|--|-----------------------------------|------------------|-----------------|----------------------------|------------------------|-----------------|--------------|
| Dashboard Dashboar | Devices Ports | | | | | | |
| 🚍 Devices 🛛 🔨 | | | | | | | |
| Switches 🔨 | | | | | | | Add Switch |
| Peripherals | | Por | ts | | | | |
| 🕅 Zones | DKM Ports Table | | | | | | |
| | - | | | | ving 1 to 2 of 2 Items | | |
| < Connections | Port Name ^ CON_010252038 | Port Type CON | Port ID 3001 | Switch Name DKM 48-Port | Linked to Rx Hostname | Linked to Rx IP | Options |
| 嶜 Users 🛛 🔨 | CPU_010198312 | Real CPU | 1001 | DKM 48-Port | | | |
| 👝 DKM 🛛 🔨 | Last Updated: 2020-01-14 04:55:07 | +0000 | | | | | |
| System | | | | | | | |
| Q _€ License ∧ | | | | | | | ` |
| 🗞 Cluster | | | | | | | |
| ៉ុជ្ | | | | | | | |
| 🛦 Alerts 🔨 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | FIGURE 1 | 3-11 POR | T ID SCREEN | | |



To start a connection you have two options:

1. Manual connections using "Add custom Source," which lasts until the connection is broken.

2. Saving connection configurations as "Presets," which can be activated on demand.

To detach a connection, left-click on the connection name. You will see a popup box that gives you the option to disconnect.

| | | | | | | | | ۰ ® م |
|-------------------------------|------------------|--|--|--|--|---|------------------------|---|
| DKM Connections | Active | | | | | | | |
| ^ | | | | | | | | |
| ^ | | | Acti | ve DKM Connections | | | | |
| | 2 | 0 | \$ | 1 | 0 | A | 0 | |
| | Ports Configured | 0 | · | Active Connections | Ŭ | - | Active Alerts | Ŭ |
| ^ | | | | Showing 1 to 1 of 1 items | | | | |
| Switch Name ^ DKM 48-Port | | | 2001 3001 | CON Name CON_010252038 | | Created At 2020-01-13 23:42:10 -0500 | | Options |
| ^ | | | | | | | Break Connection | 1 of 1 > |
| ^ | | | | | | | | |
| ^ | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| ^ | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | A 2 Port Configured Model Approx DMI 48-Port | Image: Configured 2 Ports Configured © Image: Configured © | Activ 2 O Ports Configured O Note: Name * CPU ID CPU INsee CON ID DMA 48-Port 1001 CPU (0195012) 301 | Active DKM Connections Active DKM Connections Ports Configured O | Active DKM Connections Active Configured Ports Configured Ports Configured Ports CPU ID CPU Name CPU ID CPU Name | Active DKM Connections | Active DKM Connections 2 Image: Configured Ports Configured Image: Configured Showing the 1 of theme Deck Allows CMU Image: Configured Out-4 Prov. CMU Image: Configured Configured CONID Configured Configured Beck Connections Configured |

FIGURE 13-15. DETACH CONNECTION SCREEN







13.4 ADD CUSTOM SOURCE

Under Viewer, click "Make a Connection" and select one or multiple sources from the list of available sources to activate, which will create connections with the selected sources.

| = | BOXI | | Add Source × | ► |
|----------------|------|---------------------------------|-------------------------|--|
| 🚯 Dashboar | | DKM Connection Matrix | Available Sources : 1 Q | |
| Devices | | Ports Provisioned | CPU_010198312 | Active Alerts |
| Switches | | CPU Unite: 1 CON Unite: 1 | | Active Alerts Worings 0 Criscal Warnings 0 |
| 📇 Periphera | | Q Search Sources | | _ |
| 🛜 Connectio | | + Make Connection Save Snapshot | | Manage Presets |
| 警 Users | | CPU_010198312 | | • 1 |
| DKM | | | × | |
| 🛟 System | | | | |
| 🔍 License | | | Ţ | |
| 🗞 Cluster | | | | |
| ៉ុុុ Discovery | | | | |
| Alerts | | | Activate Selected | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

FIGURE 13-16. ADD CUSTOM SOURCE SCREEN

Once these connections are listed, each connection needs at least one destination added to form a functional connection.

Connections have the following options:

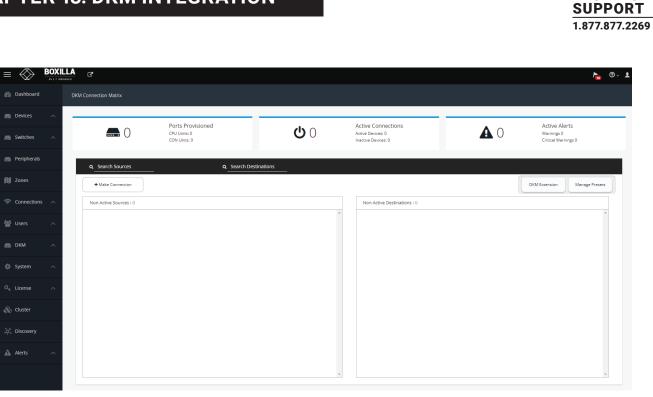
1. Detach Source: Break the connection by detaching the source.

2. Detach Destination: Break the connection by detaching the destination.

3. Add Destination: Add additional destinations to the source, e.g. if you wish to share the source.

You also have the option of saving the current connections in the Viewer as a preset via "Save Snapshot." Save Snapshot is located under "Manage Presets."





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FIGURE 13-17. MANAGE PRESETS BUTTON

Search of available destinations can be completed within the "Add Destinations" popup box.

| Buthbard DM Connection Mark Devices Switches Switches Connections Connections Output: Output: Active Alerts Wannep B Connections Output: Output: Active Alerts Wannep B Connections Output: Output: Active Alerts Wannep B Connections Output: Active Alerts Wannep B Connections Output: Output: Active Alerts Wannep B Output: Active Alerts Active Alerts Output: Output: Active Alerts Active Alerts Active Alerts Active Alerts Active A | ha 🕫 - 1 | | age Presets × | ILLA C ² | |
|---|----------------|------------|---|---------------------------------|-----------------------------|
| Deckes Connections Connections | | | Available Presets () Q | DKM Connection Matrix | 🚯 Dashboard |
| Switches Convectors Co | Activo Alorte | | A | Parte Provisionad | E Devices |
| Image: Search Sources Image: Searces Image: Searces | Warnings 0 | A 0 | | CPU Units: 1 | Switches A |
| Connections | | | | Q Search Sources | Peripherals |
| (201,010963)2 · · · · · · · · · · · · · · · · · · · | Manage Presets | | | + Make Connection Save Snapshot | Diff Zones |
| | • | | | | 🤶 Connections 🛛 🔨 |
| | | | | | ₩ Users ^ |
| | | | | | 💼 ОКМ 🔨 |
| Save Snapshot Create Custom Activate Selected | | | Save Snapshot Create Custom Activate Selected | | System |
| | | | | | Q _€ License ∧ |
| & Cluster | | | | | 🗞 Cluster |
| 2/, Disovery | | | | | ំថ្ល ⁰ Discovery |
| A Ners A | | | | | 🛕 Alerts 🔨 |
| | | | | | |
| | | | | | |
| | | | | | |

FIGURE 13-18. ADD DESTINATION POPUP BOX





| $\equiv \bigotimes$ | BOXILLA | Add Destination × | r 🕲 - 🗴 - |
|------------------------|---------------------------------|------------------------------|--|
| 🚯 Dashboard | DKM Connection Matrix | Available Destinations : 1 Q | |
| E Devices | Ports Provisioned | CON_010252038 | Active Alerts |
| Switches | | | Active Alerts Warnings 0 Critical Warnings 0 |
| Peripherals | Q Search Sources | | |
| D Zones | + Make Connection Save Snapshot | | Manage Presets |
| 🛜 Connections | CPU_010198312 | | • 1 |
| 🐮 Users | ^ · | - | |
| 👝 ОКМ | A | | |
| 🔅 System | A | | |
| Q _₹ License | A | Activate Selected | |
| 🗞 Cluster | | | |
| ့တို့ Discovery | | | |
| Alerts | · • | | |
| | | | |
| | | | |
| | | | |

FIGURE 13-19. ADD DESTINATION POPUP BOX, ACTIVATE SELECTED BUTTON

Select the Destinations from the available destinations and click next.

| | | Add Destination × | h. 0 - 1 |
|--------------------------|---------------------------------|------------------------------|---|
| Dashboard | | Available Destinations : 1 Q | |
| E Devices 🔨 | Ports Provisioned | ^ | Active Alerts |
| 👝 Switches 🔨 🔨 | CPU Units: 1 CON Units: 1 | | A Ctive Alerts Wornings 0 Critical Warnings 0 |
| eripherals | Q Search Sources | | |
| D Zones | + Make Connection Save Snapshot | | Manage Presets |
| 🔶 Connections 🔨 | CPU_010198312 | | |
| 🔮 Users 🛛 🔨 | | · · · | |
| 👝 DKM 🛛 🔨 | | CON_010252038 × | |
| System | | | |
| Q _€ License ∧ | | Activate Selected | |
| 🗞 Cluster | | | |
| ៉ុំជុំ, Discovery | | | |
| 🛦 Alerts 🔨 | | | |
| | | | |
| | | | |
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FIGURE 13-20. ADD DESTINATION RESULTING CONNECTION SCREEN



Once Activated, connections get listed under the Viewer screen.

| | LA C | | b. 0~ 1 |
|------------------|----------------------------------|--|--|
| 🚯 Dashboard | DKM Connection Matrix | | |
| E Devices 🔨 | Ports Provisioned | Active Connections | Active Alerts |
| 📾 Switches 🔨 | CPU Units: 0 CON Units: 0 | C O Active Connections Active Devices: 0 Inactive Devices: 0 | Active Alerts Warnings 0 Critical Warnings 0 |
| 📾 Peripherals | Q Search Sources Q Search Destin | nations | |
| Zones | + Make Connection | | DKM Extension Manage Presets |
| 🛜 Connections 🔨 | Non Active Sources : 0 | Non Active Destinations : 0 | |
| 🖆 Users 🛛 🔨 | | | |
| DKM ^ | | | |
| 🖨 System 🔨 | | | |
| a, License 🔨 | | | |
| 🗞 Cluster | | | |
| ູ່ຕຸື, Discovery | | | |
| A Alerts | | | |
| | | - | * |

FIGURE 13-21. VIEWER SCREEN

Active connections are listed under the Connections link. Each connection has the option of remotely breaking it.

| ≡ 🛞 | BOXI | | | | | | | | h <u>a</u> 🕑 - J |
|-----------------|------|--|----------|---|-----------------------|----------|---------|---------------|------------------|
| 🚯 Dashboard | | DKM Connections Active | | | | | | | |
| E Devices | | | | | | | | | |
| Switches | | | | | Active DKM Connection | ns | | | |
| Peripherals | | 0 | | হ | 0 | | A | 0 | |
| 🚺 Zones | | Ports Configured | Ũ | ÷ | Active Connections | 0 | - | Active Alerts | Ŭ |
| 🔶 Connections | | | | | Showing 0 Results | | | | |
| 🐮 Users | | Switch Name CPU ID No data available in table | CPU Name | | CON ID | CON Name | Created | At | Options |
| 📄 DKM | | | | | | | | | |
| 🏟 System | | | | | | | | | |
| المريد License | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | |
| ៉ីជុំ Discovery | | | | | | | | | |
| Alerts | | | | | | | | | |
| | | | | | | | | | |



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13.5 PRESETS

Under Viewer, click "Manage Presets," then click "Create Custom" and select one or more available sources.

| | | Create Preset | | | × | | |
|--------------------------|----------------------|---------------------|-----------------------------|------------------|-------|------------|----------------|
| Dashboard | | Adding Sources | Adding & Setup Destinations | Preset Details | | | |
| Devices 🔿 | | 0 | 2 | 3 | | A - | Active Alerts |
| Switches 🔿 | — 2 | 1. Select Sources > | | | | A 0 | |
| Peripherals | Q Search Sources | | Available Sources : 1 | م | | | |
| Zones | + Make Connection Se | | CPU_010198312 | ~ <u></u> | | | Manage Presets |
| 🔶 Connections 🗠 | CPU_010198312 | | | | | | |
| 曫 Users 🗠 | | | | | | | |
| ркм 🥎 | | | | | | | |
| 🔅 System 🔿 | | | | | | | |
| ି _୯ License ^ | | | | - | | | |
| 🗞 Cluster | | | | | | | |
| ့တို့ Discovery | | | | | | | |
| 🛕 Alerts 🔷 | | | | | _ | | |
| | | | | | | | |
| | | | | Cancel < Back Ne | ext > | | |
| | | | | | | | |

FIGURE 13-23. CREATE CUSTOM PRESETS

Next, select one or more destinations from the list of available destinations.

| $\equiv \bigotimes$ | BOXI | | Create Preset | | | × | |
|------------------------|------|----------------------|-----------------|-----------------------------|--------------------|------------|----------------|
| 🚯 Dashboard | | | Adding Sources | Adding & Setup Destinations | Preset Details | | |
| E Devices | | | 1 | 2 | 3 | | Active Alerts |
| Switches | | — 2 | CPU_010198312 > | | | A 0 | |
| eripherals | | Q. Search Sources | | | | | |
| D Zones | | + Make Connection Sa | | Available Destinations : Q | | | Manage Presets |
| 奈 Connections | | | | | | | |
| 曫 Users | | • | | | | | |
| 👝 ОКМ | | | | | | | |
| 🔅 System | | | | | | | |
| Q _€ License | | | | | v * | | |
| 🖧 Cluster | | | | | | | |
| ့တို့ Discovery | | | | | Ψ. | | |
| Alerts | | | | | | | |
| | | | | | | | |
| | | | | | Cancel < Back Next | > | |
| | | | | | | | |

FIGURE 13-24. SELECT DESTINATIONS



Now enter the name for the preset and choose the type of preset you want.

