



***Viewer II
Management Software
for the
Trilithic Guardian II
Return Path Maintenance System***

**OPERATION
MANUAL**

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Trilithic Company Profile

Trilithic is a privately held manufacturer founded in 1986 as an engineering and assembly company that built and designed customer-directed products for telecommunications, military and industrial customers. From its modest beginnings as a two-man engineering team, Trilithic grew over the years and broadened its offerings of RF and microwave components by adding broadband solutions to its product line. This was accomplished with the acquisition of components manufacturer Cir-Q-Tel and instruments manufacturer Texscan.

Today, Trilithic is an industry leader providing telecommunications solutions for major broadband, RF and microwave markets around the world. As an ISO 9000:2001 certified company with over 40 years of collective expertise in engineering and custom assembly, Trilithic is dedicated to providing quality products, services and communications solutions that exceed customer expectations.

Trilithic is comprised of three major divisions:

- **Broadband Instruments & Systems**
Offers test, analysis and quality management solutions for the major cable television systems worldwide.
- **RF Microwave Components**
Provides components and custom subsystems for companies specializing in cellular, military and other wireless applications.
- **Emergency Alert Systems**
Leading supplier of government-mandated emergency alert systems used by HFC service providers.

Helpful Websites

The following websites may be of interest to you:

<http://www.trilithic.com>

Trilithic's website contains product specifications and information, tips, release information, marketing information, Frequently Asked Questions (FAQs), bulletins and other technical information. You can also check this website for product updates.

<http://www.guardiansystemonline.com>

The website for the Guardian II family of products contains information about the Viewer II software, product information and FAQs.

Where to Get Technical Support

Trilithic technical support is available Monday through Friday from 8:00AM to 5:00PM EST.

Callers in North America can dial 1-317-895-3600 or 1-800-344-2412 (toll free). International callers should dial 1-317-895-3600 or fax questions to 1-317-895-3613. You can also e-mail technical support at techsupport@trilithic.com.

For quicker support response when calling or sending e-mail, please provide the following information:

- Your name and your company name
- The technical point of contact (name, phone number, e-mail)
- The version number of the Viewer II software
- The version of Windows you are using (including any Service Packs and patches)
- A detailed description of the problem you are having, including any error or information messages

This chapter:

- Describes Viewer II's purpose
- Provides an overview of Viewer II's features
- Gives a guided tour of Viewer II's two main screens

What is Viewer II?

Viewer II is the management software for Trilithic's Guardian II Return Path Maintenance System and performs the following functions:

- Serves as a manager and display for node ingress incidents
- Features a live node display showing current and historical return path spectra
- Works as a reporting tool for summarizing system performance and trends

Since Viewer II works in tandem with Trilithic's 9581 SST R4, system or operation center personnel can use it to assess ingress and common path distortion (CPD) outbreaks over large geographies and direct technicians where to troubleshoot problems.

Minimum System Requirements

To operate the Viewer II software, your PC **must** meet the following minimum system requirements:

- 1 GHz Pentium-III or higher (2 GHz Pentium IV or higher recommended)
- 256 MB RAM
- 50 MB free disk space
- Windows 2000, Windows XP, or Windows Server 2003
- Color monitor running at 256 colors or higher, 1024x768 minimum screen resolution
- High-speed Internet connection
- Windows compatible keyboard and mouse

Overview of Viewer II's Features

Viewer II offers the following features for monitoring and displaying system information:

- **Incident Manager to Track Node Ingress**

When node ingress is detected, Viewer II automatically creates and manages an incident for the node, allowing the problem to be monitored and tracked until it is resolved. The Incident Manager allows users to prioritize and filter ingress problems by several criteria and, when used in a group management environment, allows each incident to be assigned to the appropriate user for resolution.

- **Element Manager for Structured Viewing of Nodes**

The Element Manager allows nodes to be organized into any number of logical tree-type representations called element views. Elements can be structured to provide a quick view into the status of the entire system, or of selected parts of the cable network. Element trees can be created to represent any desired configuration. For example: by geographical location, hub, CMTS blade, service technician or power supply.

- **Node View**

The current spectrum, status, and recent history of any node may be viewed graphically in the node view. Node view includes the current node spectrum, more than 30 minutes of historical spectrum, and up to 1000 of the most recent threshold alarm spectrum. Any number of node views may be opened and displayed at once.

- **Chronological Event History List**

Viewer II displays a chronological list of all ingress alarms generated by the 9581 SST hardware. When node ingress levels reach any of the user-defined thresholds, Viewer II logs an entry into the Event History list indicating the location and severity of the violation.

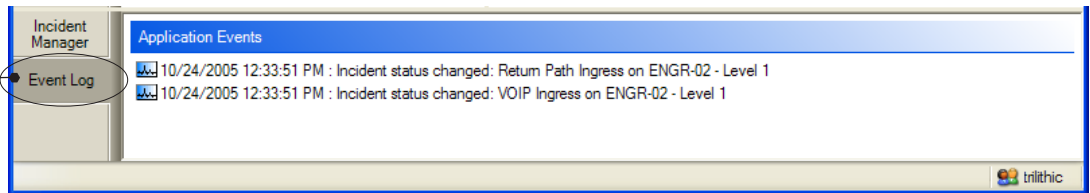
- **Reporting**

Viewer II reporting services allow users to quickly generate detailed or summarized reports to assist in the recording and trending of node histories and performance. Reports may be printed or exported to several popular file formats.

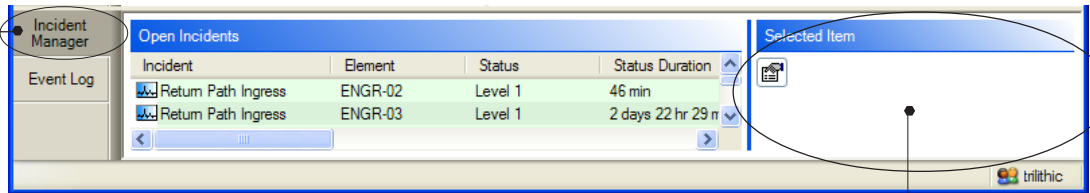
Guided Tour of Viewer II's Main Screens

Events Log and Incident Manager Screens

Click here to view a list of recent node alarms.



Click here to view the most recent node status.



The Incident Manager is discussed in more detail in step 9.

Displays details about the selected incident.

Element Manager Screen

When the element manager screen is in design mode, it looks like this:

Note: Before you can enter design mode, you must be logged into the Viewer II server as a user that is a member of the Administrators or TrilithicAdministrators group.

Click here to move the element view in and out of design mode.

The dropdown menu under this arrow gives you the options to create, delete and rename an element view.

Used for adding a new level in the Grouping area.

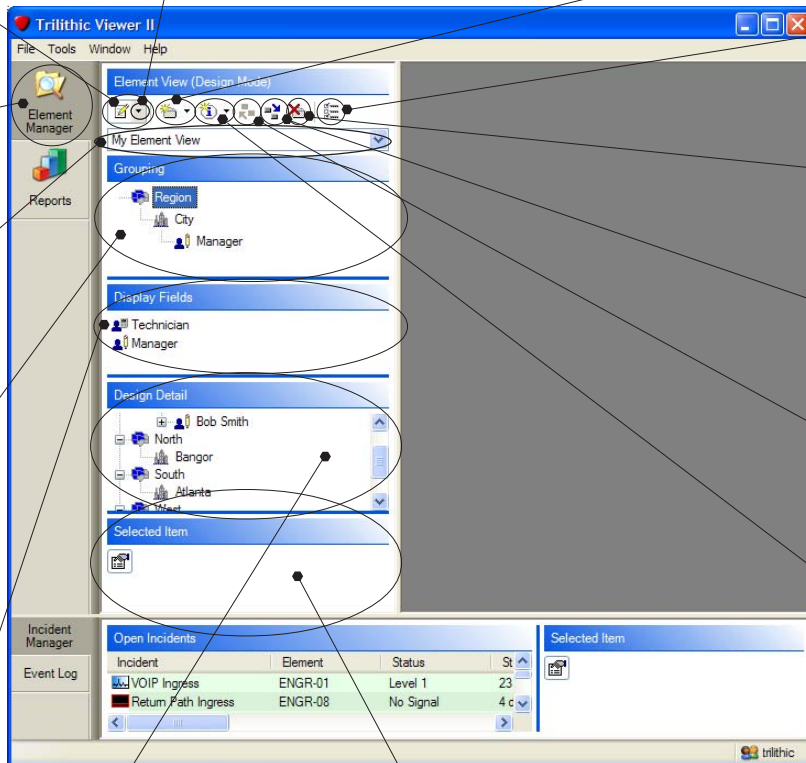
Used for adding attributes in the Design Details area.

Click on this button to go to the Element Manager screen.

Select the name of the element view you want to work with here.

This area is where you create and view the hierarchy that represents how your system nodes are organized.

Here you choose other attributes that you want to use to further identify nodes on reports and to also appear as columns in the incident manager.



Use this area to name the specific attributes within your Groupings.

Displays details about the selected attribute in the Design Detail area.

Deletes any level you select in either the Groupings or Display Fields areas.

Moves down the level selected in the Grouping area.

Moves up the level selected in the Grouping area.

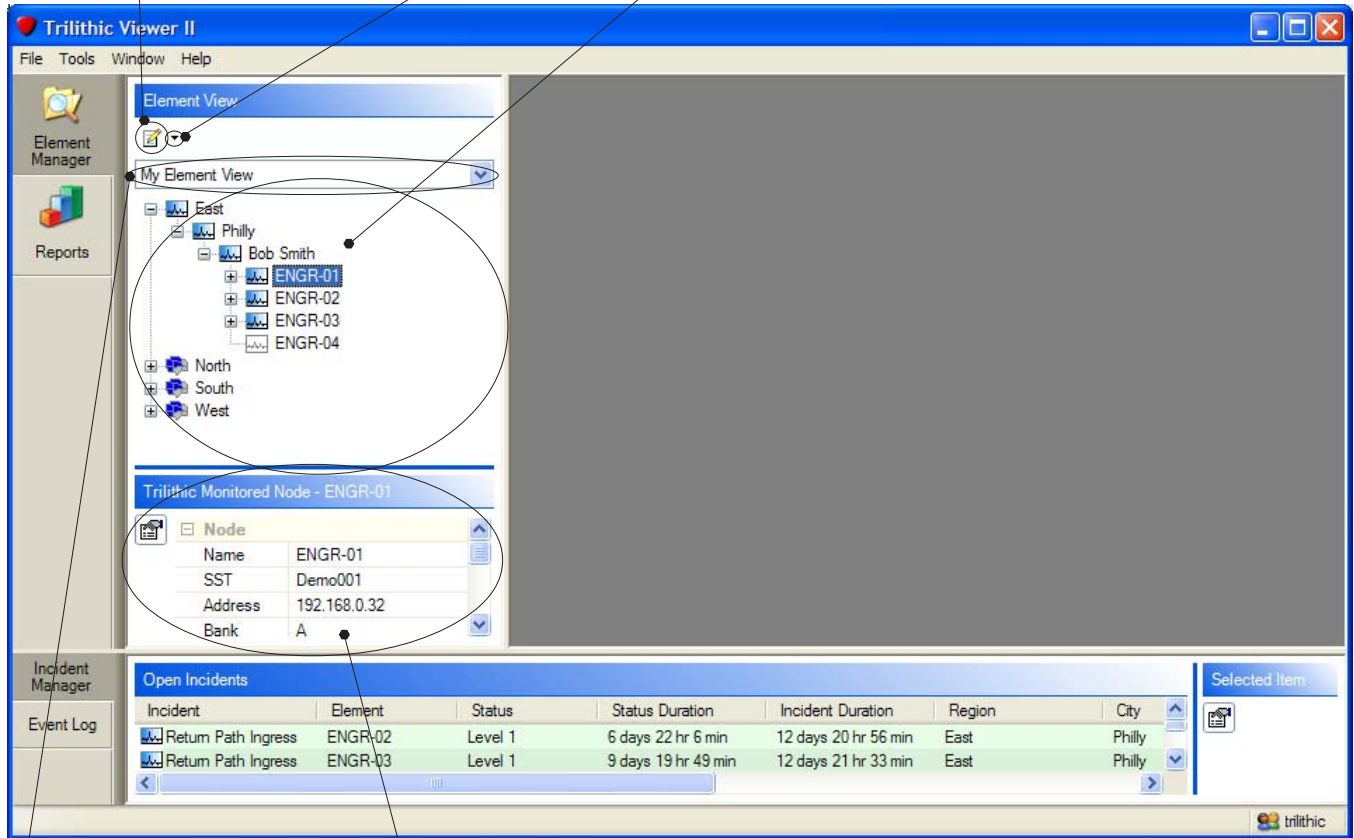
Used for adding a new attribute to the Grouping area or Display Fields area.

