



**Consul  
System Monitor  
User Manual**



077-1143-01



# Consul System Monitor



## User Manual

**Tektronix®**





# CONSUL

# User Manual

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## About This Document

### Audience

This user manual is intended for service providers who use Tektronix Consul for monitoring, historical reporting, and alerting from MPEG-2, H.264 AVC, MPEG-4 part 10, and VC-1 transport streams. We assume that you understand the concepts and tools used in a head-end environment. We assume that you are familiar with basic computer operations such as click, drag and drop, and that you are also familiar with the operation of an internet browser.

### Purpose

The Tektronix Consul User Manual introduces you to the Consul Digital Content Monitor, and describes in detail Consul's features.

This user manual shows you how to configure, control, and use Tektronix Consul. This user manual also describes the Consul hardware installation.

### Screen Shot Note

While all screen shot s in this document are accurate and truthful representations of the product, some may have been edited to remove information that could pose a security risk.

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# Sentry Family Product Matrix

This Sentry product manual contains technical information on the Sentry family of video quality monitors. Information for the Sentry Edge products can be found in Appendix B of the *Sentry Series User Manual*.

Some of the features and purchasable options described in this manual are not supported on all of the products. For a breakdown of features and options by product, please refer to the table below.

Service	Sentry (ASI, GigE, 10G)	Sentry Verify, Verify 10G	Sentry Assure	Sentry ABR	Sentry Edge (I - III)
<b>Comprehensive MPEG Quality of Experience (QoE) Monitoring</b>					
Video QoE real time monitoring	✓			Optional	Optional
Video eMOS/PVQ real time monitoring	Optional			Optional	Optional
Audio QoE real-time monitoring	✓			Optional	Optional
Audio loudness & AC-3 Dialnorm (ITU-R BS.1770) monitoring	✓		✓	Optional	Optional
Video freeze detection	✓			Optional	Optional
Audio Silence detection	✓			Optional	Optional
<b>Comprehensive MPEG Quality of Service (QoS) Monitoring</b>					
Transport Stream QoS Monitoring	✓	✓	✓	Optional	✓
IP (UDP) statistics	✓	✓	✓		
HTTP Statistics				✓	
Closed captioning (708, 608, SCTE-20), DVB Subtitle, Teletext reporting	✓	✓	✓	Optional	✓
Error Seconds and Program Availability Reporting	✓	✓	✓	Optional	✓
GOP length reporting	✓	✓	✓	Optional	✓
Video and Audio PID metadata	✓	✓	✓	Optional	✓
Program/PID discontinuity	✓	✓	✓	Optional	✓
Program/PID/Transport Stream/Program Group bandwidth graphing	✓	✓	✓	Optional	
PCR interval & jitter	✓ ASI Only			Optional	✓
MPEG-PSI, DVB-SI, ATSC-PSIP table detect, bit rate, cycle time	✓	✓	✓	Optional	✓
TR101/290 (priority 1, 2, 3) reporting	✓	✓	✓		✓
Scalable RF Monitoring (16/64/256 QAM A, B, or C)					✓

<i>Service</i>	<i>Sentry (ASI, GigE, 10G)</i>	<i>Sentry Verify, Verify 10G</i>	<i>Sentry Assure</i>	<i>Sentry ABR</i>	<i>Sentry Edge (I - III)</i>
<b>Purchasable Software Options</b>					
QoE Monitoring	✓			Optional	Optional
Carousel monitoring (tru2way / OCAP / MHP / DSM-CC)	Optional	Optional	Optional	Optional	Optional
Ad Insertion/Digital Program Insertion	Optional	Optional	✓	Optional	Optional
EBIF Monitoring	Optional	Optional	Optional	Optional	Optional
SA-BFS Monitoring	Optional	Optional	Optional	Optional	Optional
Perceptual Video Quality (eMOS) on MPEG-2 & H.264	Optional			Optional	Optional
Audio Loudness Monitoring (includes CALM Compliance)	✓		✓	Optional	Optional
<b>Video &amp; Audio</b>					
Video: HD, SD, MPEG-2, MPEG-4 AVC (H.264), VC1	✓	✓	✓	Optional	✓
Audio: Dolby AC-3, MPEG-1 Layer II, AAC, HE-AAC, and HE-AAC v2	✓	✓	✓	Optional	✓
<b>Interfaces</b>					
ASI	✓ ASI Only				
GigE	✓ GigE Only	✓	✓	✓	
Dual GigE	✓				
Single-Mode or Multi-Mode LC SFP+	✓ 10G Only	✓ 10G Only		✓ 10G Only	
8VSB & QAM-B					✓ Edge Only
QAM A, B, or C					✓ Edge II Only
DVB-S2 receiver supports two channels in QPSK / 8-PSK mode					✓ Edge III-S Only
Single-channel DVB-T2 receiver for VHF/UHF					✓ Edge III-T Only
RF Measurements: Level, MER, CNR, Pre-RS BER, Post-FEC Erred Packets					✓ Edge II and Edge III Only
RF Measurements: EVM, Carrier Offset					✓ Edge II Only

# Preface

This user manual describes Consul and its web browser-based interface. This manual introduces the components and features of Consul, so you can begin using the device.

## Who Should Use This Manual

This manual is intended for service providers who use Tektronix Consul for monitoring, reporting and alerting from MPEG transport streams. You should understand the concepts and tools used in a headend environment. You should also be familiar with basic computer operations such as click, drag and drop, as well as the operation of a web browser.

## What is Tektronix Consul?

The Consul is an aggregation device that provides a central location to view important alert information for all of your Medius units.

The Consul allows you to compare like programs across multiple Medius units to correlate reports for anomalies and view trending data for all of your services.



# Getting Started

## Requirements

You will need a web connection accessible via any modern web browser. We recommend Mozilla Firefox as the browser.

---

**NOTE:** Before installing the system in an equipment rack, make sure that:

- The operating temperature is between 0 °C (32 °F) and 35 °C (95 °F).
  - The operating relative humidity is between 0% and 80%.
  - There is sufficient airflow around the unit.
  - The electrical circuits are not overloaded.
  - The equipment is properly grounded.
  - No objects are placed on top of the unit.
- 

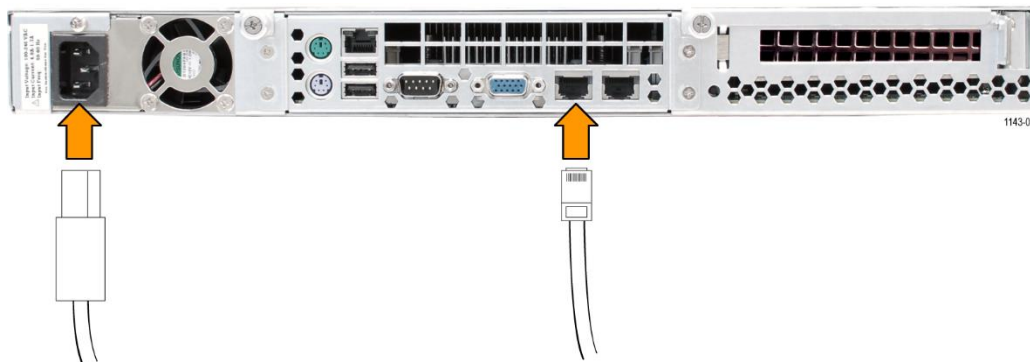
## Setting up the System

To set up Consul, you need:

- A 10Base-T network connection
- Network parameters including address of DNS and NTP servers on your network. (Refer to the section **Configure: System Settings**.)

## Making the Connection

1. On the management port, connect one end of a Cat5 Ethernet cable to the LAN2 connector on the Consul unit and the other end to the network socket that connects to the LAN network.
2. Connect the power cord to the system and plug it in to an electrical outlet.
3. Turn on the main power switch on the front of the system.



**Figure 1: Making final connections**

## Front Panel Functions

Consul units are able to provide the following functions:

- IP address display on LED
- Manual Reboot option from front panel
- LED Brightness control

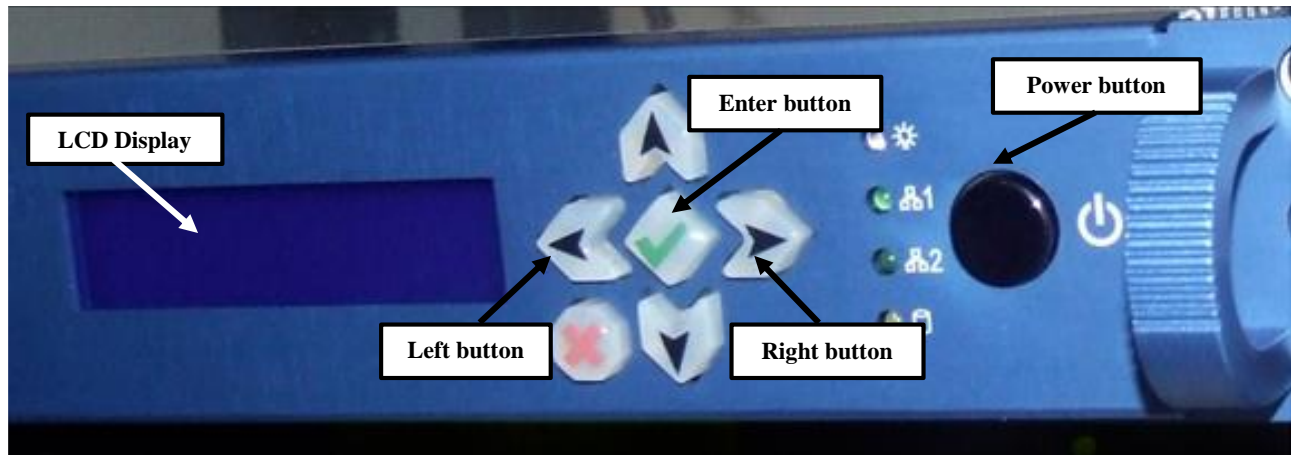


Figure 2: Consul front panel

### IP address on the front panel

To see a display of the IP addresses of both of the system network interfaces on the front panel LCD display:

1. Press and hold **Enter** (green check mark) on the front panel.
2. The address displayed on the top line corresponds to the **Management** interface and the lower line corresponds to the **MPEG/IP input**.

### Manual power down from front panel

In addition to powering down through the Consul interface, you may also use the front panel button.

1. Start the power down of the unit by pressing the front panel power button two times quickly within 2 seconds.
2. Within moments, the LCD display will indicate that the unit has begun the **Safe Power Off** process, and several seconds following, the unit will power down completely.

### LED Brightness

1. The brightness of the LCD display backlight can be changed by selecting either the left arrow or right arrow buttons on the front panel. The left button will dim the display while the right will brighten it.
2. Changes to the brightness level persist until the unit is rebooted or powered down.

## Starting the Web-Browser Interface

1. Start your web browser.
2. Enter the IP address assigned to Consul in the web browser's URL field.

For example, if the Consul IP address is 192.168.1.1, you would enter the following:



Figure 3: IP Address Entry

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**NOTE:** *Consul is fully functional if JavaScript is disabled in your browser, however the look and feel of the UI may differ in some areas from that presented in this User Manual.*

---

3. Log in with the user name and password for the account.

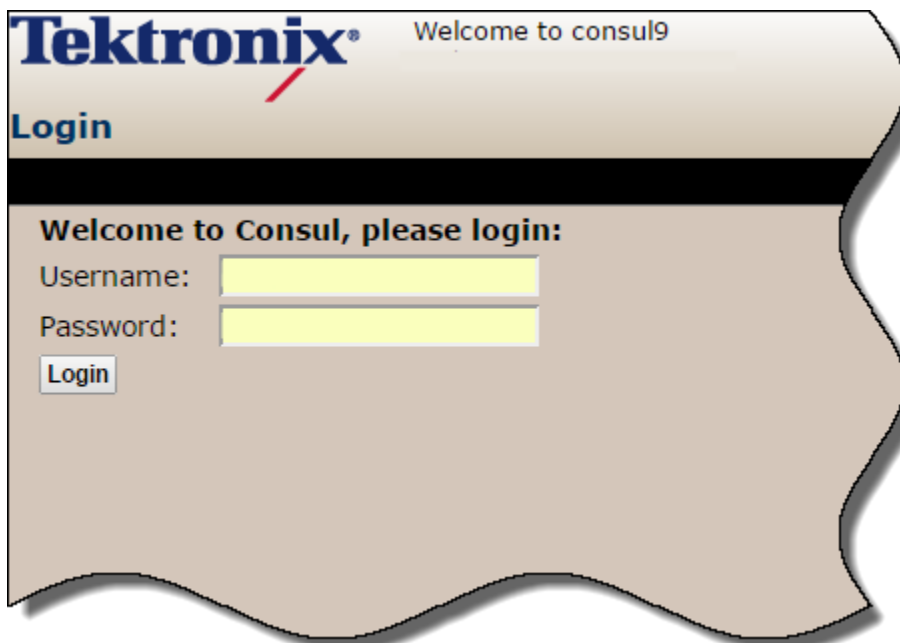


Figure 4: Consul Log In Screen

- The Consul opens to the **Program Alert Dashboard** view.



Figure 5: The Dashboard

**NOTE:** There may be a few seconds delay while the Dashboard screen collects data.

*Do not stop the browser while loading is in progress*

# Status

From the **Main Menu**, select **Status** then select the particular status view you want to see. All pages are set to automatically refresh themselves making monitoring almost real time.

## Program Alert Dashboard

**Program Alert Dashboard** gives you a quick overview of all open and recently triggered alerts by program.

### Access Program Alert Dashboard

Select **Status** from the main menu and then select **Program Alert Dashboard**.

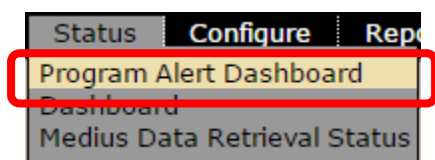


Figure 6: Selecting Program Alert Dashboard

### Interface Components

A screenshot of the 'Program Alert Dashboard' interface. The interface includes a top navigation bar with 'Status', 'Configure', 'Reports', and 'About' tabs. Below the navigation bar, there's a 'Page will refresh in (secs):' section with a timer at '00:00:45' and 'Stop' and 'Start' buttons. A 'Filter Criteria' section allows filtering by 'Medius' or 'All Medius Units' and 'Alert Types' or 'All Types'. A 'Program Name' search field is also present. The main area displays a grid of alerts, each with a number and a program name. A 'Global Program search' box is overlaid on the grid. A 'Color Coded Alerts for Individual Consul units' box points to the grid. An 'Alert Filter' box is on the right. A 'Refresh options' box is on the left. A 'View' box points to the 'Combined' tab. A 'Login Info' box is at the top right. A 'Consul Status Info' box is at the top right. A 'Navigation Bar' box is at the top center. A 'Tektronix' logo is at the top left. A 'Welcome to consul9, Administrator' message is at the top left. A 'Logout' link is at the top left. A 'Consul™' logo is at the top right. A 'Hide Criteria' link is at the top right. A 'Submit' button is at the top right. A 'Clear' button is at the top right. A 'Find:' search box is at the top center. A 'Global Program search' box is overlaid on the grid. A 'Color Coded Alerts for Individual Consul units' box points to the grid. An 'Alert Filter' box is on the right. A 'Refresh options' box is on the left. A 'View' box points to the 'Combined' tab. A 'Login Info' box is at the top right. A 'Consul Status Info' box is at the top right. A 'Navigation Bar' box is at the top center. A 'Tektronix' logo is at the top left. A 'Welcome to consul9, Administrator' message is at the top left. A 'Logout' link is at the top left. A 'Consul™' logo is at the top right. A 'Hide Criteria' link is at the top right. A 'Submit' button is at the top right. A 'Clear' button is at the top right. A 'Find:' search box is at the top center. A 'Global Program search' box is overlaid on the grid. A 'Color Coded Alerts for Individual Consul units' box points to the grid. An 'Alert Filter' box is on the right. A 'Refresh options' box is on the left. A 'View' box points to the 'Combined' tab.

Figure 7: Program Alert Dashboard

## Login Information

The **Login Information** area displays the username of the logged on user and provides a link to log out of Consul.

Click **Logout** to log out of the system. The username and date and time of the most recent refresh of the screen are also shown.

## Navigation bar

The **Navigation** bar provides the main navigation for the Consul. It includes drop-down menu items for **Status, Configure, Reports, and About**.

## Consul Status Information

When viewing the Medius tab, the header of each Medius box will be color coded to **Online** (white) or **Unreachable** which means it is off-line (red).

## Alert Filter

**Alert Filter** allows you to refine the search criteria for alerts, including the checkbox option. Includes resolved alerts in open count.

## View tabs

**View** tabs allow you to view the current status by **Combined** or **By Medius** view.

## Refresh options

All views in **Program Alerts Dashboard** will refresh every 60 seconds without moving the page or scroll position.