Both preset types will forcibly take any CONs and CPUs required to establish their configuration, i.e., if those CONs and CPUs are already in active connections then these connections will be broken.

The partial type applies only to the specific CONs and CPUs that are selected in this preset type.

The full type is applied to all the CONS and CPUS. Any CONs and CPUs not selected in this preset type will become inactive when this preset is launched.

Click "Complete" to save the preset.

| | | Create Preset | | × | | |
|--------------------------|----------------------|----------------|------------------------------|-------------------|------------|----------------|
| 🚳 Dashboard | | Adding Sources | Adding & Setup Destinations | Preset Details | | |
| E Devices 🔨 | | 1 | 2 | | | Active Alerts |
| 👼 Switches 🛛 🔨 | a 2 | 3A. Summary | | | A 0 | |
| Peripherals | Q Search Sources | Nan | e DKM Extension | | | |
| Zones | + Make Connection Sa | Тут | Full | • | | Manage Presets |
| 🤶 Connections 🛛 🔿 | CPU_010198312 | | Cancel | < Back Complete > | | |
| 🕍 Users 🛛 🔨 | | | | Complete y | | |
| 👝 DKM 🔷 | | | | | | |
| 🎲 System 🔨 | | Save S | hapshot Create Custom Activa | ate Selected | | |
| Q _≵ License ∧ | | | | _ | | |
| 🖧 Cluster | | | | | | |
| ៉ូំំុ Discovery | | | | | | |
| 🛕 Alerts 🛛 🔨 | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

FIGURE 13-25. PRESETS SCREEN

The following methods are available to activate presets:

1. Direct preset activation in the Viewer: The first three presets (ordered by creation) are presented directly in the Viewer and can be activated with a direct click.

2. Activation via Manage Presets: All presets can be activated with the "Activate Selected" option in "Manage Presets." This is mandatory for any preset that is the fourth or later one created, as there is no other method to activate these presets from within Boxilla.





| | Manage Presets × | r <u>s</u> • • • • |
|---|---|--|
| Dashboard DKM Connection Matrix | Available Presets () Q | |
| Devices Ports Provisioned | © DKM Extension © × | Active Alerts |
| Switches A CON United CON United 1 | | Active Alerts Warnings 0 Critical Wernings 0 |
| Peripherals Q Search Sources | | |
| Zones Save Snapshot Save Snapshot | | DKM Extension Manage Presets |
| Connections A | | · · · · · · · · · · · · · · · · · · · |
| 생 Users A | × | |
| C DKM | | |
| 🕼 System 🔿 | Save Snapshot Create Custom Activate Selected | |
| Q _t License A | | |
| 🔊 Cluster | | |
| 次。Discovery | | |
| ▲ Alerts ∧ | | |
| | | |
| | | |
| | | |

FIGURE 13-26. CREATE CUSTOM PRESETS COMPLETED SCREEN

Connections started via Presets will be displayed in the work area with the following options:

- 1. Detach Source: Break the connection by detaching the source.
- 2. Detach Destination: Break the connection by detaching the destination.
- 3. Add Destination: Add additional destinations to the source, e.g., if you wish to share the source.

| \equiv | BOXI | LA 🕑 | | | | | | | | ha 🔊 - 1 |
|-----------------|------|---|------------------|---------|----|-----------------------|----------|------------|---------------|-------------------------|
| 🛞 Dashboard | | DKM Connections Act | tive | | | | | | | |
| E Devices | ^ | | | | | | | | | |
| 🛲 Switches | ^ | | | | | Active DKM Connection | ons | | | |
| Peripherals | ; | | 0 | | ¢ | 0 | | A | 0 | |
| 🚺 Zones | | | Ports Configured | | | Active Connections | | - | Active Alerts | |
| 🛜 Connection | is 🔨 | | CPU ID | CPU Nar | | Showing 0 Results | CON Name | Created At | | Options |
| 🐸 Users | ^ | Switch Name ^ No data available in table | CPUID | CPU Nar | пе | LONID | CON Name | Created At | | <pre> Options</pre> |
| E DKM | ^ | | | | | | | | | |
| 🔅 System | ^ | | | | | | | | | |
| a License | ^ | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | |
| ့တို့ Discovery | | | | | | | | | | |
| Alerts | ^ | | | | | | | | | |
| | | | | | | | | | | |
| | | | FIGUE | | | | | | | |

FIGURE 13-27. ACTIVE DESTINATIONS SCREEN

Deselect a source/destination

To disconnect a connection while active status, click on 'x' on either destination / source (in case of one to one only)

| | | | | | | ه ۵۰ ا | 2 ~ |
|-----------------|-----------------------|------------------------------|-------------|--|-----|-----------------------------------|-----|
| 📸 Dashboard | DKM Connection Matrix | | | | | | |
| 📠 Devices 🛛 🔨 | | Ports Provisioned | | Active Connections | | Active Alerts | |
| 💻 Switches 🛛 🔿 | 2 | CPU Units: 1 CON Units: 1 | ပ် 1 | Active Devices: 2 Inactive Devices: 0 | • 0 | Warnings 0 Critical Warnings 0 | |
| 🙈 Peripherals | Q Search Sources | Q Search Dest | inations | | | | |
| 🕅 Zones | + Make Connection | Save Snapshot | | | | DKM Extension Manage Presets | |
| 🗢 Connections 🗠 | CPU_010198312 | CON_01025200 | 38 | | | + | ſ |
| Osers ~ | | | | | | | |
| 🚔 DKM 🔷 | | | | | | | |
| 🔅 System 🔨 | | | | | | | |
| a, License 🔨 | | | | | | | |
| 🚓 Cluster | | | | | | | |
| ៉ីជុំ Discovery | | | | | | v | |
| 🛦 Alerts 🔷 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

FIGURE 13-28. DESELECT A SOURCE/DESTINATION

13.6 ATTACHING VIRTUAL CPUS TO INVISAPC RX

Virtual CPU based connections from a DKM switch can be connected directly to a managed Emerald/InvisaPC RX on Boxilla by attaching them.

| | | | | | | | ha 🕫 🕹 |
|-----------------|-------------------------------------|------------------|-----------------|-------------------------|-----------------------|-----------------|-----------------------------|
| 🚳 Dashboard | Devices Ports | | | | | | |
| 🚐 Devices 🛛 🔿 | | | | | | | |
| Switches 🔨 | | | | | | | Add Switch |
| Peripherals | | Port | ts | | _ | Switches | |
| 🕅 Zones | DKM Ports Table | | | | | | |
| | | | | Showing | 1 to 2 of 2 Items | | |
| 🧟 Connections 🗠 | Port Name ^ CON_010252038 | Port Type CON | Port ID 3001 | Switch Name DKM 48-Port | Linked to Rx Hostname | Linked to Rx IP | Options |
| o Users · | CPU_010198312 | Real CPU | 1001 | DKM 48-Port | | 10.10.13 | ((1 of 1 →) (1 of 1 →) |
| 🚍 DKM 🔷 | Last Updated: 2020-01-14 05:08:04 4 | +0000 | | | | | |
| 🔅 System 🔨 | | | | | | | |
| a, License 🔨 | | | | | | | |
| 🖧 Cluster | | | | | | | |
| ៉ូជុំ Discovery | | | | | | | |
| 🛕 Alerts 🔨 | | | | | | | |
| | | | | | | | |
| | FIGURE | 13-29. VIF | RTUAL CF | US CONNE | ECTED TO INVI | SAPC SCREEN | |



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The System button in the main menu brings up the System -> Administration -> Upgrade screen shown next. This screen allows the Boxilla unit itself to be managed:

• upgrade the firmware;

| Dashboard | Adn | ninistration | | | | | | | | | |
|--------------|-----|------------------------|-----------|-----------|-----------------|--------------------------|------|------------------------------|---|--------------|--|
| Devices | ~ | | | | | | | | | | |
| Switches | ^ | Upgrade | | - | Backup/Restore | | | System Info Boxilla Us | | Certificates | |
| Peripherals | | Choose version to s | switch to | | | | | File Upload | | | |
| | | Current Version: 3.4.1 | | | | | | Select upgrade file to uploa | d | | |
| 🚺 Zones | | | | | | | | Filename | | | |
| | | Backup File Table | | Showing 1 | to 8 of 8 Items | | | Choose File No file chosen | | | |
| | ~ | Filename ^ | Version | Active | Compatible | Date | | Cancel Submit | | | |
| | | bxa_2.2.0.3828 | 2.2.0 | Inactive | Yes | Tue Nov 27 15:09:18 2018 | • | | | | |
| 🔮 Users | ~ | bxa_3.0.0.3948 | 3.0.0 | Inactive | Yes | Thu Dec 20 10:51:20 2018 | 0 | | | | |
| | | bxa_3.1.0.4310 | 3.1.0 | Inactive | Yes | Wed Apr 17 13:18:01 2019 | • | | | | |
| DKM | ~ | bxa_3.2.0.4463 | 3.2.0 | Inactive | Yes | Wed Jun 5 13:13:53 2019 | • | | | | |
| | | bxa_3.3.2.4870 | 3.3.2 | Inactive | Yes | Fri Oct 11 12:30:55 2019 | • | | | | |
| 🔅 System | ~ | bxa_3.4.0.5080 | 3.4.0 | Inactive | Yes | Thu Nov 28 17:03:26 2019 | • | | | | |
| | | bxa_3.4.1.5118 | 3.4.1 | Active | Yes | Wed Dec 18 17:29:32 2019 | ۲ | | | | |
| 2 License | ~ | wradebug_3.2.1.4541 | 3.2.1 | Inactive | Yes | Fri Jun 28 10:29:03 2019 | • | | | | |
| | | | | | | « < 1 of 1 | > >> | | | | |
| 🗞 Cluster | | | | | | | | | | | |
| | | | | | | | | | | | |
| o Discovery | | | | | | | | | | | |
| ç, Discovery | | | | | | | | | | | |
| | | | | | | | | | | | |
| Alerts | ^ | | | | | | | | | | |
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FIGURE 14-1. UPGRADE FIRMWARE SCREEN

- generate your own self-signed certificate;
- backup/restore the database (go to System -> Adminstration -> Backup/Restore);

| | Administration | | | | |
|----------------------|-------------------------|----------------|---------------------------|---------------|-----------------|
| Devices ^ | | | | | |
| Switches ^ | Upgrade | Backup/Restore | System Info | Boxilla Users | Certificates |
| Peripherals | | | | Backup | Upload Reset DB |
| | Backup File Table | | Showing 1 to 9 of 9 Items | | |
| Zones | Enterprise Manager Host | | Timestamp 🖉 | Size (MB) | |
| | boxilla | | 2020-01-09 02:00:11 | 1 | • |
| Connections | boxilla | | 2020-01-08 02:00:10 | 1 | • |
| | boxilla | | 2020-01-07 02:00:11 | 1 | 0 |
| Users ^ | boxilla | | 2020-01-06 02:00:10 | 1 | 0 |
| | boxilla | | 2020-01-05 02:00:10 | 1 | • |
| DKM ^ | boxilla | | 2020-01-04 02:00:11 | 1 | • |
| | boxilla | | 2020-01-03 02:00:11 | 1 | ٠ |
| System 🔨 | boxilla | | 2020-01-02 02:00:11 | 1 | • |
| System A | boxilla | | 2020-01-01 02:00:11 | 1 | ٠ |
| License ^ | | | | | « < 1 of 1 > > |
| Cluster Discovery | | | | | |
| Alerts ^ | | | | | |
| Alerts | | | | | |
| Alerts | | | | | |
| | | | | | |

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| Dashboard Ac | ministration | | | | | | Rebo |
|-------------------|--------------------------|---------------------------|------------------|--------------------|--------------------------------------|---|-------------------------|
| 🛋 Devices 🔨 | _ | | | | | | |
| 🚍 Switches 🛛 🔨 | Upgrad | le | Backup/Restor | re — | System Info | Boxilla Users | Certificates |
| Peripherals | Current Version 3.4.1 | Serial No AEB817800017 | Build No 5118 | Model No BXAMGR | Network Status Link detected: yes | Uptime up 2 weeks, 3 days, 3 hours, 38 minutes | Export Log Files Export |
| 🕅 Zones | | | | | | | |
| 🛜 Connections 🛛 🔨 | | | | | | | |
| ie Users ^ | | | | | | | |
| 🚔 DKM 🔷 | | | | | | | |
| 🖨 System 🔨 | | | | | | | |
| a, License 🔨 | | | | | | | |
| 🗞 Cluster | | | | | | | |
| ço, Discovery | | | | | | | |
| 🛦 Alerts 🔨 | | | | | | | |
| | | | | | | | |
| | | | | | | | |

• check system information (go to System -> Administration -> System Info page):



• set thresholds for alerts (go to System -> Settings -> Thresholds page):

| · · | Network | Thresholds | Clock | Active Dir | rectory | REST Api | Rem | ote App |
|---------------------|---------------------|----------------------|----------------------|---------------------------|-----------------------|--------------|--------------|--|
| Boxilla | Thresholds | | | | | | | Reset Three |
| | | | | Showing 1 to 8 of 8 items | | | | |
| Network | Settings Table Unit | Warning Threshold 2K | Warning Threshold 4K | Critical Threshold 2K | Critical Threshold 4K | Max Value 2K | Max Value 4K | _ |
| ions \land Audio BW | mbits | 0.64 | 0.64 | 1.0 | 1.0 | 1.5 | 1.5 | Ed |
| Dropped F | imes frames | 20.0 | 20.0 | 25.0 | 25.0 | 60.0 | 60.0 | Ed Ed Ed Ed Ed Ed Ed Ed |
| Frames Pe | Second frames | \$0.0 | 45.0 | 25.0 | 30.0 | 60.0 | 60.0 | Ec |
| RTT | miliseconda | 2.0 | 15.0 | 5.0 | 25.0 | 10.0 | 30.0 | Ed |
| A Total BW | mbits | 52.0 | 9852.0 | 102.0 | 9992.0 | 202.0 | 10004.0 | Ed |
| USB BW | mbits | 1.5 | 1.5 | 2.0 | 2.0 | 3.0 | 3.0 | Ec |
| A User Later | | 17.0 | 30.0 | 20.0 | 40.0 | 50.0 | 300.0 | Ec |
| Video BW | mbits | 50.0 | 9850.0 | 100.0 | 9990.0 | 200.0 | 10000.0 | 1 of 1 |
| у ^ | | | | | | | | |