When the element manager screen is in display mode, it looks like this:

Click here to move the element view in and out of design mode.

The dropdown menu under this arrow gives you the options to create, delete and rename an element view.

The hierarchy tree you constructed in design mode that represents how your nodes are organized.



Select the name of the element view you want to view here.

Displays details about the item selected in the element view.

Reports Screen

When the reports screen is in design mode, it looks like this:

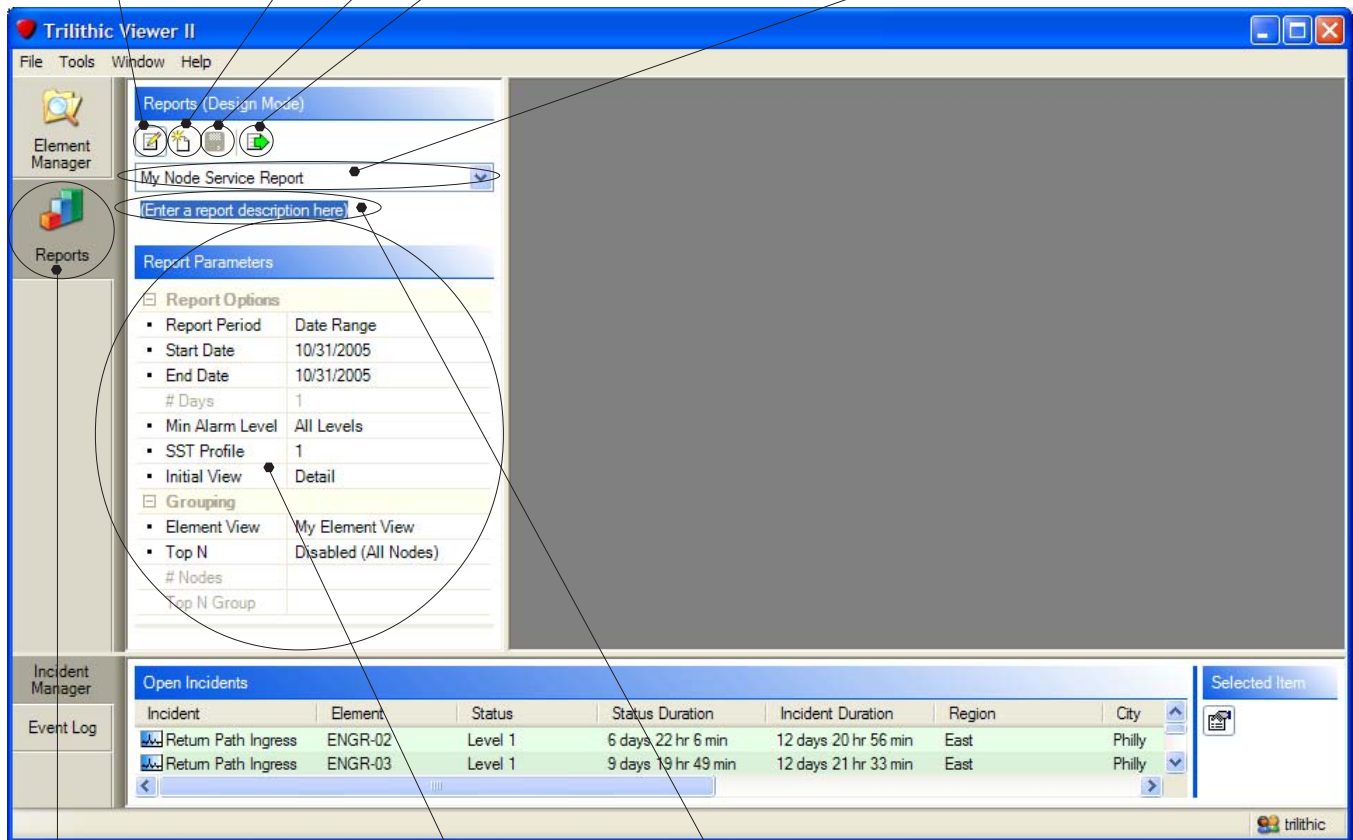
Click here to move the reports view in and out of design mode.

Click to create a new report.

Click to save a report.

Click to run the selected report.

Select the name of the report you want to view here.



Click on this button to go to the Reports screen.

Parameters for the report you selected.

A description of the report you type in.

Node View Screen

The node view screen looks like this:

Click to start/stop live updates in the node view window.

Click to show/hide live trace

Click to show/hide alarm level trace

Click to show/hide node history trace

Click to return the live view spectrum to its default view

Click to show/hide the properties window.

Click to show/hide the events window.

Zooms the live view spectrum display to the markers

Click to create a spectrum report that is in a printable format.

Lets you set the span and zoom levels

This is the alarm threshold that is set on the SST.

These lines are called traces. Different colors are used to distinguish live, historical and alarm traces. The color of an alarm trace is determined by the alarm level. Alarm levels are discussed in **Step 9: Manage Incidents.**

This is called the properties window and contains information about the node displayed in the live view window.

These parameters are discussed in greater detail in step 6.

The events window shows recent alarms.

The spectrum view window.

300 kHz RBW

Incident View

- Incident: VOIP Ingress
- Opened: 10/18/2005 2:28:15 PM

Mode

- Attributes
- Spectrum View
- Start Frequency: 0
- Stop Frequency: 65.25
- Center Frequency: 32.625
- Span: 65.25
- Ref Level: 40
- Low Level: -60

Markers

- Mode: Live - Normal
- M1 Frequency
- M1 Level
- M2 Frequency
- M2 Level
- Marker Span
- Marker Delta

VOIP Ingress Events

10/21/2005 9:44:35 AM	Level 1
10/21/2005 9:44:31 AM	Clear
10/21/2005 9:44:28 AM	Level 1
10/21/2005 7:45:41 AM	Clear
10/21/2005 7:45:38 AM	Level 4
10/18/2005 2:28:15 PM	Level 1

This chapter takes you through the steps you must complete to:

- Install Viewer II onto your PC
- Login to Viewer II
- Setup and use Viewer II

Before Installing Viewer II onto Your PC...

To use the Viewer II software, your PC **must** meet the minimum system requirements listed in the **Introducing Viewer II** section of this operation manual.

Step 1: Install Viewer II



Be sure to check the CD for release notes that may affect the installation and configuration process!

To install Viewer II:

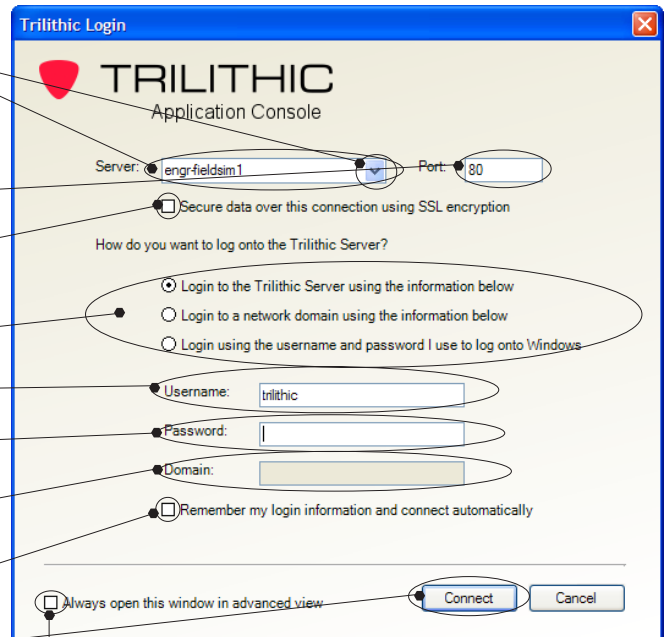
1. Log onto your computer as the local Administrator, or as a user that is a member of the local Administrator's group.
2. Insert the Viewer II installation CD into your CD-ROM drive.
3. **If you have Autorun enabled for the CD-ROM drive**, the Viewer II setup program will start automatically.

If you DO NOT have Autorun enabled for the CD-ROM drive,

- 3a) Click **Start** (which is found on the lower left-hand side of your screen).
 - 3b) Select **Run** from the pop-up window.
 - 3c) Type `D:\setup.exe` (substitute the appropriate drive path if D is not your CD-ROM drive).
 - 3d) Click **OK**.
4. To complete the installation, follow the on-screen prompts.

Step 2: Log Into Viewer II

- 1 Double-click on the Viewer II shortcut that was automatically placed on your desktop during installation.
- 2 The first time you log into Viewer II, you will see the expanded login screen shown to the right.
Type in the name or IP address of the Guardian II server. Or, if this is not your first time logging in, select it from the dropdown list.
- 3 Type in the Port number for the Guardian II server (this will normally be 80).
- 4 Place a check in this box to ensure secure encryption of data between the client and server.
- 5 Select the appropriate login method.
- 6 Type in your **Username**.
- 7 Type in your **Password**.
- 8 If you selected the second bullet in step 5, type in a **Domain** name.
- 9 Place a check in this box to bypass the login screen and connect automatically.
- 10 Click on **Connect**.



Note: Unless you place a check in this box, after you log in for the first time you will only be asked to enter the **Username** and **Password**.

Step 3: Setup Application Options

- 1 Go to the Tools menu and select **Options** from the dropdown menu.
- 2 Select **Trilithic Client**, which contains general connections options.
- 3 Place a check in this box if you want to bypass entering a username and password and login automatically.
- 4 After finishing, click on **Apply**.