## Global Program Search

From the **Find** box, you may search programs across all devices. Example: A search for Discovery Channel will bring up all instances of Discovery Channel on all connected Medius units.

## Color Coded Alerts

This section shows the current alert status of each program.

- **Red:** Open alert
- **Number in Red cell:** Number of alerts in the last hour
- **Green:** No alerts
- **Yellow:** Alerts resolved in the last hour

## Combined view tab

The programs and alert count values in the **Combined** view combine all alert counts across all registered Medius units.

## Drill down to see Alert Details

To see the details of where the programs that generate the alerts reside, click on the program in any cell.

If the program is being monitored on more than one registered Medius, this will take you to the **By Medius** tab. Otherwise, it will take you directly to the Medius **Program Alert Dashboard** for further analysis. You must log in to that Medius to complete the analysis.

## By Medius view tab

You may also view all of the above information by the individual Consul unit by selecting the **By Medius** tab.

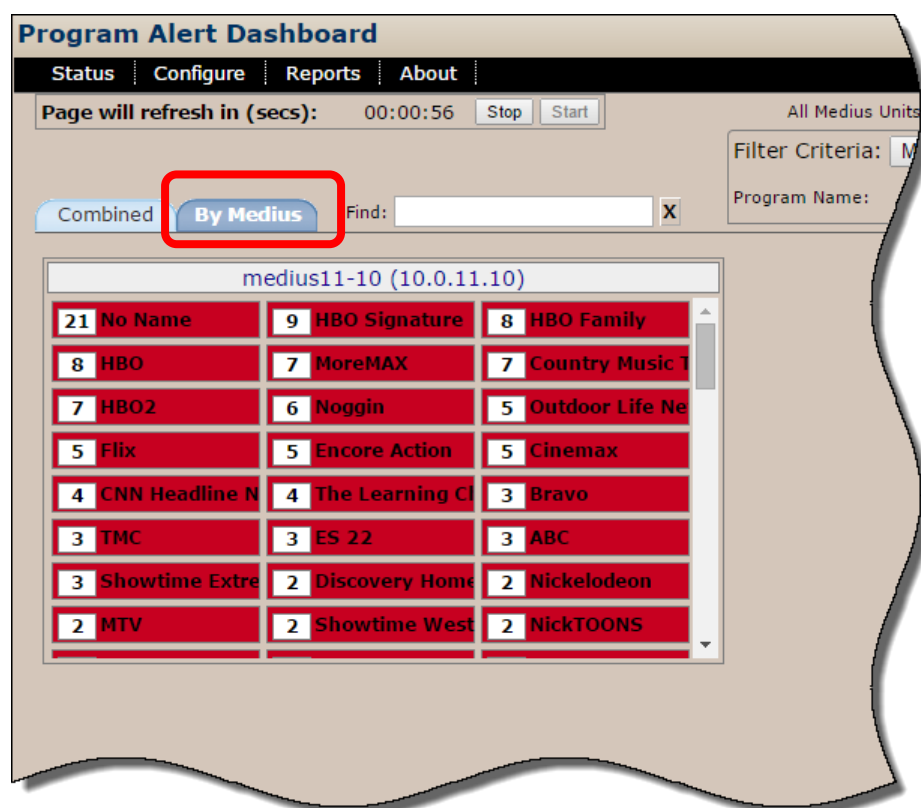


Figure 8: By Medius tab

## Drill Down to see Alert Details

To see the details of where the programs that generated the alert reside select the program name in any cell. This will take you directly to the Medius **Program Alert Dashboard** for further analysis. You must log in to the new Medius to complete the analysis.

# Dashboard

The **Dashboard** view allows you to see the Medius units by **Region and Location**.

## Access Dashboard

Select **Dashboard** from the **Status** main menu.

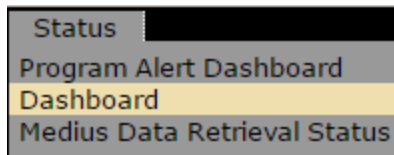


Figure 9: Select Dashboard

A screenshot of the Tektronix Consul web application. The page title is 'Status: Dashboard: Region Location View'. The navigation bar includes 'Status', 'Configure', 'Reports', and 'About'. The 'Region Location View' tab is selected and highlighted with a red box. Below the navigation bar, there is a dropdown menu set to 'List Medius by Region, then Location'. The main content area displays 'Displaying Medius 1 to 1 of 1' and a table showing the current status by Region, then Location, then Medius. The table has columns for Region, Location, Medius, Medius IP, Video QOE, Perceptual video quality (eMOS), Audio Silence, Last Hour Alerts, Changes From Previous Hour, Total Retrieval, and Link Status. The data shows one Medius unit (medius11-10) located in CA, Los Angeles, with a status of OK.

Region	Location	Medius	Medius IP	Video QOE	Perceptual video quality (eMOS)	Audio Silence	Last Hour Alerts	Changes From Previous Hour	Total Retrieval	Link Status
CA	Los Angeles	medius11-10	10.0.11.10	0	10	0	1732	39	current	OK

Figure 10: Dashboard view

## Region Location View

The **Region Location View** tab allows you to sort your view by the following options:

- List Consul
- List Consul by Region, then Location
- List Consul by Location
- List Consul by Region

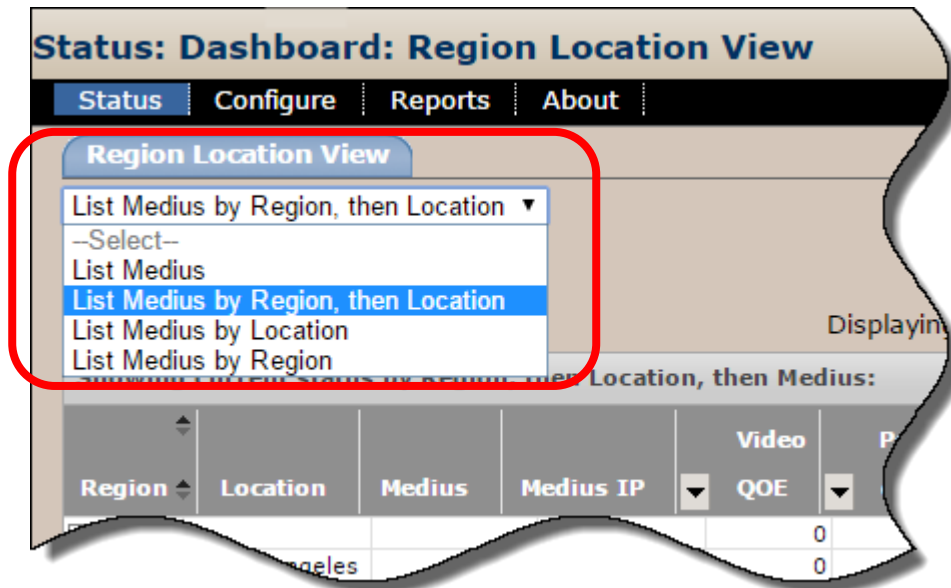


Figure 11: Select Location view

## Medius Data Retrieval Status

**Medius Data Retrieval Status** allows you to view the status of the alert data retrieval for each registered Medius.

Every 15 minutes, Consul will retrieve the aggregated alert data from each Medius for the **Alert Analysis** reports.

This report will enable you to see if the retrieval process for any of the Medius units is delayed.

Additionally when a new Medius unit is registered, the results are pulled over from the most recent to the oldest until all two months of history has been retrieved. This report will enable you to determine how far back the results have been pulled.

- **Red** shows that no data has been retrieved for that block of time for that Medius.
- **Green** shows that all data has been retrieved for that block of time for that Medius.
- **Yellow** shows that some of the data has been retrieved for that block of time for that Medius.

### Access Medius Data Retrieval Status

Select from the **Status** menu

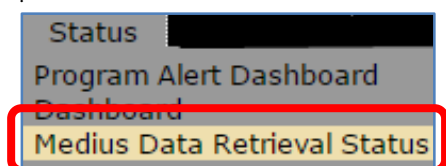


Figure 12: Selecting Medius Data Retrieval Status

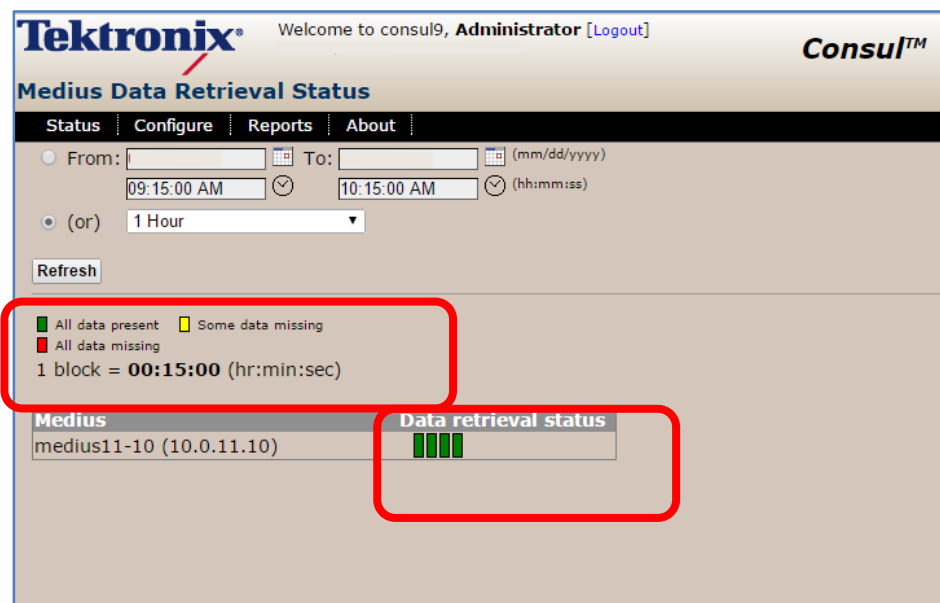


Figure 13: Medius Data Retrieval Status

# Configure

The **Configure** menu section is used to configure and set parameters that stay constant throughout Consul reports and forms.

## Registered Medius Units

The **Registered Consul Units** section allows you to **Register a New Consul** and **Move/Edit** or **Remove** the IP address for an existing Consul.

Select **Registered Consul Units** from the main menu.

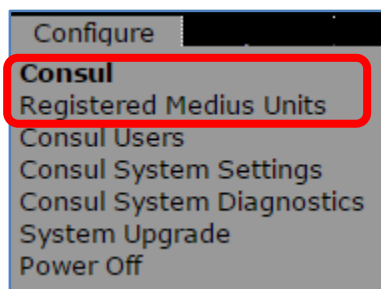


Figure 14: Accessing Registered Consul Units

## Register New Medius

Select **Register New Medius**

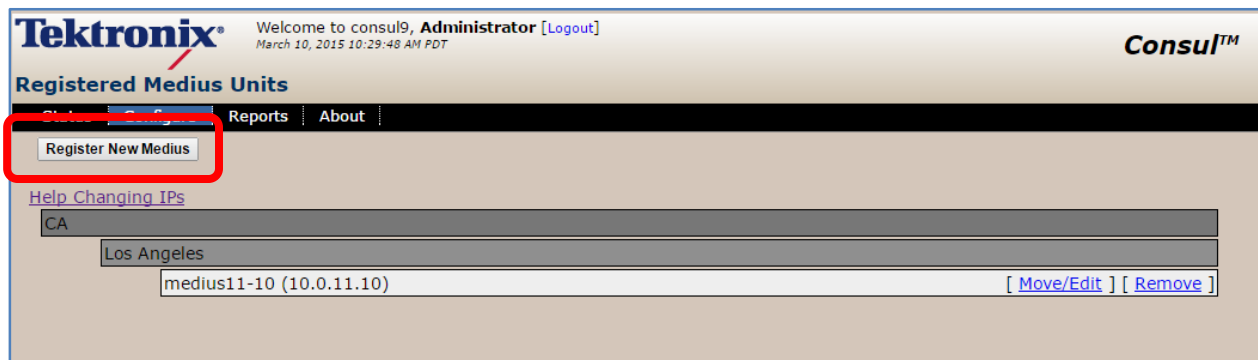


Figure 15: Register New Consul button

Next, enter the IP address of the Consul you are registering and click **Get Medius Info**. If that IP address points to a valid Medius unit, you may proceed. Otherwise, you will get an error message.

**Register Medius**

Status Configure Reports About

Enter the IP address of the Medius you wish to register:

Get Medius Info

Medius configuration information:

Unit Name:

Region:

Location:

Address: unspecified.

Save Cancel

Figure 16: Enter IP Address

Select **Save** when finished.

### *Move/Edit a Medius*

The process for changing one or more system IP addresses involves using the **System Setting** on Medius to change a Medius IP address, or using the Consul System Setting page to change the Consul IP address (or both).

If the Medius and the Consul can reach each other over the network at their new addresses, they will communicate their new IP addresses to each other automatically and no further action is required.

### *If the Medius and Consul do not connect to each other due to address change*

However, if the new addresses result in the units not being able to communicate (because the addresses are being changed in anticipation of a physical relocation of both the Consul and Medius or because of a substantial network change), the following steps are recommended:

1. On the Medius **System Settings** page, change the IP address for the desired Medius units. Because communication between the Medius and Consul will be temporarily unavailable, each Medius will be unable to inform Consul of its new IP.
2. Navigate to the Consul **System Settings** page, change the IP address for the Consul unit. Consul will be unable to inform each of the Medius units of its new IP address because it still has the old IP addresses for those units.

3. Finally, from the Consul **Register New Medius** page, when the systems are reconnected in their new configuration, use the **Move/Edit** link below for each moved Medius to inform Consul of the Medius units new IP addresses.



Figure 17: Select Move/Edit

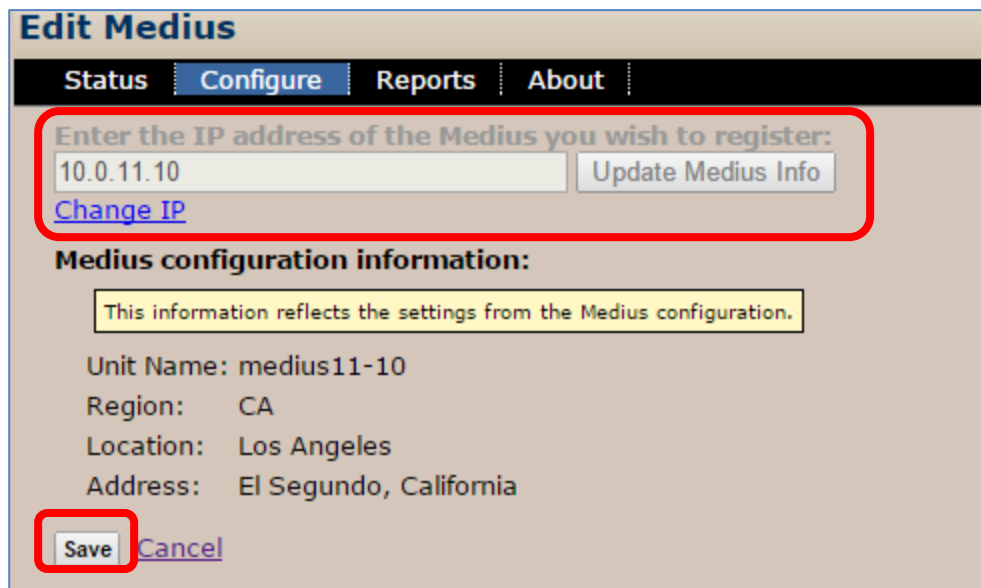


Figure 18: Enter IP Address

4. Select **Save**.

## Remove a Consul

Locate the Consul you wish to remove and select **Remove** from that line

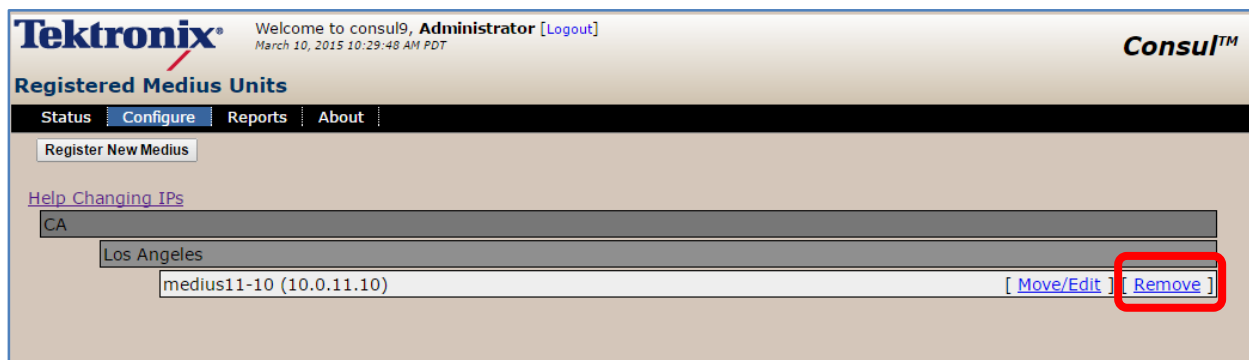


Figure 19: Remove Option

A warning message will appear.