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• change network settings (go to System -> Settings -> Network page):

| | | | | | | | | ۴. |
|--------------|----------------------------------|------------|-------------|----------|-----------------|-------------|---------------|------------|
| hboard | Setting s | | | | | | | |
| wices ^ | | | | | | | | |
| witches 🔿 | Network | Thresh | olds | Clock | Active Director | У | REST Api | Remote App |
| | Network Cettiere | | | | | | | |
| eripherals | Network Settings Network Port | IP Address | Netmask | Gateway | Hostname | Primary DNS | Secondary DNS | |
| | Ethernet Port 1 | 10.0.0.234 | 255.255.0.0 | 10.0.0.1 | boxille | 8.8.8.8 | 8.8.4.4 | |
| ones | Ethernet Port 2 | 10.0.0.232 | 255.255.0.0 | 10.0.0.1 | boxilla-c | 8.8.8.8 | 8.8.4.4 | |
| onnections ^ | | | | | | | | |
| | | | | | | | | |
| sers ^ | | | | | | | | |
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| км ^ | | | | | | | | |
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| icense ^ | | | | | | | | |
| luster | | | | | | | | |
| | | | | | | | | |
| iscovery | | | | | | | | |
| | | | | | | | | |
| lerts ^ | | | | | | | | |
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FIGURE 14-5. NETWORK SETTINGS SCREEN





• create/edit Boxilla users (go to System -> Administration -> Boxilla Users page):

| ≡ 🛞 | BOX | | | | | | | ł; | ® ~ |
|-------------------|-----|---------|------------------|--------------------|------------------|-------------------------------|---|--------------------|------------|
| Dashboard | | Adminis | tration | | | | | | Reboot |
| Devices | | | | | | | | | |
| 📾 Switches | | | Upgra | ıde | Backup/Restore | System | Info Boxilla | Users Certificates | |
| 👝 Peripheral | | | | | | Showing 1 to 1 | of 1 Items | | |
| 🕅 Zones | | | Login ^ admin | Firstname Admin | Lastname User | Email noreply@blackbox.com | Last Login 2020-06-23 20:41:17 -0400 | Actions | |
| 🛜 Connectio | | | | • | | | | < < 1 of 1 > > |] |
| 嶜 Users | | | | | | | | New User | |
| 📄 ОКМ | | | | | | | | | |
| 🔅 System | | | | | | | | | |
| २, License | | | | | | | | | |
| 🛞 Cluster | | | | | | | | | |
| ៉ីថ្លុំ Discovery | | | | | | | | | |
| Alerts | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

FIGURE 14-6. CREATE/EDIT BOXILLA USERS SCREEN

The administrator can reboot the Boxilla unit by clicking on the Reboot button on the top right of the System -> Administration screen.

| Dashboard | Administration | | | | | | | | Re |
|---------------|----------------------------------|--------------|----------|--------------------------|---|------|----------------------------|---------------|--------------|
| Devices ^ | | | | | | | | | |
| Switches ^ | Upg | grade | | Backup/I | Restore | Syst | em Info | Boxilla Users | Certificates |
| Peripherals | Choose versi | ion to switc | h to | | | | File Upload | | |
| | Current Version: | 3.6.0 | | | | | Select upgrade file to up | bload | |
| Zones | | | | | | | Filename | | |
| | Backup File T | able | Show | ving 1 to 10 of 10 Item: | s | | Choose File No file choser | n | |
| Connections ^ | Filename | ^ Version | Active | Compatible | Date | | Cancel Submit | | |
| | bxa_2.0.0.3196 | 2.0.0 | Inactive | Yes | Fri Jun 29 14:10:22 2018 | • | | | |
| Users ^ | bxa_2.2.0.3828 | 2.2.0 | Inactive | Yes | Tue Nov 27 15:09:18 2018 | • | | | |
| | bxa_3.0.0.3948 | 3.0.0 | Inactive | Yes | Thu Dec 20 10:51:20 2018 | • | | | |
| DKM ^ | bxa_3.1.0.4310 | 3.1.0 | Inactive | Yes | Wed Apr 17 13:18:01 2019 | • | | | |
| | bxa_3.2.0.4463 bxa_3.3.2.4870 | 3.2.0 | Inactive | Yes | Wed Jun 5 13:13:53 2019 Fri Oct 11 12:30:55 2019 | • | | | |
| System 🔨 | bxa_3.4.0.5080 | 3.4.0 | Inactive | Yes | Thu Nov 28 17:03:26 2019 | • | | | |
| | bxa_3.4.1.5118 | 3.4.1 | Inactive | Yes | Wed Dec 18 17:29:32 2019 | 0 | | | |
| License ^ | bxa_3.5.1.5378 | 3.5.1 | Inactive | Yes | Tue Apr 7 11:31:36 2020 | 0 | | | |
| | bxa_3.6.0.5484 | 3.6.0 | Active | Yes | Fri May 22 00:00:01 2020 | • | | | |
| 👌 Cluster | | | | | « < 1 of 1 | > » | | | |
| | | | | | | | | | |
| ç Discovery | | | | | | | | | |
| | | | | | | | | | |
| 🛕 Alerts 🛛 🔨 | | | | | | | | | |

FIGURE 14-7. SYSTEM SCREEN-UPGRADE

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14.1 SYSTEM-UPGRADING BOXILLA UNIT FIRMWARE

To upgrade the firmware on the Boxilla unit, choose the file to be used to upgrade and click on submit and follow the instructions provided. This will cause the new firmware to be added to the Backup Image table (i.e., the firmware file is copied onto the Boxilla unit). To initiate the upgrade of the the Boxilla unit, click on Activate on ellipsis "•••" icon options on the row of the firmware to be used to upgrade the unit.

NOTE: Boxilla supports the uploading and storage of a maximum of 10 Boxilla upgrade images.

The upgrade will not change the contents of the database. If you are upgrading to Boxilla 1.2 from a Boxilla 1.0, 1.0.1, or 1.1 unit, you will need to reboot the Boxilla unit when the upgrade is completed.

VERY IMPORTANT: Ensure the Boxilla unit stays powered-up during the upgrade. Losing power during an upgrade may cause the unit to cease functioning.

14.2 SYSTEM-ADMINISTRATION - CERTIFICATES UPLOAD

Users who wish to remove the "This connection is insecure" need to have the ability to generate their own self signed certificates with their own company information or certificates generated form a registered Certificate Authority (CA). The system allows the users to upload these files into Boxilla. This will then act as an authenticated certificate and the user will no longer get the security warning.

Under the System -> Administration page, go to the Certificates tab to add and manage certificates.

| ≡ | | | | | | | | | | ħ | • ® ~ |
|-------|-------------|----------------|---------|-------------|---------------------------|-------------|---------|---------------|-------------|-------------|--------|
| മ | Dashboard | Administration | | | | | | | | | Reboot |
| | Devices ^ | | | | | | | | | | |
| | Switches ^ | | Upgrade | Backup/Rest | ore | System Info | Boxilla | Users | Certi | ficates | _ |
| | Peripherals | | | | | | | Activate Cert | Upload Cert | Delete Cert | |
| | | File name | | | Created/Modified | | | | | | |
| - 01 | Zones | device.key | | | 2020-06-11 03:08:36 +0100 | | | | | | |
| 10 | | device.ort | | | 2020-06-11 03:08:36 +0100 | | | | | | |
| ~ | | | | | | | | | | | |
| .ė. | Connections | | | | | | | | | | |
| | | | | | | | | | | | |
| - 205 | | | | | | | | | | | |
| | | | | | | | | | | | |
| _ | | | | | | | | | | | |
| 60040 | | | | | | | | | | | |
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| • | System 🔿 | | | | | | | | | | |
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| A | Alerts ^ | | | | | | | | | | |
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| | | | | | | | | | | | |

FIGURE 14-8. CERTIFICATES TAB

To upload a certificate, click on the Upload certificate button under the Certificates tab. Browse to the where the file is located and select it to upload the certificate.



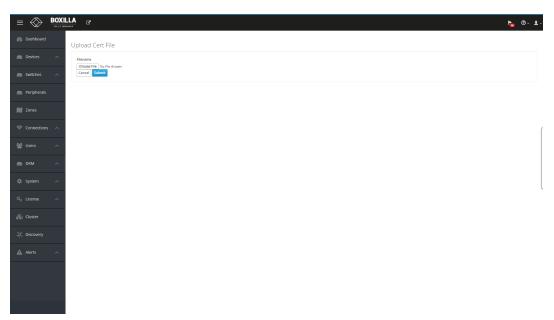


FIGURE 14-9. UPLOAD CERTIFICATE BUTTON

| | r 🕨 Removable Disk (F:) 🕨 New folder | | | | • 49 Search New folder | × | h. 0~ 1 |
|--|--------------------------------------|---------------|---------------------|--------------------------|--------------------------|-------------|---------|
| Organize 👻 New folde | a | | | | ii: • | | |
| ★ Favorites Desktop Desktop Downloads Gondbrive Recent Places Documents Documents Music Pictures | Name | Date modified | Type No items ma | Size tch your search. | | | |
| Videos Videos Videos Videos Vindovs (C) HP-RECOVEV(P) Removable Disk (F) Network | | | | | | | |
| File n | ime: server | | | | All Files (*.*) Open | • Cancel | |
| . Discovery | | | | | | | |
| 🛕 Alerts 🧳 | ^ | | | | | | |
| | | | | | | | |

FIGURE 14-10. SELECT THE CERTIFICATE FILE

A green alert on the page indicates that the certifcate is uploaded.





To delete any existing certificates, click on the delete cert button under certificates tab.

| ≡ 🛞 | BOXI | LA C ^a | 10.8.1.24 says Delete all certificates ? | | | b | ® - ⊥ - |
|--|------|-------------------|---|---------------|---------------|-------------------------|----------------|
| Dashboard Dashboar | | Administration | | OX Cancel | | | Reboot |
| Devices | ^ | | | | | | |
| Switches | ^ | Upgrade | Backup/Restore | System Info | Boxilla Users | Certificates | _ |
| Peripherals | | | | | Activate Cert | Upload Cert Delete Cert | |
| D Zones | | File name N/A | Cres N/A | tted/Modified | | | |
| 奈 Connections | ^ | | | | | | ſ |
| 嶜 Users | ^ | | | | | | |
| 👝 ОКМ | ^ | | | | | | |
| 🔅 System | ^ | | | | | | |
| ୟ _େ License | ^ | | | | | | |
| 🗞 Cluster | | | | | | | |
| ံ့ငံ့ Discovery | | | | | | | |

FIGURE 14-11. DELETE BUTTON

A popup message will be displayed once the certificate is deleted.

| | | | | | ħ | |
|-----------------|------------------|----------------|-------------------------|---------------|-------------------------|--------|
| 🚯 Dashboard | Administration | | | | | Reboot |
| E Devices 🔨 | | | | | | |
| Switches 🔨 | Upgrade | Backup/Restore | System Info | Boxilla Users | Certificates | _ |
| Peripherals | | | | Activate Cert | Upload Cert Delete Cert | |
| 🕅 Zones | File name N/A | | Treated/Modified N/A | | | |
| 🤝 Connections 🔿 | | | | | | |
| 嶜 Users 🛛 🔿 | | | | | | |
| E DKM ^ | | | | | | |

FIGURE 14-12. DELETE SUCCESSFUL





14.3 SYSTEM-BACKUP/RESTORE

The Administrator can backup and restore the database of the Boxilla unit on the Backup/Restore tab on the System screen.

When the Backup button is clicked, a complete backup of the Boxilla unit is created and added to the Backup table with a timestamp. This file is still on the Boxilla unit. To save this backup file to your local system, click on Download using the ellipsis "•••" icon found next to the specific backup.

| | A C* | | | | <u> </u> |
|--------------|-------------------------|----------------|---------------------------|---------------|------------------------|
| Dashboard | Administration | | | | |
| Devices ^ | | | | | |
| witches ^ | Upgrade | Backup/Restore | System Info | Boxilla Users | Certificates |
| eripherals | | | | | Backup Upload Reset DB |
| | Backup File Table | | Showing 1 to 8 of 8 Items | | |
| ones | Enterprise Manager Host | | Timestamp 👃 | Size (| мв) |
| | boxilla | | 2020-06-23 02:00:12 | 2 | • |
| onnections 🔨 | boxilla | | 2020-06-22 02:00:11 | 2 | 0 |
| | boxilla | | 2020-06-21 02:00:11 | 2 | 0 |
| Jsers 🔨 | boxilla | | 2020-06-20 02:00:12 | 2 | • |
| | boxilla | | 2020-06-19 02:00:11 | 2 | • |
| окм ^ | boxilla | | 2020-06-18 02:00:12 | 2 | • |
| | boxilla | | 2020-06-17 02:00:11 | 2 | • |
| System 🔨 | boxilla | | 2020-06-16 02:00:11 | 2 | • |
| system ~ | | | | | < |
| License ^ | | | | | |
| Discovery | | | | | |
| lerts ^ | | | | | |
| | | | | | |

FIGURE 14-13. SYSTEM BACKUP/RESTORE TAB

There is a two-step process to restore a Boxilla unit from an external backup file. First the file must be uploaded to the Backup table and then the backup file in the table must be imported into the Boxilla unit.

When the Upload button is clicked, the administrator is prompted for the filename to upload into the Backup Table. Once the upload has been completed, the administrator clicks on Import using the ellipsis "•••" icon found next to the specific backup.

Clicking on ResetDB purges the database on the Boxilla unit and restores it to a default state. The IP address will not be changed when using the ResetDB option.