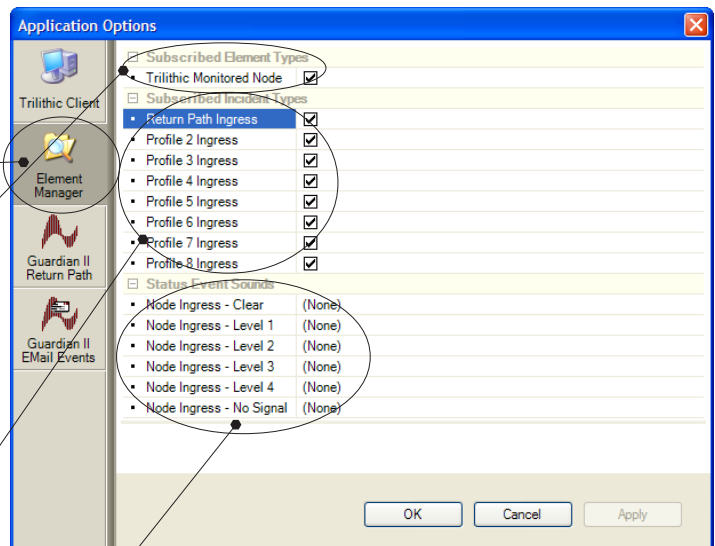


5 Now, select **Element Manager**. In Element Manager you change settings that affect the appearance and behavior of the element manager and the incident manager.

6 The box for Trilithic Monitored Node is checked by default because nodes are the only elements currently available on Viewer II.

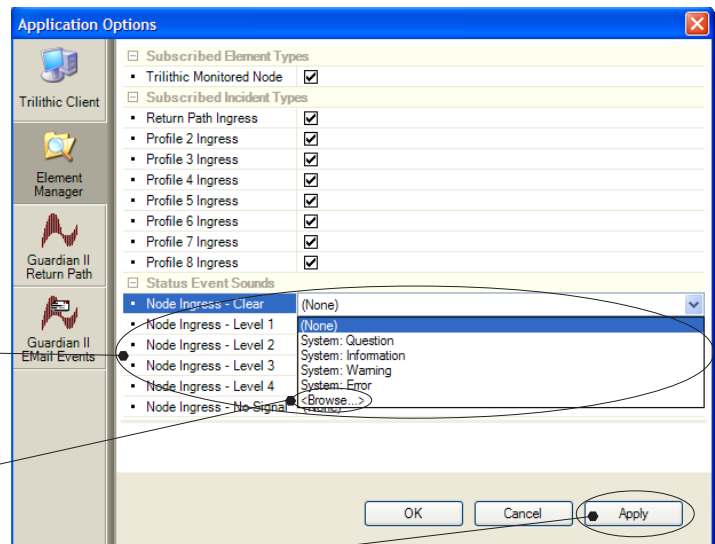
7 The Subscribed Incident Types section is where you filter your element view by the types of elements and incidents that interest you. Place a check in the box by the selection(s) you wish to include in your element view.

8 Status Event Sounds is where you choose alert sounds that let you know when certain ingress levels develop.



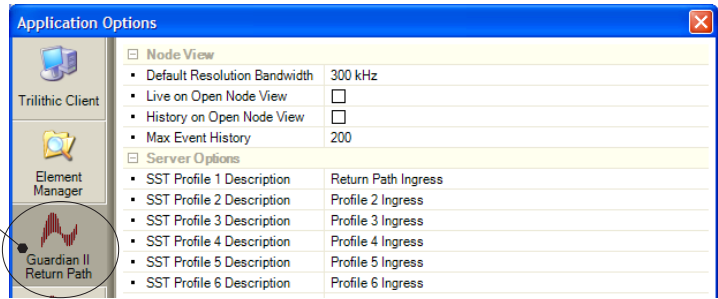
9 To choose a sound, left-click on the node ingress level of your choice to highlight it. Then select the sound you want from the dropdown list.

Select the **<Browse...>** option if you'd like to select a sound from your hard drive or local network.

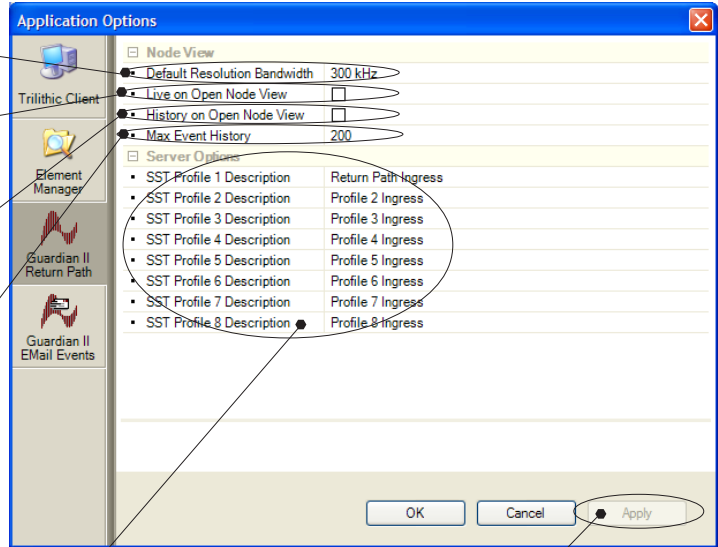


10 After finishing, click on **Apply**.

- 11 Move on to **Guardian II Return Path**. Here you modify the settings that affect the behavior and appearance of node view and other return path specific information.



- 12 Select the default resolution bandwidth for live view from the dropdown list.
- 13 Place a check in the box if you want live view to start automatically when node view is opened.
- 14 Place a check in the box if you want the most recent 15 minute history trace (its color is purple) from the SST displayed automatically when node view is opened.
- 15 Type in the maximum number of historical ingress events that will be displayed for an ingress incident.



- 16 These profiles correspond to the numbered profiles of your SSTs. **Before you can modify SST profile names**, you must be connected to the Viewer II server as a user that is a member of the Administrators or TrilithicAdministrators group.

For each profile, enter a name that is descriptive of the way that profile is configured. For example, if the profile is being used for VoIP, cable modem, etc.

In conjunction with the configuration of profile thresholds on the SST, these descriptions can be used to differentiate ingress within the different bands of the return spectrum.

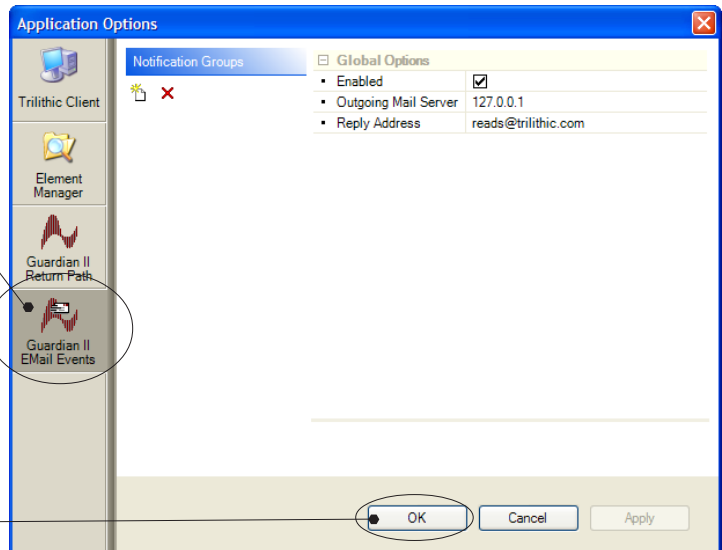
See the **SST 9581 R4 Operation Manual** for more information on SST profiles.

- 17 After finishing, click on **Apply**.

18 Your last stop is **Guardian II EMail Events**. The settings contained here affect the way that users are notified of ingress alarms via e-mail.

Before you can create, delete or edit e-mail groups, you must be connected to the Viewer II server as a user that is a member of the Administrators or TrilithicAdministrators group.

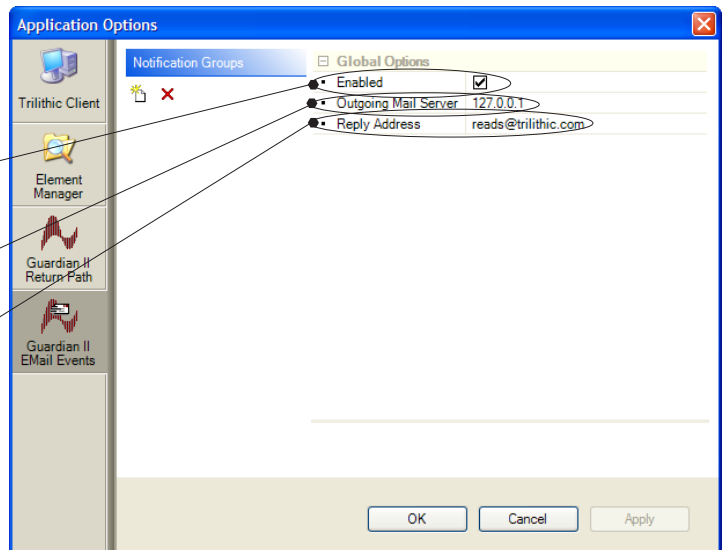
If you don't want to use this feature, click on **OK** and move ahead to **Step 4: Define the Nodes in Your System**.



19 Place a check in this box to allow e-mail notifications to be sent from the Guardian II server.

20 Type in the name or IP address of your SMTP mail server.

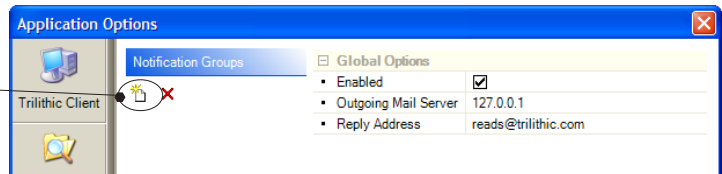
21 If you'd like a "from" address to appear on all outgoing e-mail notifications, enter it here.



To learn how to:

- **Add a new e-mail group**, continue to step 22.
- **Delete an e-mail group**, go to step 32.
- **Edit an e-mail group**, go to step 33.

22 To add a new e-mail group, click on the New Notification Group button.



23 Type in a name to identify this group profile.

24 Put a check in this box to enable this group to begin sending notifications. Removing the check later will not delete the group.

25 Type in a list of e-mail addresses to which notifications meeting the group's criteria will be set. You must separate each e-mail address with a semicolon.

26 Only ingress alarm events at the level you choose here or higher you want to be sent to recipients of this group.

Left click on **Min Alarm Level** to highlight it and then choose your selection from the dropdown list.

27 Place a check in this box to allow notifications to be sent to this group when ingress levels return to a "clear" status.

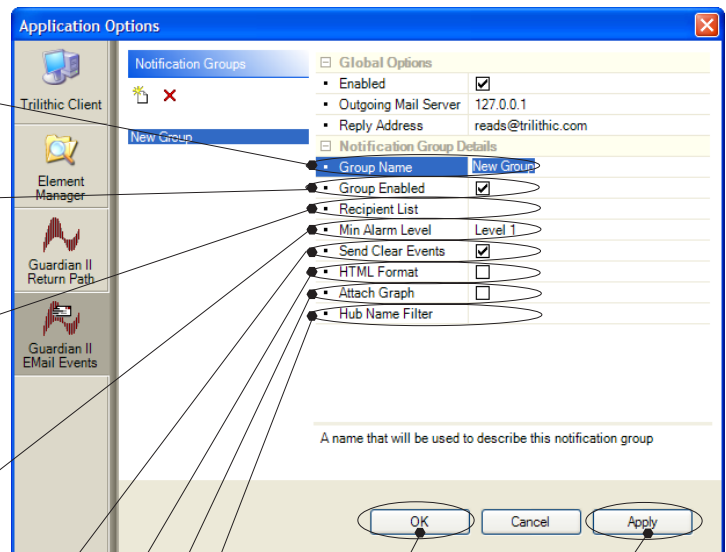
28 Place a check in this box to format notifications sent to this group as HTML. Otherwise, text will be in plain text format.