To proceed, select **Yes, remove the Consul**.

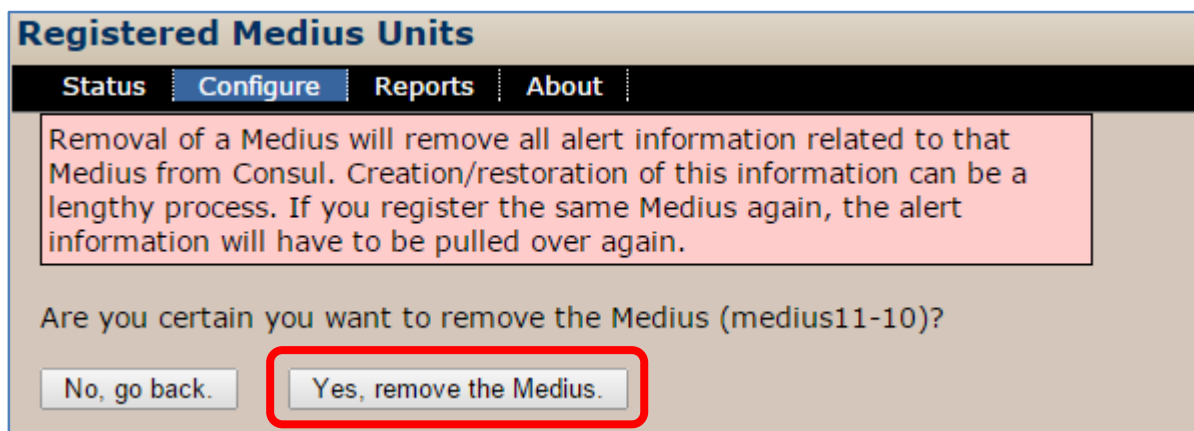


Figure 20: Consul removal warning message

The **Registered Consul** list will return showing that the selected Consul has been successfully removed.

## Consul Users

Consul supports any number of users. Users are defined by two categories of privileges: **Administrator** and **Regular User**.

An **Administrator** can make system wide configuration changes and is the only one who can create user accounts.

A **Regular User** cannot add users, set alerts or make any changes to the system wide settings.

### Access Consul Users

Select **Consul Users** from the **Configure** menu.

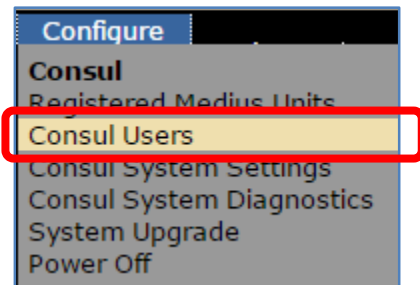


Figure 21: Selecting Consul Users

### Add New User

1. Select Add New User.

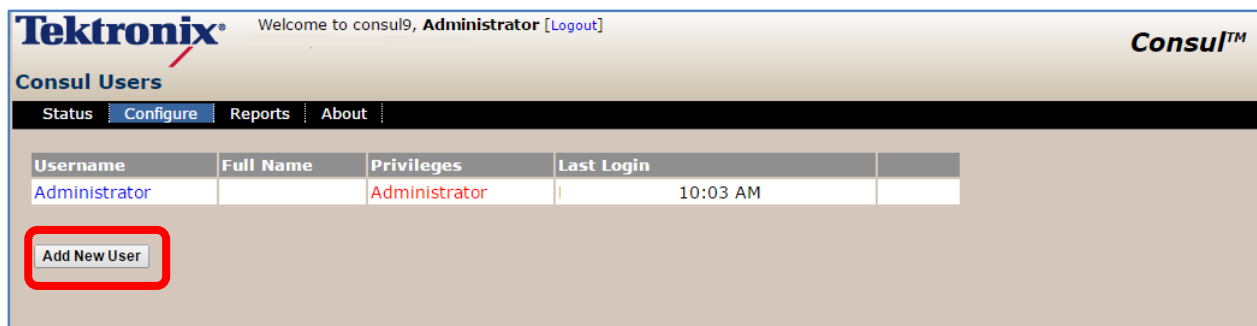


Figure 22: Add New User

2. Enter the new user's information.
3. Any information that is highlighted in red is required.

**Consul Users**

Status | **Configure** | Reports | About

\*Username:  Primary Phone: (  )

\*Password:  Secondary Phone: (  )

\*Confirm Password:  Location:

\*Email:  Administrator?

First Name:

Last Name:

Address:

City:

State: -- Select state --

Zip Code:

**Add User**

\*The red fields are required, everything else is optional.

Figure 23: Configure User screen

4. Select **Add User** when finished.



**CAUTION:** All Administrator passwords must be kept in a secure location.  
If you forget your Administrator password, contact Tektronix Customer Support

## Delete a User



**CAUTION:** *Once users are deleted, there is no recovery.  
To reinstate a user, you must manually add them back to the system.*

1. To delete a user select **Delete** located to the right of a user name.

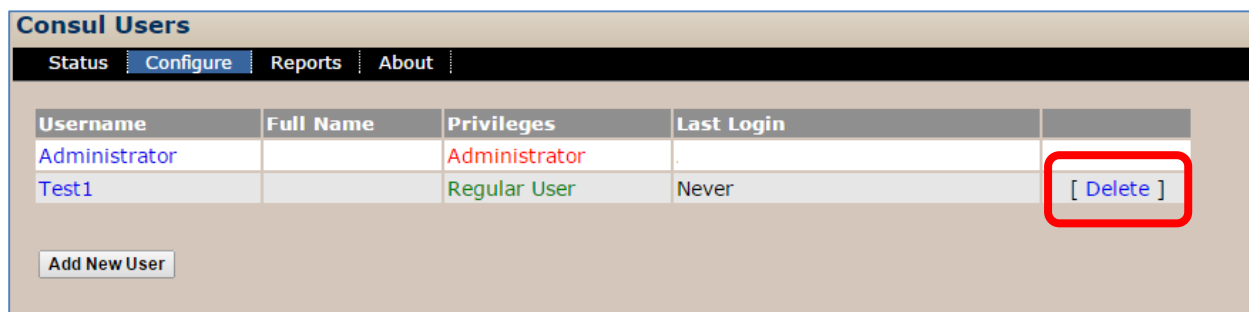


Figure 24: Select Delete

Select **Yes, delete this user** to completely remove the user from the system.

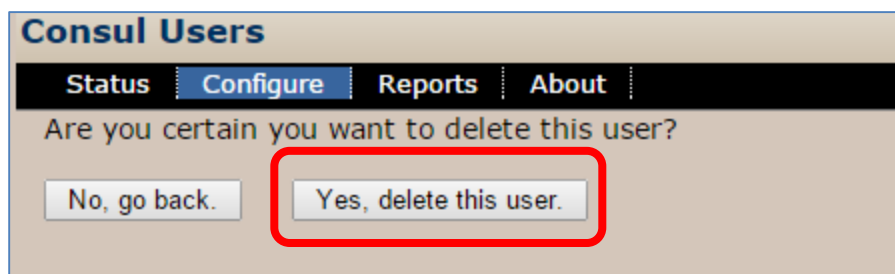


Figure 25: Confirm deletion of the user

The following message will display if removal was successful.

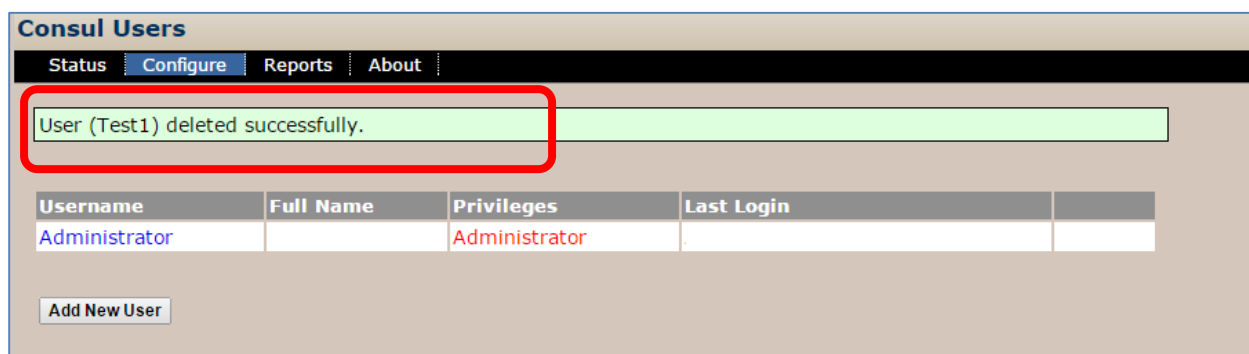


Figure 26: Confirmation of deletion

# Consul System Settings

Users may change a host of basic settings on Consul such as **Network**, **Time**, and **Locale**.

## Access System Settings

1. Select **Consul System Settings** from the **Configure** menu.

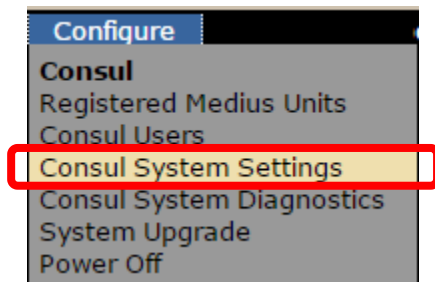


Figure 27: Select System Settings

Select the tab of the function you wish to review or change.

A screenshot of the 'Tektronix Consul System Settings' web page. The page has a header with the Tektronix logo, a welcome message 'Welcome to consul9, Administrator [Logout]', and the 'Consul™' logo. Below the header is a navigation bar with 'Status', 'Configure', 'Reports', and 'About' tabs. The 'Configure' tab is active. Below the navigation bar, it says 'Settings last updated 04/16, 05:06:53 PM PDT.' There are three sub-tabs: 'Network', 'Time', and 'Locale'. The 'Network' tab is selected and highlighted with a red box. The main content area is divided into two columns. The left column contains sections for 'Hostname' (with a text input field), 'Unit Name' (with a text input field containing 'consul9'), 'Ethernet Network Settings' (with input fields for LAN 2 IP, Netmask, and Gateway set to '10.0.10.1'), 'Domain Name System (DNS) servers' (with a text input field), and 'Firewall Override' (with an 'Enable' checkbox and an 'IP:Port' input field). The right column contains sections for 'Email Setup' (with input fields for Gateway, Port, Username, and Password), 'SNMP System Settings' (with an 'Enable' checkbox, 'Location', 'Administrator', and 'Community name' input fields), and a 'Save Settings' button at the bottom left with the text '(will take a few seconds)'.

Figure 28: System Settings

## Network Settings tab

1. From the **Network** tab, review or change the information as needed.

The screenshot shows the Tektronix Consul System Settings web interface. At the top, it says 'Welcome to consul9, Administrator [Logout]'. Below the header, there are tabs for 'Status', 'Configure', 'Reports', and 'About'. The 'Configure' tab is active, and within it, the 'Network' sub-tab is selected and highlighted with a red box. The page shows settings last updated on 04/16 at 05:06:53 PM PDT. The 'Network' tab contains several sections: 'Hostname' (with a text input field), 'Unit Name' (set to 'consul9'), 'Ethernet Network Settings' (with fields for LAN 2 IP, Netmask, and Gateway set to '10.0.10.1'), 'Domain Name System (DNS) servers' (with a text input field), and 'Firewall Override' (with 'Enable' unchecked and 'IP:Port' set to a text input field). To the right, there are sections for 'Email Setup' (with fields for Gateway, Port, Username set to 'Administrator', and Password) and 'SNMP System Settings' (with 'Enable' unchecked, and fields for Location, Administrator, and Community name set to 'consulro'). At the bottom left, the 'Save Settings' button is highlighted with a red box, with a note that it will take a few seconds.

Figure 29: Network System Settings

2. Select **Save Settings** when finished.

## Time Tab

1. From the **Time** tab, enter or review the information as needed.
2. Select **Save Date and Time Settings** when finished.

**Consul System Settings**

Status | **Configure** | Reports | About

Settings last updated **04/16/**      **05:06:53 PM PDT.**

Network | **Time** | Locale

---

**Network Time Protocol (NTP) Setup**

NTP ensures that the Medius internal clock is automatically synchronized. The use of NTP is strongly recommended.

☒ Enable NTP

NTP Server 1:

NTP Server 2:

**Manual Time Setup**

This option should *only* be used if an NTP server is not available on the network. Manually setting the system's clock is discouraged.

☐ Enable Manual Time Input

New Date:  (mm/dd/yyyy)

New Time:  (hh:mm:ss)

---

**Time Zone Setup**

Changing the time zone takes effect immediately. The web interface will experience a short interruption in service for all users, but data collection will not be affected.

Time zone currently set to: **US/Pacific**

Select New Time Zone:

**Save Date and Time Settings**

Figure 30: Time Settings

## Locale Tab

**Locale** is used for STD auto-naming function as well as XDS display. This allows you to choose what character set to use in the interface. Example: Western alphabet or Chinese Kanji.

1. From the **Locale** tab, complete or review the information as needed.

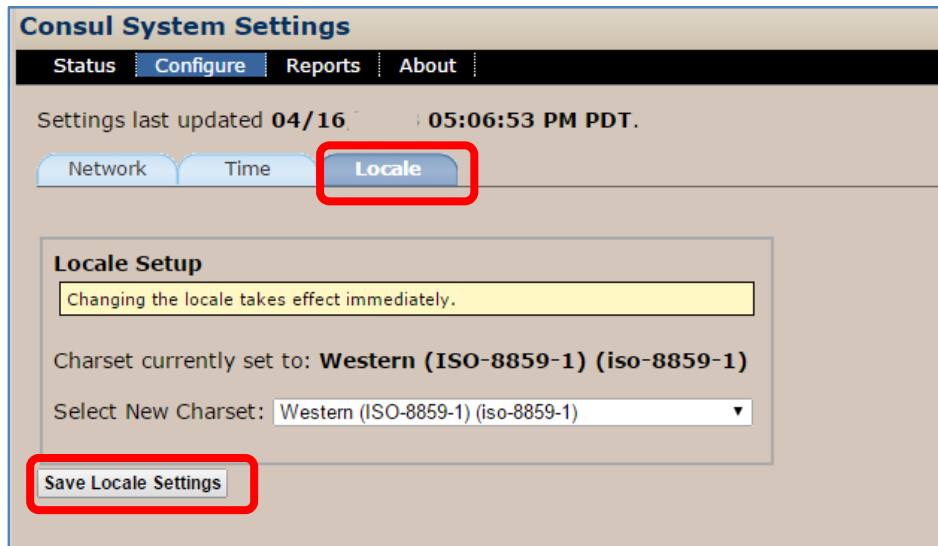


Figure 31: Locale Settings

2. Select **Save Locale Settings** when finished.

## Consul System Diagnostics

**System Diagnostics** allows you to perform basic tests for connectivity and communications between Consul and other devices.

Select **Consul System Diagnostics** from the **Configure** menu.

