Oracle® Communications Performance Intelligence Center

ProDiag User Guide

Release 9.0

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ORACLE®

Oracle Communications Performance Intelligence Center ProDiag User Guide, Release 9.0

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Chapter1: About This Help Text

Topics:

This user manual is designed around common tasks that you perform with the application.

Scope and Audience

This Guide is designed to assist the user in working with *ProDiag.* Beginners and experienced users alike should find the information they need to cover important administration activities required to manage *ProDiag.*

About the Performance Intelligence Center

The Performance Intelligence Center (PIC) is a monitoring and data gathering system that provides network performance, service quality and customer experience - across various networks, technologies, protocols, etc. Beyond monitoring performance and gathering data, the solution also provides analytics, actionable intelligence and potentially an intelligent feedback mechanism. It allows Service Providers to simultaneously look across the Data Link, Network, Transport and Application layer traffic to better correlate and identify the impact of network problems on revenue generating applications and services.

PIC functionality is based on the following general flow. The Integrated Message Feeder (IMF) is used to capture SS7 and SigTran traffic. The Probed Message Feeder (PMF) is used to capture both SS7 and IP traffic. Both products forward Probe Data Units (PDUs) to the Integrated xDR Platform (IXP). The IXP stores this traffic data and correlates the data into detailed records (CDRs, IPDRs, TDRs, etc.). The IXP then stores the data on the system for future analysis. The Network Software Platform (NSP) provides applications that mine the detailed records to provide value-added services such as network performance analysis, call tracing and reporting.

PIC centralized configuration tasks fall into one of two categories:

- Data Acquisition and Processing - the configuration of the probes, routing of PDUs to the xDR builder setup, KPI generation, data feeds, etc.
- PIC System Administration - the configuration of monitoring sites, configuring PIC servers, setting up permissions, etc.

Note: For more information see Centralized Configuration Manager Administration Guide. This is a graphic overview of the PIC system.

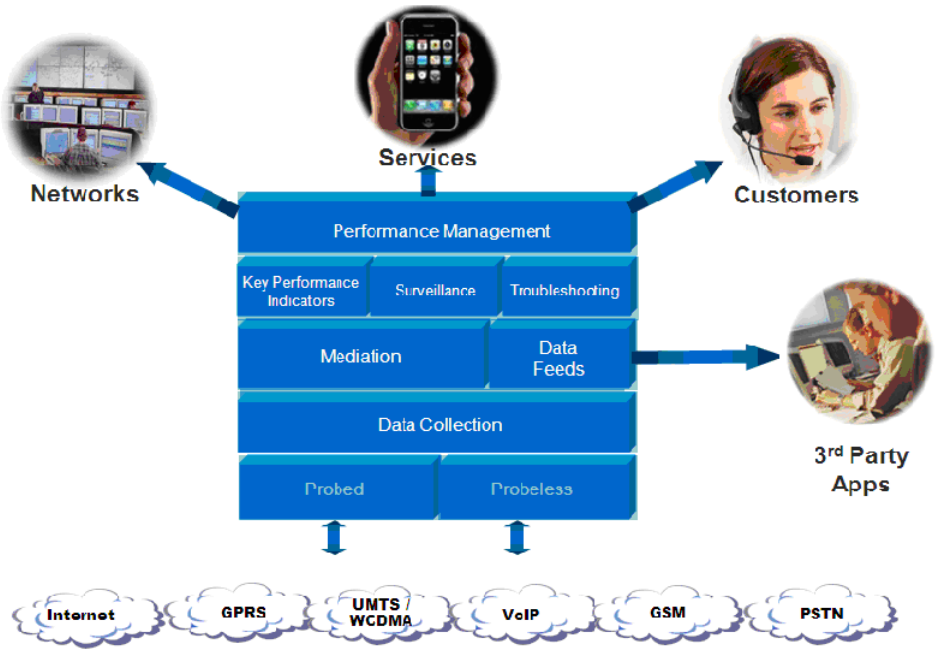


Figure 1 : PIC Overview

User Preferences

All applications that query xDRs use a specific User Preferences option. The description outlined goes over the formatting screens.

Note: All screen shots presented here show default values.

Date/Time tab screen

Format the time parameters.

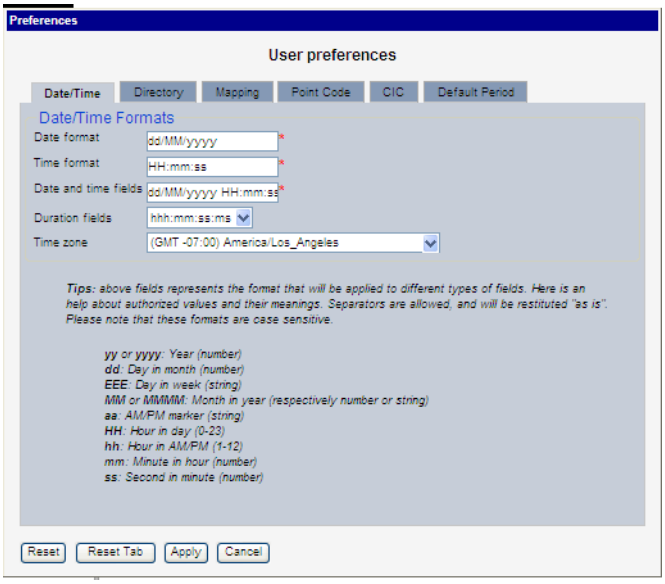


Figure 2 : Date/Time Tab Screen

Table 1 : Time Tab Screen

Field	Description
Date Format	Required field - Sets date format.
Time Format	Required field - Sets time format.
Date and time fields	Required field - Sets the date and time format.
Duration fields	Sets a duration format.
Time Zone	Pull-down list for selecting the desired time zone.
Reset Button	Resets all the tabs to default values.
Reset Tab Button	Resets to default values for the specific tab.
Apply Button	Applies any changes to the system.
Cancel Button	Exits the screen.

Directory tab

Select the **Directory** tab to set the defaults directories used in transport screen.

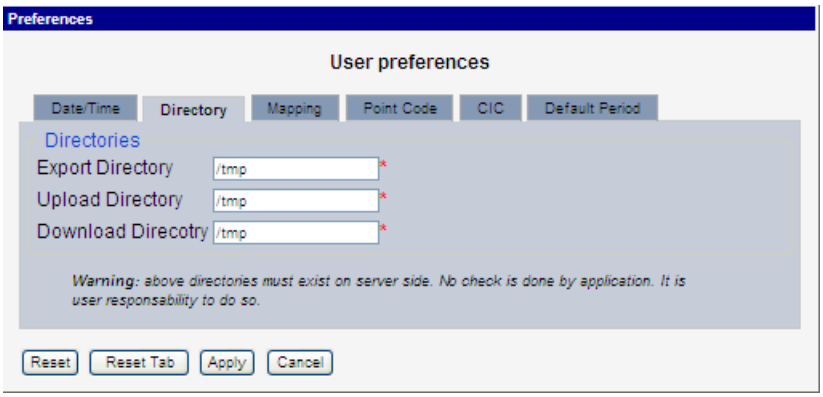


Figure 3 : Directory Tab Screen

Note: The directories must be present on the NSP server side. See warning at the bottom of the Directory tab screen.

Table 2 : Directory Tab Field Description

Field	Description
Export Directory	Enables you to set the default directory for exporting.
Upload Directory	Enables you to set the default directory for uploads.
Download Directory	Enables you to set the default directory for downloads.
Reset Button	Resets all the tabs to default values.
Reset Tab Button	Resets to default values for the specific tab.
Apply Button	Applies any changes to the system.
Cancel Button	Exits the screen.

Mapping tab

Select the **Mapping** tab to set the xDR display parameters.

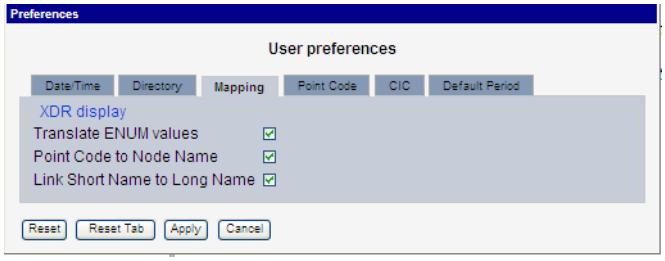


Figure 4 : Mapping Tab Screen

Table 3 : Mapping Tab

Field	Description
Translate ENUM values	Selects whether ENUM values are translated or not Default is to select ENUM values translation.
Point Code to Node Name	Select this if you want to use the Node Name instead of the Point Code name in the xDR display. Default is to use Node Name.
Link Short Name to Long Name	Selects whether you can use long name (Eagle) for linksets. Default is to use Long Name.
Reset Button	Resets all the tabs to default values.
Reset Tab Button	Resets to default values for the specific tab.
Apply Button	Applies any changes to the system.
Cancel Button	Exits the screen.

Point Code tab

Select the **Point Code tab**, shown and described in the figure and table.

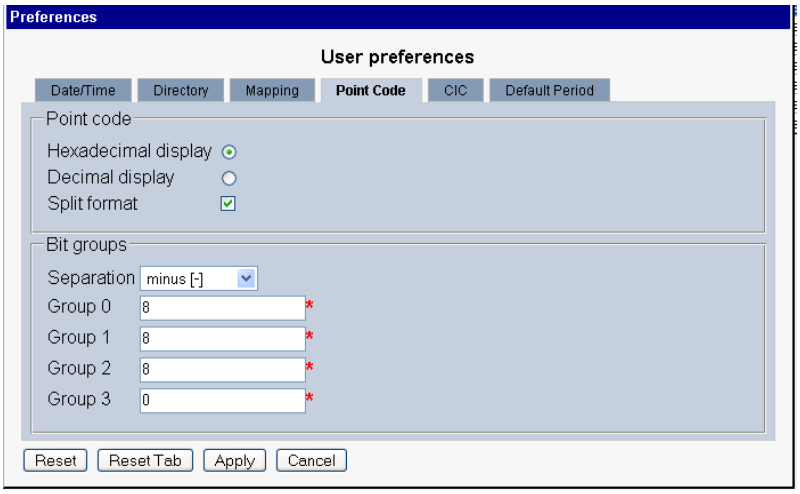


Figure 5: Point Code Tab

Note: if Session Point Code feature is enabled the Point Code tab will look like

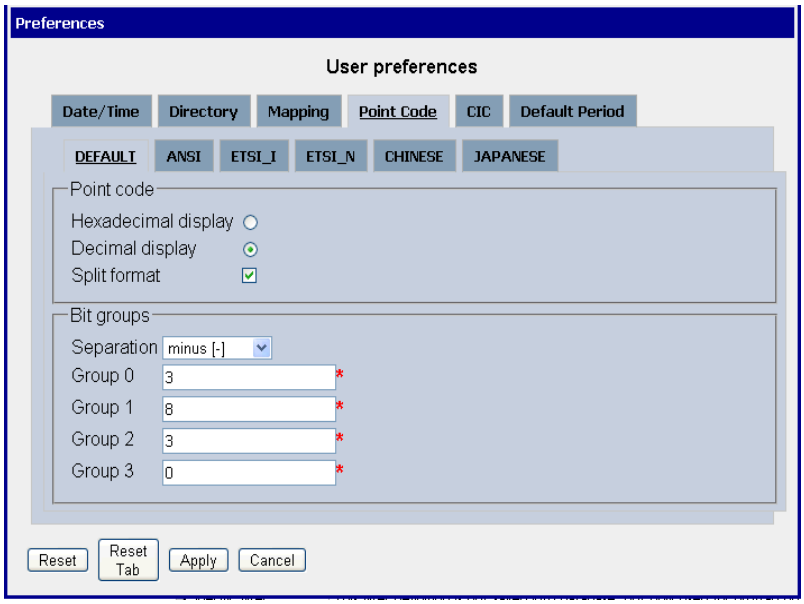


Figure 6: Point Code Tab with Session Point Code Enabled

Field	Description
Hexadecimal display	European defaults are hexadecimal and display with Group 0-3, Group 1-8, Group 2-3, Group 3-0.
Decimal display	North American defaults are decimal and display with Group 0-7 and Group 1-5.
Split format	Select or deselect Spilt format.
Separation	Select a Bit Group Separation
Group 0	Type a value. (0-7 or 1-5 see hexadecimal or decimal display)
Group 1	Type a value. (0-7 or 1-5 see hexadecimal or decimal display
Group 2	Type a value. (0-7 or 1-5 see hexadecimal or decimal display)
Group 3	Type a value. (0-7 or 1-5 see hexadecimal or decimal display)
Reset Button	Resets all the tabs to default values.
Reset Tab Button	Resets to default values for the specific tab.