The Enterprise Manager Host column refers to the name of the host machine where the backup was generated. Currently, this will always be this Boxilla unit.





14.4 SYSTEM -SYSTEM INFO

The System Info tab provides summary information on the Boxilla unit. This information is:

- Current Version: Version of firmware currently running on the Boxilla Unit.
- Serial No: The serial number of the Boxilla unit.
- Build No: The software build number (internal Black Box number to software control of firmware on the Boxilla unit).
- Model No: The model number of the Boxilla unit (internal Black Box number to indicate hardware version on Boxilla unit).
- Network Status: Whether Boxilla is active on the network.
- Uptime: Length of time that the Boxilla unit has been powered up.
- Export Log files: allows the administrator to export log files from the Boxilla unit.

14.5 SYSTEM – SETTINGS –THRESHOLDS

The System —> Settings—> Threshold tab shows the level used to define an alert for various measurements recorded on a connection and enables the Administrator to change them.

| Backla Thresholds Backla Thresholds Notest Setup: Table Description Notest Setup: Table Description Description Notest Setup: Table Description Description Description Notest Setup: Table Description Description Description Description Notest Setup: Table Description Description Description Description Description Notest Setup: Table Description Description Description Description Description Description Operation Description Description Description Description Description Description Description Operation Description Description Description Description Description Description Description Operation Description Description Description Description Description Description Operation Description Description Description Description Description Description Operation D | Production Organ Threador M. Organ Threador M. March M. M |
|--|---|
| Amount Amount Amount Amount Amount Amount Amount Maria Amount Amount Amount Amount Amount Amount Amount | Dest Transport Test Fold Sector (M. 1000) Montes Colspan="2">Dest Transport Dest Tra |
| And And And and And and And and And and And and | Production Oracle Theodol M. Normal M. Norma M. Normal M. Normal M. |
| And Ball Threbdd Ball Threbdd Ball Threbdd </td <td>Production Oracle Theodol M. Normal M. Norma M. Normal M. Normal M.</td> | Production Oracle Theodol M. Normal M. Norma M. Normal M. Normal M. |
| Image: Second State Second | Distribution Official Threebook Note Name Note Name Note Name Note Name Note Name Note Name Nam Name Name |
| Non-formation Non-form | Description Oreact Threadout AC Norwal or all and |
| Network Nota | Other Methods/K Montheya Mathematic 10 10 13 14 60 26.4 26.4 65.4 66.4 66.4 25.5 26.4 65.4 66.4 66.4 26.4 26.4 65.4 66.4 66.4 26.1 26.4 26.2 60.2 66.2 66.2 26.2 26.2 26.3 30.2 66.2 </td |
| Num Num <td>Other Methods/K Montheya Market Methods/K 10 10 13 14 16 24.4 24.5 45.4 45.4 16.4 25.5 25.4 45.4 45.4 46.4 25.4 25.4 45.4 45.4 46.4 25.4 25.4 25.4 45.4 46.4 46.4 26.1 25.4 25.4 45.4 46.4 46.4 26.2 25.4 26.2 45.4 46.</td> | Other Methods/K Montheya Market Methods/K 10 10 13 14 16 24.4 24.5 45.4 45.4 16.4 25.5 25.4 45.4 45.4 46.4 25.4 25.4 45.4 45.4 46.4 25.4 25.4 25.4 45.4 46.4 46.4 26.1 25.4 25.4 45.4 46.4 46.4 26.2 25.4 26.2 45.4 46. |
| Pandefand Neme 3.0 | 32.4 32.5 62.5 63.6 64.6 35.5 45.0 45.0 64.0 64.0 45.0 32.0 10.0 82.0 10.0 10.0 20.0 20.0 0004.0 70.0 12.1 20.0 20.0 20.0 70.0 10.2 40.0 20.0 20.0 70.0 |
| Monde for de | 100.0 9990.0 200.0 10000.0 Fett |
| MT Mmonde Gal 10.4 B,A B,A B,A B,A Table main Gal M,A | 100.0 9990.0 200.0 10000.0 Fett |
| Tan Bin minu SLO MEGO SLO MEGO SLO MEGO MEGO <th< td=""><td>100.0 9990.0 200.0 10000.0 Fett</td></th<> | 100.0 9990.0 200.0 10000.0 Fett |
| VIER VIER Main 14 14 24 24 24 24 24 VIER Malence Malence 12 02 <td>100.0 9990.0 200.0 10000.0 Feet</td> | 100.0 9990.0 200.0 10000.0 Feet |
| Mail Mail 10 M0 20 A0 90 A0 Ymax Mail | 100.0 9990.0 200.0 10000.0 Feet |
| Main Main R2 RE2 Main R2 RE2 RE2 RE3 RE3 <td>100.0 9990.0 200.0 10000.0 Feet</td> | 100.0 9990.0 200.0 10000.0 Feet |
| Vene B# main 10.0 100.0 <th< td=""><td></td></th<> | |
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The Warning Threshold sets the level above which a measurement must be below to be classified as normal or at "info" level. Measurements above the Warning Threshold and below Critical Threshold are classified as at "Warning" level. Measurements at or above the Critical Threshold are classified as "Critical" level.





The color coding on graphs and tables for measurements (such as Bandwidth) follow these rules:

- Info Level (or normal level): color set as Green
- Warning Level: color set as Amber
- Critical Level : color set as Red

14.6 SYSTEM-SETTINGS-NETWORK

The System -> Settings -> Network tab shows the IP settings for the Boxilla unit and enables the Administrator to change the IP settings for the Boxilla unit (enter IP address, Net Mask, Gateway, and DNS in IPv4 format and click Apply). The second Ethernet port is disabled by default. Also note when setting up a Primay / Backup Boxilla that if the Primary Ethernet 2 is enabled, it must also be enabled on the Backup, otherwise they will fail to link together.

NOTE: Ethernet Port 2 is disabled by default.

| | ď | | | | | | | b 0 |
|---------------|---------------------------------|--------------------------|------------------------|---------------------|------------------|------------------------|--------------------------|------------|
| Dashboard Set | tings | | | | | | | |
| Devices ^ | | | | | | | | |
| Switches | Network | Thresh | olds | Clock | Active Directory | R | EST Api | Remote App |
| Peripherals | Network Settings | | | | | | | |
| | Network Port Ethernet Port 1 | IP Address 10.0.0.234 | Netmask 255.255.0.0 | Gateway 10.0.0.1 | Hostname | Primary DNS 8.8.8.8 | Secondary DNS 8.8.4.4 | |
| 🔰 Zones | Ethernet Port 2 | 10.0.0.232 | 255.255.0.0 | 10.0.0.1 | boxilla-c | 8.8.8.8 | 8.8.4.4 | |
| Connections | | | | | | | | |
| 🖞 Users 🔨 | | | | | | | | |
| ркм ^ | | | | | | | | |
| System ^ | | | | | | | | |
| License ^ | | | | | | | | |
| Cluster | | | | | | | | |
| Discovery | | | | | | | | |
| , Alerts 🔨 | | | | | | | | |
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FIGURE 14-15. SYSTEM -> SETTINGS -> NETWORK SCREEN

NOTE: Ethernet Port 2 does not support KVM traffic. All KVM traffic is routed through Ethernet Port 1.





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|--|------------------------------------|----------------------|----------------------------|----------------------|----------------------|-------------|--------------------|------------|
| Dashboard Dashboar | Settings | | | | | | | |
| Evices 🔨 | Network | Thresholds | | | Active Directory | REST Api | | Remote App |
| Switches ^ | Network | Intestoius | | ALK. | Active Directory | кезт жи | | Kemole App |
| 🚐 Peripherals | Network Settings Network Port | IP Address | Netmask | Gateway | Hostname | Primary DNS | Secondary DNS | |
| 🚺 Zones | Ethernet Port 1 Ethernet Port 2 | 10.0.234 10.0.232 | 255.255.0.0 255.255.0.0 | 10.0.0.1 10.0.0.1 | boxilla boxilla-c | 8.8.8 | 8.8.4.4 8.8.4.4 | |
| | | | | | | | | |
| 嶜 Users 🛛 🔨 | | | | | | | | |
| 👝 DKM 🛛 🔨 | | | | | | | | |
| 🔅 System \land | | | | | | | | |
| Q _e License ∧ | | | | | | | | |
| 🛞 Cluster | | | | | | | | |
| ູ່ດີ, Discovery | | | | | | | | |
| 🛕 Alerts 🔨 | | | | | | | | |
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| | | | | | | | | |
| | | | | | NETWORK | | | |

FIGURE 14-16. SYSTEM -> SETTINGS -> NETWORK SCREEN 3

14.7 SYSTEM – SETTINGS – CLOCK

The System -> Settings -> Clock tab enables the Administrator to see the current system time and to change it.

There are two options for the Clock.

- 1. Manually configure time, time is not maintained.
- 2. Use NTP Server to set and maintain time.

Time Zone setting can be applied to both options above.

| | | | | | | | h 🕑 🕹 |
|--------------------------|--|------------|----------------------|---|-----------------|-------------|-------|
| Dashboard Settin | ıgs | | | | | | |
| 🛋 Devices 🛛 🔿 | | | | | | | |
| Switches ^ | Network | Thresholds | Clock | Active Directory | REST Api | Remote App | |
| m Peripherals | Change Clock Settings | | | Change Timezone Settings | | | |
| 🔊 Zones | Current System time is: October 1st, 2020 13: DateTime 2020/10/01 13:52:17 | 2 | | Current Timezone Is: Europe/Dublin TimeZone Europe/Dublin | | | |
| 🗇 Connections | submit | - | | submit | | | |
| 🔠 Users 🗠 | | | | | | | |
| 🚍 DKM 🔷 | Current NTP Settings Primary Ntp Server | | Secondary Ntp Server | | c Period [days] | NTP Support | |
| 🔅 System 🧠 | | | | 7 | | | |
| Q _e License ∧ | Enter NTP Settings | | | | | | |
| 🛞 Cluster | Secondary IP Address / Hostname | | | | | | |
| .¦çr°, Discovery | Time Sync Internal (days) | | | | | | |
| 🛕 Alerts 🔨 | Арріу | | | | | | |
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FIGURE 14-17. CLOCK (OR TIME) SETTINGS



14.8 SYSTEM - ADMINISTRATION - BOXILLA USERS

The System -> Administration - Boxilla Users tab shows a table of users for the Boxilla unit (not the same as users for the managed domain) as shown below, System Users. The users here should be considered Administrative users.

| Dashboard | Administration | | | | | | Rebo | |
|-----------------|----------------|-----------|----------------|-----------------------------|---------------------------|----------------|------|--|
| Devices | | | | | | | | |
| Switches 🔨 | | Upgrade | Backup/Restore | System Info | Boxilla Users | Certificates | | |
| 🚐 Peripherals | | | | | | | | |
| | | Firstname | Lastname Ei | Showing 1 to 1 of 1 items | Last Login | Actions | | |
| III Zones | Login ^ | Admin | | nell areply@blackbox.com | 2020-06-23 20:41:17 -0400 | Actions | | |
| 🤝 Connections 🔿 | | | | | | « < 1 of 1 > > | | |
| 👹 Users 🛛 🔨 | | | | | | New User | | |
| 💼 ркм 🔷 | | | | | | | | |
| | | | | | | | | |
| 🔅 System 🔨 | | | | | | | | |
| a, License 🛛 🔨 | | | | | | | | |
| 🗞 Cluster | | | | | | | | |
| ູ່ດໍ, Discovery | | | | | | | | |
| Alerts ^ | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

FIGURE 14-18. SYSTEM USERS

| | | | ha 🕫 🕹 |
|-------------------|------------------------------|----------------------|--------|
| 🚳 Dashboard | Boxilla Users Add New User | | |
| E Devices 🔨 | | | |
| Switches 🔨 | | Ac | d User |
| 🚐 Peripherals | | | |
| 🚺 Zones | User | | |
| 🗢 Connections 🔨 | Username * | | |
| 嶜 Users 🛛 🔨 | First name * Surname * | | |
| 📾 DKM 🛛 🔿 | Email address * | | |
| 🔅 System 🔨 | Language Timezone | Browser locale | |
| a, License 🔨 | Authorized by * | utonset utilizzotile | |
| 🗞 Cluster | Cancel Submit | | |
| ್ಕೆಧ್ಕೆ Discovery | | | |
| Alerts ^ | | | |
| | | | |
| | | | |
| | | | |

FIGURE 14-19. NEW SYSTEM USER

Enter Username, First name, Surname, Email address, Language, Time zone, and Authorized by. Then click Submit to save your changes or Cancel to cancel your entries.







14.9 SYSTEM – SETTINGS

Active Directory is a Directory Services implementation that allows for user/group authentication, group policies etc. LDAP (lightweight Directory Access Protocol) is a cross platform protocol used for such directory services authentication.

14.9.1 ADMIN USER ENABLING ACTIVE DIRECTORY ON BOXILLA

The Boxilla administrator can enable Active Directory for any KVM Network by enabling Active Directory authentication by switching the option ON/OFF under System -> Settings -> Active Directory tab

For individual users, the option can be switched by enabling/disabling Active Directory Authentication.