29 Place a check in this box to attach a PNG-formatted image file with messages sent to this group that shows the offending node spectrum and threshold graphs.

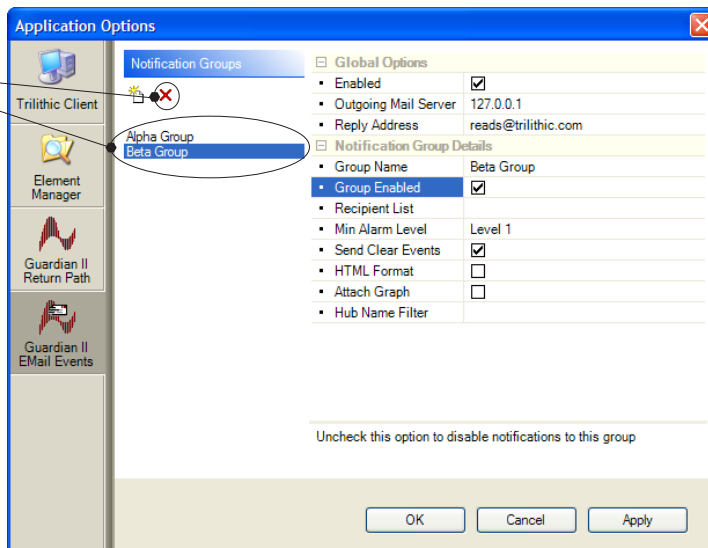
30 Type in a list of names of hubs from which notifications should be sent. You must separate each hub name with a semicolon. Only alarms from SSTs with a matching hub name will be sent to this group.

31 After finishing all e-mail groups, click on **OK**. This will close the Application Options window.

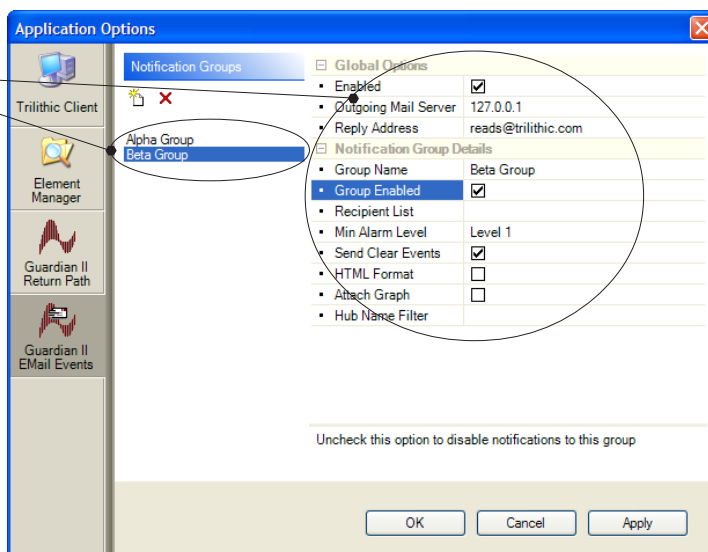
If you'd like to work in another Application Options tab, click on **Apply** and then select that tab.



32 To delete an e-mail group, highlight the name of the group and then click on the delete button.



33 To edit an e-mail group, highlight the name of the group and then make the edits directly in the appropriate fields.



Step 4: Define the Nodes in Your System

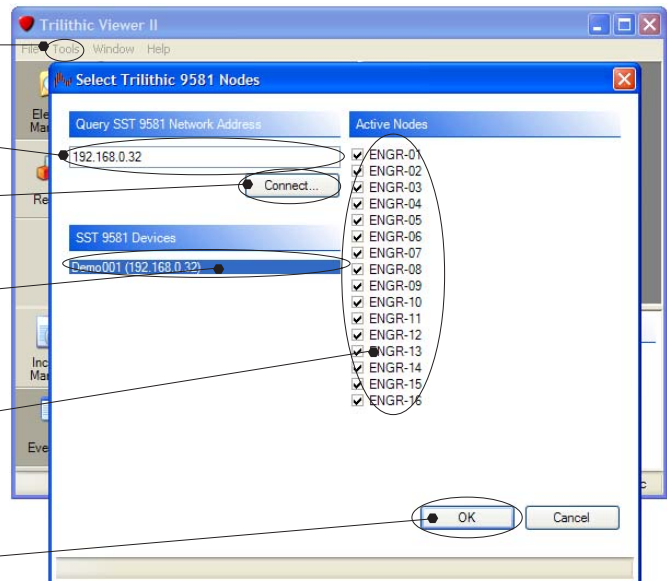
Use these steps below to:

- Connect to an SST for the first time
- Reconnect to an SST if you've changed node names

Note #1: SSTs must be placed on the network and configured before performing the following steps.

Note #2: Before you can define new nodes, you must be connected to the Viewer II server as a user that is a member of the Administrators or TrilithicAdministrators group.

- 1 Go to the Tools menu and select **Trilithic SST 9581 Device Manager** from the dropdown menu.
- 2 Type in the SST's IP address.
- 3 Click on **Connect**. (You may be asked to enter a username and password to access the SST.)
- 4 SSTs you've already entered are listed here. Click on the SST's name to list its nodes.
- 5 The nodes for each SST will be listed here. To deactivate/activate a node, remove/add the check next to its corresponding box.
- 6 Repeat steps 2 through 5 for each of your SSTs.
- 7 When you are finished adding all SSTs, click on **OK**.



Step 5: Create Element Views

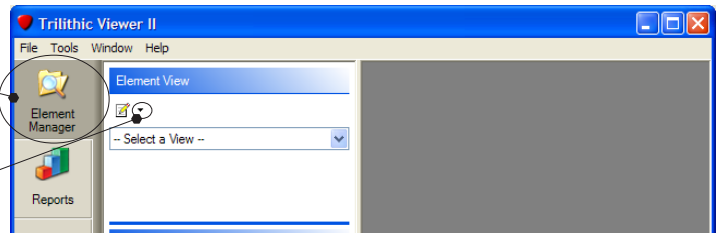
What is an element view?

Element views give you an easy way to sort and identify groups of nodes and are organized in a hierarchical tree-style structure. They also determine how your reports are grouped.

Note: Before you can create or modify element views, you must be connected to the Viewer II server as a user that is a member of the Administrators or TrilithicAdministrators group.

1 Make sure **Element Manager** is selected.

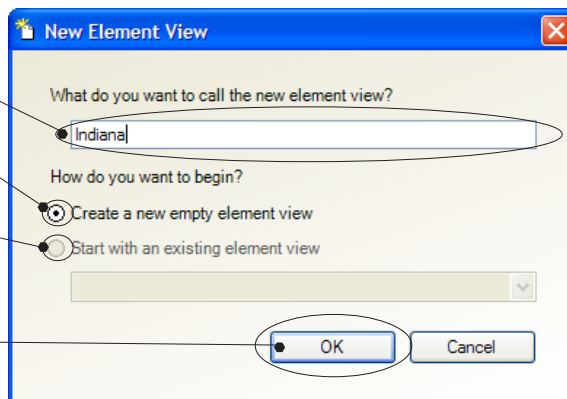
2 Click on this arrow and select **New...** from the dropdown list.



3 Type in a name for your element view.

4 The first time you create an element view, this will be the only bullet you can choose. After you begin saving element views, you will also be able to choose a previously created view as a template from the dropdown list.

5 Click on **OK**.

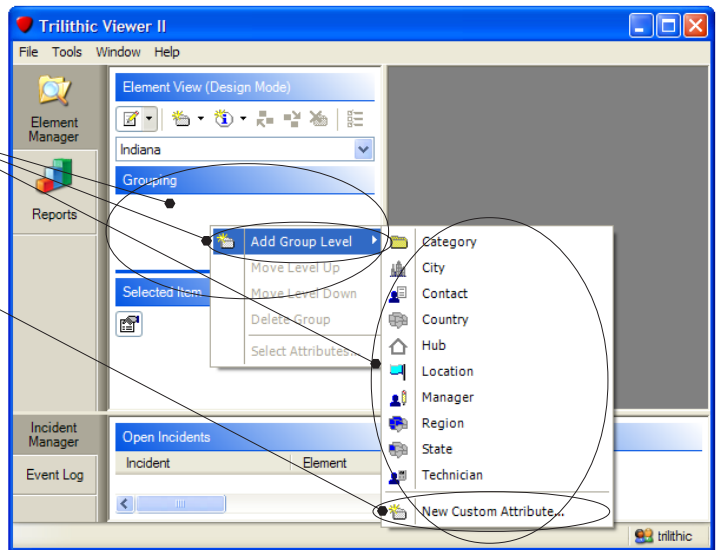


You will now start designing the hierarchy trees within your element view.

- 6 Right-click in the **Grouping** area, choose **Add Group Level**, and then select the attribute you want to serve as the highest level of your tree.

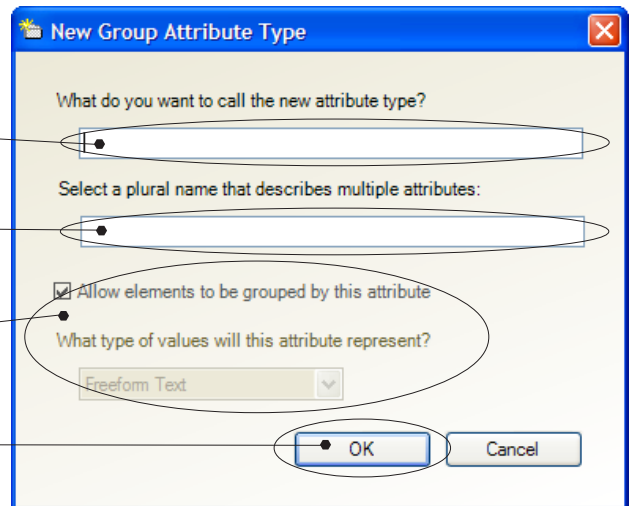
In addition to the built-in attributes, you can define any number of custom attributes for the purpose of grouping or further describing the nodes in your system.

See below for more information on the **New Custom Attribute** option.

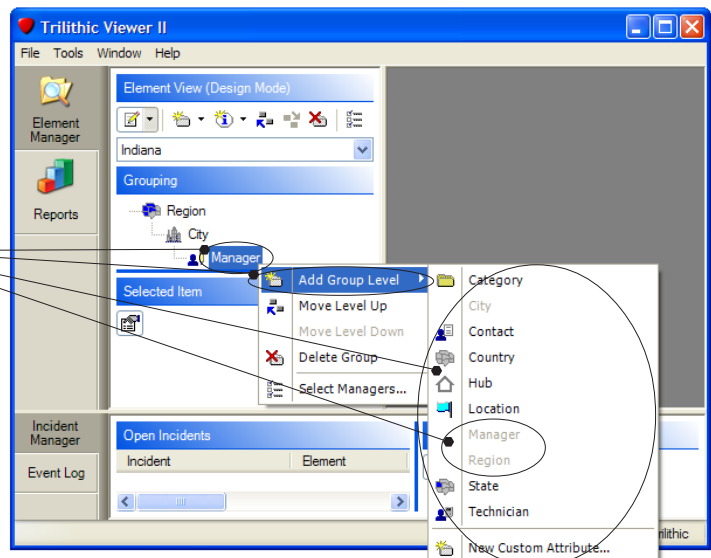


If you select **New Custom Attribute...** the following dialogue box will appear:

- 6a Type in a name for the new attribute.
- 6b This field will automatically populate. Check to make sure that the plural form is spelled correctly.
- 6c This section will remain grayed out.
- 6d Click on **OK** after you are finished.