Apply Button	Applies any changes to the system
Cancel Button	Exits the screen.

Table 4 : Point code Tab

CIC tab

Select the CIC tab to set the parameters for CIC and Bit groups.

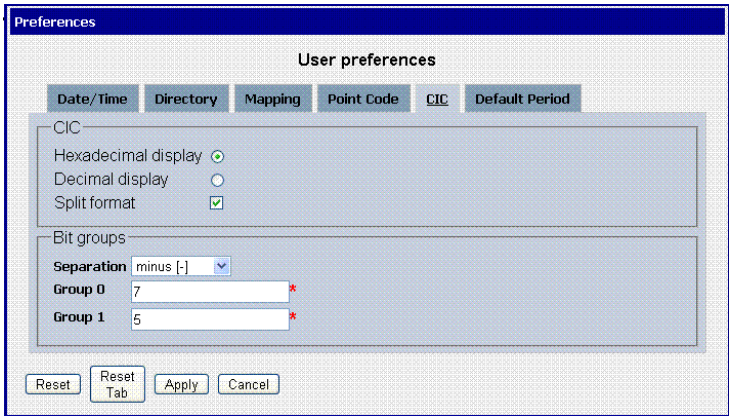


Figure 7: Formatting Rules (CIC) Screen

Field	Description
Hexadecimal display	European defaults are hexadecimal and display with Group 0-7 and Group 1-5.
Decimal display	European defaults are hexadecimal and display with Group 0-7 and Group 1-5.
Split format	Select or deselect **Split format.**
Separation	Select a **Bit Group Separation:** Group 0:8, Group 1:8 .
Group 0	Type a value. (0-7 or 1-5 see hexadecimal or decimal display)
Group 1	Type a value. (0-7 or 1-5 see hexadecimal or decimal display)
Reset Button	Resets all the tabs to default values.
Reset Tab Button	Resets to default values for the specific tab.
Apply Button	Applies any changes to the system.
Cancel Button	Exits the screen.

Table 5 : CIC Tab Field Descriptions

Default Period tab

Select the **Default Period tab**, for setting the default time period for beginning and ending time for traces (ProTrace only).

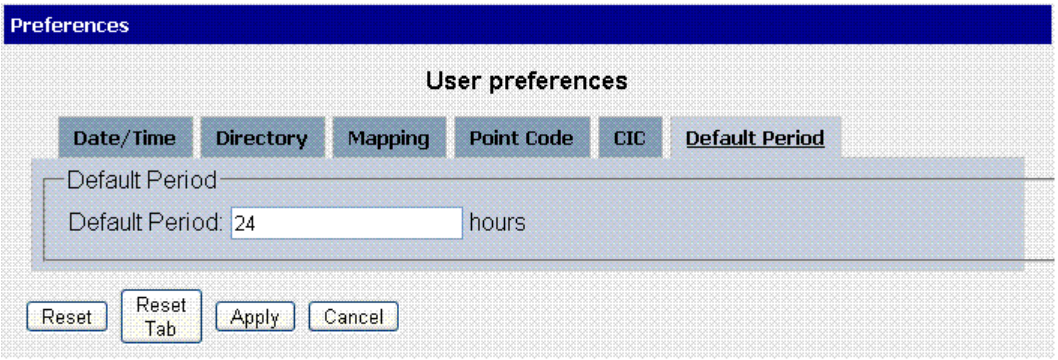


Figure 8: Default Period Tab Screen (ProTrace only)

Table 6 : Default Period Tab Field Descriptions

Field	Description
Default Period (in hours)	Sets the default run time period for running traces. Default is 24 hours. Range 1-7200
Reset Button	Resets all the tabs to default values.
Reset Tab Button	Resets to default values for the specific tab.
Apply Button	Applies any changes to the system.
Cancel Button	Exits the screen.

After setting the formatting parameters, click Next to move to the next screen in the wizard.

Customer Care Center

The Tekelec Customer Care Center is your initial point of contact for all product support needs. A representative takes your call or email, creates a Customer Service Request (CSR) and directs your requests to the Tekelec Technical Assistance Center (TAC). Each CSR includes an individual tracking number. Together with TAC Engineers, the representative will help you resolve your request.

The Customer Care Center is available 24 hours a day, 7 days a week, 365 days a year, and is linked to TAC Engineers around the globe.

Tekelec TAC Engineers are available to provide solutions to your technical questions and issues 7 days a week, 24 hours a day. After a CSR is issued, the TAC Engineer determines the classification of the trouble. If a critical problem exists, emergency procedures are initiated. If the problem is not critical, normal support procedures apply. A primary Technical Engineer is assigned to work on the CSR and provide a solution to the problem. The CSR is closed when the problem is resolved.

Tekelec Technical Assistance Centers are located around the globe in the following locations:

Tekelec - Global

Email (All Regions): support@tekelec.com •

USA and Canada

Phone:

1-888-FOR-TKLC or 1-888-367-8552 (toll-free, within continental USA and Canada)

1-919-460-2150 (outside continental USA and Canada) TAC Regional Support

Office Hours:

8:00 a.m. through 5:00 p.m. (GMT minus 5 hours), Monday through Friday, excluding holidays •

Caribbean and Latin America (CALA) Phone:

USA access code +1-800-658-5454, then 1-888-FOR-TKLC or 1-888-367-8552 (toll-free) TAC

Regional Support Office Hours (except Brazil):

10:00 a.m. through 7:00 p.m. (GMT minus 6 hours), Monday through Friday, excluding holidays

- **Argentina**

  Phone:

  0-800-555-5246 (toll-free)

- **Brazil**
  Phone:

  0-800-891-4341 (toll-free)
  TAC Regional Support Office Hours:

  8:30 a.m. through 6:30 p.m. (GMT minus 3 hours), Monday through Friday, excluding holidays

- **Chile**
  Phone:

1230-020-555-5468

- **Colombia**
  Phone:
  1- 800-912-0537
- **Dominican Republic**
  Phone:
  1-888-367-8552
- **Mexico**
  Phone:
  001-888-367-8552
- **Peru**
  Phone:
  0800-53-087
- **Puerto Rico**
  Phone:
  1-888-367-8552 (1-888-FOR-TKLC)
- **Venezuela**
  Phone:
  0800-176-6497

- **Europe, Middle East, and Africa**
  Regional Office Hours:
  8:30 a.m. through 5:00 p.m. (GMT), Monday through Friday, excluding holidays
  - **Signaling**
    Phone:
    +44 1784 467 804 (within UK)
  - **Software Solutions**
    Phone:
    +33 3 89 33 54 00

- **Asia**
  - **India**
    Phone:
    +91 124 436 8552 or +91 124 436 8553
    TAC Regional Support Office Hours:

10:00 a.m. through 7:00 p.m. (GMT plus 5 1/2 hours), Monday through Saturday, excluding holidays

- **Singapore**

  Phone:

  +65 6796 2288
  TAC Regional Support Office Hours:

  9:00 a.m. through 6:00 p.m. (GMT plus 8 hours), Monday through Friday, excluding holidays

PIC Documentation Library

PIC customer documentation and online help are created whenever significant changes are made that affect system operation or configuration. Revised editions of the documentation and online help are distributed and installed on the customer system. Consult your NSP Installation Manual for details on how to update user documentation. Additionally, a Release Notice is distributed on the Tekelec Customer Support site along with each new release of software. A Release Notice lists the PRs that have been resolved in the current release and the PRs that are known to exist in the current release.

Listed is the entire PIC documentation library of user guides.

- Security User Guide
- Alarms User Guide
- ProAlarm Viewer User Guide
- ProAlarm Configuration User Guide
- Centralized Configuration Manager Administration Guide
- Customer Care User Guide
- Alarm Forwarding Administration Guide
- Diagnostic Utility Administration Guide
- ProTraq User Guide
- ProPerf User Guide
- ProPerf Configuration User Guide
- System Alarms User Guide
- ProTrace User Guide
- Data Feed Export User Guide
- Audit Viewer Administration Guide
- ProDiag User Guide
- SigTran ProDiag User Guide
- Report Server Platform User Guide
- Reference Data User Guide
- Exported Files User Guide
- Scheduler User Guide
- Quick Start User Guide

Locate Product Documentation on the Customer Support Site

Access to Tekelec's Customer Support site is restricted to current Tekelec customers only. This section describes how to log into the Tekelec Customer Support site and locate a document. Viewing the document requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the *Tekelec Customer Support* site.

   Note: If you have not registered for this new site, click the **Register Here** link. Have your customer number available. The response time for registration requests is 24 to 48 hours.

2. Click the **Product Support** tab.
3. Use the Search field to locate a document by its part number, release number, document name, or document type. The Search field accepts both full and partial entries.
4. Click a subject folder to browse through a list of related files.
5. To download a file to your location, right-click the file name and select **Save Target As.**

Chapter2: Getting Started with ProDiag

Topics:

This topic presents an overview of the various methods available, depending on the features installed, for using the ProDiag application. The ProDiag application is built to integrate into the Performance Intelligence Center (PIC). ProDiag functions using the Network View context and provides the capability to view overall status of nodes as well as to drill down to individual links

Introduction to ProDiag

ProDiag is an application used by users with the roles NSPBusinessUser, NSPBusinessPwrUser and NSPBusinessUser to query or view link information from the site collectors, namely IMF and PMF servers using Low Speed Links (LSLs) and High Speed Links (HSLs). Functioning as a near real-time application, ProDiag indicates status of nodes, linksets and links that make up a network. This description provides a overview of the ProDiag application.

Note: ProDiag monitorsonZy SS7 links.

ProDiag application is built to integrate into NSP Platform. The ProDiag application functions on a Network View context. ProDiag provides the capability to view overall status of nodes as well as to drill down to individual links.

The privileges assigned to each business user role are listed here.

Feature-Authority	NSPBusiMgr	NSPBusiPwrUser	NSPBusiUser
View Counters	**x**	**x**	**x**
Reset Counters	**x**		

Logging into Prodiag

Complete these steps to open the Prodiag application.

Note: Reference Data is an application that runs on NSP, it must be opened from the NSP application board.

1. Using a Web browser, type In the IP Address of the NSP *Server.*

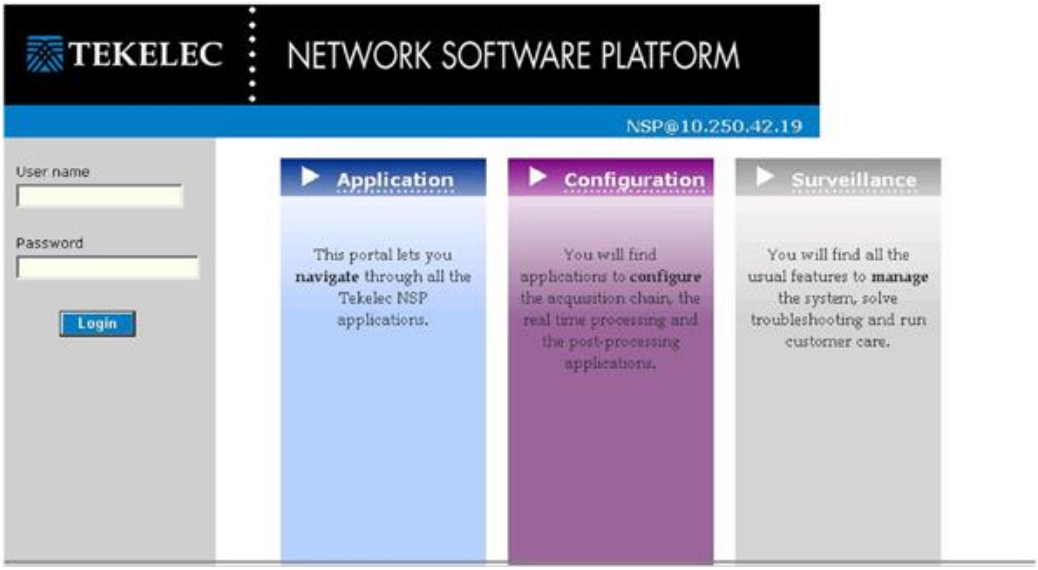
Note: NSP only supports versions of IE 7.0 or later and Firefox 3.6 or later. Before using NSP, turn off the browser pop up blocker for the NSP site.