To enable Active Directory support on Boxilla:

- 1. In System -> Settings -> Active Directory tab, you will see the ON/OFF switch, which needs to be ON to globally enable Active Directory support.
- 2. You then need to enter the Active Directory server details. IP, Port (by default this is 389), the domain of the active directory server, the AD Username and AD Password, which are any administrator account on Active Directory. This account is not used for authentication and is used to retrieve OU information for the users in Boxilla.
- 3. You then save your settings and Boxilla is set up for Active Directory support.

| EXILLA C | | | | | | | | | | h 🕑 🖌 |
|------------------------|-------|---------|---|--------------|-------------------------------------|-----------------|-------------------------------|----------------|----------------|-------|
| Dashboar | rd S | ettings | | | | | | | | |
| Devices | ^ | | | | | | | | | |
| Switches | ^ | | Network | Thresholds | Cloc | Ac | tive Directory | REST Api | Remote App | |
| 👝 Periphera | als | | | | | | | Active Dire | ectory Support | |
| 🕅 Zones | | | Current AD Settings | | rt Domain | | AD Username | | | |
| 🛜 Connectio | ons ^ | | 10.211.129.221 | 34 | 19 bbtest.com | , | Administrator | | Test | |
| 🐸 Users | ~ | | Link OU with Boxilla Conne | ection Group | | Add OU | Enter Global AD Settings | | | |
| - DKM | ~ | | Boxilla Thresholds Organizational Unit A | | to 5 of 5 Items Connection Group | | IP Address / Hostname Port | 10.211.129.221 | | |
| System | ~ | | Development Engineering | | • | • | Domain | bbtest.com | | |
| C _e License | | | Ireland Product | | Training | • | AD Username AD Password | Administrator | | |
| | ^ | | QA. | | | < < 1 of 1 > >> | | | Арріу | |
| 🛞 Cluster | | | | | | | | | | |
| ៉ូ្លុំ Discovery | y . | | | | | | | | | |
| Alerts | ^ | | | | | | | | | |
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FIGURE 14-20. ACTIVE DIRECTORY DETAILS—SYSTEM CONFIGURATION



14.9.2 LINKING AN ACTIVE DIRECTORY OU TO A BOXILLA CONNECTION GROUP

The AD admin user will have the option to specify what Active Directory OU they are a part of.

Once Active Directory is successfully connected, Boxilla automatically retrieves the OU information and stores it in its database. The Boxilla administrator has the option to associate the Active Directory user with a connection group. They will also have the option to associate an OU with a Connection Group. Connections are automatically assigned to the users.

| | | | Link OU to Connection Group | × | |
|----------------------------|----------|---|--|--|--------------------------|
| Dashboard | Settings | | Choose connection group | | |
| E Devices 🔨 | | | Showing 1 to 1 of 1 Items | | |
| Switches 🔨 | | | Group Name ^ testAD 《 〈 1 of 1 | XCK | Active Directory |
| Peripherals | | | | | Active Directory Support |
| Zones | | Current AD Settings | | Cancel | AD Username |
| 🛜 Connections 🛛 🔿 | | 10.8.1.100 | 389 bbnsengineering.local | | adsync |
| 曫 Users 🛛 🔿 | | Link OU with Boxilla Connection G | | Enter Global AD Setti IP Address / Hostname | ngs |
| 💼 DKM 🧄 | | Boxilla Thresholds Organizational Unit A NorthAmerica | Showing 1 to 2 of 2 Items Connection Group | Port | |
| 🕼 System 🔨 | | Pittsburgh | · . | Domain AD Username | |
| a _e License 🛛 🔨 | | | | AD Password | |
| 🗞 Cluster | | | | | Арріу |
| ့တို့ Discovery | | | | | |
| 🛕 Alerts 🛛 🔨 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

FIGURE 14-21. CONNECTING OU TO CONNECTION GROUP

14.9.3 USING ACTIVE DIRECTORY WITH ORGANIZATIONAL UNITS (OUS)

When configuring the Active Directory credentials within Boxilla, you have the option to enter the details of the AD server and then test the connection to make sure it is successful. Once connected to the AD, the OU list (Organization Unit) will update with all of the available OU groups found within the AD server automatically. The administrator may now Link an OU with a Connection Group (which is configured under Connections). Only those users will have access to the connection list, thus limiting the number of connections for that OU group. If any user needs more unique connections, the administrator can add that AD user to the Users list and manually configure available connections. The user will see a composite access control list from the OU Group and Custom Configuration.

Any AD user can now login to the receiver even though their username may not be found under the Users profile. If an AD user profile is still under the Users menu, it is because they were added prior to the firmware update or they require more unique connection options that may not fit other users within the same OU. If for any reason the user(s) within the OU shouldn't have access to any KVM hardware, you can Delete the OU and the users in that OU won't have access to the system, or you can configure certain users for Groups that are empty. This in turn will not allow those users to access the system.





OU Setup

The Admin will be able to add OUs and assign these OUs to Connection groups. See Section 11.2, Connections - Groups.

When the user above is authenticated as described above and the OU matches one added by the admin they will get access to the assigned connection groups.

If the OU cannot be matched, the user can define a connection group: "OU undefined."

If the OU cannot be found or there is no OU, the user can define another connection group: "No OU found."

| | | Link OU to Connection Group | × | | ۰ ا |
|-----------------|---|------------------------------------|--------|--------------------|------------|
| Dashboard | Settings | Choose connection group | | | |
| 🚍 Devices 🛛 🔨 | | Showing 1 to 7 of 7 Items | | | |
| Switches 🔨 | | Group Name ^ Credit | | Active Directory | |
| Peripherals | | Engineering Legal Management | | Active Directory S | upport 🛛 🔍 |
| Zones | Current AD Settings IP Address Port | NewYork Group OU Undefined | | AD Username | |
| 🤝 Connections 🔨 | 10.8.1.100 389 | Sales | 1 > > | adsync | Test |
| 嶜 Users 🛛 🔨 | Link OU with Boxilla Connection G | | d | lobal AD Settings | |
| 📾 DKM 🔨 | Boxilla Thresholds Organizational Unit A | Connection Group | Cancel | Address / Hostname | |
| 🔹 System 🔿 | NorthAmerica Pittsburgh | Engineering O | | Domain | |
| 🔍 License 🛛 🔿 | | « < 1 of 1 > » | | AD Username | |
| 🗞 Cluster | | | | | Apply |
| رمد Discovery | | | | | |
| Alerts | | | | | |
| H Alerts A | | | | | |



14.10 SYSTEM - SETTINGS - REST API

This will enable REST API support on the Boxilla so other 3rd-party devices can communicate with the manager to perform additional functions.

| | | | | | | Success Successfully activated REST Apl. |
|-------------|----------|------------|-----------------|------------------|----------|---|
| | Settings | | | | | |
| | | | | | | |
| | Network | Thresholds | Clock | Active Directory | REST Api | Remote App |
| Peripherals | | | REST API | 1.0 | | |
| 🚺 Zones | | | | | | |
| | | | | | | |
| 블 Users 🔷 👋 | | | | | | |
| 👝 DKM 🔷 | | | | | | |
| 🔅 System 🔿 | | | | | | |
| | | | FIGURE 14-23. A | PION | | |



| | | | | | | Success Successfully descrivated REST Ap. |
|------------------------|---------|------------|-------|------------------|----------|--|
| Dashboard Settings | | | | | | |
| Devices ^ | Network | Thresholds | Clock | Active Directory | REST Api | Remote App |
| Peripherals | | | | API State | | |
| III Zones | | | | OFF | | |
| P Connections | | | | | | |
| 🖬 Users 🗠 | | | | | | |
| DKM ^ | | | | | | |
| 🗙 System 🗠 | | | | | | |

FIGURE 14-24. API OFF

14.11 SYSTEM - SETTINGS - REMOTE APP

Minimum Supported Remote App Version: The recommended minimum revision of Remote App will be set by Boxilla and automatically be set following an upgrade of the system.

However, the Boxilla user can decide to set another minimum version. Versions to choose from will automatically be added to the list following a failed login attempt from a Remote App user at a lower revision.

The Boxilla administrator will be notified of a failed attempt. A minimum supported Remote App version will create a Boxilla alert.

The Boxilla administrator can decide to advise the app user to upgrade or in an exception could change the setting in Boxilla to match the lower revision. The Boxilla Administrator should only change this Minimum supported version if advised by the Black Box support team.

Remote App error message:

The Remote App will check on login if the Remote App is at a compatible version of Boxilla.

For Remote App version 1.2 and higher, an error will display the version that the Remote App user should be upgraded to.

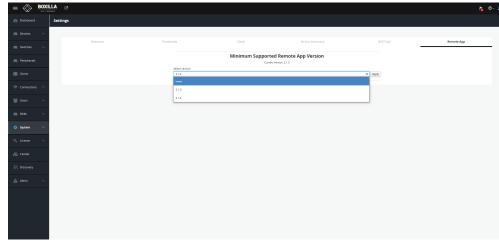


FIGURE 14-25. REMOTE APP



CHAPTER 15: LICENSE



15.1 LICENSE PAGE – BOXILLA LICENSING

Boxilla licensing allows for customization of the system. It gives the ability to add licenses to Boxilla to define number of Users, Connections, and Devices to be supported in a Managed Domain. Release 2.0 default licensing model will be 25 Devices, 25 Connections, and 25 Users (BXAMGR).

The system supports the addition of:

- BXAMGR-LIC-25 (25 more devices/users/connections)
- BXAMGR-LIC-50 (50 more devices/users/connections)
- BXAMGR-LIC-100 (100 more devices/users/connections)
- BXAMGR-LIC-200 (200 more devices/users/connections)
- BXAMGR-LIC-300 (300 more devices/users/connections)
- BXAMGR-LIC-ULT (unlimited devices/users/connections)
- BXAMGR-LICBAK-25 (Boxilla KVM Manager 25 Device License for Active and Standby Boxilla)
- BXAMGR-LICBAK-100 (Boxilla KVM Manager 100 Device License for Active and Standby Boxilla)
- BXAMGR-LICBAK-200 (Boxilla KVM Manager 200 Device License for Active and Standby Boxilla)
- BXAMGR-LICBAK-300 (Boxilla KVM Manager 300 Device License for Active and Standby Boxilla)
- BXAMGR-LICBAK-ULT (Boxilla KVM Manager Unlimited Device License for Active and Standby Boxilla)

Licenses can be added under the System -> License Page.

To find the current license, the License button and you will be able to verify the Boxilla Endpoint and RemoteApp licenses available.



15.1.1 HOW TO REQUEST A LICENSE

To procure a new license file, generate the info file from your current system using Generate Info File option at the top of the License page. The info file will be downloaded onto the local machine. Provide the info file to Black Box Technical Support (contact us at 877-877-2269 or info@blackbox.com) to generate the license file for you. Additional licenses will need to be purchased.

| | | ď | | | | | h (|
|----------------------|------|--|---|----------------------------------|-------------------------|--------------------------------|-----------------|
| Dashboard | Boxi | lla License | | | | | |
| Devices | ^ | | | | | Add License | Generate Info F |
| Switches | ^ | anse ID | File Name | User/Connection/ Device limit | PO no. | Added on | |
| Peripherals | | 3B1780001722052019212530 3B1780001722042020155116 | licenseKeyDefault.lic licenseKeyULT_300-0100-001_008c101cc69e_22042020155116.lic | 25 Unlimited | default GARRETTS LAB | 2019-05-22 15 2020-04-22 18 | |
| Zones | | | | | | | |
| Connections Users | | | | | | | |
| | ^ | | | | | | |
| DKM | ^ | | | | | | |
| System | ^ | | | | | | |
| | ^ | | | | | | |
| Cluster | | | | | | | |
| Discovery | | | | | | | |
| Alerts | ^ | | | | | | |
| | | | | | | | |

FIGURE 15-1. ADD LICENSE SCREEN





CHAPTER 15: LICENSE



15.1.2 HOW TO UPLOAD A LICENSE FILE

Once you receive the license file, upload the new license.

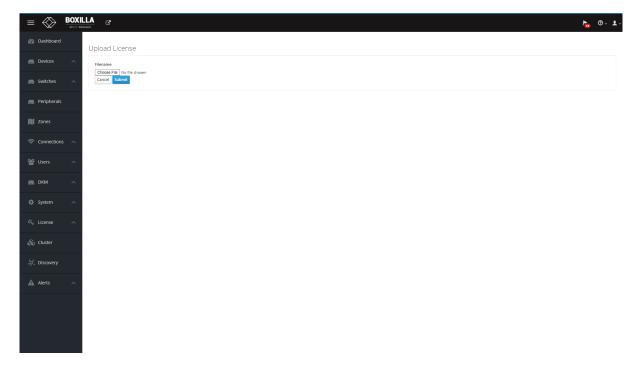


FIGURE 15-2. UPLOAD LICENSE SCREEN





16.1 INTRODUCTION

The Boxilla system can support a Primary/Standby manager that allows the standby to take over if the Primary is not online. This ensures a smooth operating environment for users and administrators.

16.2 BEFORE YOU BEGIN/PREREQUISITES

Before you begin configuring the Boxilla managers for Primary / Standby mode, verify the following prerequisites have been met first; otherwise, the Primary / Standby mode will not work.

- Boxilla managers must have firmware 3.0 or higher
- · Boxilla managers must be on the same firmware version
- Boxilla managers must be using the same endpoint license
- Boxilla managers must be on the same subnet and connected to the network so they can be seen
- Both the Primary / Standby must have matching Ethernet Port Configurations (i.e. if Primary has Ethernet 2 enabled, so does the standby, if it is disabled on the Primary, then the Standby must also be disabled).

16.3 OVERVIEW OF OPERATION

When the system is configured for Primary / Standby, you will use a Virtual IP address to access the managers (*you won't use the actual Boxilla IP address unless you are initially creating the cluster, updating the managers, or breaking the clusters*), and all activity will be managed via the Virtual IP address. The Virtual IP address is assigned during the configuration of the Primary Boxilla.

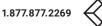
If the Primary Boxilla goes offline and the Virtual IP is no longer accessible, it will take approximately 4 minutes between the time the Primary goes offline and when you can access the Virtual IP again. This timeout occurs to make sure the Primary is truly offline before the Standby takes over. Once this time has elapsed, you can access the Virtual IP again to manage the system.

In certain situations, when the Primary Boxilla goes offline and the Standby takes over, you will be required to login into the Virtual IP interface to make sure both Boxilla managers are operating in their proper roles after bringing the Primary back online, and in some instances when the Primary comes back online, you may need to swap the roles (Primary / Standby). In this situation, where the roles must be swapped, it is because both managers think they are Primary, but they do not have valid Standby configurations. To swap the roles, simply select the ellipsis "•••" icon and select "Make Standby" for the old Primary.