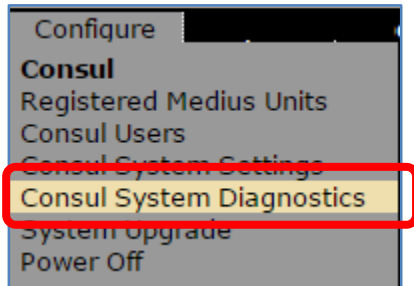


Figure 32: Access System Diagnostics

### Email Diagnostics

- **Send:** Send a test email
- **View Email Log:** View the email servers log file
- **Clear Email Queue:** Delete unsent emails on the email queue

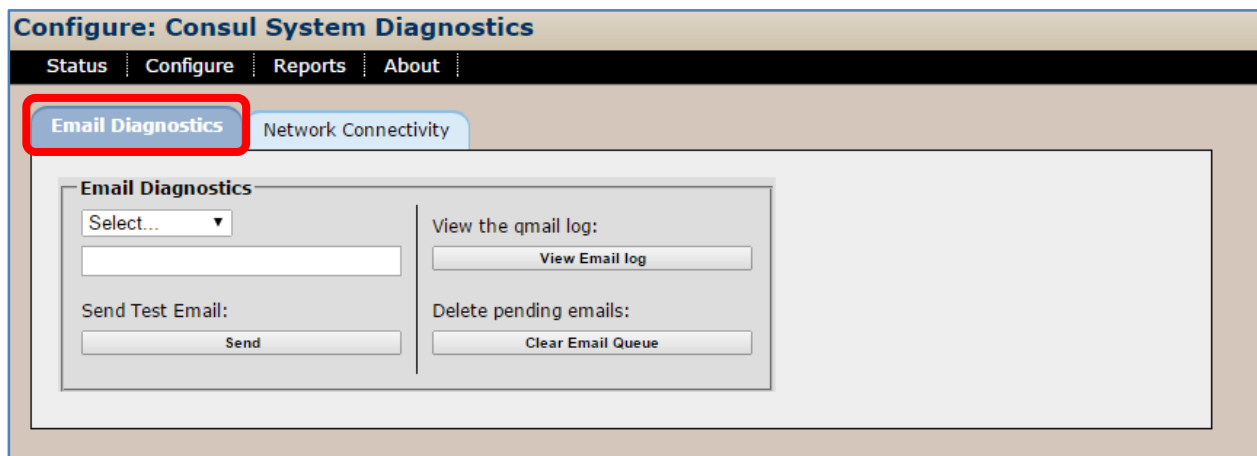


Figure 33: Email Diagnostics tab

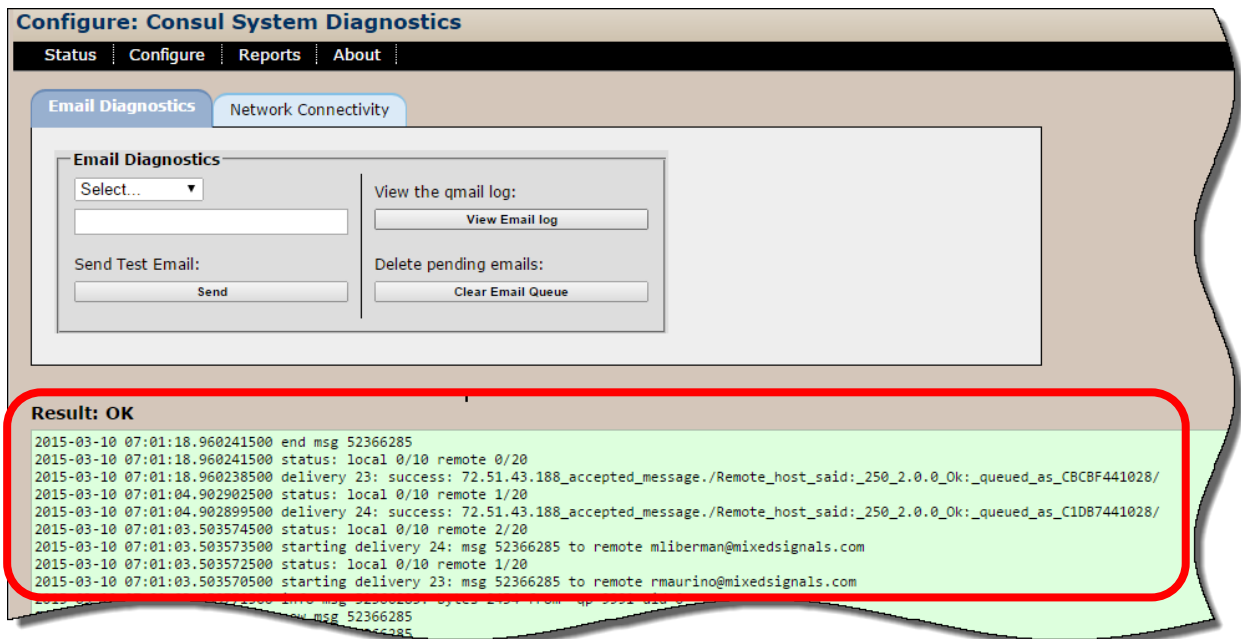


Figure 34: Results of email diagnostics

## Network Connectivity

- **Ping Server:** ICMP ping to validate connectivity
- **Traceroute:** Perform a path trace to host
- **Check Web Response:** Performs WGET to the host specified on TCP port 80
- **DNS Verification:** Checks to see if DNS servers are reachable and working

The screenshot shows the 'Configure: Consul System Diagnostics' web interface. At the top, there is a navigation bar with 'Status', 'Configure', 'Reports', and 'About'. Below this, there are two tabs: 'Email Diagnostics' and 'Network Connectivity'. The 'Network Connectivity' tab is highlighted with a red rectangular box. The main content area of the 'Network Connectivity' tab contains a form with the following elements:

- A label 'Enter IP address or Host name:' followed by a text input field.
- A 'Ping' section with a 'Ping Server' button.
- A 'Traceroute' section with a 'Traceroute' button.
- A 'Verify web server response' section with a 'Check Web Response' button.
- A 'DNS Verification' section with a 'DNS Verification' button and a 'Type' dropdown menu set to 'a'.

Figure 35: Network Connectivity tab

This screenshot shows the same 'Configure: Consul System Diagnostics' interface, but now with diagnostic results displayed. The 'Network Connectivity' tab remains highlighted with a red box. The form fields are populated with the following values:

- 'Enter IP address or Host name:' is set to 'www.google.com'.
- The 'Ping' section shows a 'Ping Server' button.
- The 'Traceroute' section shows a 'Traceroute' button.
- The 'Verify web server response' section shows a 'Check Web Response' button.
- The 'DNS Verification' section shows a 'DNS Verification' button and a 'Type' dropdown menu set to 'a'.

Below the form, the results of the ping test are displayed in a green box:

```
Result: OK
PING www.google.com (216.58.216.4) 56(84) bytes of data.
64 bytes from lax02s21-in-f4.1e100.net (216.58.216.4): icmp_seq=1 ttl=54 time=16.9 ms
64 bytes from lax02s21-in-f4.1e100.net (216.58.216.4): icmp_seq=2 ttl=54 time=11.1 ms
64 bytes from lax02s21-in-f4.1e100.net (216.58.216.4): icmp_seq=3 ttl=54 time=10.0 ms

--- www.google.com ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 10.097/12.757/16.995/3.030 ms
```

Figure 36: Diagnostic results for Ping

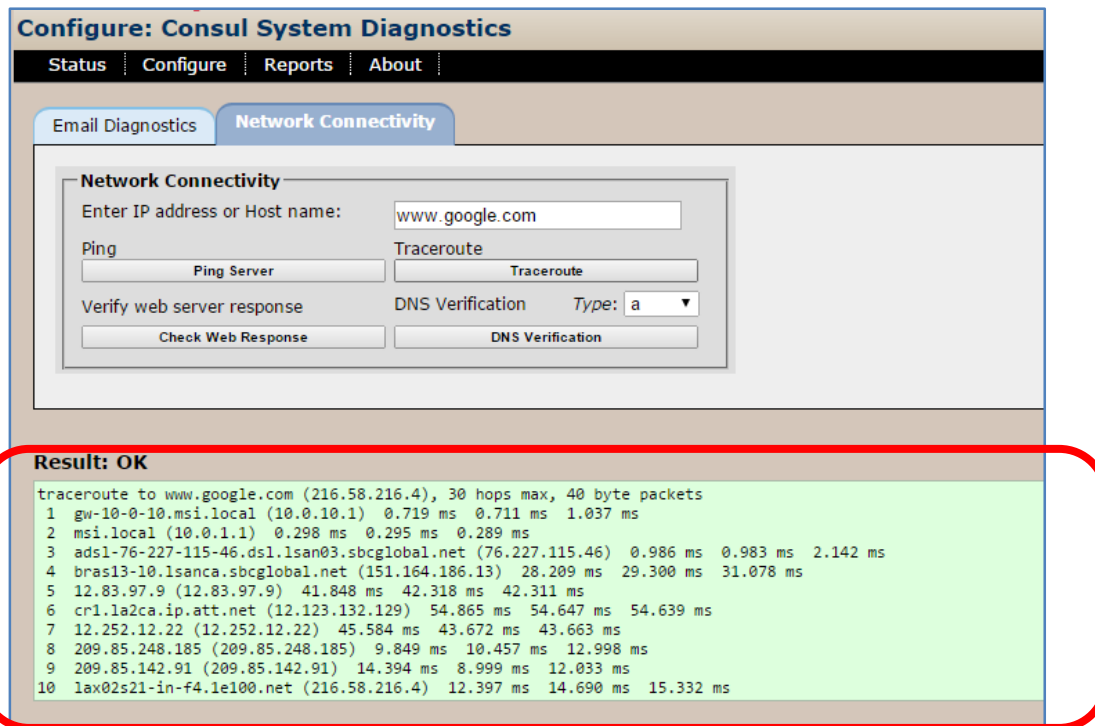


Figure 37: Results for traceroute

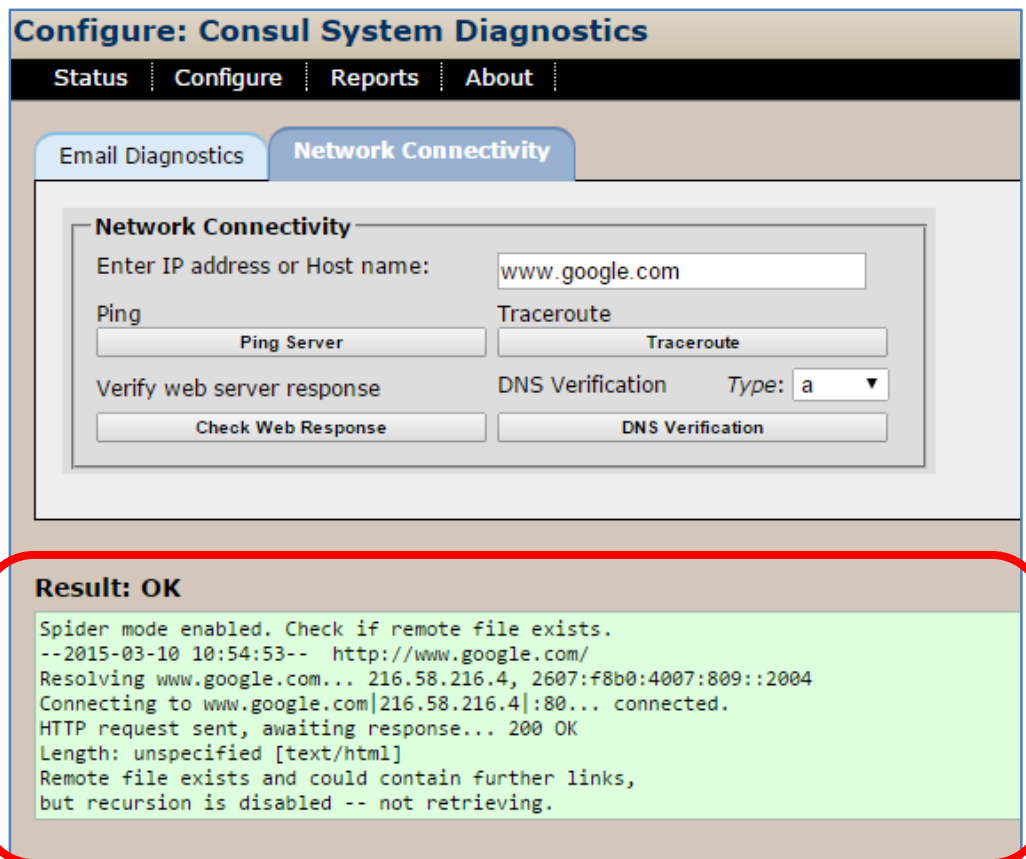


Figure 38: Results for web server response

**Configure: Consul System Diagnostics**

Status | **Configure** | Reports | About

Email Diagnostics | **Network Connectivity**

**Network Connectivity**

Enter IP address or Host name:

Ping  Traceroute

Verify web server response  DNS Verification  Type:

**Result: WARNING**

Exec failed for command "dnsqr", did you specify full path name

- a
- any
- ns
- mx
- ptr
- txt
- soa
- rp
- sig
- key
- aaaa
- axfr

Figure 39: Options for DNS Verification

## System Upgrade

**System Upgrade** allows system **Administrators** to remotely upgrade their Consul units to the latest software releases. The upgrade can be performed by anyone with administrator access.

**System Upgrade** will also allow you to view a log of past updates, including their name and date applied via the **History** tab.

If your support contract is current, you can perform a Consul system upgrade. To get started, you must first obtain an upgrade package from Tektronix. Please call your Tektronix Service Representative for more details.



**WARNING:** *During a Consul upgrade, all monitoring will be suspended and users will not be able to access the Consul pages. Choose your upgrade time accordingly.*

---

### Consul System Upgrade Procedure

Select **System Upgrade** from the Configure menu.

**Figure 40:** Upgrade tab

1. From here, you may either **Upgrade** or see a **History** of past upgrades for both the Consul unit and all Consul assigned to it.
2. For this procedure, select **Upgrade**.

## Section 1

3. Once you have received a valid Consul upgrade package from Tektronix, navigate to this file by clicking the **Browse** button and selecting your upgrade package file from its current location.
4. Next, click **Upload Package** to upload the upgrade package file to Consul.
5. Consul will perform an automatic check to make sure this is a valid upgrade for the system. Once it has been validated, the following screen will appear:

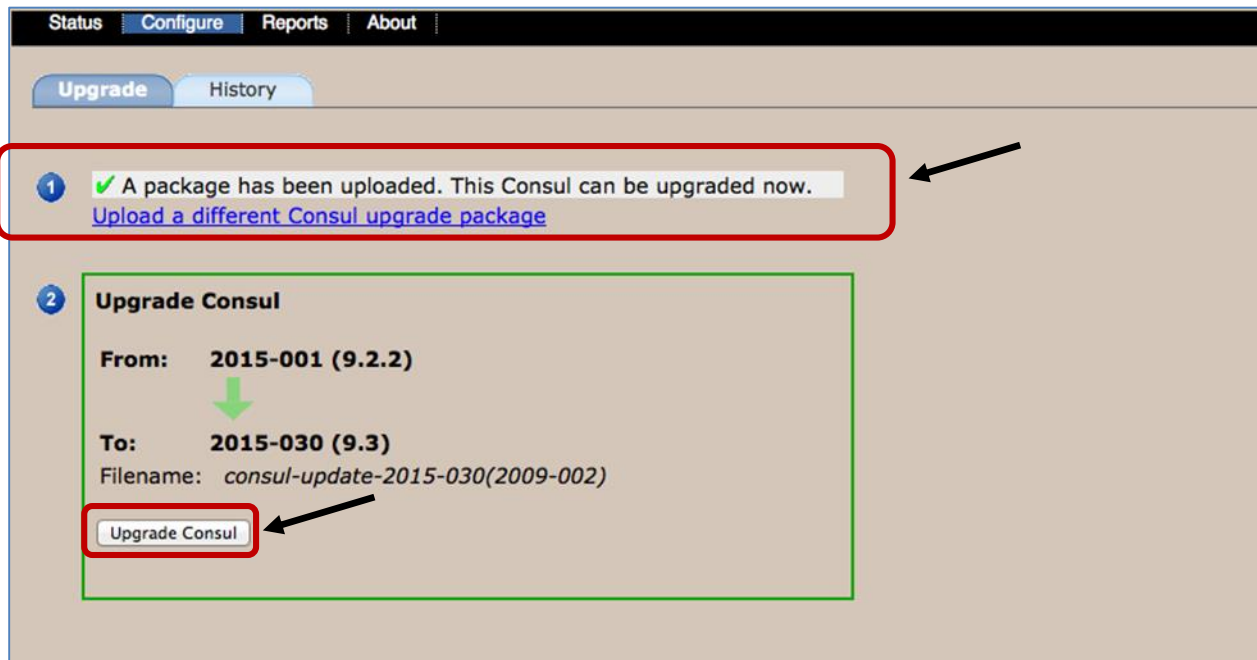



Figure 41: Upgrade package confirmation and Upgrade Consul button

## Section 2

6. Upon returning to the **System Upgrade** screen, you should see another  next to **Section 1**.
7. **Section 2** will show the upgrade information and an arrow leading from the old version to the new version. Select **Upgrade Consul** to continue.
8. The next screen will warn you that during a Consul system upgrade, all monitoring will be suspended and users will not be able to access the Consul pages. If you wish to continue with the upgrade, click **Yes, Upgrade Consul**.

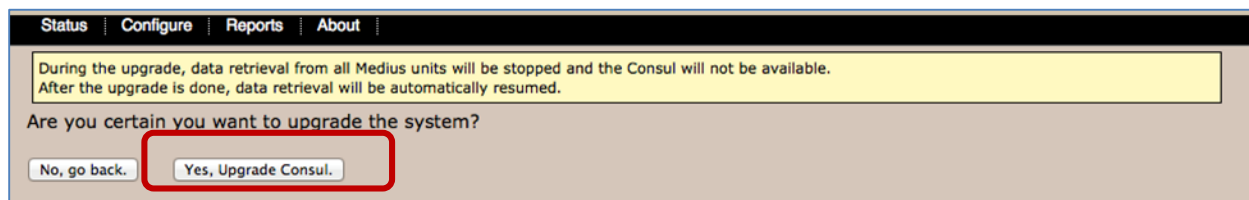



Figure 42: Upgrade confirmation

9. You will then be routed to the **Upgrade Status** page. From here, you will be able to monitor the progress of the **Upgrade**. A  will appear next to each completed **Section**. The number of steps varies from upgrade to upgrade.