Note: Contact your system administrator to obtain the IP address for the NSP *Server.*

Note: Reference Data runs on a Web interface and uses an IP address to access the NSP platform. The URL can be saved in the Favorites list on your browser.

The NSP *login* screen opens shown here.

Figure 9 : NSP Portal Login Screen



2. Log into NSP by typing:

   a) **Your Userid**

   b) **Your Password**

   Note: Check with your system administrator for your userid and password.

   The NSP *Application Board* opens.

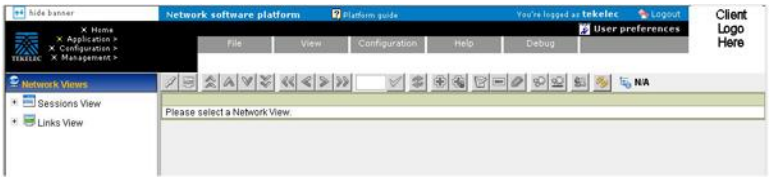


Figure 10 : ProDiag Welcome Screen

3. Click the **SigTran Prodiag** icon to open the *Prodiag Welcome* page shown here.

ProDiag User Interface

ProDiag allows you to view near-real-time status and statistics on the various links that make up your network. This application is designed to start with a context of a Network View. A Network View is a logical representation of the network configured by your System Administrator using Centralized Configuration Manager. The Network View is created as a collection of nodes (linksets and links) or xDR storage sessions.

Note: For proper monitoring and viewing, the correct version and configuration of Adobe Flash Player Plugin and Internet Explorer must be loaded on the system. (The system must have IE 7 and Flash Player 10 or later.) Please check with your Tekelec Authorized representative.

Note: Network Elements associated with IMF must be synchronized through the Centralized Configuration Manager (CCM). For more information about CCM, see the Centralized Configuration Manager Administration Guide or contact your system administrator.

This section describes the *ProDiag*screen.

- Object Tree - located on the left-hand section shows the nodes, linksets and links located on the system.
- Work area - located on the right-hand section provides an area to:

  - Toolbar- for manipulating element functions
  - Table - provides a graphic means of viewing elements in tabular form.

Note: All screens are configurable and allow for different table layouts (column layout button). Tables can be minimized or maximized so that the desired table can always be viewed. Record columns can to be re-arranged (by drag and drop) and sort order (ascending or descending) is changed by clicking on the column heading.

Object Tree

The object tree provides a graphic representation of the nodes, linksets and links in the system as well as the node type (SS7, GBRS, IP). The tree can be expanded or collapsed by clicking (**+)** or (**-)** to the left of the icon. *Figure 10 : ProDiag Welcome* Screen shows an expanded object tree showing nodes with link sets, links and link type.

Note: While you can view SS7, GBRS and IP nodes in the object tree, ProDiag monitoring functionality is designed only for SS7 links.

Note: ProDiag is capable of monitoring up to 1000 network links with no impact on performance.

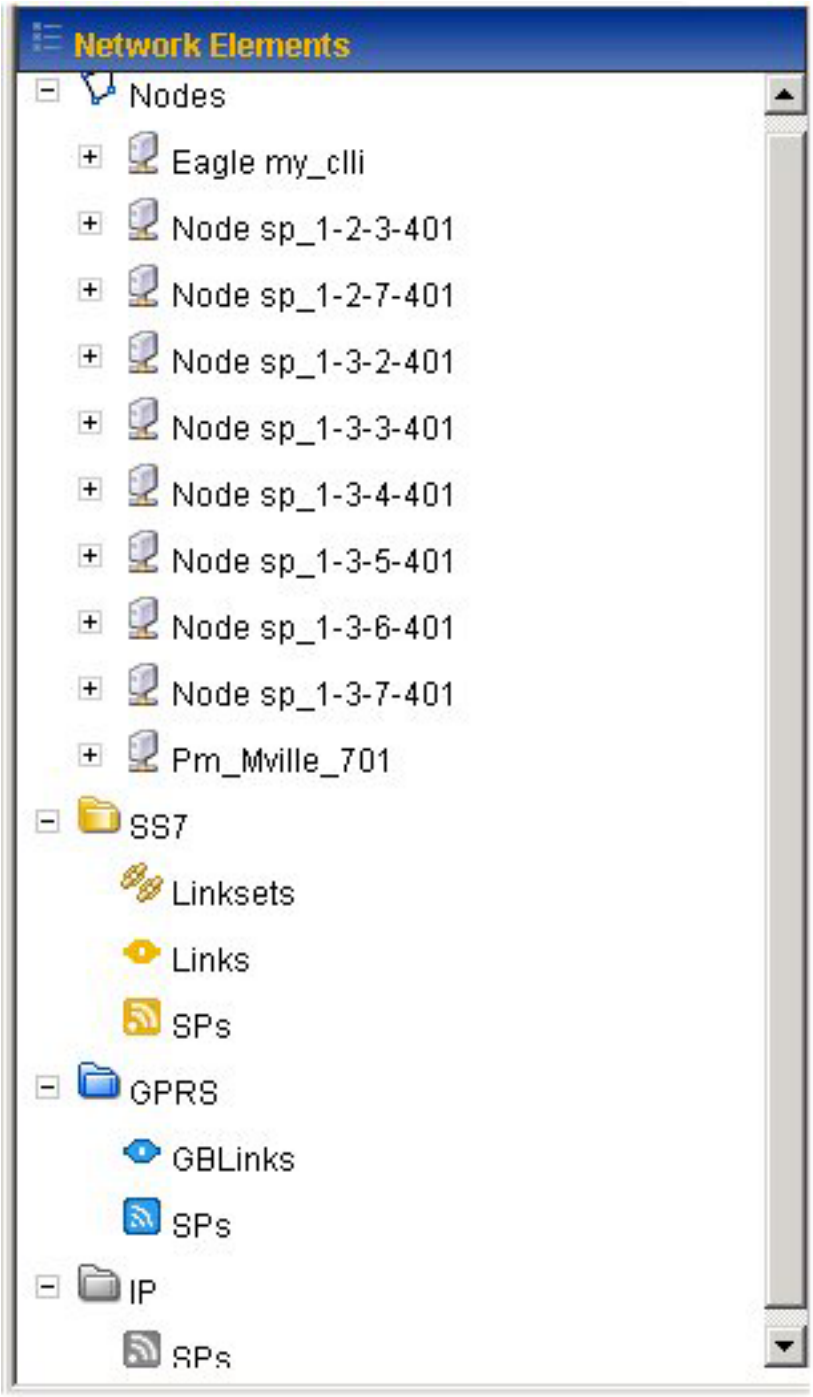
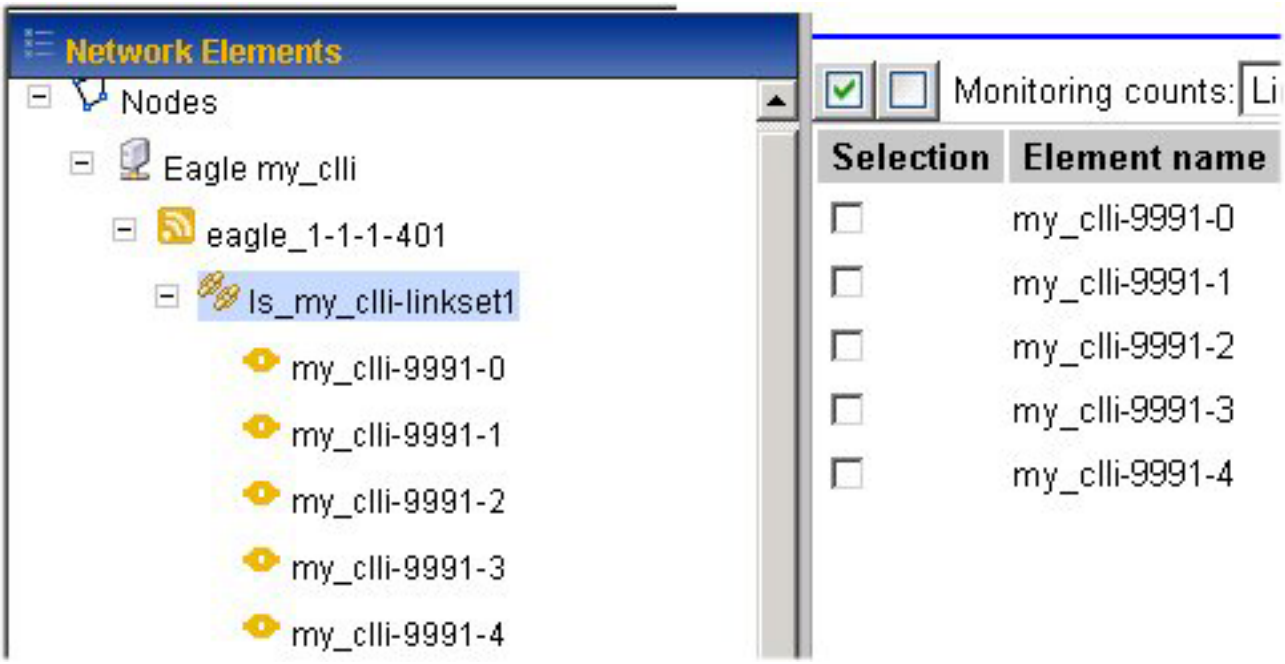


Figure 11 : Expanded Object Tree

Selecting an object opens all the elements that belong to that object in the work space. *Figure 12 : Object Tree With Linkset Selected Links In Workspace* shows the object tree with the *link set Is_my_cili-linkset1* selected and all the *links* belonging to that node listed in the *Workspace* section.

Figure 12 : Object Tree With Linkset Selected Links In Workspace



Toolbar

The ProDiag toolbar is shown in *Figure 13 : ProDiag* Toolbar

Figure 13 : ProDiag Toolbar

The toolbar is composed of seven buttons.

Select All - selects all elements

Select None - clears all elements that have been selected

Monitoring Counts list - enables you to select what type of element you are monitoring:

- Link status - monitors the status of a link(s) (see *Status Table Node and Linkset Column Headings ")*
- Link state - monitors the state of a link(s) (see *Status Table Node and Linkset Column Headings")*
- NetMgmt Transfer Signals - monitors the transfer information (see ***NetMgmt transfer signals Column Headings")***
- NetMgmt Signal Route - monitors the route information (see *NetMgmt signal Route Column Headings")*
- NetMgmt Others - monitors other information (see *NetMgmt others Column Headings")S*

 Start Table Monitoring - opens a new page and displays the monitored element(s) in tabular format

 Start Chart Monitoring - opens a new page that displays the charted status of all the selected elements

 Save as Favorite - saves selected element as a “favorite” to be stored in the system. For more information about saving favorites, see How to Create Favorites”

 Load Favorites- shows all the saved local elements selected as favorites that are stored in the system. For more information on using saved element lists, see *How to Load Saved Favorites*

 Reset Counts - resets all counters displayed on Link State to zero (only functional to users with role NSPConfigManager).

 Reset Selected Counts - resets only selected counts displayed on the Link Status to zero (only functional to users with role NSPConfigManager).

Note: For link state the counters displayed continuously increment from the time of system set up from the last time the reset button was selected.