An example of this situation is when the Primary Boxilla gets disconnected from the network and comes back eventually. If you log into the Virtual IP address and see that the Primary is still offline (but you can physically ping it and access it on its own IP), click the ellipsis "•••" icon of the old Primary Boxilla, and click on "Make Standby". This will address the roles for all managers' part of that cluster.

When configuring the Primary / Standby system, keep in mind the following functions and what they really do:

- Make Standalone This will factory restore the Boxilla and clear the users, connections, and endpoints, but keep the existing network configuration, endpoint licenses, and firmware.
- Detach This will disconnect the Boxilla from the cluster, but will keep all of its configuration parameters including users, connections, and endpoints. This is used to perform firmware updates primarily, or to start the Cluster Dissolving process.
- Prepare Standby This will take the active configuration of the designated Primary and overwrite the configuration in the Standby Boxilla manager.





16.4 CREATING THE CLUSTER

To create a Boxilla Primary / Standby system, first make sure you have met all of the prerequisites as stated above. The next step is to make a backup of the existing Boxilla configuration in case it is needed to be uploaded to restore the system endpoints, connections, users, and settings.

PREPARING THE PRIMARY

- 1. Within the Boxilla Primary manager, login and navigate to "Cluster" in the menu.
- 2. Click the "Prepare Master" button and enter the configuration information. Use the help windows throughout this process. The Virtual IP will be used as a single point of access to the Primary / Standby cluster.

| E South and the second | |
|--|--------------------|
| Dashboard Active Standby Cluster D Prepare Stan | dby Prepare Master |
| Enter he Bailla Cluster D. Enter he Bailla Clust | |
| Virtual /P Switches Switches | |
| Peripherals Node initio Enter the master Bouila ID. It must be unique number inside. Network Info | |
| duster is 98. | |
| Network Info Table Enter the name of the master Bould is: bus/8. Network Info Table Enter the name of the master Bould is: bus/8. Netmaak Gateway | |
| Etherne Part 1 10.0 2255/250.0 100.01 W Users A Etherne Ron 2 10.0 Close Peppine Master 2255/250.0 100.0.01 | |
| | 1 of 1 > >> |
| | |
| ♦ System ∧ | |
| Q _v License ^ | |
| & Cluster | |
| ېژ Discovery | |
| Alerts A | |
| | |
| | |
| | |

FIGURE 16-1. SETUP NEW MASTER SCREEN

PREPARING THE STANDBY

1. Within the Boxilla Standby manager, login and navigate to "Cluster" in the menu.

2. Click the "Prepare Standby" button and enter the configuration information. Use the help windows throughout this process.

CHAPTER 16: CLUSTER



| = | BOXILL | A C' | Standby Boxilla Preparation | × | | |
|---|-------------|--------------------|-----------------------------|---|---------------|--------------------------------|
| Dashboard | | Active Standby | Master Boxilla IP | | | Prepare Standby Prepare Master |
| Devices | ~ | | | Enter the lp address of the master Baxilla in xooxxooxxoox format ie. 10.211.129.6 . | _ | |
| Switches | ~ | | Node ID | Enter the standby Boxilla ID. It must be unique number inside a cluster ie. 4 . | | |
| Peripherals | | | Node Name | Enter the name of the standby Boxilla ie. bxa04 . | | Network Info |
| Di Zones | | Network Info Table | | Close Prepare Standby | | |
| 🛜 Connections | | Interface 🗠 | IP Address | Mac | Netmask | Gateway |
| | | Ethernet Port 1 | 10.8.1.24 | 00:8c:10:1c:c6:9e | 255.255.0.0 | 10.8.1.1 |
| 🐏 Users | | Ethernet Port 2 | 10.0.0.25 | 00:8c:10:1c:c6:9d | 255-255-255-0 | |
| ✿ System Q₀ License Q₀ Cluster Q₀ Discovery Q₁ Alerts | ^ ^ ^ | | | | | |

FIGURE 16-2. STANDBY BOXILLA PREPARATION

At this time, you should only be able to access the Boxilla Primary web interface and Virtual IP web interface. The Standby manager can be pinged, but the Standby web interface will be disabled on purpose.

- NOTE 1: You will only use the Virtual IP address unless you are dissolving or detaching a cluster (i.e. to perform an update as an example).
- NOTE 2: The Standby Boxilla will disable its web interface once part of the system.
- You now have a Primary / Standby system configured.
- The configured cluster shows up in the Node Info tab on the screen.

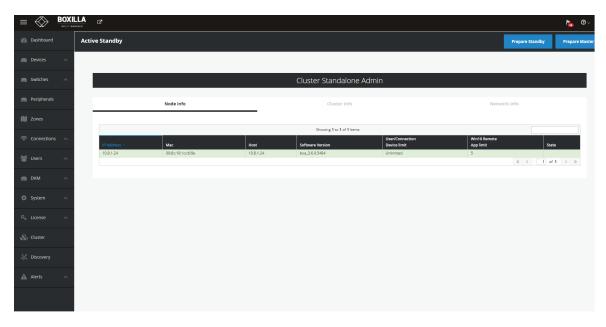


FIGURE 16-3. CONFIGURED CLUSTER PRIMARY VIEW

BLACKBOX.COM



CHAPTER 16: CLUSTER



16.5 FAILOVER

When a Primary / Standby system is configured and the acting Primary is disconnected or goes offline, it will take about 4 minutes before the Standby will take over and begin responding as the new Primary. There will be a small window where the Virtual IP web interface cannot be accessed.

Once the system has been identified as having performed a failover, it is important as a system admin to go into the Virtual IP web interface and make sure your Primary / Standby are operating in their correct roles. Depending on the circumstances and firmware version of the Boxilla, the system may be restored naturally without any user intervention, but it is always good practice to make sure.

If you navigate to this page and see that the "old Primary" is in a "failed" state, you can simply click the ellipsis "…" icon near the failed controller and click "Prepare Standby". This will in turn flip the Primary / Standby roles (IP addresses of the Boxilla managers will remain the same) and initialize the cluster again so you still have a Primary / Standby configuration.

| Devices Switches Peripherals Node info Cluster Info Node info Cluster Info Network Info Network Info </th <th>≡ 🛞 !</th> <th></th> <th>G,</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>🍗 🔍 🕹</th> | ≡ 🛞 ! | | G, | | | | | | 🍗 🔍 🕹 |
|---|-------------|----|--------------|-------------------|-----------|--------------------|-----------------|-----------|--------------------------------|
| Switches Cluster Standalone Admin Peripherals Construint Zones Construints Indiants Indiants <th>🚯 Dashboard</th> <th>Ac</th> <th>tive Standby</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Prepare Standby Prepare Master</th> | 🚯 Dashboard | Ac | tive Standby | | | | | | Prepare Standby Prepare Master |
| Pergherals Node info Cluster info Cluster info Network i | | ^ | | | | | | | |
| Node info Cluster info Network info V Zones State State © Connections ^ Image: Connections ^ Image: Connections ^ Image: Connections ^ Max Image: Connections ^ | Switches | ^ | | | | Cluster Standalone | Admin | | |
| Openetions Mac Isot Software Version Win10 Aerost Decide limit Same ¹ Users 10.8.1.24 10.8.1.24 tex_36.05484 Unlineed see see | Peripherals | | | Node info | | Cluster Info | | Netwo | rk Info |
| © Connections Mac Host Software Version User/Connections Win10 Benote Applinit Suite W Lots ^ 10.8.124 bixe_36.0584 Unlinesd 5 DKM ^ | 🕅 Zones | | | | | | - | | |
| | | ^ | IP Address | Mac | Host | | User/Connection | App limit | State |
| | 嶜 Users | ^ | 10.8.1.24 | 00:8c:10:1c:c6:9e | 10.8.1.24 | bxe_3.6.0.5484 | Unlimited | 5 | < 1 of 1 > >> |
| 🗘 System 🔿 | | ^ | | | | | | | |
| | | ^ | | | | | | | |
| $Q_{\rm e}$ License \sim | | ^ | | | | | | | |
| & Cluster | | | | | | | | | |
| ∭. Discovery | | | | | | | | | |
| ▲ Alerts ∧ | | ^ | | | | | | | |
| | | | | | | | | | |
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FIGURE 16-4. PRIMARY FAILED VIEW BACKUP ACTIVE SCREEN



| | BOXILLA | | | | | | | | | | b |
|---------|---------|------------|--|---------|----------------|-------------|----------------------------------|---------------------------------|---------------------------|---|----------|
| | Acti | ve Standby | | | | | | | | | ļ |
| Devices | ^ | | | | | | | | | | |
| | ^ | | | | | Cluste | r Admin | | | | |
| | | | Node info | | _ | Clus | er Info | | Network Info | | |
| Zones | | | | | | Showing 1 t | 2 of 2 Items | | | | |
| | ~ | IP Address | Mac | Node Id | Node Name | Host | Software Version | User/Connection Device limit | Win10 Remote App limit | State | |
| users | ~ | 10.8.1.24 | 00:8c:10:1c:c6:9e 00:8c:10:1c:c7:66 | 10 | bxa10 bxa11 | 10.8.1.24 | bxa_3.4.1.5118 bxa_3.4.1.5118 | 75 75 | 5 | failed | • |
| | ^ | | | | | | | | 4 | Prepare Standby Detach Make Standalone Remove Failed | * |
| | ^ | | | | | | | | | | - |
| | ~ | | | | | | | | | | |
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FIGURE 16-5. OPTIONS FOR FAILED VIEW BACKUP DROP-DOWN BOX

16.6 PRIMARY/STANDBY FIRMWARE UPDATES

When firmware needs to be applied to the Boxilla managers in a Primary / Standby configuration, a special process needs to be followed. Be sure to make a copy of your Boxilla configuration so you can easily upload it later in case it gets lost.

1. Navigate to the Virtual IP web interface, login, and go to the Cluster menu. In this menu, click the ellipsis "•••" icon of the active Standby and select "Detach". Remember the Standby web interface is disabled when it is part of a cluster, so detaching it allows the administrator to gain access to it again.

IMPORTANT: Be sure to use the "Detach" or you will lose your configuration.

| ≡ | \bigotimes | BOXI | LA | | | | | | | | | | ۰ ®~ |
|-----|--------------|------|-----------|--------------|--|---------|----------------|-----------|----------------------------------|---------------------------------|---------------------------|---------------------------|------|
| ති | | | Activ | e Standby | | | | | | | | | |
| - | | ^ | | | | | | | | | | | |
| - | Switches | ^ | | | | | | Cluste | er Admin | | | | |
| - | | | | | Node info | | | Clus | ter Info | | Network Inf | 2 | |
| N | | | | | | | | Showing 1 | to 2 of 2 Items | | | | |
| (î: | | ^ | | IP Address 个 | Мас | Node Id | Node Name | Host | Software Version | User/Connection Device limit | Win10 Remote App limit | State | |
| 쓥 | | ^ | | 10.8.1.24 | 00:8c:10:1c:c6:9e 00:8c:10:1c:c7:66 | 10 | boa10 boa11 | 10.8.1.24 | bxa_3.4.1.5118 bxa_3.4.1.5118 | 75 | 5 | active standby | • |
| - | | ^ | | | | | | | | | | Detach Make Standalone | |
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FIGURE 16-6. DETACH BOXILLA FROM DROP-DOWN BOX

CHAPTER 16: CLUSTER



- 2. Navigate to the Standby Boxilla IP Address (not the Virtual IP) and perform the firmware upgrade.
- 3. Now that the Standby Boxilla is updated first, make this the Primary (role switch) by going into the Cluster menu and clicking the Switchover button.
- 4. Go back to the old Primary and perform the firmware upgrade; once done, make it a Standby by clicking the "Prepare Standby" button.
- 5. Now your Primary / Standalone is back in order and operating.

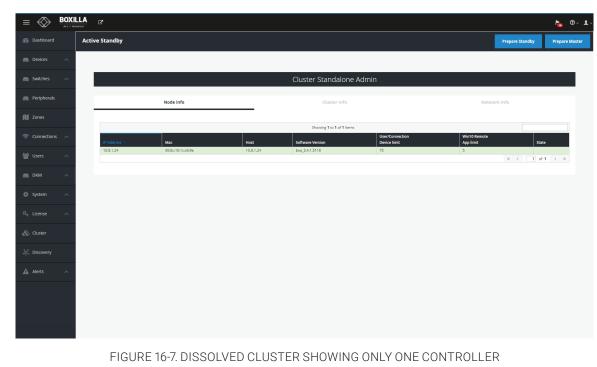
16.7 DISSOLVE CLUSTER

In certain situations or environments, you may need to dissolve the Boxilla Primary / Standby Cluster. Some of these reasons include:

- Replacing / Swapping in new Boxilla hardware
- · Wanting to only have a single Boxilla manager without a Standby manager
- Technical reasons that include syncronization problems

To dissolve a cluster, follow these steps.

- 1. Navigate to the Primary Boxilla IP address web interface and login.
- 2. Go to the Cluster menu and verify you still see the Primary and Standby.
- 3. Next to the Standby Boxilla, click the ellipsis "•••" icon and then click on "Make Standalone". This will factory restore your Standby Boxilla removing the users, connections, and endpoints, but it will remember the Boxilla firmware and network settings.
- 4. Once the Standby is removed, the web interface will show a button in the top right named "Dissolve Cluster". Click this to finish the process.



Now that the Boxilla Primary / Standby are dissolved, the Virtual IP will no longer work, and you must navigate to the original Boxilla IP addresses to gain access to the web interface.

CHAPTER 17: ALERTS



Alerts in Boxilla log significant events within the Boxilla and its managed domain. Alerts can be normal events such as users logging in, a user making a connection, a user disconnecting or logging out.

Alerts are classified as Info, Warning or Critical. Normal events are Info Alerts. Events that may be indicate an unusual activity level is classified as a Warning Alert. Events that indicate a potential serious negative impact on the system is classified as a Critical event.