- 7 Keep adding group levels until your tree is complete.
To add another group level, right-click on the level you previously added, choose **Add Group Level**, and then select the option you want to be the next level in your tree. Options you have already selected will be grayed out.



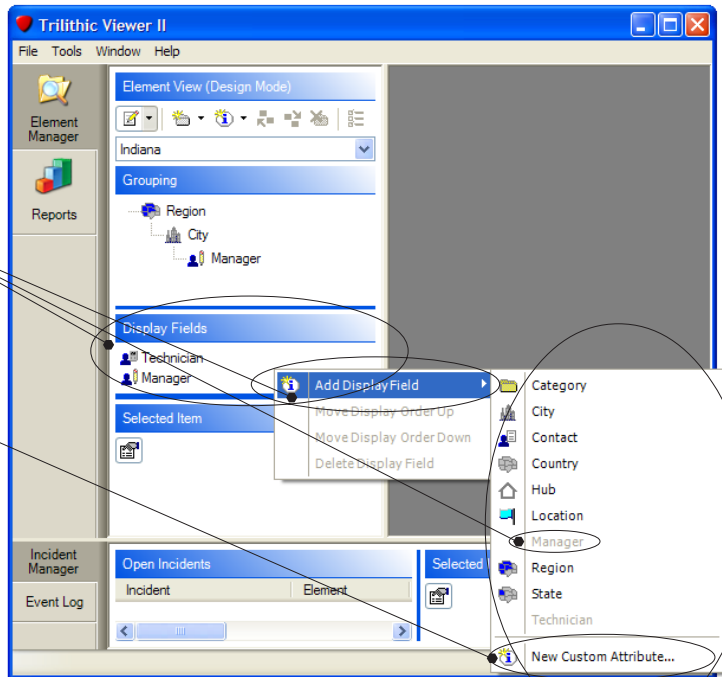
Now choose other attributes that you want to use to further identify nodes on reports and to also appear as columns in the incident manager.

Note: Only the first two attributes you choose will be shown on reports because of page size limitations.

- 7 Right-click in the **Display Fields** area, choose **Add Display Field**, and then select the appropriate attribute. Keep selecting attributes until you are finished. Attributes you have already selected will be grayed out.

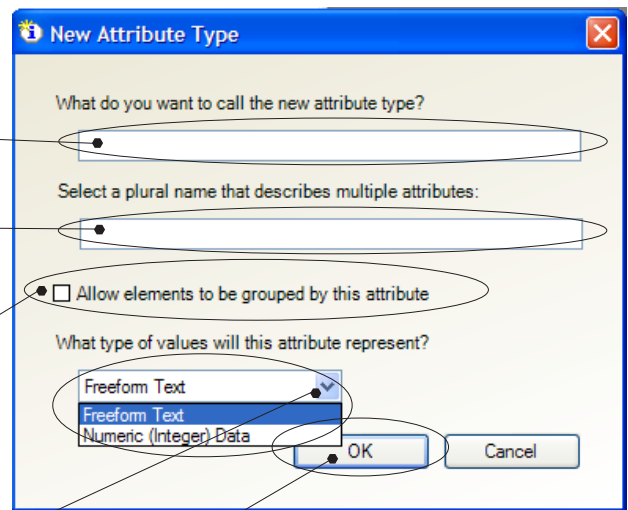
In addition to the built-in attributes, you can define any number of custom attributes for the purpose of grouping or further describing the nodes in your system.

See below for more information on the **New Custom Attribute** option.



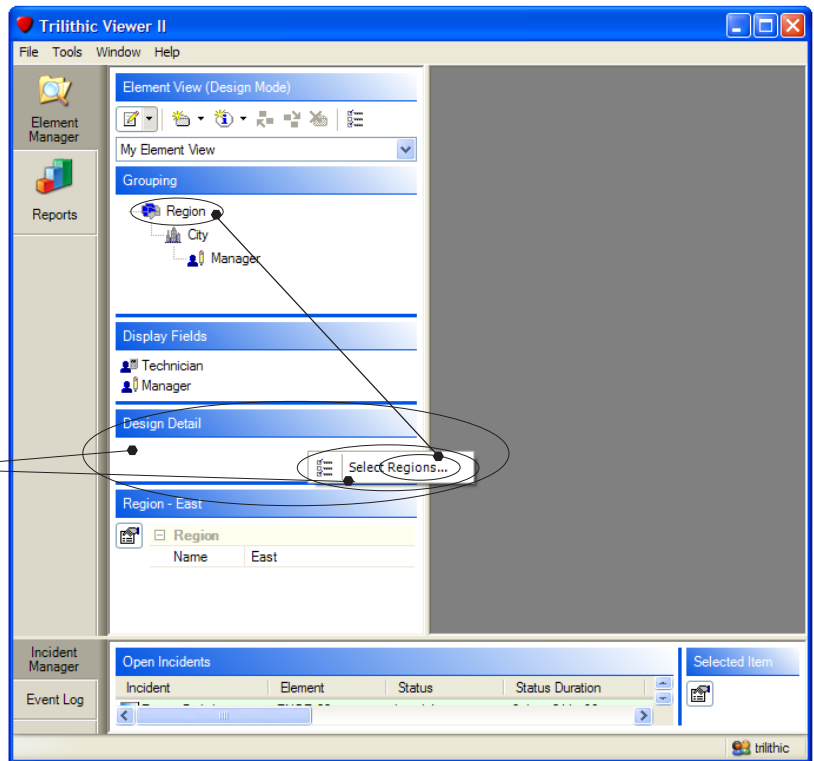
If you select **New Custom Attribute...** the following dialogue box will appear:

- 7a Type in a name for the new attribute.
- 7b This field will automatically populate. Check to make sure that the plural form is spelled correctly.
- 7c Remove the check from this box if the custom attribute you create will likely be unique for each element in your system. For example, the number of node subscribers. Leave the check if the custom attribute you create will likely be shared by groups of elements. For example, the service area.
- 7d If you remove the check in step 7c, select whether the values you enter for this attribute in the future will be **Freeform Text** or **Numeric (Integer) Data**.
- 7e Click on **OK** after you are finished.



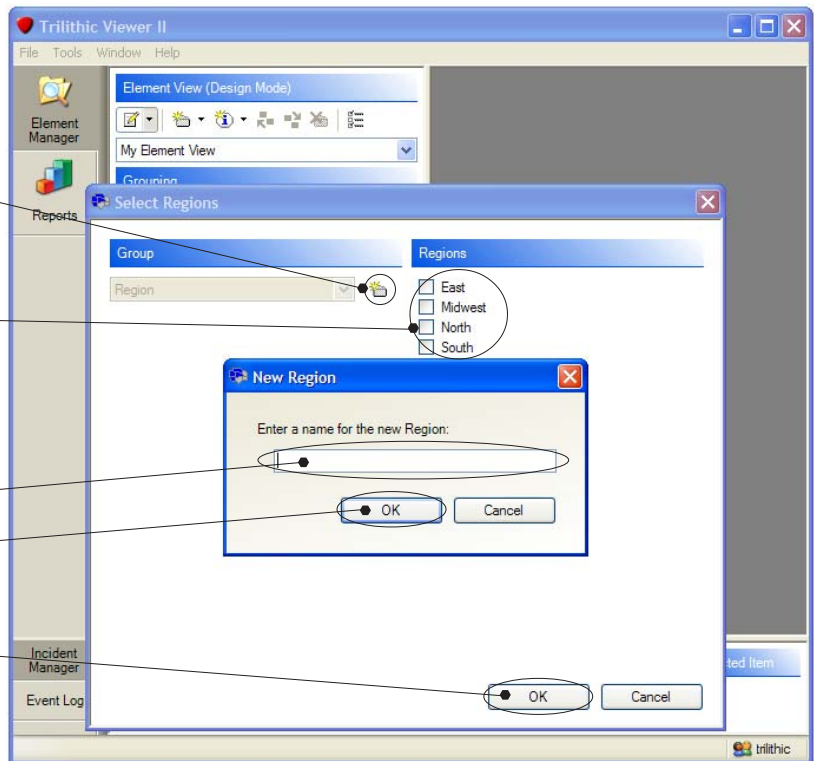
Your next step is to define your tree by specifying the attribute value(s) within your **Groupings**. This is done in the **Design Detail** field.

- 8** Right-click in the **Design Detail** box and choose the **Select...** popup box that follows. The name in the box will automatically correspond with the first name in your **Grouping** window.

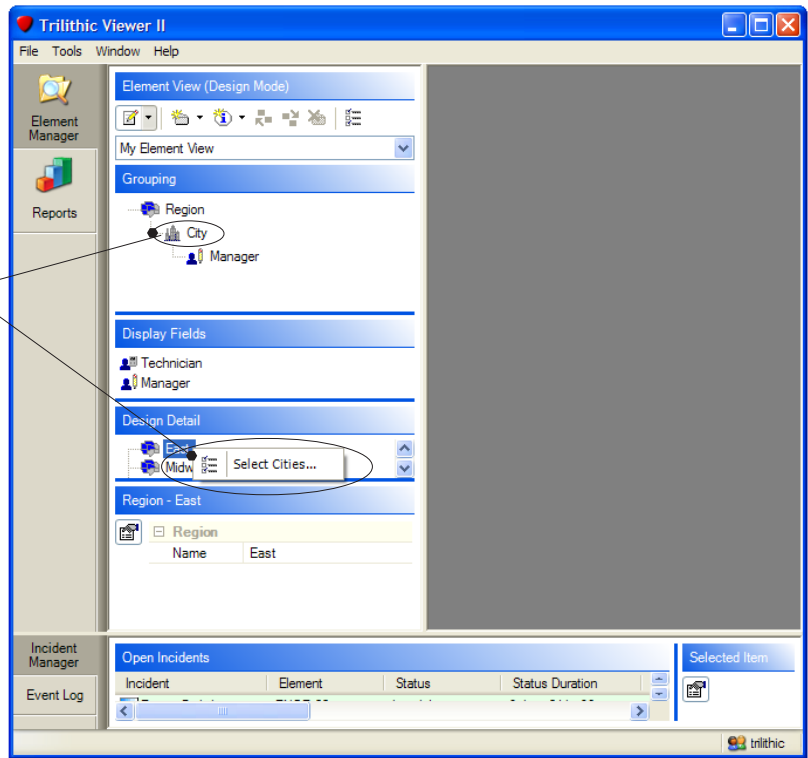


- 9** To enter a new grouping attribute, click on the **New** icon. To select a previously defined grouping attribute, place a check next to its corresponding box. If you're only adding previously defined groupings, move ahead to step 12.