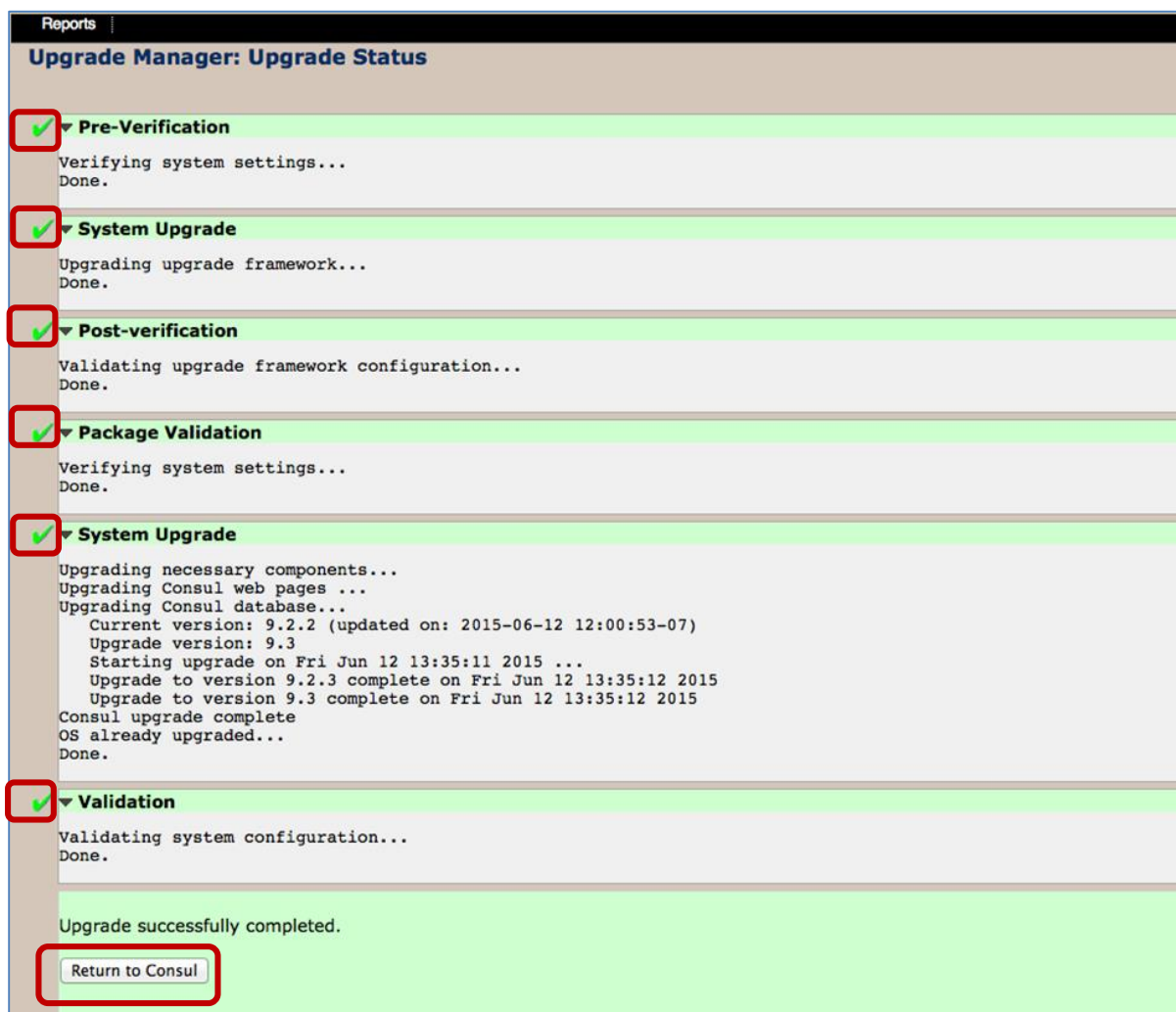


Figure 43: Successful Upgrade

10. The system will begin upgrading and will display the status. If the system upgrades successfully, all system monitoring will resume automatically and users will be able to access the Consul pages.
11. Click **Return to Consul** to return to the main Consul pages.

## Upgrade Errors for Consul

If any type of error occurs during the upgrade or the pre-verification steps of the upgrade, you will see the following:

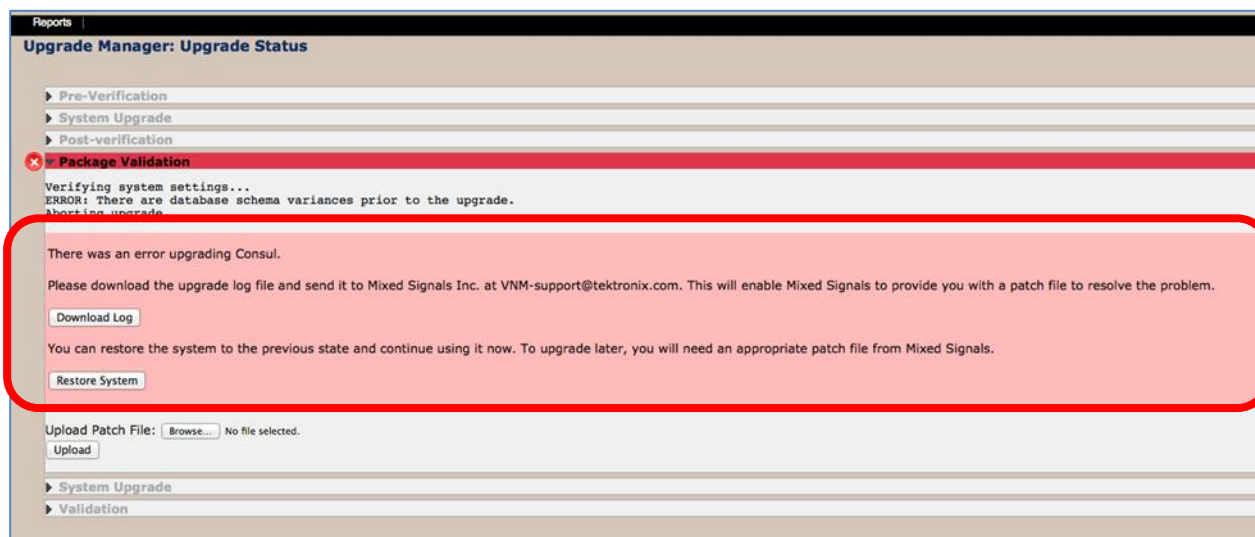


Figure 44: Upgrade Error

You will need to contact a Tektronix Support representative to troubleshoot and resolve the issue.

In order to help your support representative resolve the problem, you will need to download the upgrade log and provide it to Tektronix. This log file is an encrypted file with detailed information that is critical to Tektronix to being able to diagnose your problem.

1. Click **Download Log** to save the upgrade log file.

There are two types of errors you might encounter:

### Recoverable error

This is generally an error that happens in the pre-verification step. Such errors are recoverable, in that you can roll back the upgrade and return to the pre-upgrade state. If the error is Recoverable, you can click the Restore System button.

For such an error, providing the upgrade log to your Tektronix representative is still crucial, because Tektronix will still need to provide you with a patch in order for you to complete your upgrade.

### Error Requiring a Patch

If the error is not a recoverable error, it will require a patch from Tektronix to resolve. At this point, you must provide your Tektronix support representative with the upgrade log file. After diagnosing the problem, Tektronix will provide you with an upgrade patch file.

## Upload Error Patch File

1. To upload the patch file click **Browse** and select the file.

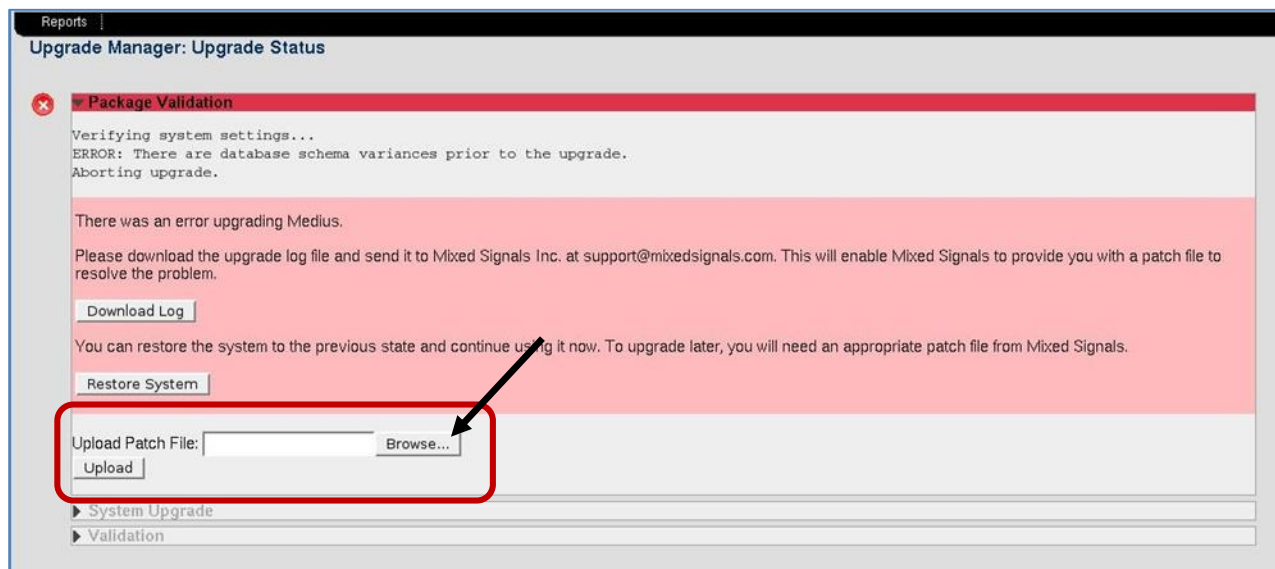


Figure 45: Uploading the patch

2. Next, click **Upload**.
3. If this is a valid patch for this Sentry at this time, you can click **Apply Patch** to apply the patch and resume the upgrade.

---

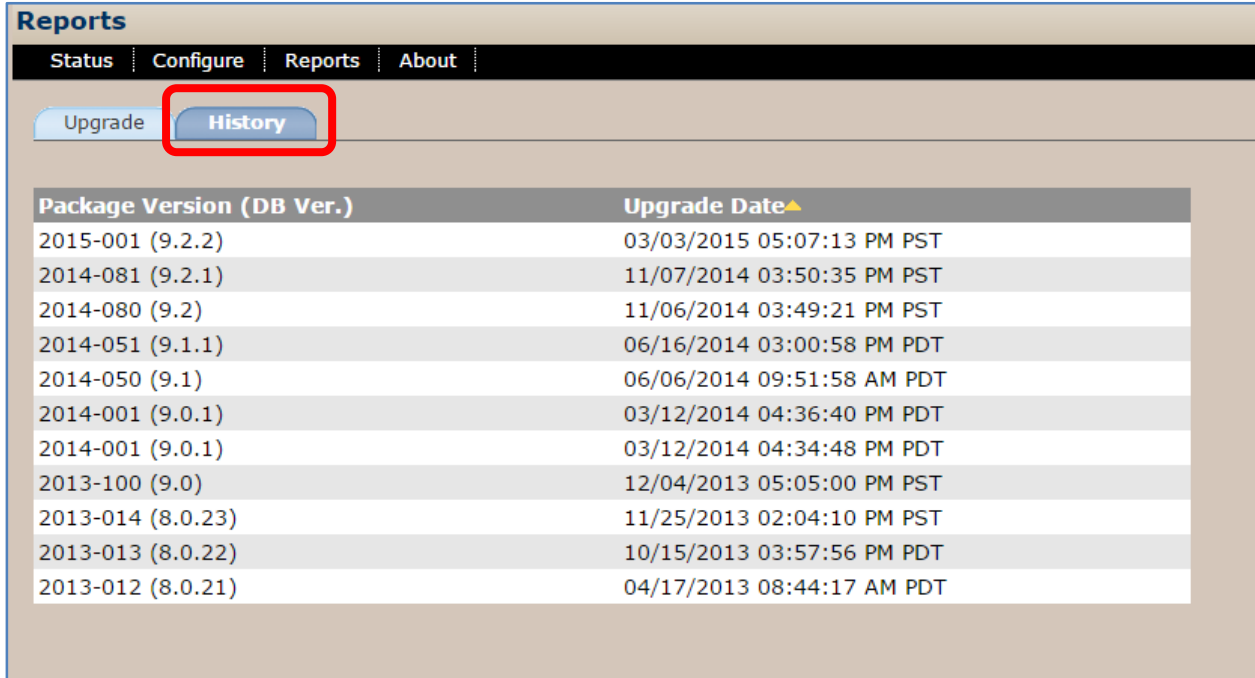
**NOTE:** *If you didn't download the upgrade log from this page, you can do so later by clicking the History tab on the System Upgrade page.*

---

## History tab

The **History** tab on the **System Upgrade** page will display a history of all system upgrades performed.

To access, select **System Upgrade** from the **Configure** drop down menu and then select the history tab.



The screenshot shows a web interface with a 'Reports' header. Below the header is a navigation bar with 'Status', 'Configure', 'Reports', and 'About'. Under 'Configure', there are two buttons: 'Upgrade' and 'History'. The 'History' button is highlighted with a red rectangle. Below the buttons is a table with two columns: 'Package Version (DB Ver.)' and 'Upgrade Date▲'. The table contains 12 rows of upgrade history data.

Package Version (DB Ver.)	Upgrade Date▲
2015-001 (9.2.2)	03/03/2015 05:07:13 PM PST
2014-081 (9.2.1)	11/07/2014 03:50:35 PM PST
2014-080 (9.2)	11/06/2014 03:49:21 PM PST
2014-051 (9.1.1)	06/16/2014 03:00:58 PM PDT
2014-050 (9.1)	06/06/2014 09:51:58 AM PDT
2014-001 (9.0.1)	03/12/2014 04:36:40 PM PDT
2014-001 (9.0.1)	03/12/2014 04:34:48 PM PDT
2013-100 (9.0)	12/04/2013 05:05:00 PM PST
2013-014 (8.0.23)	11/25/2013 02:04:10 PM PST
2013-013 (8.0.22)	10/15/2013 03:57:56 PM PDT
2013-012 (8.0.21)	04/17/2013 08:44:17 AM PDT

**Figure 46: Upgrade history log**

If there are any errors with the current upgrade, you can access the upgrade log from this page.

## Power off

Consul allows users to do a remote **Restart** or **Power Off** of any Consul unit.

You cannot **Power Off** or **Restart** a Consul unit from a Consul. That action must be done from the Consul itself.



**WARNING:** *When moving a Consul, it is very important to properly power off the Consul. Never unplug a Consul without performing the Power Off procedure. Improper shutdown may cause file corruption and failure of the Consul.*

---

---

**NOTE:** *A Restart or Power Off may make it difficult to troubleshoot the cause of the problem later on as log information has the potential to be permanently lost.*

---

To navigate to the **Remote Restart** and **Power Off** page, go to the main menu and select **Configure** and then **Power Off**.

### To Power Off a unit:

1. Select **Power Off**.

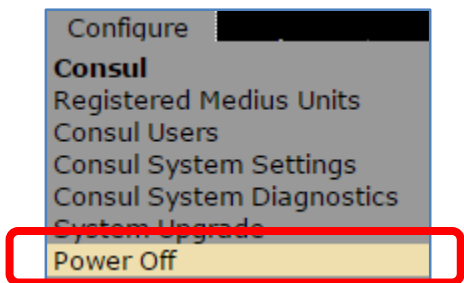


Figure 47: Access Power off

1. Select **Submit**.
2. The next screen will show a conformation.
3. Select **No** if you wish to cancel the action or **Yes** if you wish to continue with the power off.

## Restart a unit

In the unlikely event that the Consul is not behaving as expected, as last resort, you may attempt a **Restart**.