Events that are classified as Critical are:

- Failure to update the IP Address of a managed appliance.
- Failure to retrieve appliance details.
- Failure to UnManage a managed appliance.
- Failure to reboot a managed appliance.
- Failure to Upgrade a managed appliance.
- When a managed appliance goes Off-Line

Events that are classified as Warnings are:

- When a user fails to login.
- Firmware on a device mismatches domain's active firmware version
- When a device transitions to Out of Service during an upgrade.
- System threshold is exceeded
- Forced connection fails to establish





17.1 ALERTS-HISTORY

Alert history is a time-stamped log of events across the system. This history can be examined by either looking at all Alerts, or filtering them down to just Critical, Warning or Info by selecting the appropriate tab on the Alerts–History screen as shown in Figure 17-1.

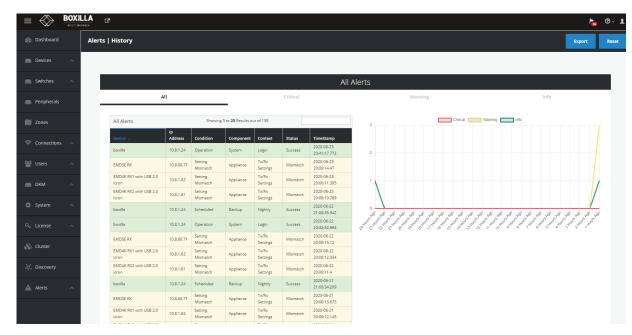


FIGURE 17-1. ALERTS HISTORY

Critical logs are shown below.

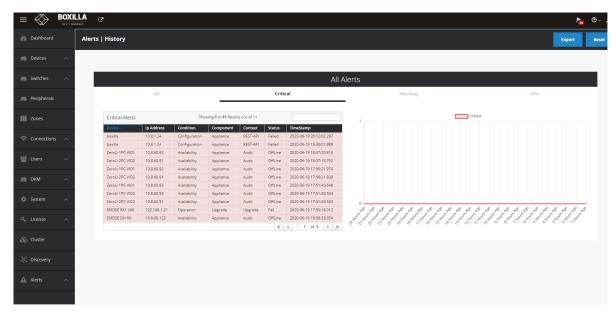


FIGURE 17-2. CRITICAL



Warning logs are shown next.

| | AV LIT MANAGER | | | | | | | | | | | | | | | | | | | | | 6 | |
|---------------|----------------|---------------------------------|-------------|---------------------|-------------------|-------------------|----------|----------------------------|------------|-----------|--------------|----------------------|---------|---------------------------|-------------|-----------|---------------------|---------------------|-----------|---------------------|-------------|-------|----|
| 🚯 Dashboard | Alert | ts History | | | | | | | | | | | | | | | | | | | Expor | t | Re |
| Devices | ^ | | | | | | | | | | | | | | | | | | | | | | |
| Switches | ^ | | | | | | | All | Alerts | | | | | | | | | | | | | | |
| Peripherals | | | All | | | | Critical | | | | | Warning | ş | | | - | | | Inf | o | | | |
| 🚺 Zones | | Warning Alerts | | Showing | 1 to 20 Results o | out of 47 | | | 3 | | | | | | _ | Warning | | | | | | | |
| | | Device 🧅 | Ip Address | Condition | Component | Context | Status | TimeStamp | 1 | | | | | | | | | | | | | | |
| < Connections | ^ | EMDSE RX | 10.8.60.71 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-23 20:00:14.47 | | | | | | | | | | | | | | | |
| 🔛 Users | ~ | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-23 20:00:11.395 | 2- | | | | | | | | | | | | | | |
| | | EMD4K RX2 with USB 2.0 | 10.8.1.61 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-23 20:00:10.789 | | | | | | | | | | | | | | | |
| DKM | ^ | EMDSE RX | 10.8.60.71 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-22 20:00:15.12 | 1 | | | | | | | | | | | | | | |
| 🔅 System | ~ | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-22 20:00:12.034 | 0 | | | | | | | | | | | | | | |
| Q: License | | EMD4K RX2 with USB 2.0 Icron | 10.8.1.61 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-22 20:00:11.4 | 2ª HOUR PO | outo Paso | 2 House Page | 224 224 2010 2001 | Bag and | 927 027 027 02 N. CUQL | States Land | ROAD LOUD | 897889 2007 2007 | 929 929 921 9201 | IS POP IS | 80 768 2010 2005 | ARD ARD ARD | an an | |
| ⊶ License | ^ | EMDSE RX | 10.8.60.71 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-21 20:00:13.675 | * * | Ŷ | చి చి - | છે. છે | 1. 10 | 5 1 | 2 2 | 1 2 | 6 | 6° 1° | ତିତ | , p. | રું હેં ! | S | |
| 🗞 Cluster | | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-21 20:00:12.145 | | | | | | | | | | | | | | | |
| o, Discovery | | EMD4K RX2 with USB 2.0 Icron | 10.8.1.61 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-21 20:00:11.544 | | | | | | | | | | | | | | | |
| | | EMDSE RX | 10.8.60.71 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-20 20:00:13.316 | | | | | | | | | | | | | | | |
| Alerts | ^ | EMD4K RX1 with USB 2.0 Icron | 10.8.1.62 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-20 20:00:11.789 | | | | | | | | | | | | | | | |
| | | EMD4K RX2 with USB 2.0 Icron | 10.8.1.61 | Setting Mismatch | Appliance | Tx/Rx Settings | Mismatch | 2020-06-20 20:00:11.144 | | | | | | | | | | | | | | | |
| | | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_Login | Failed | 2020-06-19 | | | | | | | | | | | | | | | |

FIGURE 17-3. WARNING

| You can also | collect inf | o logs. |
|--------------|-------------|---------|
|--------------|-------------|---------|

| | AV LIT MANAGER | | | | | | | | | |
|-------------|----------------|--------------|-------------|---------------|-------------------|--------------------|------------|-------------------------|--|---|
|) Dashboard | Aler | ts History | | | | | | | | Export |
| Devices | ^ | | | | | | | | | |
| Switches | ^ | | | | | | | All / | Alerts | |
| Peripherals | | | All | | | | Critica | I | Warning | Info |
| | | Info Alerts | | | Showing 1 to 20 i | Results out of 100 | | | . – | Info |
| | | Device 🗸 | Ip Address | Condition | Component | Context | Status | TimeStamp | | |
| Connections | ~ | boxilla | 10.8.1.24 | Operation | System | Login | Success | 2020-06-23 20:41:17.772 | | |
| | | boxilla | 10.8.1.24 | Scheduled | Backup | Nightly | Success | 2020-06-22 21:00:35.942 | | |
| | | boxilla | 10.8.1.24 | Operation | System | Login | Success | 2020-06-22 20:32:32.694 | | |
| | ~ | boxilla | 10.8.1.24 | Scheduled | Backup | Nightly | Success | 2020-06-21 21:00:34.209 | | |
| | | boxilla | 10.8.1.24 | Scheduled | Backup | Nightly | Success | 2020-06-20 21:00:33.963 | | |
| DKM | ~ | boxilla | 10.8.1.24 | Scheduled | Backup | Weekly | Success | 2020-06-20 00:00:02.00 | | |
| | | boxilla | 10.8.1.24 | Scheduled | Backup | Nightly | Success | 2020-06-19 21:00:35.572 | | |
| | | boxilla | 10.8.1.24 | Configuration | Appliance | REST-API | Configured | 2020-06-19 20:24:03.994 | | |
| System | ^ | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_Login | Success | 2020-06-19 20:14:01.922 | • | |
| | | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_logout | Success | 2020-06-19 20:14:01.913 | کور کی | 5 |
| | ~ | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_Login | Success | 2020-06-19 20:14:01.91 | A the set of the set o | 8 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |
| | | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_logout | | 2020-06-19 20:14:01.907 | | |
| Cluster | | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_Login | Success | 2020-06-19 20:14:01.904 | | |
| | | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_logout | | 2020-06-19 20:14:01.902 | | |
| | | EMDSE DH RX | 10.8.60.123 | Operation | User | Manual_Login | Success | 2020-06-19 20:14:01.899 | | |
| | | boxilla | 10.8.1.24 | Operation | User | Login | Success | 2020-06-19 20:13:45.979 | | |
| | | boxilla | 10.8.1.24 | Operation | User | Login | Success | 2020-06-19 20:13:31.374 | | |
| Alerts | ~ | boxilla | 10.8.1.24 | Operation | User | Login | Success | 2020-06-19 20:13:28.72 | | |
| | | boxilla | 10.8.1.24 | Operation | Active Directory | Authenticate | Success | 2020-06-19 20:13:27.297 | | |
| | | boxilla | 10.8.1.24 | Operation | User | Login | Success | 2020-06-19 20:13:16.765 | | |

FIGURE 17-4. INFO



17.2 ALERTS-ACTIVE

Active Alerts are alerts that are currently active, e.g. devices that are offline, thresholds that are exceeded, and devices with mis-matched software versions.

These active alerts are cleared when the devices are back online, device metrics return to below threshold levels, and devices are upgraded to the domain's active firmware version.

17.3 SYSLOG

Syslog supports the configurable generation of Alert History event and Active Connection statistics to an external Syslog Server.

The administrator can use an external SYSLOG server to capture all of the alert details. During the configuration of the SYSLOG server, you can select which alerts you would like to capture on the remote SYLOG server (Info, Warning, Critical, Connections).

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|----------------------------------|--------|-----------------------------------|--------|----------|--------|----------------------|-------------|---------|----------|---------------|---------------|
| 🚯 Dashboard | 4 | llerts settings | | | | | | | | | |
| Devices | ^ | | Syslog | | | | | | Email | | |
| Switches | ^ | | | | | | | | | | |
| E Peripherals | | | | | | Syslog | | | | | |
| Zones | | | | | | | | | | ENABLE SYSLOG | OFF |
| 🗢 Connections | ^ | Syslog IP Address / Hostname 🗟 | Port | Protocol | Status | Showing 1 to 1 Resul | ts out of 1 | Warning | Critical | Connections | Options |
| 🐸 Users - | ^ | 10.8.1.20 | 514 | тср | × | 1 | ~ | ~ | * | ✓ ≪ < | □ 1 of 1 > >> |
| 💼 ОКМ | ^ | | | | | | | | | | |
| 🔅 System | ^ | | | | | | | | | | |
| م License | ~ | | | | | | | | | | |
| 🗞 Cluster | | | | | | | | | | | |
| ුද් Discovery | | | | | | | | | | | |
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FIGURE 17-5. SYSLOG





| | | × | |
|-----------------------------------|-----------------------------|----------|---------------------|
| Alerts settings | IP Address / Hostname | | |
| | Port | | |
| | Poll Time 1 | | |
| | ALERTS TO BE SENT TO SYSLOG | | Add Server |
| | Warning OFF | | |
| | Critical OFF | | |
| Syslog IP Address / Hostname 🗸 | Connections OFF | Critical | Connections Options |
| | | | <pre></pre> |
| | | Close | |
| | | | |
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FIGURE 17-6. ADD SYSLOG SERVER

- IP Address/Hostname This is the IP address or hostname of the server where the external syslog server is running.
- Port The port the syslog server is listening on.
- Poll time Poll time sets how often (in minutes) active connections will send connection stats to the syslog server.
- Alerts to be sent to syslog You can limit what type of alerts are sent to the syslog server by turning these options on/off.





17.4 ALERTS - SETTINGS - EMAIL

An administrator can configure an SMTP server that is a mail system for logging. This page also offers additional settings to send the Boxilla admin emails on system info/alerts.

1) SMTP stands for Simple Mail Transfer Protocol. The Boxilla offers the SMTP configuration to allow a user to enter their mail server information so that the Boxilla can properly communicate with the server using the protocol. The information required here is used to find and authenticate against the mail server so that a communication link can be made.

2) Mailer Settings allows the Boxilla administrator to configure who the email is from and who it is going to, and how often to check. You may also configure what alerts (critical and/or information) are in the message.

3) Test Email allows the Boxilla administrator to perform a quick verification of the SMTP setting to make sure the emails are getting through properly without having to wait for an actual alert to be sent. This Test Email feature is typically used at the time of configuration and during troubleshooting.

| | | LA C | | | | 🍗 ®~ |
|---------------|---|---|--|-------|---------------------------------------|-----------------|
| Dashboard | | Alerts settings | | | | |
| Devices | ^ | Syslog | _ | | Email | |
| Switches | ^ | | | | | |
| Peripherals | | | Email | | | |
| 🕅 Zones | | | | | | ENABLE EMAIL ON |
| 🛜 Connections | ^ | SMTP settings | Mailer settings | | Test Email | |
| 📽 Users | ^ | 10.8.1.20 SMTP Port | 15 Boxilla Email | | Recipients | |
| 💼 ркм | ^ | 25 SMTP authentication | boxilla.admin@blackbox.com Recipients | | Email v boxilla.admin@blackbox.com | |
| 🏟 System | ^ | plain 🗸 | boxilla.admin@blackbox.com ALERTS TO BE NOTIFIED OF | | | |
| Q License | ^ | enabled v SMTP Username snmpAdmin | Critical ON Warning ON | | | Jenu |
| 🚓 Cluster | | SMTP Password | ORDER NOTIFICATIONS BY | | | |
| ç° Discovery | | SMTP Password confirmation | Order Time Importance | Apply | | |
| Alerts | ^ | Арру | | | | |
| | | | | | | |
| | | | | | | |

FIGURE 17-7. ALERTS - SETTINGS - EMAIL



The dashboard is divided into three main areas: Status & Performance Indicators, Active Connections and Active Logins.

| | | | | | | ۰ ® ե |
|--------------|---|---|--------|---|--|-------|
| 🚯 Dashboard | Dashboard | | | | | |
| E Devices | | | | | | |
| 🚐 Switches 🔨 | | Status | | | Performance | _ |
| Peripherals | A Last 24 Hours A Logged in Min 3 Users Age 3 Users | Alerts | | O Active | 0.00Mbps Bandwidth | |
| Connections | Logged In : 3 Logged Out : 0 | 2 Critical 6 Warning 10 Info | | Active Connections : D Active Users : 3 | Ng 0 | |
| Users ^ | Last 24 Hours Mm 9 Devices Max 9 Devices | Security | | O Exceeded | O FPS Dropped Frames | |
| DKM ^ | Online : 4 | 22 Refused Logins 4 Unauthorized Connections | | Exceeded Avg 0 Connections : 0 Thresholds : 0 | Last 24 hours Min O Propped Max 0 Dropped Avg 0 Dropped | - |
| e License 🔨 | | | | | | |
| 👌 Cluster | | | | | | |
| C Discovery | | | e Conr | nections | | |
| Alerts ^ | Network Bandwidth | User Response Time | | Dropped Frames | Roundtrip Time | |
| | She | wing 1 to 0 Results out of 0 | | 10 Mbps | | |
| | Connection Name 🗸 Username Re | ceiver Transmitter FPS Bandwidth (Mbps) | » | 5 Mbps | | |

18.1 STATUS AND PERFORMANCE INDICATORS



The Status and Performance Indicators are defined as:

Status:

1. Logged-In—number of users currently logged-in is displayed in the center of ring. The Ring shows the number of users logged-in on Receivers and the number of Receiver units with no one logged-in (i.e. shows % of Receiver units that have a user logged in).