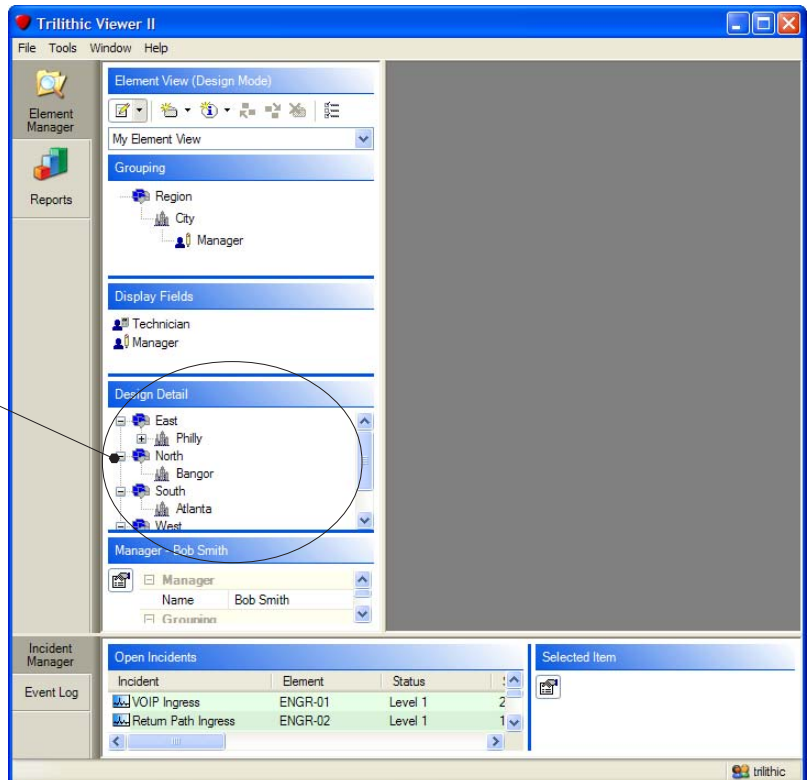
- 10** Type in a name.
11 Click on **OK**.
12 Repeat steps 9 to 11 until all names are entered. When you are finished, click on **OK**.



- 13 In the **Design Detail** field, right-click on the first design detail you entered in step 7 and choose the **Select...** popup box that follows. The name in the box will automatically correspond with the second name in the Grouping window you selected earlier.



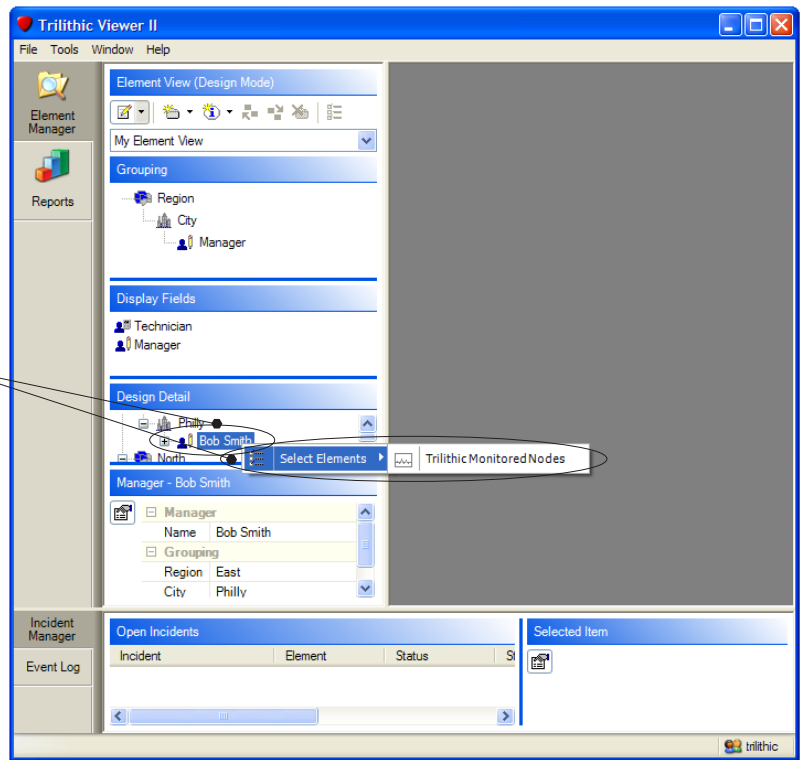
Note: Every time you add design details for a grouping, this tree will expand automatically.



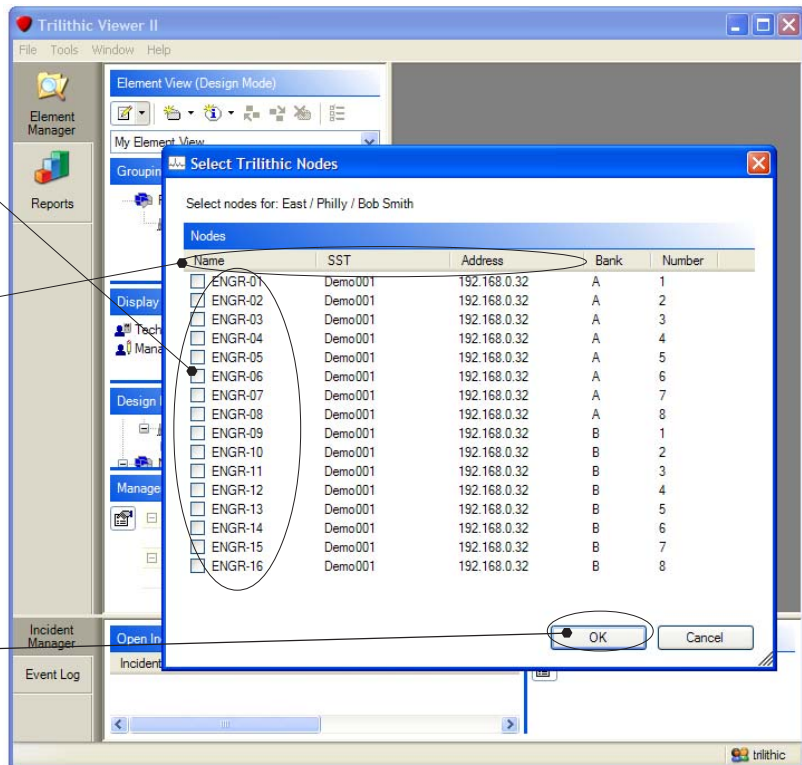
- 14 This process needs to be completed for each layer you created in the **Grouping** field. Repeat steps 9 to 12 for all group levels.

When you reach the last level in your grouping, it is time to assign nodes. When you are ready to assign nodes, continue to the next step.

- 15 In the **Design Detail** field, right-click on the last grouping layer. Choose the **Select Elements** popup box that follows and then select **Trilithic Monitored Nodes**.



- 16 Select the nodes you want to assign to the current **Grouping** by placing a check in the box next to the corresponding node. To make it easier to find the desired nodes, you can change the sorting order by clicking on the **Name**, **SST**, or **Address** column headers.



- 17 Click on **OK** when you have selected all of your nodes.

- 18 Repeat steps 15 to 17 for each bottom level group in your element view.

Now that you have assigned nodes, you can open a live view showing current node activity.

Step 6: Open a Node View

- 1 There are two ways to open a node view:
 - In the **Incident Manager** -- double-click on a node name or incident
 - In the **Element View** (while it is in display mode) -- double-click on a node name or incident

Note: You may be prompted to enter a username and password for the SST before node view will open.
- 2 To begin live update mode, click on the **Start/Stop Live Updates** button.

The screenshot displays the Trilithic Viewer II interface. The main window is titled "Trilithic Viewer II - [ENGR-04]". The interface is divided into several sections:

- Element View:** Shows a tree structure under "My Element View" with nodes for "East", "Philly", "Bob Smith", "ENGR-01", "ENGR-02", "ENGR-03", and "ENGR-04".
- Incident View:** Displays details for "ENGR-04", including "Incident" (None), "Node", "Attributes", "Spectrum View", and "Markers". The "Spectrum View" shows a graph with a green waveform on a black background, with axes ranging from -60 to 40. The graph is labeled "300 kHz RBW" and "reads".
- Incident Manager:** Shows a table of "Open Incidents" with columns for Incident, Element, Status, Status Duration, Incident Duration, and Region.
- Event Log:** Shows a table of "Open Incidents" with columns for Incident, Element, Status, Status Duration, Incident Duration, and Region.

Incident	Element	Status	Status Duration	Incident Duration	Region
VOIP Ingress	ENGR-02	Level 1	2 hr 6 min	0 min	East
Return Path Ingress	ENGR-01	Level 4	6 hr 24 min	0 min	East

Step 7: Change Node View Parameters

You can change any parameter with a bullet next to it. (For examples of bulleted parameters see **Incident**, **Start Frequency**, **Span**, etc.) To change a parameter, left-click on the field to highlight it and then (depending on the parameter) select the new data from the dropdown list, type it in or click on the up and down toggle bars.

Note: Click on this icon to hide the properties window. Click on it again to bring the window back.

- 1 Changes the incident being displayed in live view (if there is more than one).

Note: A node may only have one incident per SST profile.

- 2 Changes the appearance of the spectrum display.

Start Frequency = displays starting frequency (in MHz)

Stop Frequency = displays ending frequency (in MHz)

Center Frequency = displays center frequency (in MHz)

Span = Amount of bandwidth (X axis) of the display (in MHz)

Note: The X axis is the horizontal axis.

Ref Level = top of the graph's Y axis (in dBmV)

Low Level = bottom of the graph's Y axis (in dBmV)

Note: The Y axis is the vertical axis.

- 3 Mode determines which of the spectral traces the markers will lock to. Options are:

Live - Normal = the most recent live trace

Live - Max = the live spectrum peak hold trace

Live - Average = the live spectrum average trace

Live - Min = the live spectrum minimum hold trace

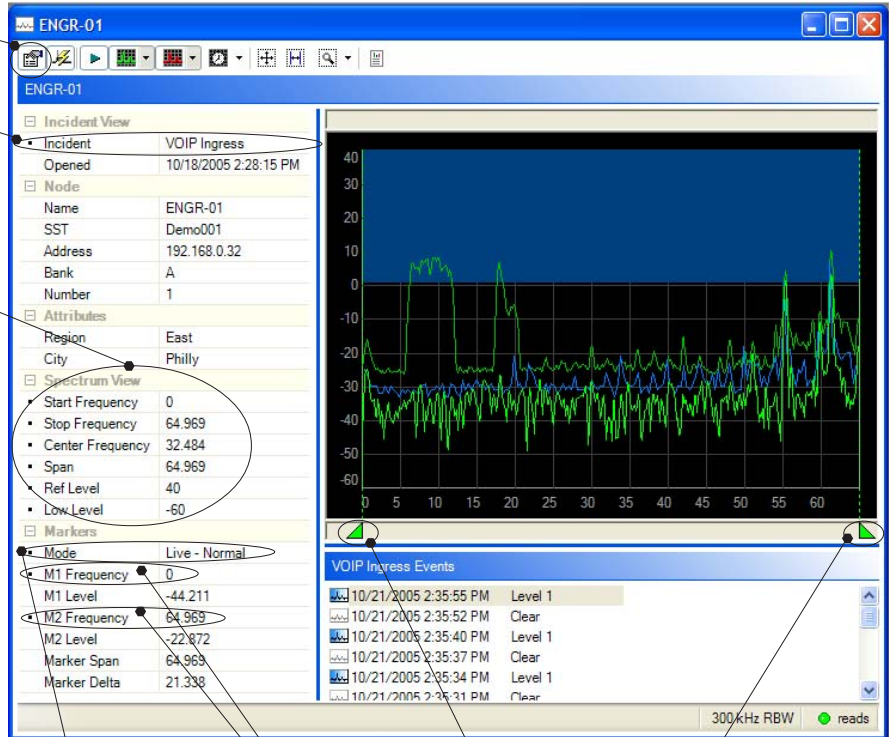
History - Max = the peak hold trace of the selected historical spectrum

History - Average = the average trace of the selected historical spectrum

History - Min = the minimum hold trace of the selected historical spectrum

Alarm = the alarm trace currently selected in the node event list

Note: If the trace corresponding to the selected marker mode isn't visible, the markers will not be visible either.