Element Table

The ProDiag table is divided into columns to show pertinent information on node elements. *Figure 14 : ProDiag Work Area* Section is an example of the *ProDiag* table layout.

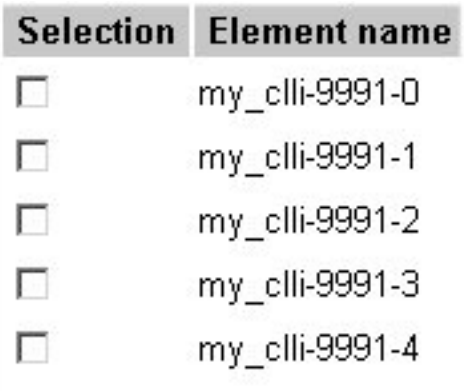


Figure 14 : ProDiag Work Area Section

The *Work area table* has two columns:

- Selection - that provides a check box for selecting the Element.
- Element name - that shows the Element (node/linkset/link) name.

When you select a monitoring option and open a element, a separate page opens that shows all the pertinent information of that element (node/linkset/link) the five figures shown below show the tabular form of each of the monitoring modes of *Start Status Start State, NetMgmt Transfer Signals, NetMgmt Signal Route and NetMgmt Other.*

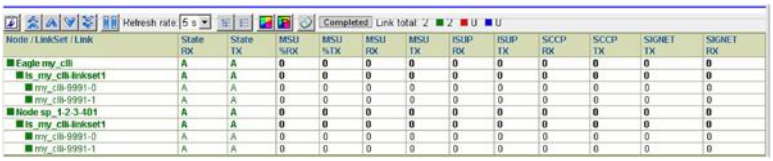


Figure 15 : Element Table- Link Status

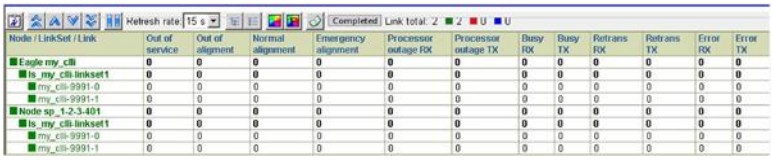


Figure 16 : Element Table- State Status

Figure 17 : Element Table- NetMgmt Transfer Signal

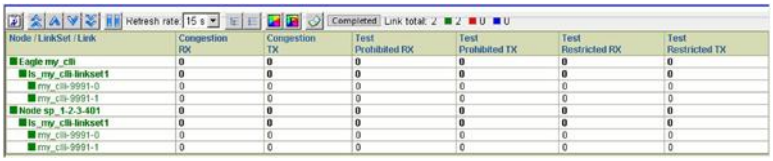


Figure 18 : Element Table - NetMgmt Signal Route

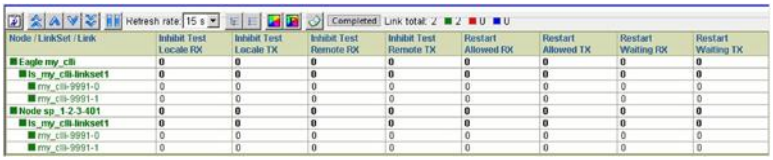


Figure 19 : Element Table - NetMgmt Other

These tables provide the pertinent status or state information for the node, linkset, or link selected.

Note: All these screens are discussed in section *Table Layout and Column Descriptions."*

Elements opened from the Welcome page appear in a separate page. To close an element, you need to close the page. Each user can have up to 10 monitoring sessions open at one time.

Note: The maximum number of sessions that can be opened by a user is ten. The actual number of sessions that can be opened is defined by Tekelec Authorized Personnel.

Chapter 3: Working In ProDiag

Topics:

This chapter provides information on ProDiag's features for monitoring Nodes, Linksets and Link status and state. Subjects covered are:

- Monitoring node, linkset and link status and state
- Charting node, linkset and link status
- Displaying network levels
- Customizing colors
- Linking from ProAlarm

Overview

This chapter provides information on ProDiag's features for monitoring *Node, Linkset and* Link status and state. This chapter will cover:

- Monitoring node, linkset and link status and state
- Charting node, linkset and link states
- Displaying network levels
- Customizing colors
- Linking from ProAlarm

Working with Network Elements

Network elements refer to customer network SS7 elements such Nodes or Singnaling Points, Linksets and Links that are monitored by the IAS system.

Element Selection

Initially, ProDiag opens with the object tree collapsed shown in *Figure 20 : Initial Page Setting*.

Figure 20 : Initial Page Setting

You can open any element within in the *Network View* (node, linkset or link). All levels of the *Network View* can be displayed in the object tree (see *Figure 21 : Selecting Level To Display* Sublevel*)* by expanding or collapsing the object tree. When you select an element in the object tree, all the children of that element are displayed in the *work* section table shown in *Figure 21 : Selecting Level To Display* Sublevel

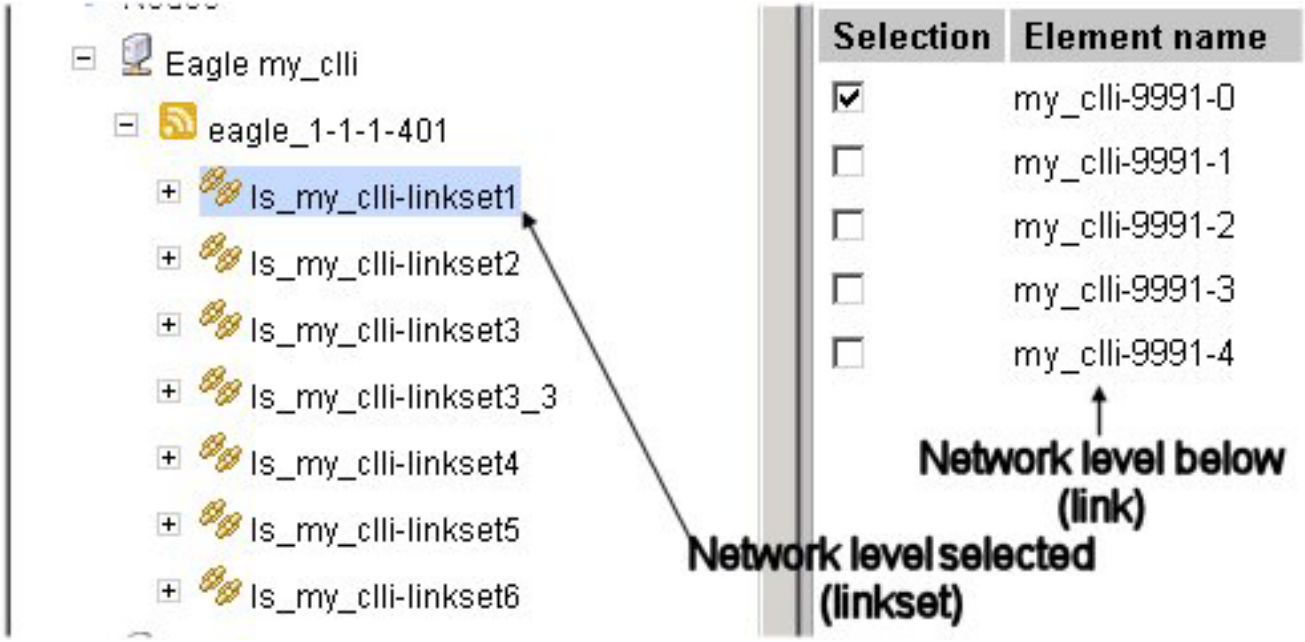


Figure 21 : Selecting Level To Display Sublevel

How to Open an Element

All elements are opened from the *workspace* section table. Complete these steps to open a element.

1. Select parent **level** in the object tree.
2. Select one or more **element(s)** using the *selection* boxes in the *Selection* column shown in *Figure 22 : Selected Element To Be* Opened.

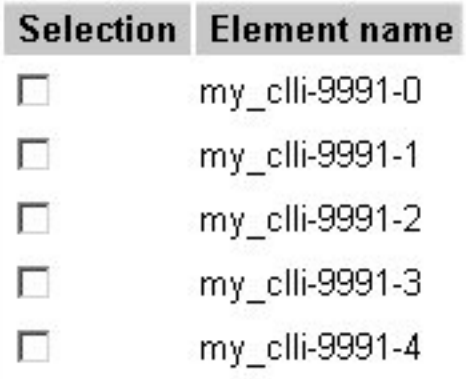


Figure 22 : Selected Element To Be Opened

(In this example, links are shown.)

3. Click either **Start Status** or **Start State** (depending on the procedure).

The element page opens in expanded format shown in *Figure 23 : Opened Element Page*

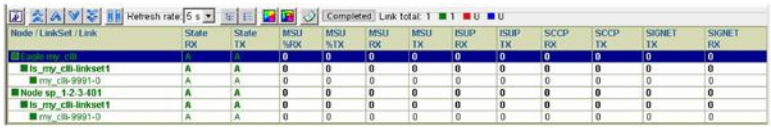


Figure 23 : Opened Element Page

4. Click the **node or linkset row** to expand or contract the element to the level below or just to show that level.

How to Create Favorites

If you work with specific elements (specific nodes, linksets or links) you can save them as Favorites.

Complete these steps to save specific groups as Favorites.

1. Select the **Network Element(s)** from the work space that you want to save by clicking in the desired **box** in the Selection column.

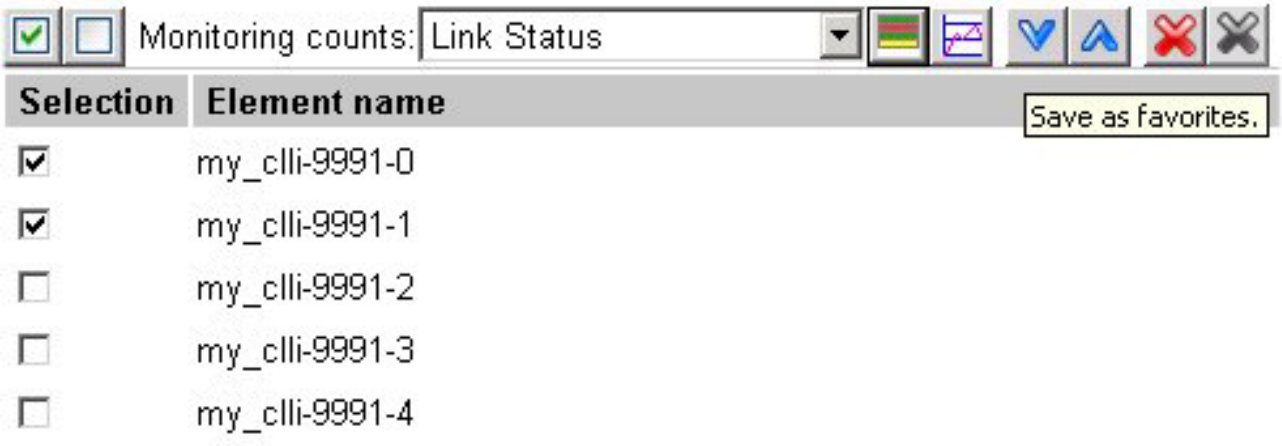


Figure 24 : Selected Network Elements

2. Click **Save as favorites** (downward-facing arrow located on the toolbar).

The *Select favorite element list* screen opens.