The graph portion of the Logged-In indicator shows the minimum, maximum and average number of users logged-in over the last 24 hours and a graph of number logged-in over the last 24-hours.





| Dashboard | | | | | | | | |
|--|--|--|--|--|--|-----------------------------|---|---|
| | | | | | | | | |
| | | | | | | 2 Mbos | | |
| Devices ^ | | | | | | * million | | |
| Switches 🔨 | | | | | | 1 Mbos | | |
| | | | | | | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 6 6 6 6 6 6 6 6 6 | & & & & & & & & & & & & & & & & & & & |
| Peripherals | | | | | | | Stand Prove Stand Prove Stand Prove Stand Prove Stand | Stand Stand Stand Stand Stand Stand Stand Stand |
| | | | | | | | | |
| Zones | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Connections ^ | | | | | Active | ogins | | |
| | | All Logins | | Active Logir | | _ogins Successful Logins | | Refused Logins |
| Connections A | | All Logins | | Active Logir | | 0 | | Refused Logins |
| Users ^ | | All Logins | | | | Successful Logins | is Successful Logins | |
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FIGURE 18-2. ACTIVE LOGINS

2. Devices Online—the number of devices (Receivers and Transmitter units) in the managed domain at this time that are online is displayed in the center of the ring. The Ring shows the number of devices in the managed domain that are online and offline. A device is considered online if Boxilla can contact it over the network—and offline if not contactable.

The graph portion of the Devices Online indicator shows the minimum, maximum and average number of devices online over the last 24 hours and a graph of number devices online over the last 24-hours.

3. Alerts—the number of alerts in each category of Critical, Warning and Info (see section 11 for definition of the different categories).

4. Security—the number of Refused Logins and the number of Unauthorized Connections. Refused Logins are counted on each Receiver when a user fails a login attempt. Unauthorized Connections are counted on Receivers and Transmitters when they detected something has attempted to connect to them in an unauthorized manner—such as devices not part of our managed domain trying to connect to a managed device or an attempt to access a service using a network protocol not authorized on a device (SSH, SNMP, etc.) as may occur during a port-scan attack.

Performance:

1. Active Connections—number of currently Active connections is displayed in center of Ring. The Ring shows the number of Active connections on Receiver units with Active Users (i.e. logged in) and the number of Receivers with no connection that have users logged in.

The graph portion of the Active Connections indicator shows the minimum, maximum and average number of Active Connections over the last 24 hours and a graph of Active Connections over the last 24 hours.

2. Threshold Exceeded – the number of connections with a threshold exceeded is shown in the center of the Ring. The thresholds are defined in section 11.4. The Ring shows the number of active connections that have a threshold exceeded and the number of connections with no threshold exceeded.





The graph portion of the Threshold Exceeded indicator shows the minimum, maximum and average number of connections with a threshold exceeded over the last 24 hours and a graph of number connections with a threshold exceeded over the last 24 hours.

3. Bandwidth— the current total network bandwidth generated by the devices in the domain (i.e., the sum of the network bandwidth of all the active connections) is displayed as a number on the indicator.

The graph portion of the Bandwidth indicator shows the minimum, maximum and average total bandwidth last 24 hours.

4. Dropped Frames— the current number of dropped frames summed across all active connections in frames-per-seconds.

The graph portion of the Dropped Frames indicator shows the minimum, maximum and average number of Dropped Frames across all active connection over the last 24 hours and a graph of Dropped Frames across all active connection over the last 24 hours.

18.2 ACTIVE CONNECTIONS

The Active Connections section of the dashboard displays the currently active connections in the managed domain. The table portion provides a sortable list of the active connections. Each column can be used to sort the table—in ascending or descending order—just click on a column header to sort and click again to invest sort order. The filter box at the top right of the table will filter the table based on the filter box contents.

The first five columns of the table are fixed for all the tabs that can be selected (Network Bandwidth, User Response, Dropped Frames or Roundtrip Time). The columns are defined as:

- Connection Name—the name of the active connection
- User Name-the user name logged into the Receiver that has initiated the active connection
- Receiver—the name of the Receiver on the active connection
- Transmitter-the name of the Transmitter on the active connection
- FPS-the current frames per second being encoded/transferred on the connection

The contents of the last column in the table will vary depending on the tab selected—Network Bandwidth, User Response, Dropped Frames or Roundtrip Time.

The last column displays when the selected tab is:

- Network Bandwidth—the total network bandwidth that this connection is generating (in Mbps). Typically, 0 Mbps for a static screen and up to 120 Mbps when playing a 1080p video.
- User-Response Time—the time it takes for an event on the server to be displayed on the Monitor attached to the receiver. This includes video encode time in the Transmitter, network latency and video decode time in the Receiver as part of its calculation (in milliseconds). Typically 8–16 ms but can grow to 20–30 ms on congested networks due to dropped frames.



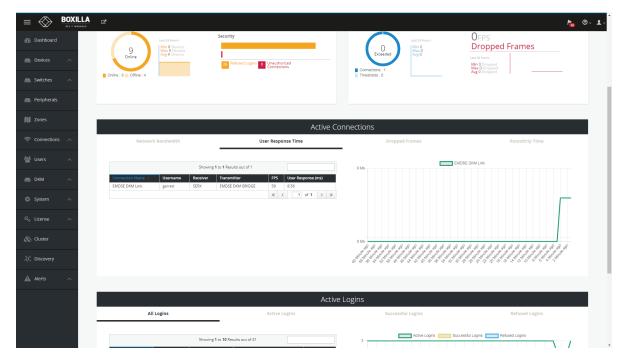


FIGURE 18-3. USER RESPONSE TIME

- Dropped Frames—the number of dropped frames in the Transmitter that is part of this connection. Dropped frames usually result from network congestion (in frames-per-second). Typically will be 0 fps.
- Round-trip time—measures the network round-trip time experienced at an IP packet level for the active connection (in milliseconds). Typically this will be 0 ms on a gigabit network with low congestion.



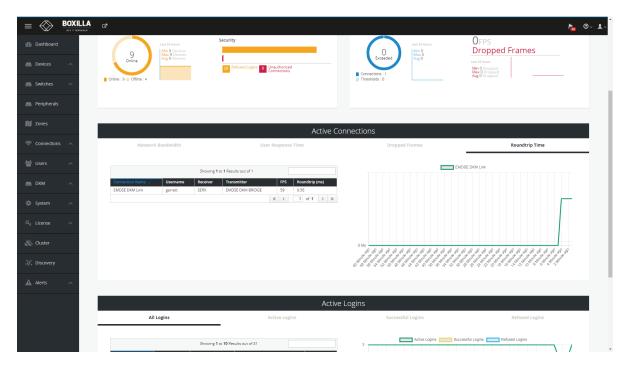


FIGURE 18-4. ROUNDTRIP TIME

The graph part of the Active Connections dashboard displays a graph of the last column over time, so it can be network bandwidth, user-response time, dropped frames per second or roundtrip time.

18.3 ACTIVE LOGINS

The Active Logins section of the dashboard displays the current active logins in the managed domain. The table portion provides a sortable list of the active connections. Each column can be used to sort the table— in ascending or descending order—just click on column header to sort and click again to invest sort order. The filter box at the top right of the table will filter the table based on the filter box contents.

The table portion has the following columns:

- Receiver- the receiver name that has been logged into
- Username—the user name that has logged into the Receiver
- User-Type—the type of user that has logged in: administrator, Power User, User (see section 9.1 for definitions of user types)
- Time Logged In —when the user logged-in
- Duration-how long the user has been logged-in





There are four tabs in the Active Logins section:

• All Logins—all logins and attempts

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FIGURE 18-5. DASHBOARD BOTTOM

Active Logins—all current active logins

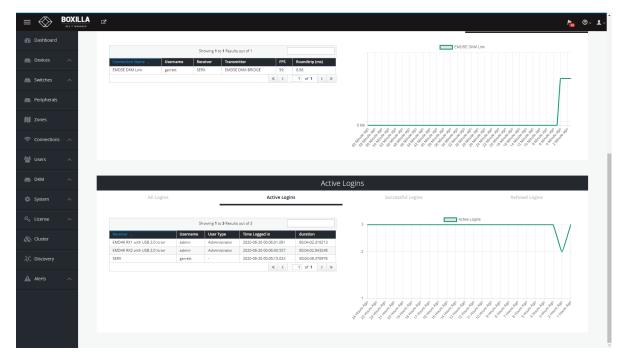


FIGURE 18-6. ACTIVE LOGINS



• Successful Logins—all Successful logins, both currently active logins and previous ones

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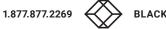
FIGURE 18-7. SUCCESSFUL LOGINS

• Refused Logins—all refused logins

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| | | 2 | |
| | | | |

FIGURE 18-8. REFUSED LOGINS

The graph part of the Active Logins dashboard displays a graph of the selected tab information over time.



APPENDIX A: REPLACING YOUR BOXILLA



This section defines what an Administrator should do to ensure the Boxilla unit can be replaced and the system restored with its previous settings.

A key maintenance task is for the Administrator to backup the system so the system can be restored to a known state. See section 11.4.

- 1. Remove the original Boxilla from the network. Connect the new Boxilla in its place and power up.
- 2. Before connecting the new Boxilla unit to the main network, connect the Boxilla unit to a network switch that is isolated from the main network.
- 3. Use a computer connected to the same switch to login to the new Boxilla Unit.
- 4. Set the IP address of the Boxilla unit to match that of the original unit. (Ideally, you have all this done in advance of failure.)
- 5. Add Licenses to the new Boxilla unit, if required.
- 6. Upload and Activate Certificates to the new Boxilla unit, if required.
- 7. Restore a backup file of the original Boxilla database to the new device.
- 8. Navigate to Devices | Settings page, and all devices should appear as OnLine after 10 seconds.
- 9. The replacement Boxilla unit is now operational.



OVERVIEW

Emerald or InvisaPC uses standard IP protocols for communication between Receivers and Transmitters.

| COMPONENT | APPLICATION | PORT | EMERALD 4K | EMERALD PE/ZU |
|-------------|--|---------------------|-------------------|--------------------|
| | Appliance REST HTTP | TCP: 7778 | Yes | Yes |
| | Appliance REST HTTPS | TCP: 8888 | Yes | Yes |
| | Communications | TCP: 22 | Yes | Yes |
| | Manager Discovery (to Appliance): Multicast 224.0.1.249. Appliance listens on UDP Port | UDP: 39150 | Yes | Yes |
| | (4K Only) Default Slave Multicast IP Port (IP: 239.0.0.1) | UDP: 8000 | Yes | No |
| Appliance | (4K only) Default Master Multicast IP Port (IP: 239.0.0.1) | UDP: 8001 | Yes | No |
| , ppilarioe | Audio (Private/Multi Unicast) | TCP: 9000 | Yes (1.2 onwards) | Yes (5.0x onwards) |
| | Video EMDSE & 4K | TCP: 16384 | Yes | Yes (5.3x onwards) |
| | Video, 2nd channel, (Paired only) | TCP: 16385 | No | Yes (5.4x only) |
| | Reserved – Future | TCP: 16387 | - | - |
| | Reserved – Future | TCP: 16388 | — | - |
| | Multicast 225.0.0.37 (Appliance – recovery) | UDP: 12345 | Yes | Yes |
| | RDP VM & RDP Broker | TCP: 3389 (default) | Yes (Default) | Yes (Default) |
| | TX connections | TCP: 3389 | Yes | Yes |
| | Boxilla REST HTTPS | TCP: 443 | - | - |
| Boxilla | Communications | TCP: 22 | - | - |
| | Discovery: Multicast 224.0.1.249 (Send) | UDP: 39150 | - | - |

TABLE B-1. PORT USAGE PER APPLIANCE

NOTE: Firewalls on the WAN may cause audio to fail due to a protocol issue that prevents it traversing some firewalls. The audio channel does not perform the SYN/SYNACK sequence which leads to some of these streams being blocked.



APPENDIX C: REGULATORY INFORMATION

C.1 FCC AND IC STATEMENTS

Federal Communications Commission and Industry Canada Radio Frequency Interference Statements

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference- to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission- from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

C.2 SAFETY AND EMC APPROVALS AND MARKINGS/PATENT INFORMATION

C.2.1 SAFETY AND EMC APPROVALS AND MARKINGS

FCC and CE Safety certifications and EMC certifications for this product are obtained under one or more of the following designations: CMN (Certification Model Number), MPN (Manufacturer's Part Number) or Sales Level Model designation. The designation that is referenced in the EMC and/or safety reports and certificates are printed on the label applied to this product.

European Union Notification Warning: This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.



C.2.2 PATENT INFORMATION

This product contains patented designs and is protected by U.S. and international patents and patents pending.



D.1 DISCLAIMER

Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document and Black Box Corporation may revise this document at any time without notice.

D.2 TRADEMARKS USED IN THIS MANUAL

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