1. Select **Restart**.
2. Select **Submit**.

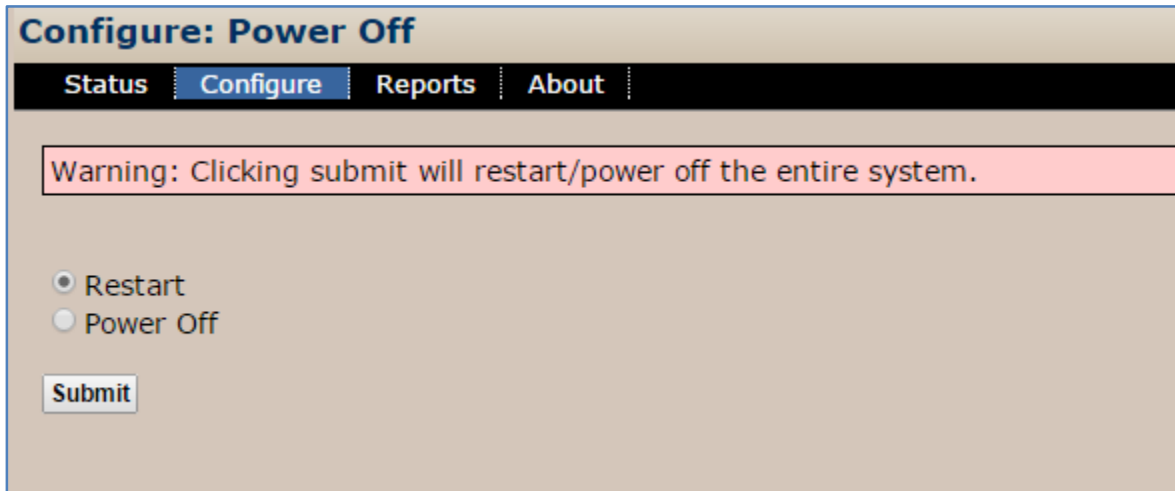


Figure 48: Restart button

3. The next screen will show a conformation.
4. Select **No** if you wish to cancel the action or **Yes** if you wish to continue with the restart.

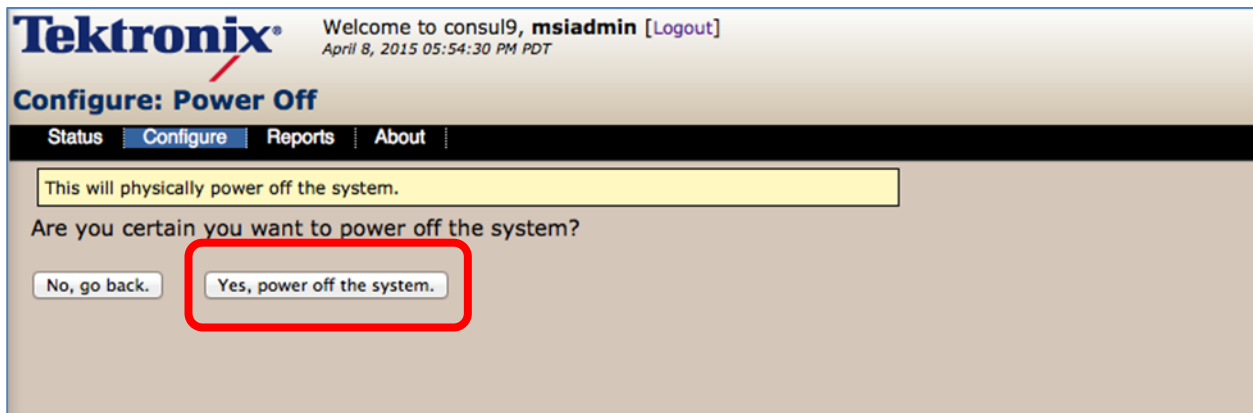


Figure 49: Restart Confirmation

# Reports

**Alert Analysis** provides an easy to use graphic analysis to visually represent alerts. These representations can be useful to track trends and to display a variety of information for any viewer, regardless of their technical experience.

## Access Alerts Analysis

Select **Alert Analysis** from the **Reports** drop-down menu.

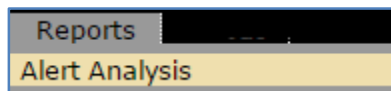


Figure 50: Selecting Alert Analysis

The summary screen consists of the following areas:

- **Report Navigation tabs** takes user to new reports.
- **New Report icons** allows user to select type for new report.
- **Existing Reports list** allows user to choose existing public and private reports.

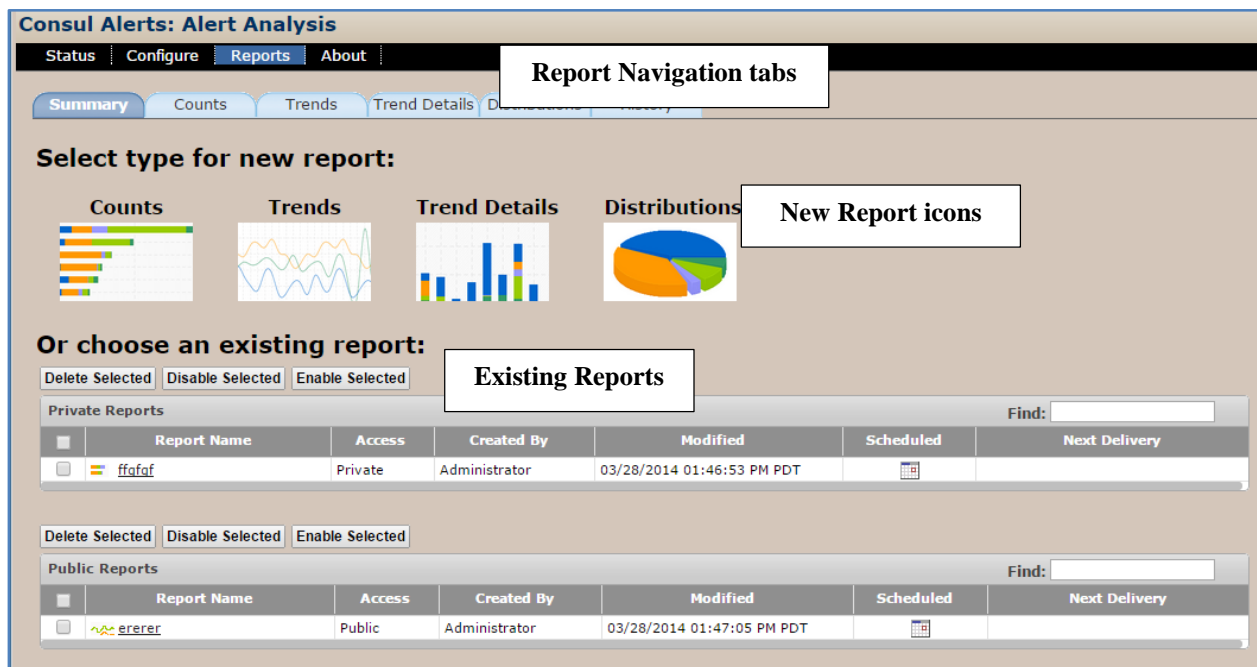


Figure 51: Alert Analysis screen

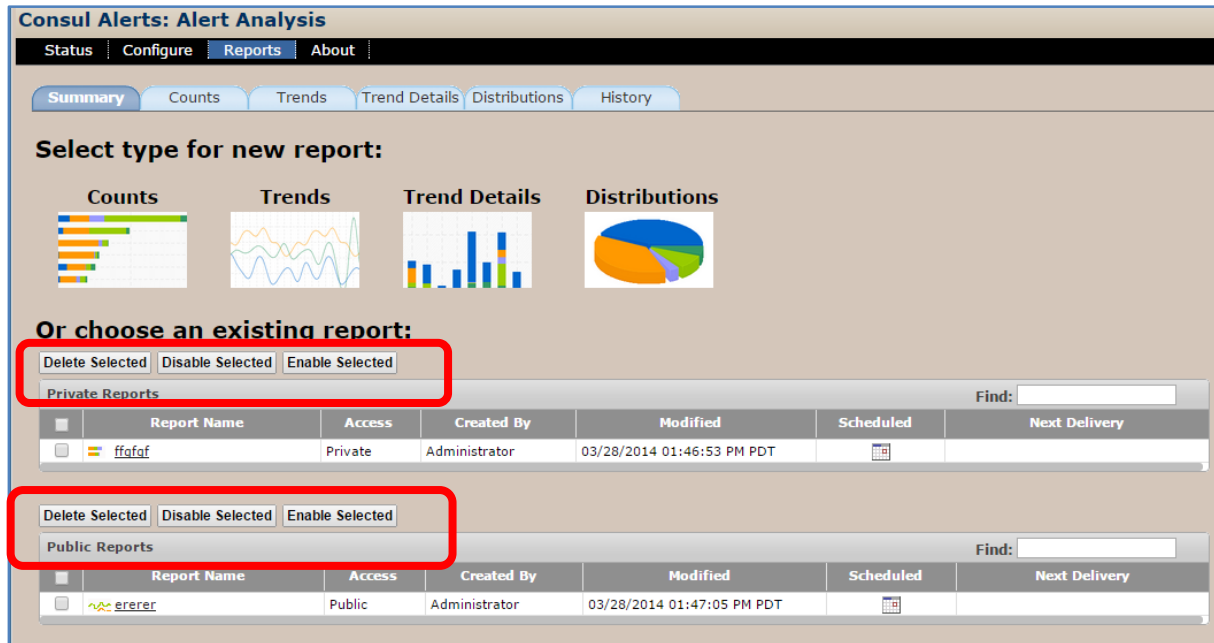
### *Report Navigation tabs and New Report icons*

The **Report Navigation** tabs contain most of the same areas that the **New Report** icons do. Either may be used according to your preference.

- **Summary**  
Create a new report or view or modify an existing report.
- **Counts**  
Shows the user a top 10 (20 or 30) count report group for a given time period.
- **Trends**  
Totals the alert count over time for all or selected ports.
- **Trend Details**  
Allows user to create a more detailed **Trend** report.
- **Distribution**  
Creates a pie chart showing total alerts by type for a given time period
- **History**  
(Not included on the **New Report** icons) Selecting the **History** tab above the **New Report** icons will take the user to a history of what alerts were emailed and when.

## Work with Existing Reports

When working with existing reports, you may select various functions from either **Private Reports** or **Public Reports**. In either case, you may **Delete Selected** reports, **Disable** the delivery of selected reports or **Enable** the delivery of selected reports.



### Delete a Saved Report

Select the checkbox for the reports you wish to delete and then select **Delete Selected** reports. Select **Yes** to continue.

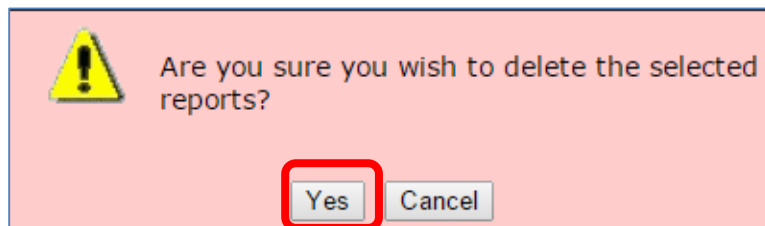


Figure 52: Delete Reports confirmation

### Disable Delivery of Emailed Reports

Select the reports you would like to temporarily suspend and then select **Disable Selected** reports. Select **Yes** to continue.

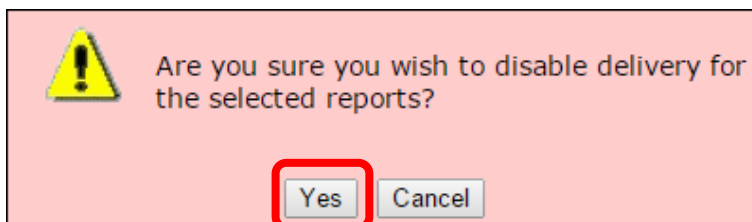
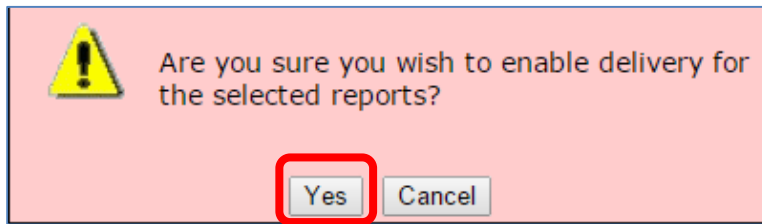


Figure 53: Disable Delivery confirmation

### *Enable Deliver of Emailed Reports*

Select the disabled reports you would like to start sending out again and then select **Enable Selected** reports. Select **Yes** to continue.



**Figure 54:** Enable Delivery confirmation

## Counts Tab

The **Counts** tab shows the user a top 10 (20 or 30) count by Medius/Sentry/Region/Location/program/program group for a given time period.

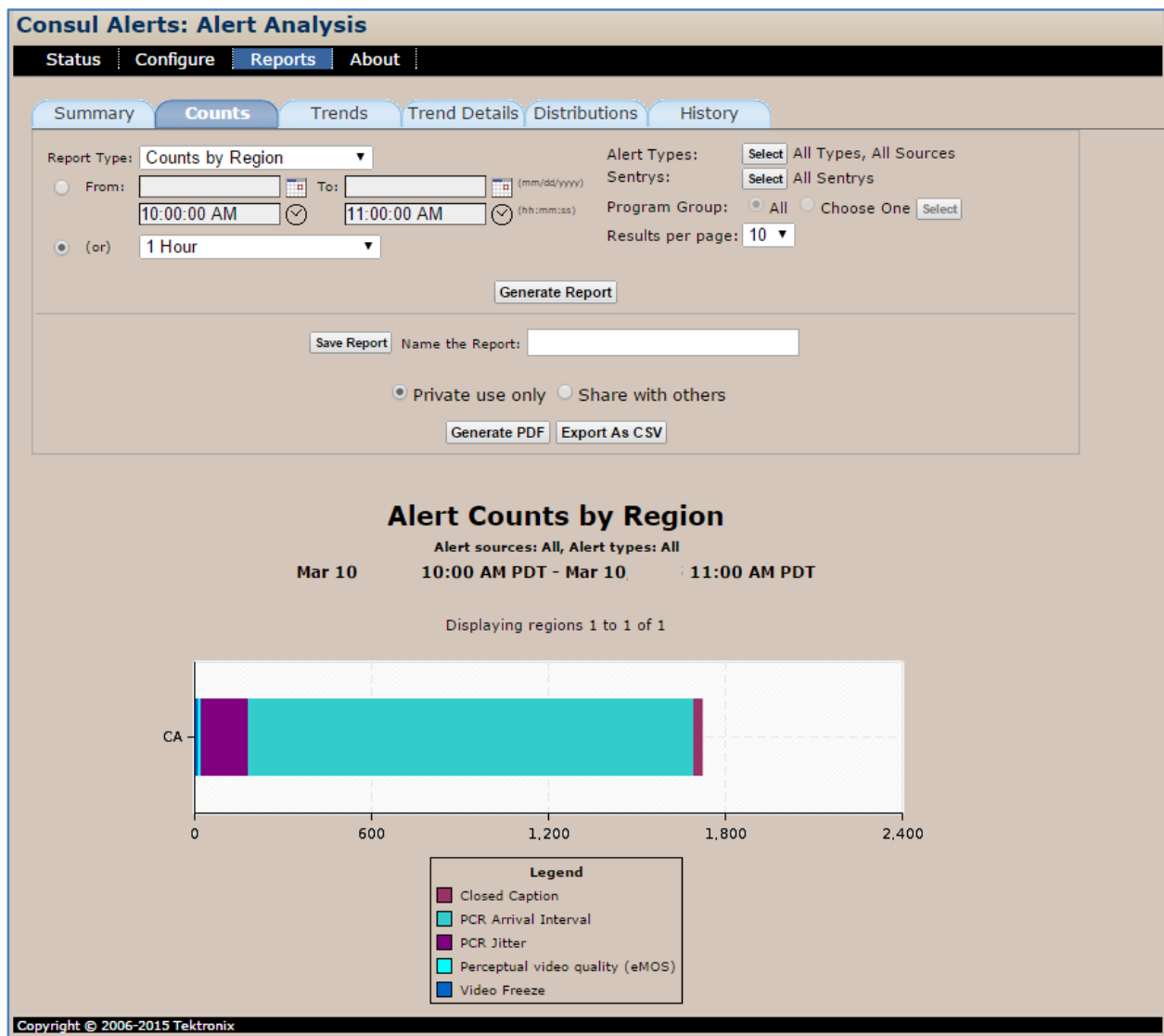


Figure 55: Counts tab

### How to create a sample Counts report

This function allows you to set your counts to count by program for specified time frame. Selecting **Top 10** will generate the top 10 alert counts by program.

This is used to see what your problem channels are.

1. Set **Report Type** to **Count's by Program**.
2. Set the dates for a one week period.

3. Set **Alert Type** to one of the following: all alerts port/all program group/all limit top 10.
4. Select **Generate Report**.