Marker 1 (M1)

Marker 2 (M1)

- 4 **M1 Frequency** = position of the first marker

M2 Frequency = position of the second marker

Note: Both markers can also be moved manually. Left-click on a marker and then drag it to the desired position.

You can also set the position of the markers by left-clicking on the graph to set the left marker, then while continuing to left-click drag the marker to the desired right marker position and let go.

M1 Level, **M2 Level**, **Marker Span** and **Marker Delta** are all determined by the M1 and M2 frequencies.

Step 8: Change the Appearance of a Node's Spectral Display

There are many ways to change how node spectra appear:

To start and stop live updates, click here.

To show or hide the live node level (green) trace, click here.

Note: If live updates have been started, they will continue to be retrieved even when the live spectrum is hidden. This allows the historical or alarm traces to be more easily viewed, while still maintaining max, average and min traces.

Selectable trace options under the dropdown arrow are:

Normal Trace = Turns on/off the live spectrum trace.

Max Hold = Turns on/off the trace showing the maximum signal value.

Average Hold = Turns on/off the trace showing the average signal value.

Min Hold = Turns on/off the trace showing the minimum signal value.

Reset All = Clears all traces on the spectrum view.

Reset Max Hold = Clears the trace showing the maximum hold signal.

Reset Average Hold = Resets the trace showing the average hold signal.

Reset Min Hold = Resets the trace showing the minimum hold signal.

30 kHz ResBW = Sets the resolution bandwidth to 30KHz.

100 kHz ResBW = Sets the resolution bandwidth to 100KHz.

300 kHz ResBW = Sets the resolution bandwidth to 300KHz.

1000 kHz ResBW = Sets the resolution bandwidth to 1000KHz.

3000 kHz ResBW = Sets the resolution bandwidth to 3000KHz.

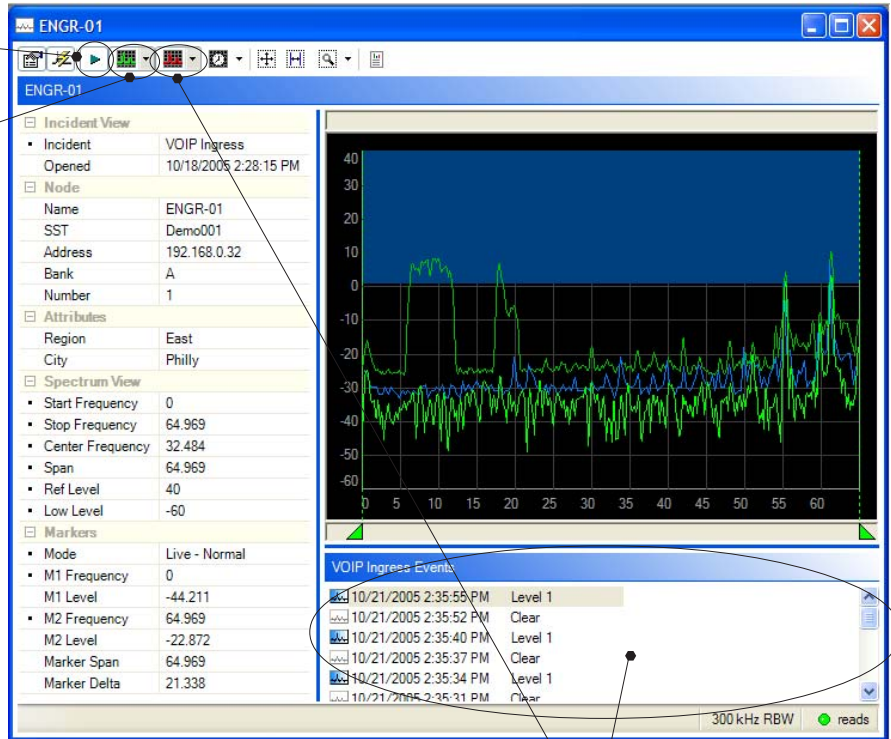
Fast Capture (375 kHz ResBW) = Turns on/off the fast capture mode that allows the SST to generate a spectrum at a 375 kHz bandwidth at about 40 samples per second.

Peak Detector = Sets the spectrum display for SST peak detection. (Used with Fast Capture mode only.)*

Average Detector = Sets the spectrum display for SST average detection.*

Traffic Detector = Sets the spectrum display to the SST's Traffic Mode.*

(*See the **SST Configure Software Operation Manual** for more information on these features.)



To show or hide the alarm trace (level 1 = blue, level 2 = yellow, level 3 = orange and level 4 = red), click here. The alarm level trace corresponds to the ingress alarm selected in the Events window.

Note: When the node view is first opened, the most recent alarm will be selected and displayed.

The selectable alarm option under the dropdown arrow is:

Hold Current Alarm = Selecting this option ensures the currently displayed alarm trace and threshold will remain visible even if new alarms are received and added to the Events window.

If this option is not selected, the spectrum display will automatically update to show new alarms as they are received.

To show or hide the node history (purple) trace, click here.

Selectable node history options under the dropdown arrow are:

Refresh = Retrieves and displays the most recent historical spectra from the SST.

Max = Turns on/off the display of the maximum (peak hold) trace of the currently selected historical spectrum.

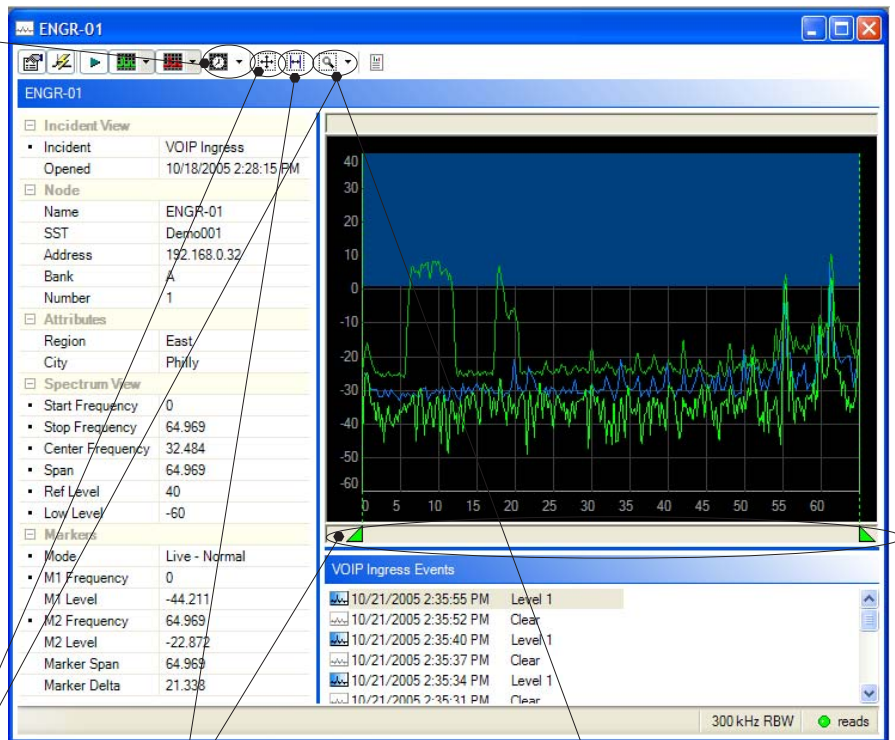
Average = Turns on/off the display of the average trace of the currently selected historical spectrum.

Min = Turns on/off the display of the minimum trace of the currently selected historical spectrum.

Under these options you will also see a list of selectable dates/times. Each of these dates/times represents a summary of spectral history for the selected node over the specific time span.

To return the live view spectrum to its default view, click here.

The default view is set in the span and zoom button to the right (it looks like a magnifying glass).



To zoom the live view spectrum display to the markers, click here.

To set the span and zoom levels, click here.

Selectable span and zoom levels under the dropdown arrow are:

Zoom Full Span (X axis) = Zooms the live spectrum to its full frequency span.

Zoom In Span (X axis) = Zooms the live spectrum display to a narrower frequency span.

Zoom Out Span (X axis) = Zooms the live spectrum display to a wider frequency span.

Frame Left = Moves the live spectrum frame to the left.

Frame Right = Moves the live spectrum frame to the right.

Zoom Full Scale (Y axis) = Zooms the live spectrum to its full db scale.

Zoom In Scale (Y axis) = Zooms the live spectrum display in to a narrower db scale.

Zoom Out Scale (Y axis) = Zooms the live spectrum display out to a wider db scale.

Frame Up = Moves the live spectrum frame up.

Frame Down = Moves the live spectrum frame down.

Save as Default View = Saves the current zoom settings as the default view.

Step 9: Manage Incidents

What is the incident manager?

The incident manager lists the most recent status of all nodes that have generated ingress alarms. It's where you keep track of the problems in your system.

The sections of the incident manager are defined below:

Click here to select the incident manager.

Displays details about the selected incident.

An incident is displayed or updated each time there is a change to the status of a node. When a new alarm is received from an SST, Viewer II checks to see if an incident has already been opened for the offending node. If it has, the incident's status will be changed to reflect the new alarm level. If an open incident doesn't already exist for the node, a new incident is created and added to the list. New incidents will be highlighted green in the incident list until they are acknowledged by a user.

Incidents will remain on this list until closed by a user. You will only see incidents from the nodes in the currently selected element view. There can only be one incident per node, per SST profile.

By default, new, unacknowledged incidents are listed at the top of the incident manager. Incidents may be sorted by any column in the incident view by clicking on the column header. Clicking on a column header one time causes incidents to be sorted in ascending order. Clicking on the same column header a second time changes the sorting to descending order.

What do the status levels mean?

Status levels are color coded and indicate the severity of an incident.

White = Clear = No alarm

Blue = Level 1 alarm = Low level alarm

Yellow = Level 2 alarm = Low medium level alarm

Orange = Level 3 alarm = High medium level alarm

Red = Level 4 alarm = High level alarm

Black = No Signal = Most severe alarm


How can incidents be managed?

Right-clicking on any incident (or group of incidents) gives you a pop-up window with the following options.

Note: Many of the incident management functions can be applied to more than one incident at a time.

To select multiple incidents, hold down your keyboard's **CTRL** key while clicking on each incident. If all the incidents you wish to select are together in a group, you can click on the first incident and then click on the last incident while holding down your keyboard's **SHIFT** key to select all incidents in between.

Once all incidents have been selected, right click on any of the selected items to display the pop-up menu shown below.