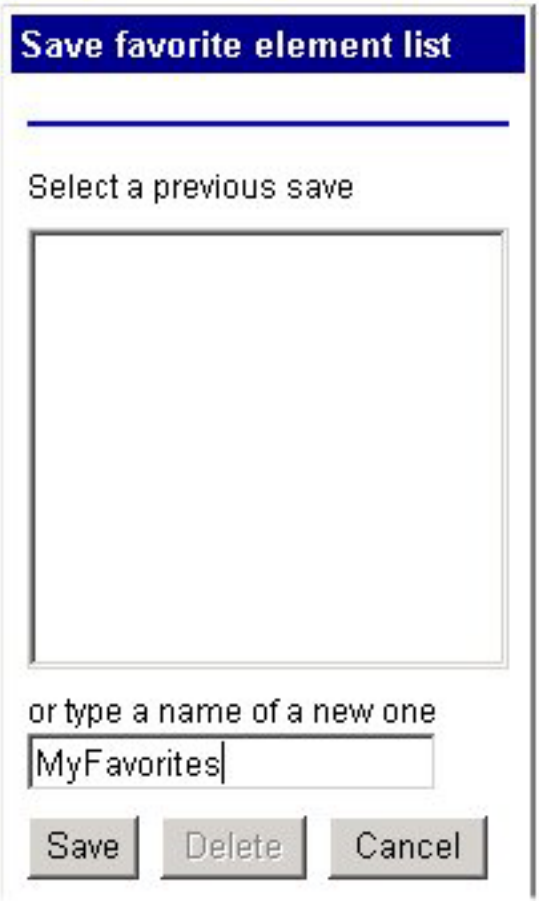


Figure 25 : Select Favorite Element List Screen

3. Type in the **Name** of the list.
4. Click **Save.**

   A message appears in the top of the page stating that the list was saved.

How to Load Saved Favorites

Complete these steps to open a list of elements saved in the favorites list.

Note: If nodes have been deleted in CCM they will not appear in the list.

1. Click **Load favorites** (upward facing arrow located on the toolbar).
The *Load favorites list* opens shown below.

Figure 26 : Load Favorite List

2. Select an **Element List.**
3. **Click Load.** The work space opens showing the element list with the selections present.

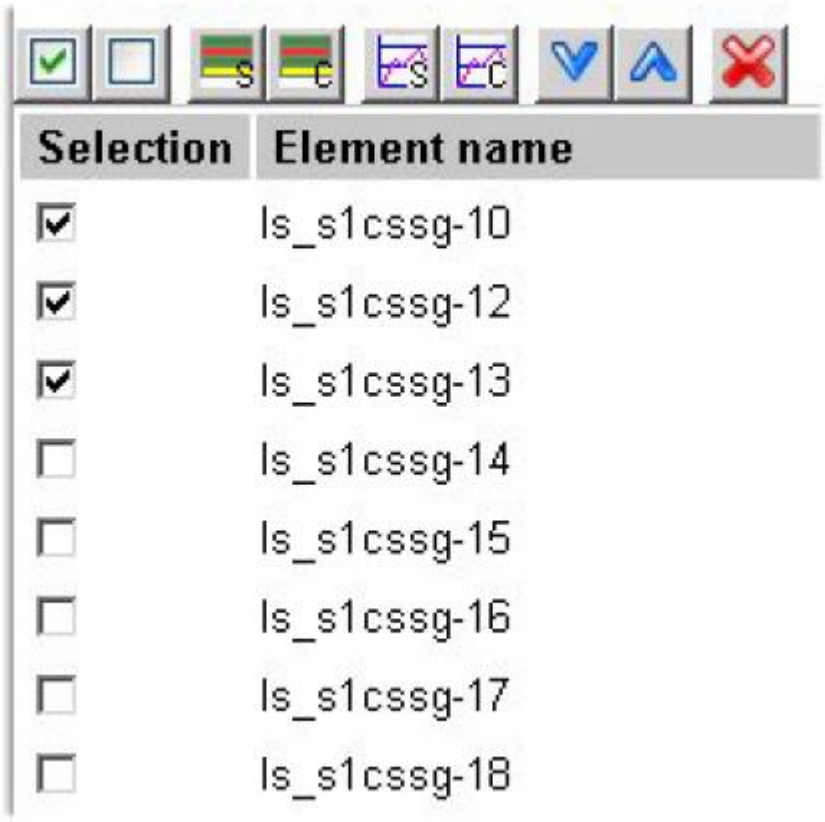


Figure 27 : Loaded Favorite Element List

How to Modify Element Lists

Complete these steps to modify a saved element list.

1. Click **Load favorites** (upward facing arrow). The *Load favorites list* opens.

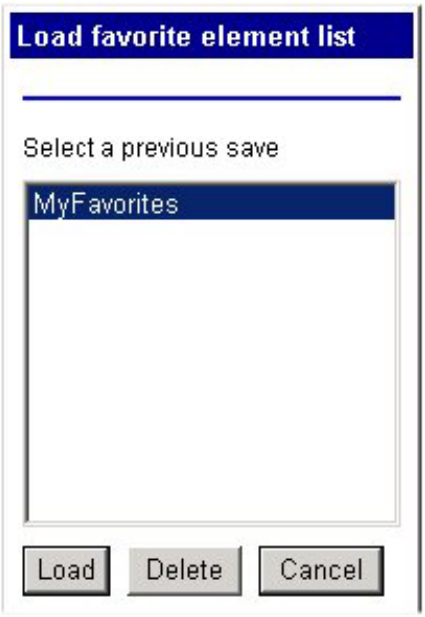


Figure 28 : Load Favorites List

2. Select and **load** an element list.
3. Add or delete an **element(s).**
4. Click **Save as Favorites** (down arrow).
5. Select the **List** to be modified.
6. Click **Save.**
7. Click **OK** at the prompt.
8. The modified list is saved.

How to Delete Element Lists

Complete these steps to delete a saved element list.

1. Open **Load Favorites.**
2. Select the **list** to be deleted.
3. Click **Delete.**
4. Click **OK** at the prompt. The list is deleted.

Using the monitoring counts Feature

ProDiag's Monitoring Counts feature provides a way to display five different statistical views for a node, linkset or link.

Monitoring Toolbar

The *status toolbar* provides a way of navigating through elements, selecting columns, selecting monitoring colors and exporting files. The buttons are described here.

 Selecting Columns - enables you to select the element columns you want displayed.

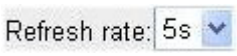
 First Row - enables you to go to the first row of elements displayed.

 Previous Row - enables you to move to the previous element from the current element selected.

 Next Row - enables you to move to the next row from the current row selected.

 Last Row - enables you to move to the last row of elements displayed.

 Pause Monitoring - enables you to pause the monitoring process to work with current displayed elements.



Refresh Rate - enables you to adjust the refresh rate for either the Start State or Start Status feature. For Start State monitoring, you can select 5,10, 15 sec. (The default is 15 sec.) For Start Status monitory you can select 1, 3 or 5 sec. (The default value is 5 sec.)

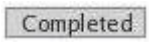
 Expand All - enables you to view all the elements in node, linkset and link (you can also just click on the row itself to expand the element).

 Collapse All - enables to collapse all the child elements of the node or linkset (you can also just click on the row itself to expand the element).

 Colors - enables you to choose color preferences for columns monitoring status *Customizing Colors and Columns*

 Visual Preferences - enables you to customize the color of the monitoring page (see *How to Configure Screen Visual Preferences."*

 Export monitoring data to PNG file - enables you to export all the data in the table that is shown in the monitoring page (see *How to Export Data in png Format*".



Informs you that the current monitoring session has completed (see refresh rate).

Link total - displays all the links in the table by monitoring color *Using the monitoring counts Feature*.

Table Layout and Column Descriptions

The Monitoring pages are displayed either in table or chart format. in the table format, the columns differ depending on the type of monitoring you use.

Link Status

The Link Status function provides a way of displaying the information for a node, linkset or link. The traffic statistics are displayed in tabular format shown in *Figure 29 : Status Column* Headings

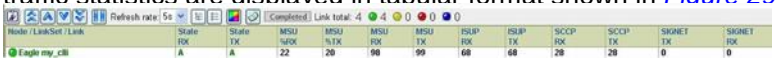


Figure 29 : Status Column Headings

The status table is organized into 13 columns with column headings described *in Status Table Node and Linkset Column Headings.*

Node/Linkset Status Color Code

These are descriptions for the default color codes for network element status.

- Green - All links are operational. When all links of the linkset/node are listed in green, then the name of the linkset/node is listed in green.
- Yellow - At least one link is operational. When at least one link, but not all, of the linkset/node is operational (listed in green), then the name of the linkset/node name is yellow.
- Blue - No link sent status. When all links of the linkset/node are listed in blue, then the name of the linkset/node is listed in blue.
- Red - No link is operational. The status *else* (not operational) is signified by the node/linkset name being listed in red.

Status Table Node and Linkset Column Headings

- Rx Status - shows a the four types of status of the element depicted by a color-coded letter.
- Rx Messages/sec - shows cumulative sum of Rx Messages/sec for all linksets/links comprising the node/linkset.
- Tx Messages/sec - shows cumulative sum of Tx Messages/sec for all linksets/links comprising the node/linkset.
- %Rx Messages/sec - shows the sum of Rx messages/sec on all linksets divided by total number of messages that can be received on all linksets.
- %Tx Messages/sec - shows the sum of Tx messages/sec on all linksets divided by total number of messages that can be transmitted on all linksets.

- SCCP Rx Messages/sec - shows the cumulative sum of SCCP Rx Messages/sec for all linksets/links comprising the node/linkset.
- SCCP Tx Messages/sec - shows the cumulative sum of SCCP Tx Messages/sec for all linksets/links comprising the node/linkset.
- ISUP Rx Messages/sec - shows thecumulative sum of ISUP Rx Messages/sec for all linksets/links comprising the node/linkset.
- ISUP Tx Messages/sec - shows the cumulative sum of ISUP Tx Messages/sec for all linksets/links comprising the node/linkset.
- SIGNET Rx Messages/sec - shows the cumulative sum of SIGNET Rx msgs/sec.
- SIGNET Tx Messages/sec - shows the cumulative sum of SIGNET Tx msgs/sec for all linksets/links comprising the node/linkset.

NetMgmt transfer signals Column Headings

- Transfer Signals Control - Transmitted / Received
- Transfer Signals Prohibited - Transmitted / Received
- Transfer Signals Restricted - Transmitted / Received
- Transfer Signals Allowed - Transmitted / Received

NetMgmt signal Route Column Headings

- Signal Route Congestion - Transmitted / Received
- Signal Route Test Prohibited - Transmitted / Received
- Signal Route Test Restricted - Transmitted / Received

NetMgmt others Column Headings

- Link Inhibit Test Local - Transmitted / Received
- Link Inhibit Test Remote - Transmitted / Received
- Traffic Restart Allowed - Transmitted / Received
- Traffic Restart Waiting - Transmitted / Received

Node and Linkset Rx/Tx Status Values

Each node or linkset can have one of four status values. Each value is described here.

- Green A - Shows that all links have "A" status .
- Yellow A - Shows that at least one link has a "Green A" status shown here.
- Red OS - Shows that link is bad shown here.
- Empty string (any color) - Shows other types of Rx/Tx status shown here.

Different Rx/Tx Status Types

The Rx/Tx Status can be one of 10 different status values. Each value is described here.

- UA - Link not connected
- AD - Link has been administratively disabled (not used)
- ND - Link is in "No Data" state
- OS - Link is out of service
- O - Link is Out of Alignment
- N - Link has entered Normal Alignment proving period
- E - Link has entered Emergency Alignment proving period
- A - Link is in service
- PO - Link is reporting Processor Outage
- B - Link is reporting Busy
- CONN - Link is connected by not sent status

Link State Table

The Link *State* monitoring count displays the *information* for a *network element.* The *statistics* are displayed in table format shown in *Figure 30 : State Table Column Display*

Figure 30 : State Table Column Display

- Out of service count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Out of Alignment count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Normal Alignment count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Emergency Alignment count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Rx Processor outage count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Tx Processor outage count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Rx Busy count - shows the cumulative sum of count for all linksets comprising the node.
- Tx Busy count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Rx Retransmission Request count - cumulative sum of count for all linksets/links comprising the node/linkset.
- Tx Retransmission Request count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.

- Rx Error count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.
- Tx Error count - shows the cumulative sum of count for all linksets/links comprising the node/linkset.

Note: Each counter indicates the number of times that event has occurred since the counter was last reset.

How to Reset Counts for Selected Nodes

Note: This feature is only available to users who have the role *NSPConfigManager.*

ProDiag provides a feature for selecting specific nodes from the workspace and resetting the counts for those particular nodes. Complete these steps to reset specific node counts.

1. From the object tree, select the **root node.**

   All the nodes in the workspace area are displayed.