---

**NOTE:** *The bottom of the report is a tabular view of the programs in chart form. Click on the link to go to the specified time period for that particular Program Detail Report.*

---

### ***Saving a report***

Once you have a report the way you like it, save it so that you can run it again without having to reconfigure it. If you make it public, others users will be able to use it as well. Selecting **Private** will make it only viewable for your specific login.

You can also set it to email you automatically.

1. Name the **Report**.
2. Select either **Private/Share** with others.
3. Select **Save** report.
4. Select **OK**.

### ***Schedule a Report***

You can schedule a report to run automatically and email a PDF of the results.

1. Select the **Schedule** button that appears after the report has been saved.

The screenshot shows the 'Medius Alerts: Alert Analysis' interface. The 'Counts' tab is selected. The 'Report Type' is 'Counts by Sentry'. The 'From' and 'To' time range is set to '12:40:42 PM' to '01:40:42 PM' for a duration of '1 Hour'. The 'Alert Types' are set to 'All Types, All Sources', 'Sentry' to 'All Sentrys', 'Program Group' to 'All', and 'Limit' to 'Top 10'. The 'Generate Report' button is highlighted. Below it, the 'Save Report' section shows 'Name the Report' as 'Report test one' and 'Save as' as 'Report test one (copy)'. The 'Schedule' button is highlighted with a red box. A green message bar at the bottom says 'Report saved successfully.'

**Figure 56: Selecting Schedule**

2. The **Scheduling** options page will automatically load.

Status | Configure | Reports | Alerts | Program Groups | About

### Medius Alerts: Alert Analysis

Summary | Counts | Trends | Trend Details | Distributions | History

**Scheduling options for Report test one:**

☐ Do not schedule this report  
☒ Schedule this report

1 Report Scheduling Frequency: Hourly  
Every 1 hour(s)

2 Deliver via email to:

Name	Email
<input type="checkbox"/> Administrator	mediusadmin@example.com
<input type="checkbox"/> Tempadmin	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Email subject: The subject will read 'Medius Alerts Report: your text'

Email body: Medius Alert Analysis Report

Attachment(s): ☒ PDF (Report results sent as PDF file)  
☐ CSV (Report results sent in a comma separated values file)

Attachment name: MediusAlertCounts PDF and CSV file attachments will have the same filename prefix.

3 Schedule report until:  
☒ No end date  
☐ [Date Picker]

☐ Temporarily suspend delivery

Update Schedule Cancel

Figure 57: Scheduling Options page

3. Section 1: Select the **Frequency**.

Summary | Counts | Trends | Trend Details | Distributions | History

**Scheduling options for Test 2:**

☐ Do not schedule this report  
☒ Schedule this report

1 Report Scheduling Frequency: Hourly  
Every 1 hour(s)

Figure 58: Select the Frequency

4. **Section 2**: Select recipients and format the email (Subject, Email body, etc.)
5. Select whether you want Medius to attach the report as a **PDF** or **CSV** file.

2 Deliver via email to:

<input type="checkbox"/> Name	Email
<input type="checkbox"/> Administrator	mediusadmin@example.com
<input type="checkbox"/> Tempadmin	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Email subject:  The subject will read 'Medius Alerts Report: your text'

Email body:

Attachment(s): ☒ PDF (Report results sent as PDF file)  
☐ CSV (Report results sent in a comma separated values file)

Attachment name:  MediusAlertCounts PDF and CSV file attachments will have the same filename prefix.

Figure 59: Section 2-Email Settings

6. **Section 3**: Schedule the delivery termination
7. You may set it to only email you one time, every time or to end on a particular date.
8. You may also temporarily suspend delivery (for vacations, etc.)

3 Schedule report until:

☒ No end date

☐

☐ Temporarily suspend delivery

**Update Schedule** **Cancel**

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Figure 60: Update Schedule

9. Select **Update Schedule**.

## Trends tab

The **Trends** tab totals the alert count over time for all or selected Sentries. This report will generate a line graph of the number alerts for a time period per **Medius**, **Sentry**, **Region** and **Location**.

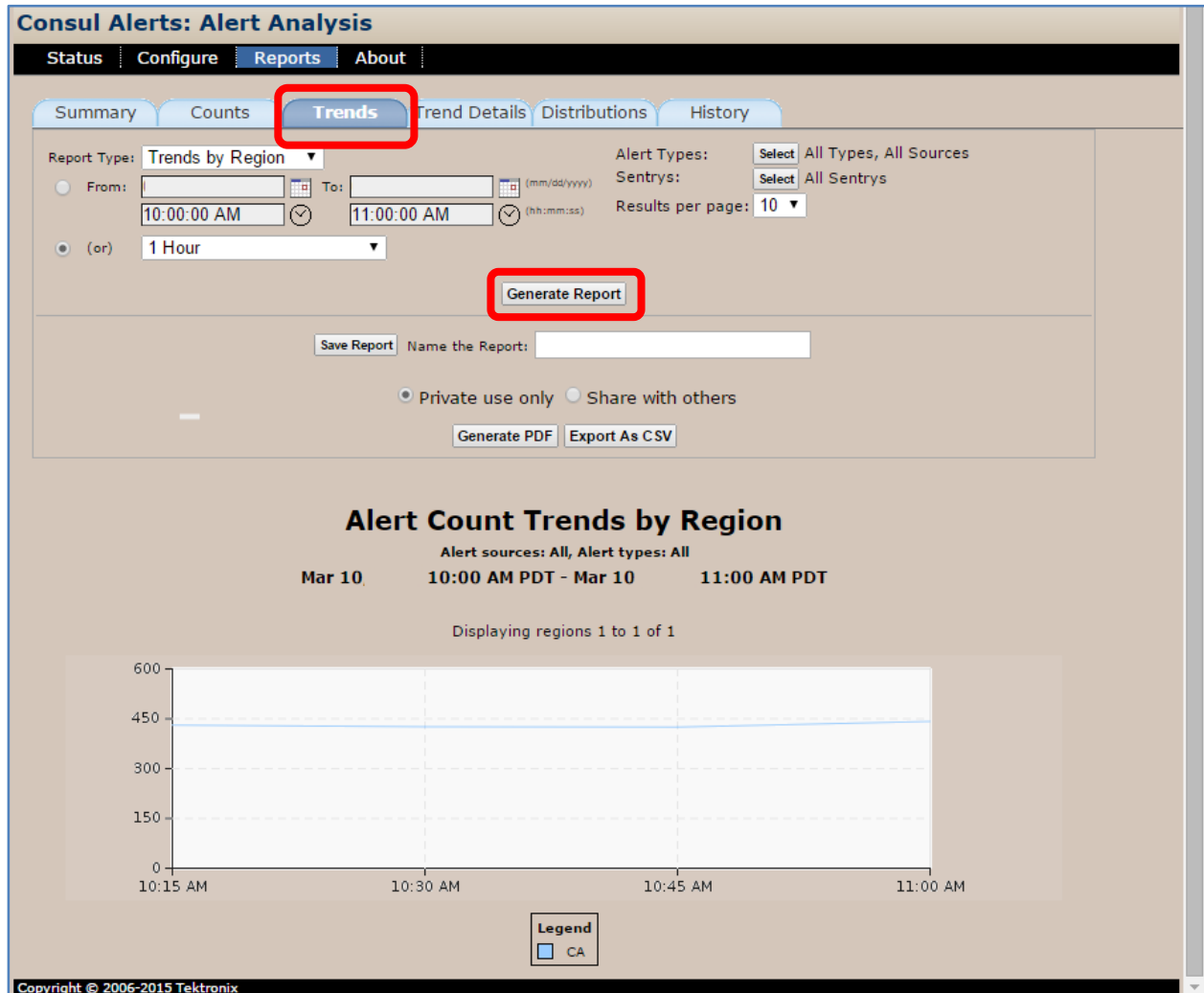


Figure 61: Trends tab

### Set a Trends report

1. Choose time frame for the report.
2. Select alert types you wish to view.
3. Select which Sentry/Sentries you wish to view.
4. Select **Generate Report**.

## Trend Details

**Trend Details** allows you to create an expanded **Trend** report. This is a handy report to run if you want to further investigate something from the **Trend** report.

1. Select **Trend Details**.

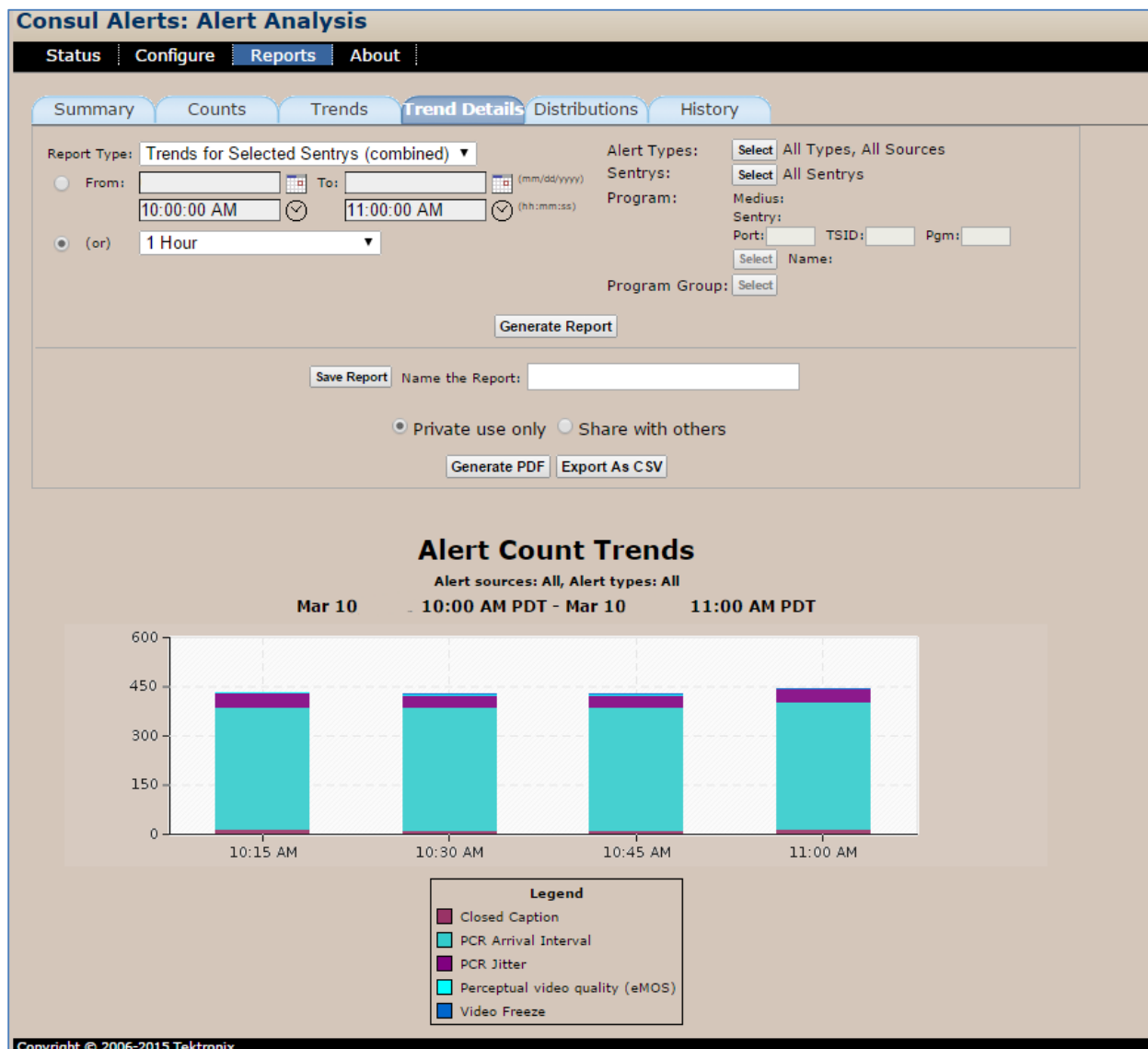
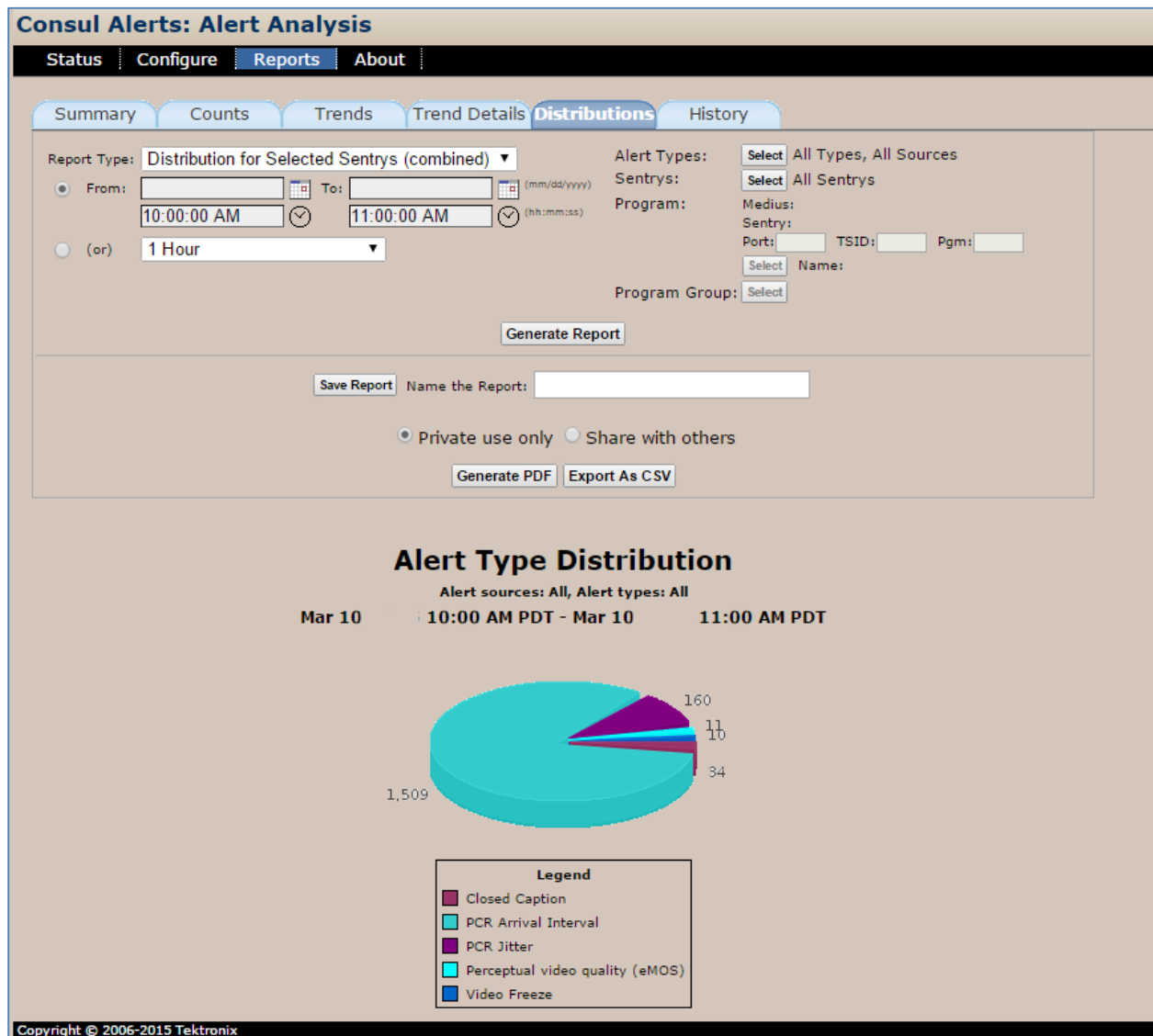


Figure 62: Trend Details tab

2. Select the **Report** type (ex. **Trends for Selected Sentries (combined)**) from the drop-down menu.
3. Set the time period.
4. Select the **Alert Type**.
5. Depending on the report type you need, select which Sentry/Sentries program you wish to view.
6. Select **Generate Report**.

## Distributions tab

**Distributions** will give you a pie chart graphic that shows the break out of all the different types of alerts.



**Figure 63: Distributions tab**

Use this to see a distribution summary of all of your alerts for a given time period. This could be handy to know what percentage of all your alerts are of a certain type.

1. Select the **Report Type**.
2. Select the required time period.
3. Select **Alert Type**.
4. Depending on the report type you need, select which Sentry/Sentries program you wish to view.
5. Select **Generate Report**.

## History tab

The **History** tab allows the user to see a schedule of reports that have been mailed. It is primarily used to see who is receiving which reports and when they are receiving them.

**Scheduled Report History - Alert Analysis**

Status | Configure | Reports | About

Summary | Counts | Trends | Trend Details | Distributions | **History**

From:  To:  (mm/dd/yyyy) (hh:mm:ss)

(or) 60 Days

**Refresh**

The following Alert Analysis reports have been emailed to the specified recipients: Find:

Report Name	Sent Time	Status	Access	Created By	Frequency	Email Recipients	Messages
No results were returned for the requested time range.							