The image shows a context menu with the following options and their descriptions:

- View**: Brings up the selected incident in the node view window.
- Acknowledge**: Assigns the person currently using Viewer II as incident owner.
- Filter by Assignment**: Filters incidents by whoever acknowledged them. If you select **My Incidents** from this menu item's dropdown list, all incidents assigned to other users will be hidden. (Incidents that have not been acknowledged are still displayed.)
- Filter by Node Ingress Level**: Filters incidents by their status/alarm level. All incidents that have a status level lower than the selected level will be hidden.
- Hide Incident**: Hides an incident from the incident manager for the amount of time you select from the dropdown list.
- Restore Incident**: Restores an incident to the incident manager that was previously hidden. (**Show Hidden Incidents** must be selected to view and restore incidents that have been hidden.)
- Show Hidden Incidents**: Causes all incidents (even those filtered or hidden) to be displayed. This option may be used to temporarily locate a filtered incident without changing your filter settings, or to find and restore a hidden incident before its hidden time expires. Incidents filtered by assignment or alarm level have light gray text. Incidents hidden by a user have light purple text.
- Keep Unacknowledged Incidents On Top**: Causes all unacknowledged incidents to be displayed at the top of the incident list. (The incident sort order will stay the same within the list of unacknowledged incidents.) Selecting this option makes it easier to quickly identify and acknowledge (assign) new ingress problems.
- Close Incident**: Permanently removes the incident from the incident manager.

Why do incidents need to be closed?

Even when the status of a node has returned to clear, the node's incident will remain on the incident list until it is closed by a user.

If incidents were automatically closed and removed from the list when their status returned to clear, many intermittent ingress problems would go unnoticed. By remaining on the list, the problem can be researched by viewing alarm spectrum, historical spectrum and live spectrum. The incident can then be closed after it has been determined that the detected ingress is not likely to become problematic.

Even though the incident filtering options can be set to hide incidents that cleared, we recommend that incidents be manually closed to remove them from the incident list.

Step 10: Create and Run Node Service Reports

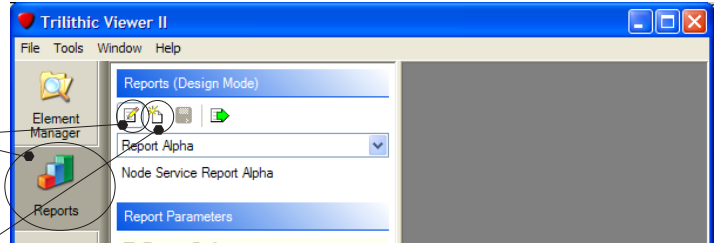
What is a node service report?

It is a summary report that shows the amount and percentage of time spent by each node at the various alarm levels.

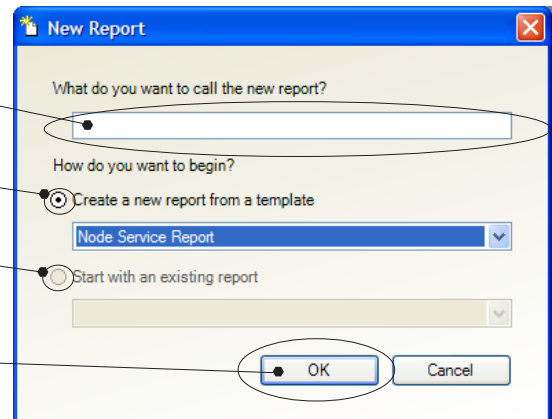
To create and run a new report, go to step 1. To run a previously created report, proceed to step 15.

If you are creating and running a new report:

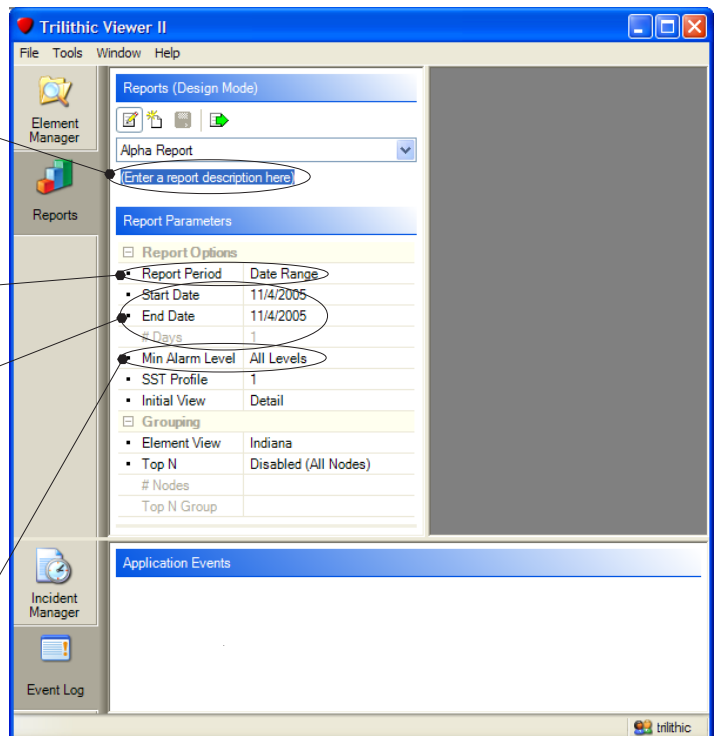
- 1 Select **Reports**.
- 2 Make sure you are in Design Mode. If you aren't click on the **Edit Report** button.
- 3 Click on this arrow and select **New...** from the dropdown list.



- 4 Type in a name for your node service report.
- 5 The first time you create a report, this will be the only bullet you can choose. After you begin saving reports, you will also be able to choose a previously created report as a template from the dropdown list.
- 6 Click on **OK**.



- 7 Type in a description of the report here.
- 8 The **Report Period** is the time frame you want the report to cover. Left-click on this field to bring up the dropdown arrow and select the appropriate **Report Period** from the list. Depending on which option you choose, you may also need to enter numbers in these fields. (The grey text will turn black when you need to do so.) You must left-click on any field first before changes can be made.
- 9 The **Min Alarm Level** is the minimum ingress alarm level to be reported. Only alarms equal to or greater than the selected level will appear on the report. Left-click on the field and select the desired alarm level from the dropdown list.

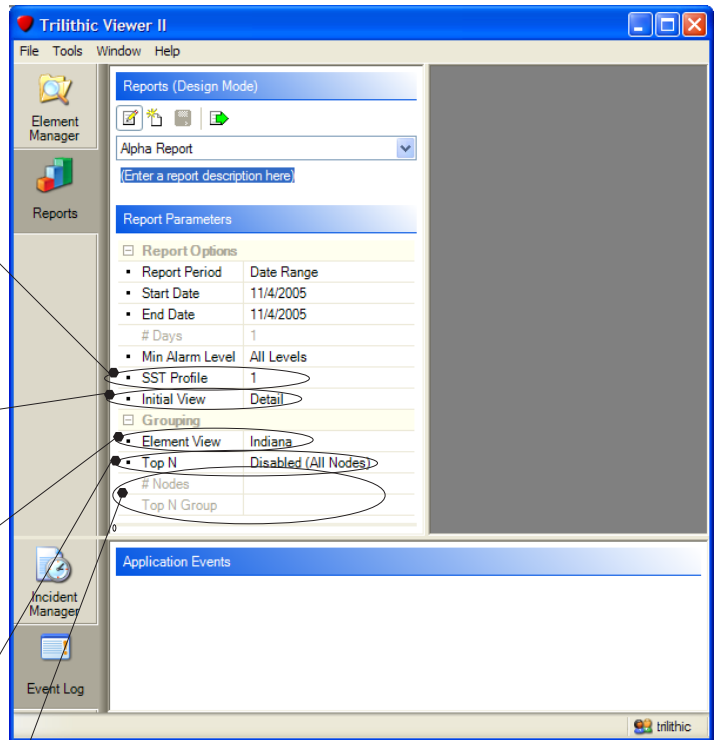


- 10 Select the numbered index of the SST Profile you created back in step 3 using the up and down bars.

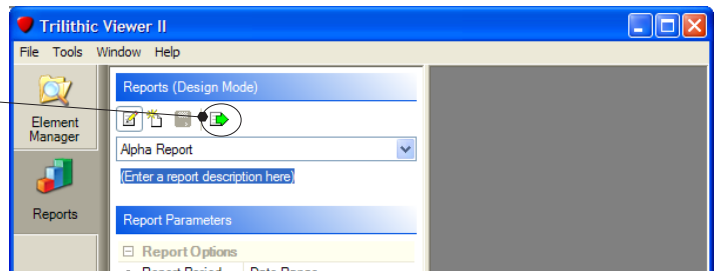
- 11 The **Initial View** determines if the report data is presented in an expanded or collapsed format. Left-click on the field and select the desired initial view from the dropdown list.

- 12 The **Element View** determines which element view will be used to group and filter the report.

- 13 **Top N** displays the worst nodes (up to the number you choose) based on percentage unavailability. Left-click on the field and select the desired option from the dropdown list. Depending on which option you choose, you may also need to put information in these fields. The grey text will turn to black when you need to do so. You must left-click on a field to highlight it before you can type in it or bring up the dropdown arrow.

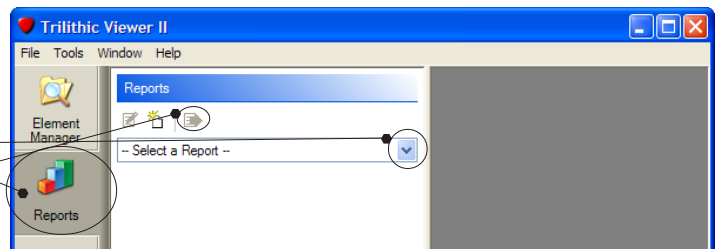


- 14 After finishing, click on the **Run Report** icon.



If you want to run a previously created report:

- 15 Select **Reports**.
- 16 Select a saved report from the dropdown list.
- 17 Click on the **Run Report** icon.



Step 11: Read Your Node Service Report

Use these arrows to go through the pages of a report.

Used to enlarge or reduce the viewing size of the report page.

Used to search for words in the report.

To export this report, select a format from the dropdown list and then click on **Export**.

To refresh a report, click here.

To print a report, click here.

The screenshot shows the TRILITHIC Guardian II Node Service report. At the top, there is a navigation bar with arrows for page navigation, a zoom level of 75%, a search box with 'Find | Next', a format dropdown menu, and buttons for 'Export', refresh, and print. The main content area includes the TRILITHIC logo, 'Guardian II', and the report title 'Node Service'. Below this, there are 'User Comments' and a 'Summary' section with details like 'Beginning: 10/11/2005 12:00:00 AM', 'Ending: 11/08/2005 12:00:00 AM', 'Report Scope: Indiana: Top 10 nodes per Region in scope', 'Minimum Alarm: All Levels', and 'Report Created: 11/07/2005'. The main data table has columns for Region, City, Node, Manager, Events, Alarm State (No Signal, Level 4, Level 3, Level 2, Level 1), and % Unavailable. A table for 'Indiana: Top 10 nodes per Region in scope' is shown below, with blue underlined links for node names and event counts. A vertical window bar on the right shows 'Report Alpha'.

To view a help file about this report, click here.

You can click on a blue, underlined node name to view a chronological list of ingress alarms.

You can click on a blue, underlined % unavailable to view a chart of percentage unavailability over time.

You can click on a blue, underlined event count to view a chart of event counts over time.

The different reports you have run during the current session appear in this window bar to the right.



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