2. Select the **Nodes** that need to be reset.
3. Click **Reset Selected Nodes.**

   The counts are reset for the selected nodes.

How to chart monitoring Counts

ProDiag provides you with a means of viewing network elements (nodes, linksets and links) in chart form. This feature provides you with an additional means of viewing, in full page, all monitoring states. Shown here are both a *table* and *charting* screens of the same network elements (links).

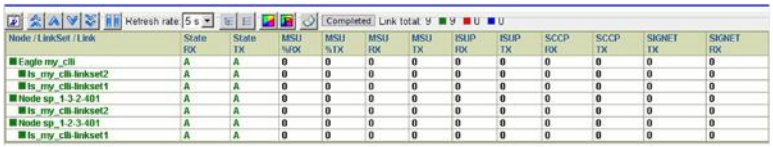


Figure 31 : Monitoring Screen Of Two Links

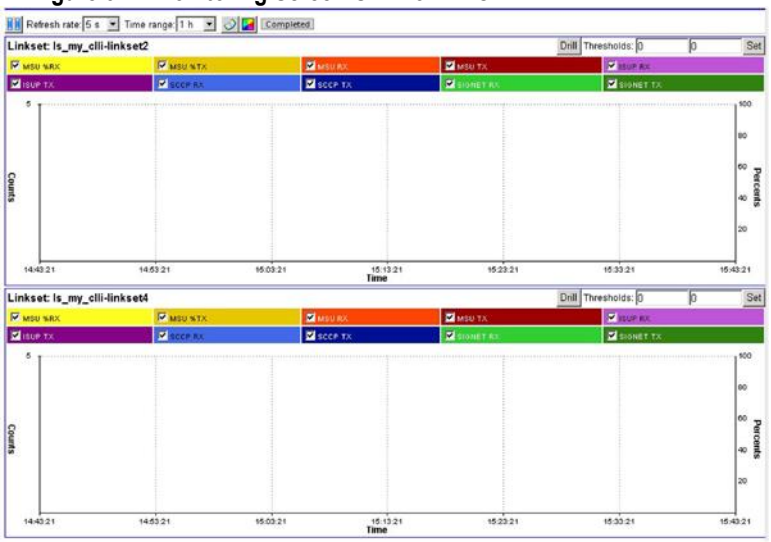


Figure 32 : Charting Screen Of Two Links

How to Start Chart Monitoring

ProDiag enables you to graphically view all the states with the *table monitoring* and *chart monitoring* features. Complete these steps to use the chart feature.

1. Select the **network element(s)** to be charted.

   Note: A maximum of eight graph windows can be displayed at one time.

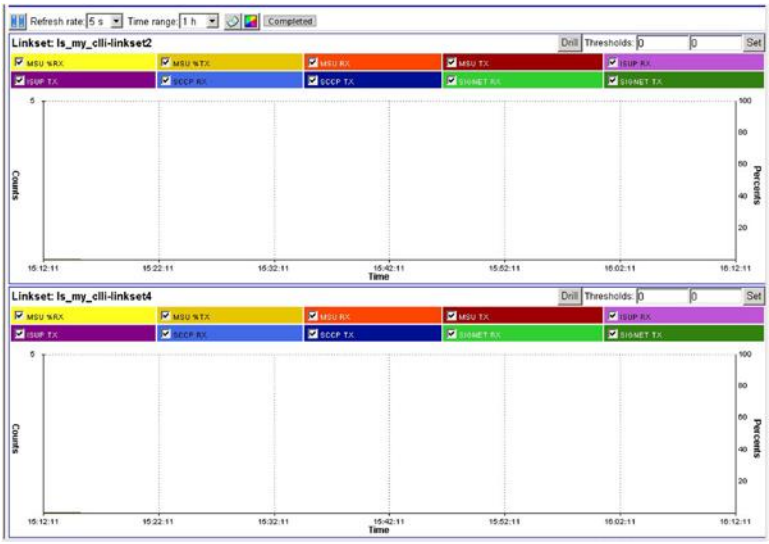
2. Select the **monitoring status** (Link status, link state, NetMgmt Transfer Signals, etc).
3. Click **Start Chart Monitoring** .

   The *Chart* page opens shown in *Figure 33 : Start Status Chart Of Link set* and described in *Table 7 : Start Status Chart* Page.

Field/Element	Description
Pause Button	Pauses the monitoring process.
Refresh Rate	Provides the interval when the screen is refreshed.
Time Range	Shown in the x-axis and provides the length of time previous to the current time for and can run for more than the previous 24-hours.
Export to PNG File Button	Enables you export the chart in PNG file format.
Change Colors to Chart Button	Enables you to choose the colors for each of the columns being monitored.
Drill Button	Enables you to also monitor the children of either nodes or linksets.
Thresholds	Provides a visual aid for during the monitoring. The threshold appears as a red line. Threshold = 0 removes the threshold marker.
Set Button	Sets the threshold level which appears in the screen as a red line.
Parameter Selection fields	Provides check boxes and color coding. When checked the tracking will be represented as a line with that color.
Graph Interface	Counts - for *states* the interface shows the alarm count of each parameter.

Table 7 : Start Status Chart Page

Figure 33 : Start Status Chart Of Link set



5. Set the **Time Range** from the pull-down list.

   The range is 15 minutes to 24 hours. (Default is 1 hour.)

6. (Optional) Set the **Thresholds.**

   Note: The threshold feature is used only as a visual aid.

   a) Set lower **Threshold** by typing in a number in the left-hand field.
   b) Set upper **Threshold** by typing in a number in the right-hand field.

7. Click **Set** to set the thresholds.

How to Use the Drill-down Function

The drill-down function is used to drill-down to the children of either a node or linkset in order to concurrently monitor those elements as well as the parent element. In addition, you can concurrently view the status of children, say links, while charting the state of the parent, linksets and vice versa. In addition, you can save the selected *children* to *Favorites.*

Complete these steps to use the drill-down function.

1. Select the **network element(s)** to be monitored and charted.

   Note: You can select up to four elements at either at the linkset or link level. You cannot use the drill-down feature on links, only nodes and linksets.

2. Click **Chart Start State** or **Chart Start Status.**

   The *Chart* page opens shown in *Figure 34 : Start Status Chart Of Linkset*

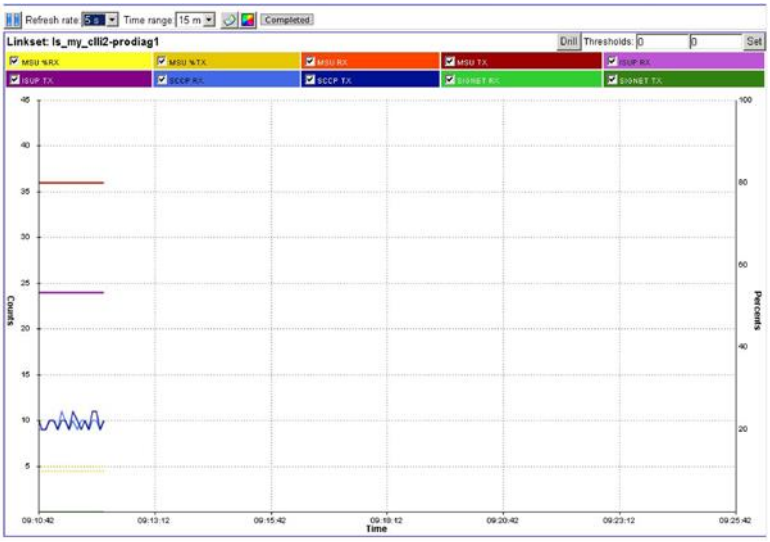


Figure 34 : Start Status Chart Of Linkset

3. Click **Drill.**

The *Child selection* pop-up opens shown in *Figure 35 : Child Selection* Pop-Up

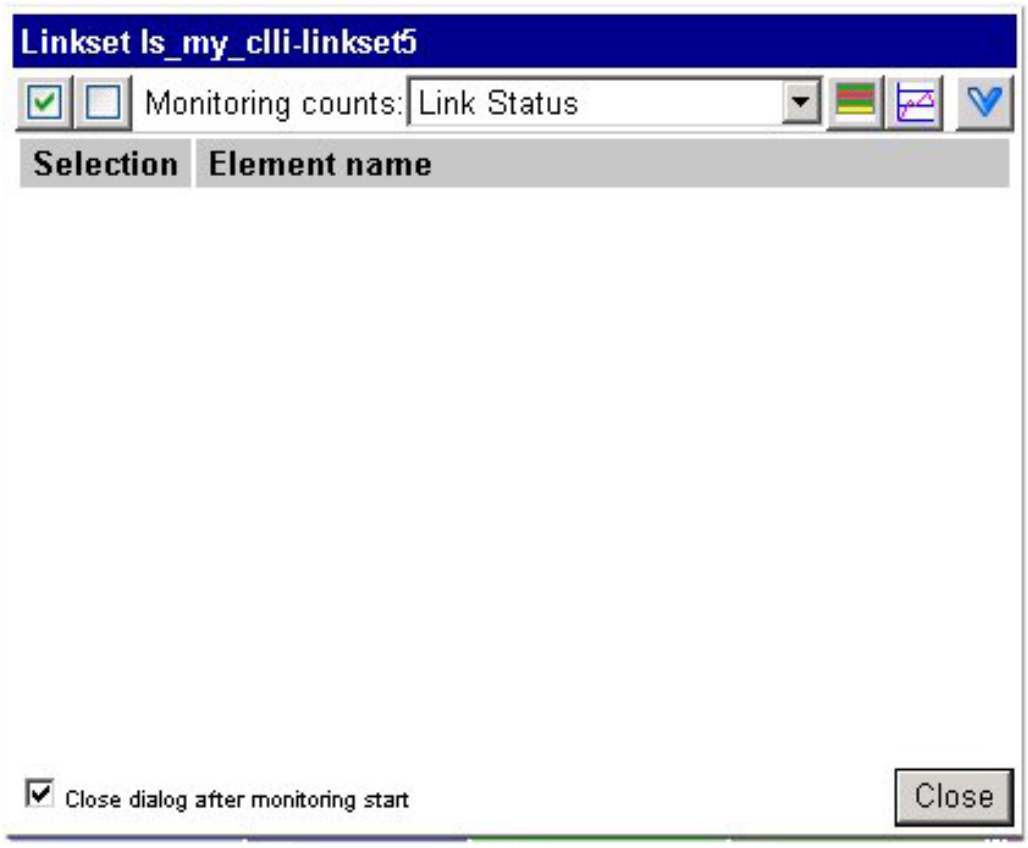
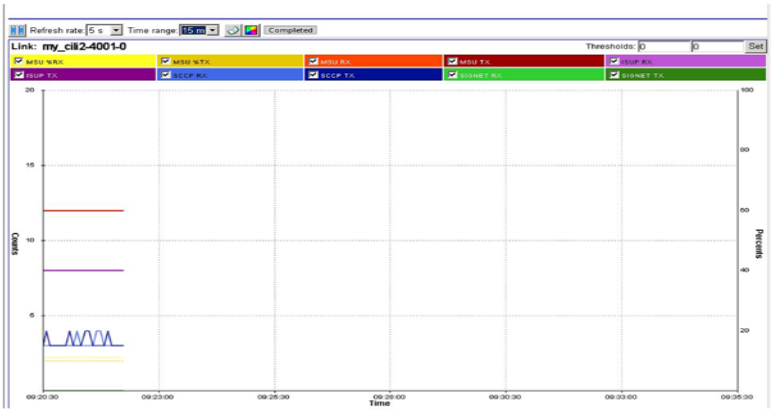


Figure 35 : Child Selection Pop-Up

4. Select the **element(s)** to be charted. (In this example no links are visible.)
5. Click either **Start Table Monitoring** to see the monitoring table or **Start Chart Monitoring** depending on what function you are performing.

   The child elements page opens shown in *Figure 35: Chart Monitoring Status Page With Child Element*.