Reports will be generated here

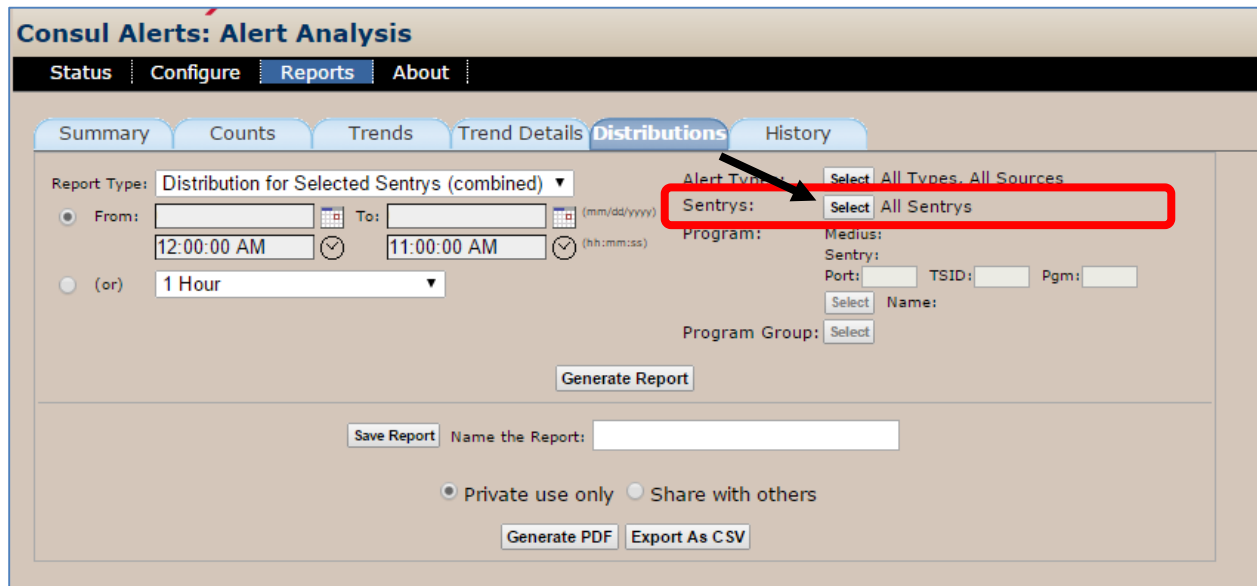
Figure 64: History tab

1. Select the time range of the reports you wish to see.
2. Select **Refresh**.

## Selecting Sentrys to Limit Search

From the **Counts**, **Trends**, **Trend Details** and **Distributions** tabs, you can narrow down any report to include only certain Sentrys.

1. Click on **Sentrys: Select**.



2. This will present you with two options: **Choose Sentrys by Region/Location** or **Choose Sentrys by their Associated Medius Units**.

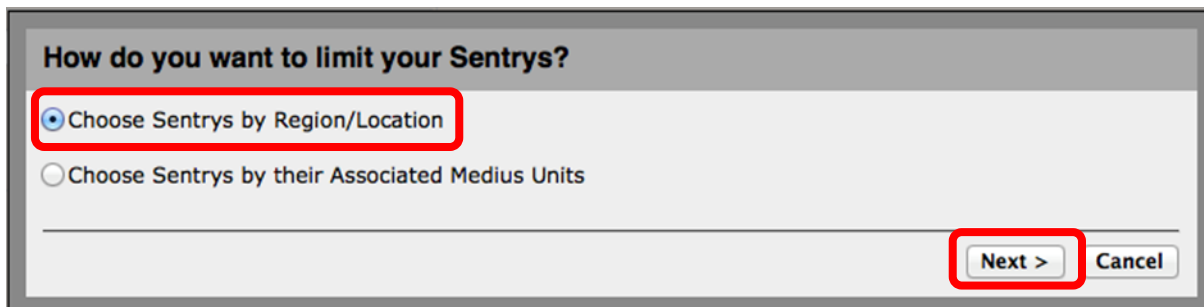
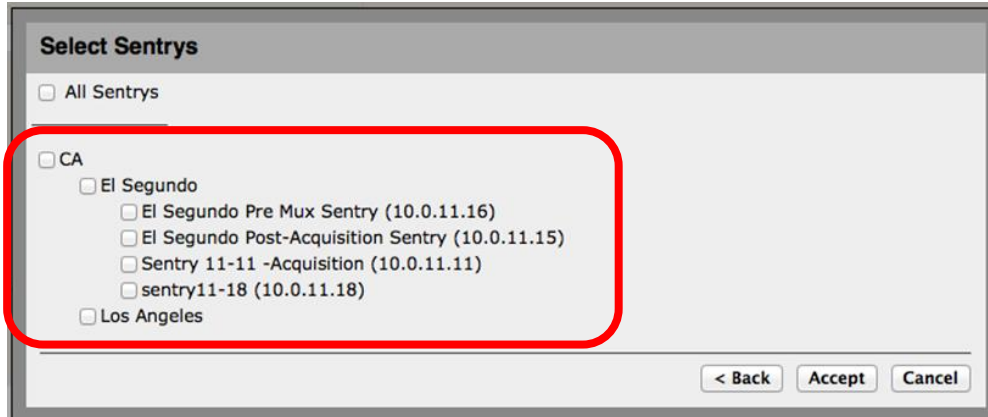


Figure 65 Limiting your Sentrys by Region

### *Choose Sentry by Region/Location*

To choose specific Sentries by **Region** and/or **Location**:

1. Select **Choose Sentries by Region/Location**.
2. Select **Next**.
3. You will now be able to use the **Region/Location** hierarchy to choose which Sentries appear in your report.



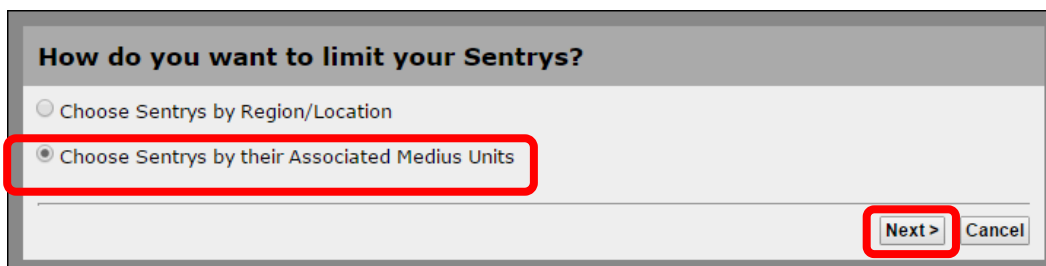
**Figure 66: Select a Sentry**

4. Select **Accept** when done.

### *Choose Sentry by Associated Medius*

To choose specific Sentries by their Medius:

1. Select **Choose Sentries by their Associated Medius Units**.
2. Select **Next**.



**Figure 67: Limit Sentries by Associated Medius Units**

3. You are now able to choose which Medius units to include in the report.



Figure 68: Select a Medius

4. Select **Accept** when done.

## Choose a Program Group

The program level reports allow you to choose a program group to limit the programs that show up in your report.

1. Select your **Report Type**. (If the **Program Group** button is grayed out, you will need to select from the list below.)

You may select a **Program Group** from the following **Report Types**:

- **Counts by Program Group**
- **Counts by Program**
- **Trends for Selected Program Group**
- **Distribution for Selected Program Group**

2. To select a program group, select **Program Group: Select**.

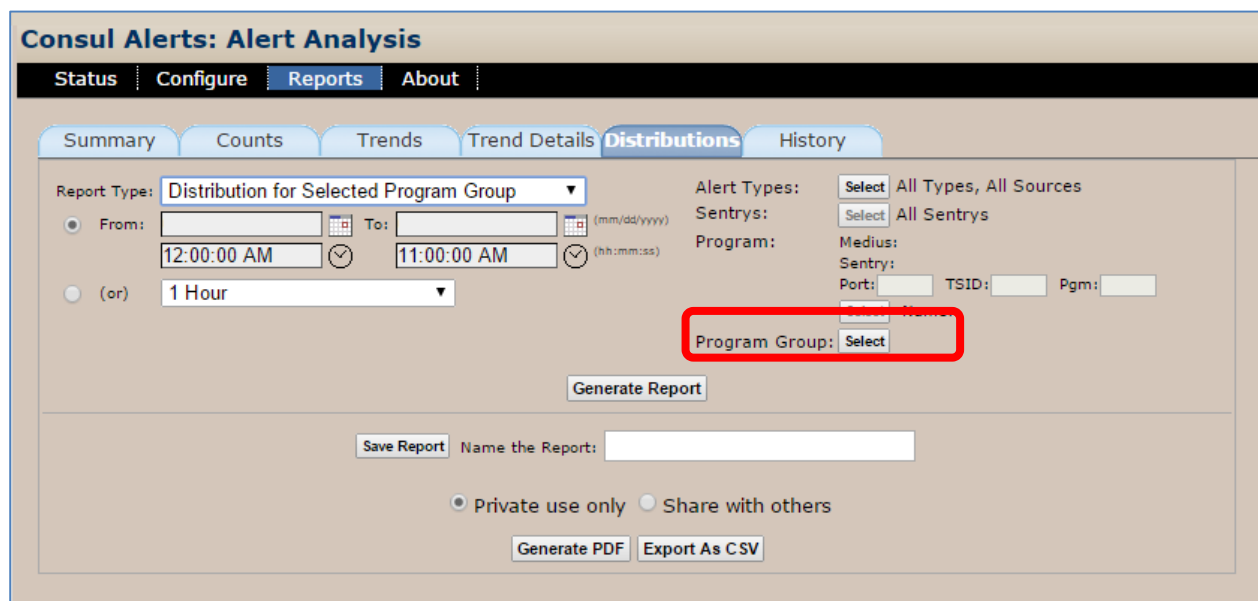


Figure 69: Select a Program Group

3. Because **Program Groups** are defined at the Medius level, you will first be prompted to select the Medius on which your specific program group resides.



Figure 70: Select Medius

4. Choose the Medius and select **Next**.

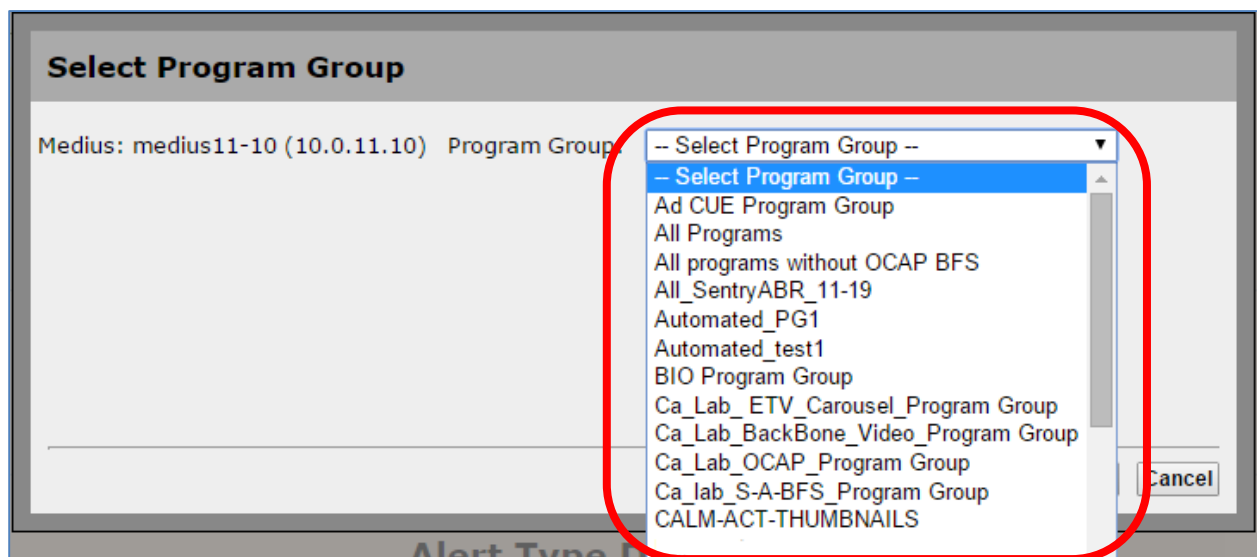


Figure 71: Select Medius

5. Select **Accept** when done.

# About

The **About** menu gives you the option to view information about the identity and upgrade package of the Consul.

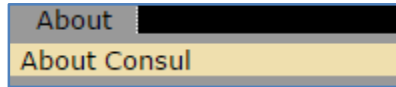


Figure 72: Access About Consul

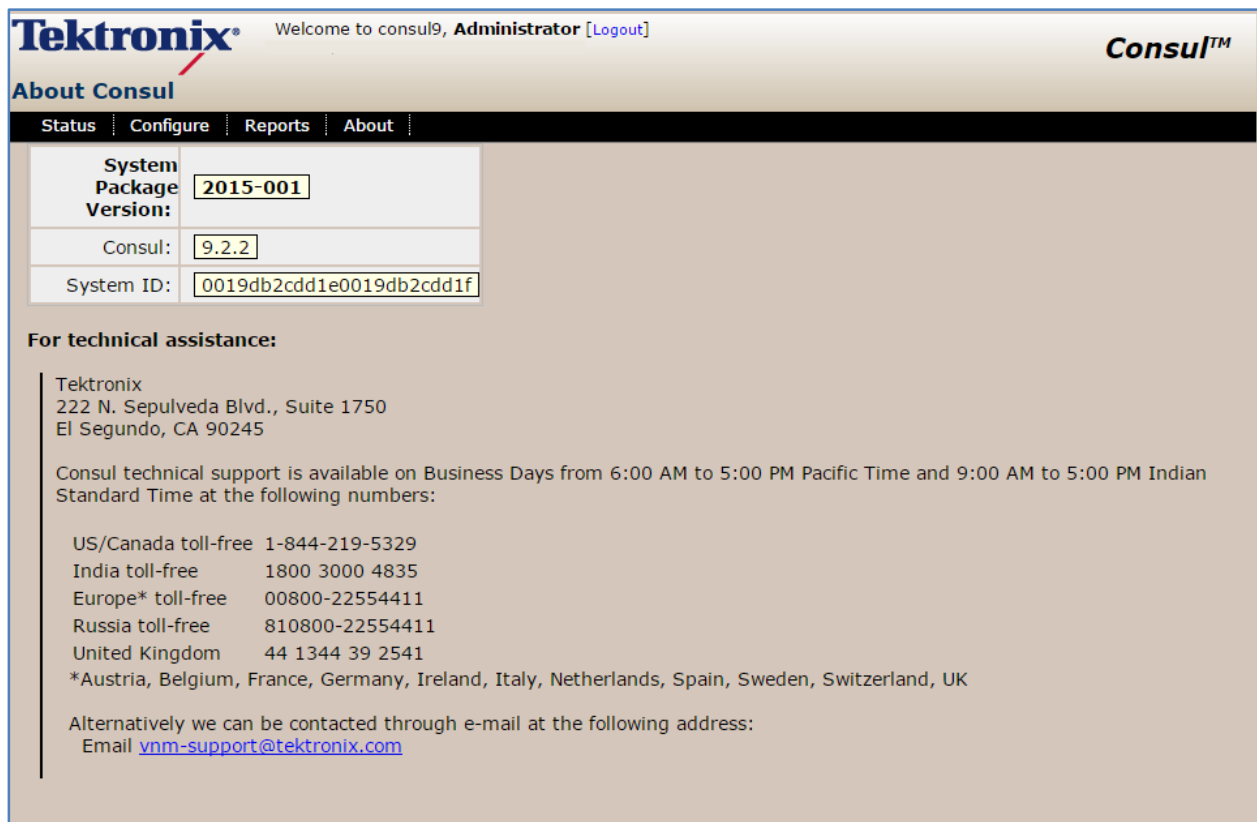
The screenshot shows the 'About Consul' page of the Tektronix Consul interface. At the top, there is a header with the Tektronix logo, a welcome message 'Welcome to consul9, Administrator [Logout]', and the Consul logo. Below the header is a navigation bar with links for 'Status', 'Configure', 'Reports', and 'About'. The main content area is titled 'About Consul' and contains a table with system information. The table has three rows: 'System Package Version:' with the value '2015-001', 'Consul:' with the value '9.2.2', and 'System ID:' with the value '0019db2cdd1e0019db2cdd1f'. Below the table, there is a section for technical assistance, including the Tektronix address, support hours, and contact numbers for various regions. The page also provides an email address for technical support: [ynm-support@tektronix.com](mailto:ynm-support@tektronix.com).

Figure 73: About page