Figure 36 : Chart Monitoring Status Page With Child Element



Steps 3-6).

charting parameters you want to use for each element. (See *How to Start Chart Monitoring*

6. Close the page by clicking the "X" in the upper right-hand corner of the page and click **OK** at the prompt.

Displaying Network Levels

You can view at either the *node, linkset* or *link* level. For more information see:

Node View *Linkset View* *Link View*

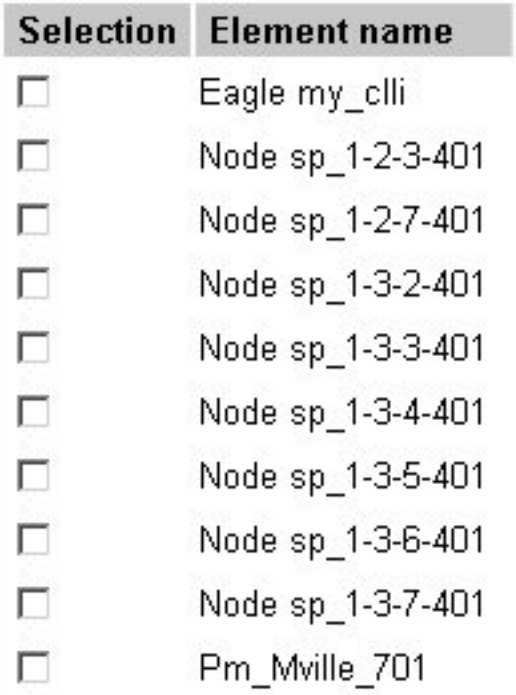
Node View

ProDiag enables you to drill down from *nodes* to *links.* Complete these steps to display a *node* view.

1. Select the *Main topic* heading of *nodes.*

All the nodes that are monitored appear in the *Workspace* section of the page. *Figure 37 : Node* List shows the *object tree-workspace* correlation.

Figure 37 : Node List



2. Select one or more **node** elements.
3. Select the **type of monitoring status** (in this case it is Link Status)
4. Click **Start Table Monitoring.**

The *Status* page opens, as a separate page, with the selected nodes in table form shown in *Figure 37: Viewing Nodes In Status Page (Abbreviated View)* (Eagle my_cili has been selected).

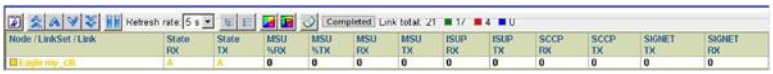


Figure 38 : Viewing Nodes In Status Page (Abbreviated View)

The table shows how many nodes are being monitored and what status they are in. You can then click **ExpandAll** to see the *linksets and links* that belong to that *node.*

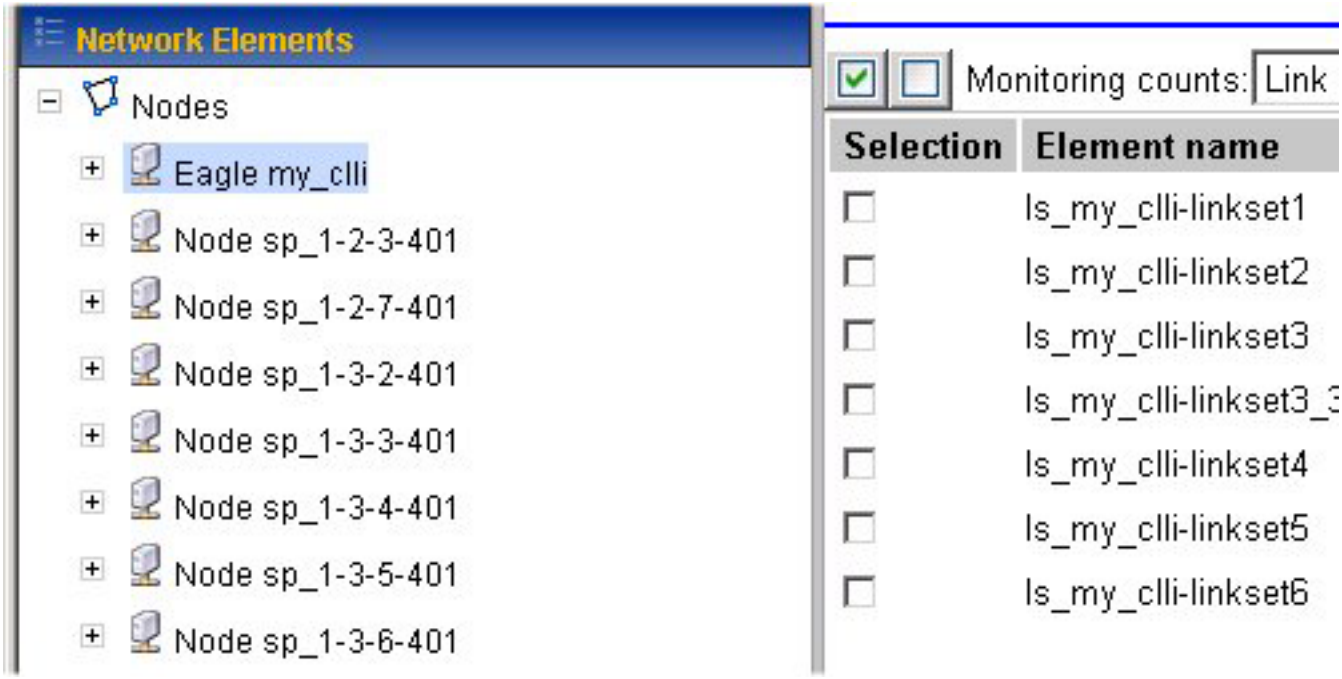
Linkset View

Complete these steps to display the *linkset* view.

1. Select the **node** or **signaling point** that contains the *linksets* you want.The linksets displayed in the *work* section table shown in *Figure 39 : Linkset* Display.

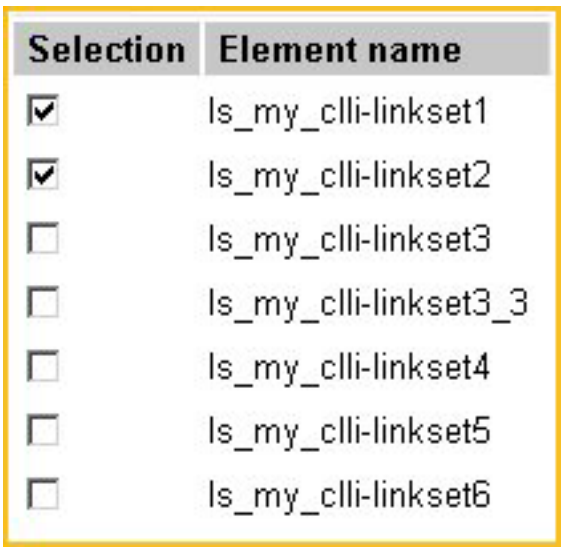
   Note: Signaling points act as placeholders in the menu tree and cannot be accessed in the workspace.

Figure 39 : Linkset Display



3. Select the linkset (s) you want

Figure 40 : Selected Linksets



4. Select the **monitoring mode.**

   (Link Status, Link State, NetMgmt Transfer Signals, etc).

4. Click **Start Table Monitoring.**

   The *Table Monitoring* page opens (as separate page) showing the expanded view of the linksets along with their parent nodes *Figure 41 : Expanded View Of Linksets In Tabular Form*.

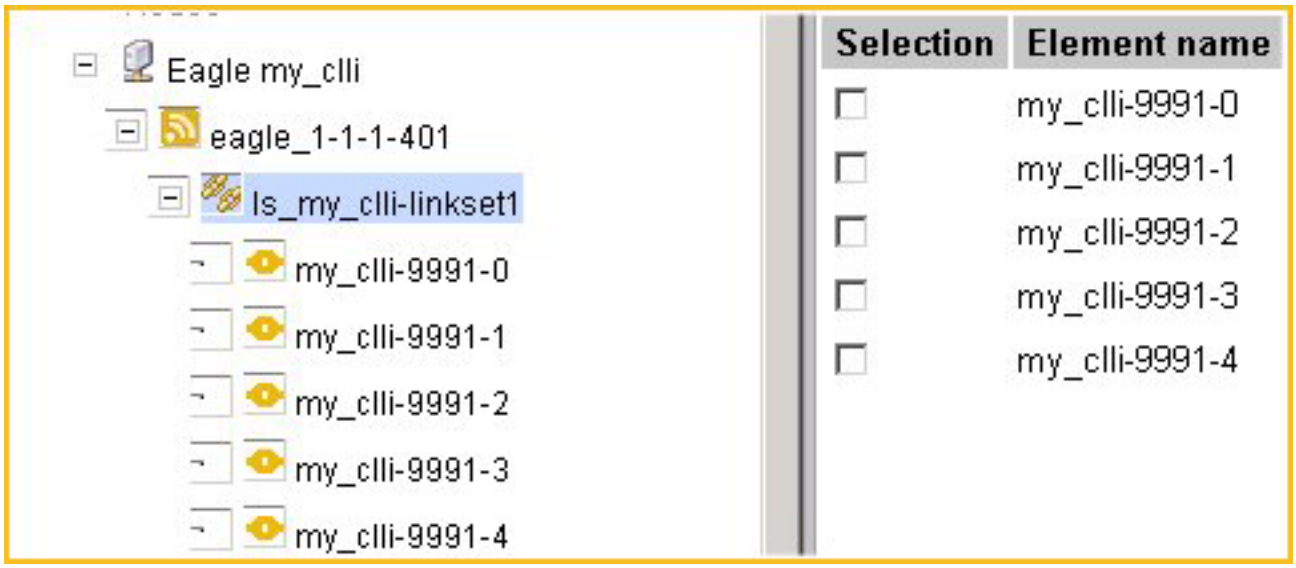
Figure 41 : Expanded View Of Linksets In Tabular Form

Link View

Complete these steps to display *links* view.

1. Select the **linkset** that contains the *links* you want. The *links* are displayed in the *workspace* section table shown in *Figure 42 : Link* Display.

Figure 42 : Link Display



2. Select the **link(s)** you want to monitor.

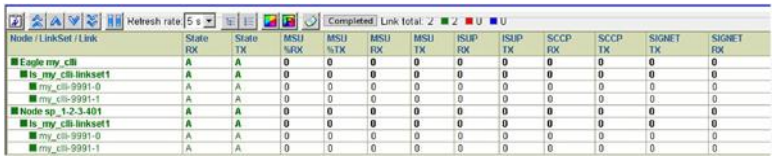
3. Select the **monitoring mode.**

(Link Status, Link State, NetMgmt Transfer Signals, etc).

4. Click **Start Table Monitoring.**

The *Table Monitoring* page opens (as separate page) showing the expanded view of links along with the parent node and linksets *Figure 43 : Expanded Link View*.

Figure 43 : Expanded Link View



Customizing Colors and Columns

ProDiag enables you to customize the colors and columns for a trace for easier identification. For more information on this feature see:

Status Colors

ProDiag codes the element status using different colors. The default colors are:

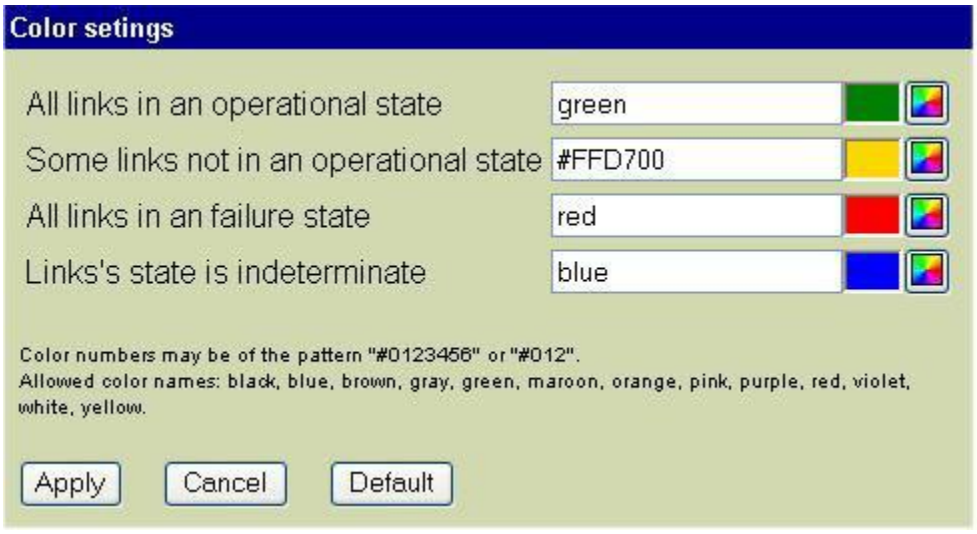
- Green - links in operational state
- Yellow - Some links in operational state
- Red - All links in operational state
- Blue - link state is indeterminate

How to Configure Status Colors

You have to ability using the *color* button on the Status toolbar to change the colors to fit you needs. Complete these steps to configure status colors.

1. From the Status view, click **Colors.**

Figure 44 : Color Settings



2. The Color Settings page opens.

2. Click on the **Color** icon to the right of the color status you want to change.
3. Select the **color.**

   The color code appears in the color name field.
4. Click **Apply** when you have finished configuration.

   The color changes are saved.

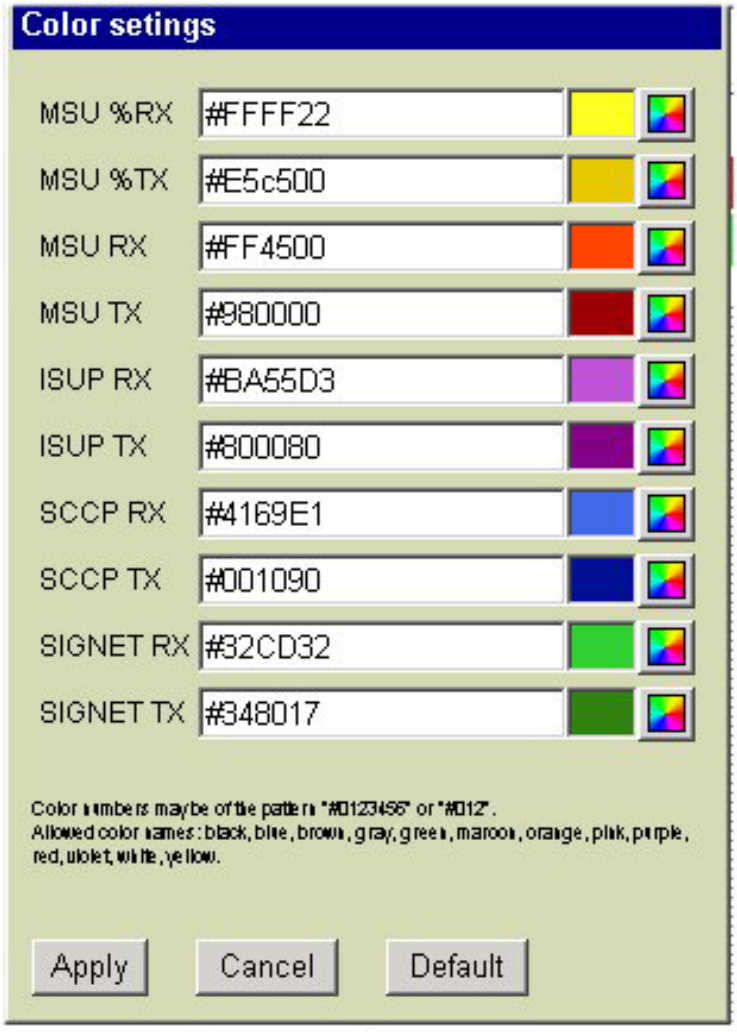
How to Configure Chart Colors

You have to ability to change the colors used for the columns being monitored by using the *Chart Color* feature. Complete these steps to configure chart colors.

1. From the *Table or Chart monitoring* page, click **Change Colors.**

The *Color Settings* screen opens.

Figure 45 : Color Settings Screen



2. Click the **color palette** on the column to be changed.
3. Select the **color** from the selection.
4. Repeat steps 2-3 to change other column colors.
5. Click **Apply.**

   The column colors are changed.

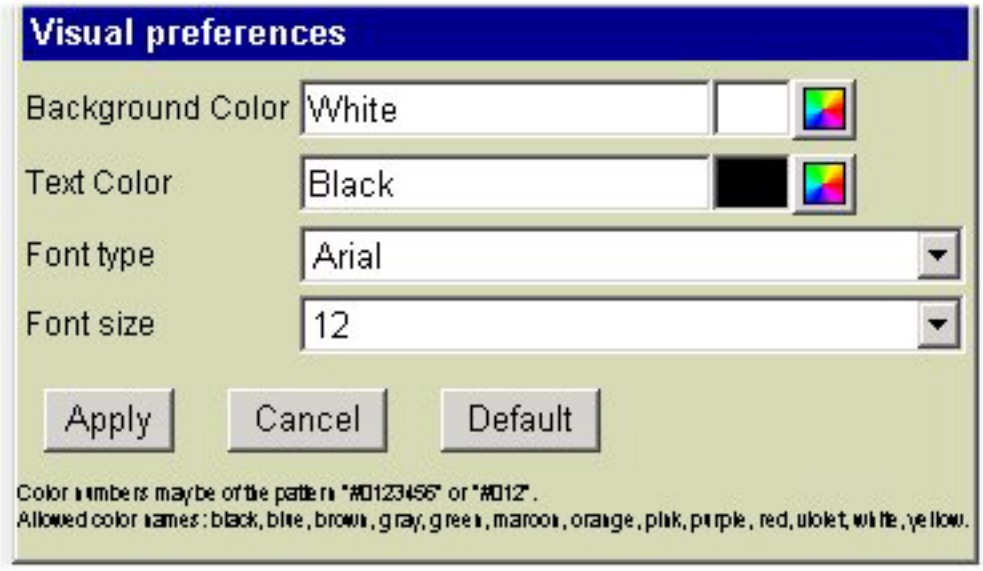
   Note: If you choose a color that is already being used, you prompted that that you must choose another color.

How to Configure Screen Visual Preferences

You have to ability to change the look of a page by using the *Visual Preferences* feature. Complete these steps to configure visual preferences.

1. From the *Table monitoring* page, click **Visual Preferences.**

Figure 46 : Visual Preferences



The *Visual Preferences* screen opens shown in *Figure 46 : Visual Preferences*

(Optional) Select the **Background Color:**

a) Click the Palette.
b) Choose the color.

3. (Optional) Select the **Text Color**

   a) Click the Palette.
   b) Choose the color.

4. (Optional) Select the **Font type** from the pull-down menu.
5. (Optional) Select the **Font size** from the pull-down menu.

6. Click **Apply.**

   The preferences are saved.

How to Configure Columns

You have to ability using the *column select* button on the *Status toolbar* to select the information columns to fit you needs. Complete these steps to select columns.

1. Select a **node/linkset/link** from the table in the *work* section.
2. Click **Start Status.**
   The status page opens (as a separate page).
3. Click **Column Select.**

   The *Column Selectpage* opens shown in *Figure 47 : Column Select Page (Status View)* with the column headings for that element.

Figure 47 : Column Select Page (Status View)

4. You can **show/hide** all the columns or you can select specific columns by selecting or de-selecting the column field.
5. Click **Apply.**

   The changes are saved.

How to Export Data in png Format

Complete these steps to export a chart in png format.

1. Select the **chart** to be exported.
2. Click on the **Export** button.
3. The **Save As dialog** screen opens
4. Select **output directory.**

5. Enter a **file name** (or accept the default name).
6. Click the **Save** button.

The file is exported to the selected directory as a PNG file.

How to Link from ProAlarm

You can invoke ProDiag from NSP's *ProAlarm Viewer* application. In this way you can check the *status* and *state* for linksets from *ProAlarm Viewer.* When this feature is used you get the status or state at both ends of the link, so you will see the same link on ProDiag two times, the first is from one direction and the second is from the other direction.

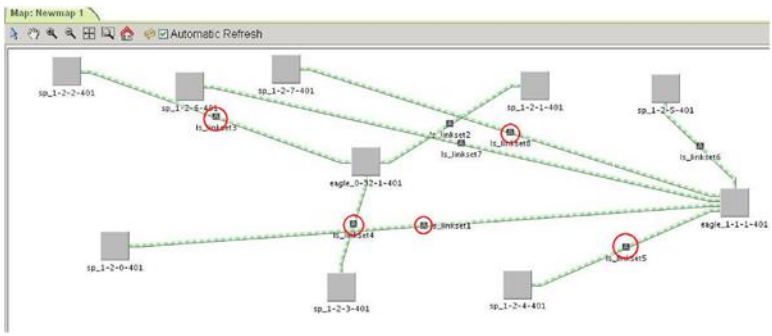
Note: For more information on how to link from ProAlarm, see NSP *ProAlarm Viewer User's Guide.*

Complete these steps to invoke *ProDiag* from *ProAlarm Viewer.*

1. Log into the **ProAlarm Viewer** application.
2. Select a **Map** from the *Maplist,* shown in *Figure 48 : ProAlarm Map List (NewMapl* is selected).The map opens in a separate page shown in *Figure 49 : ProAlarm Map Page With Anchors Marked.*

Figure 48 : ProAlarm Map List

Figure 49 : ProAlarm Map Page With Anchors Marked

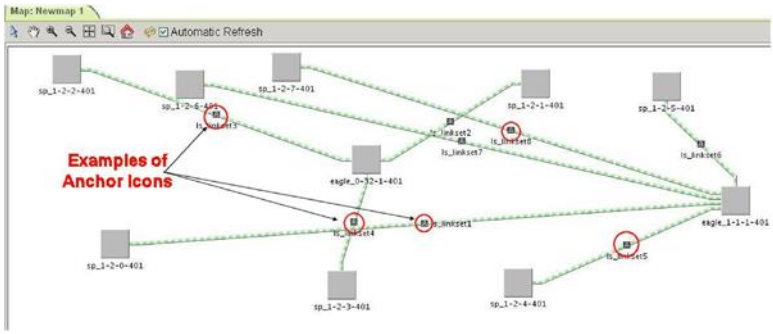


3. Select a **map** element.

   (In this example a *linkset* is selected.)

4. Right-click on an **anchor icon** shown in *Figure 50 : Selected Map Element With Diagnostics Menu*. The *Diagnostics* menu opens.

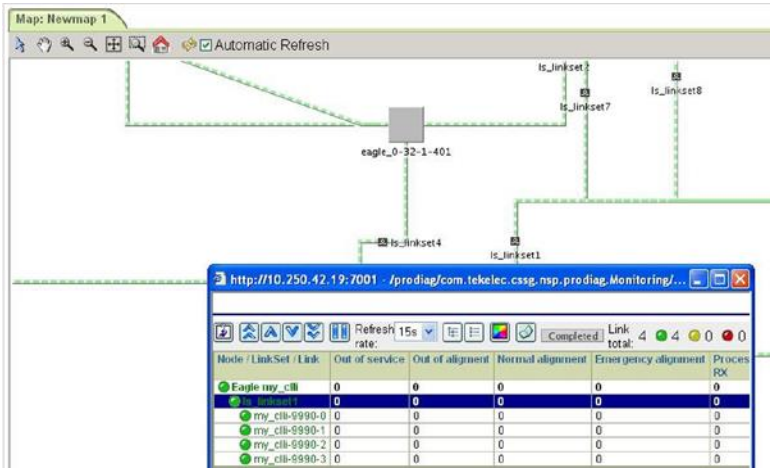
Figure 50 : Selected Map Element With Diagnostics Menu



5. Select either **Status** or **State.**

The *ProDiag* page opens showing the selected menu item shown in *Figure 51 : ProDiag State Page*. (In this example, *state* is selected.)

Figure 51 : ProDiag State Page



6. Close the page when you are finished and click **OK** at the prompt.

You are returned to the *ProAlarm Viewer* map page.

Using Network and Customer Favorites

These *toolbar buttons* provide a means of selecting displayed network elements such as *nodes, linksets and links* and saving these elements for future times. Clicking the **Favorites** button(s) opens those selected elements without having to select them again.