DIH 1.2

NSP Security User Guide

910-6512-001 Revision A

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Table of Contents

List of Figures

List of Tables

Chapter 1

About This Help Text

Topics:

Overview

The Network Software Platform (NSP) Security Application enables the user to manage user access at login to the NSP Platform and user access to data through profile and role definitions.

Scope and Audience

This help text provides information about Security concepts. It is designed as a guide for the system administrator or the user who is in charge of setting up users, groups, and roles in NSP.

About the Diameter Intelligence Hub (DIH)

The Diameter Intelligent Hub (DIH) is used to monitor a LTE network. DIH also creates a small hardware "footprint" for customers who administer 3G and 4G diameter networks. The DIH:

- Is a single blade server and storage blade collocated within a single or dual Diameter Signaling Router (DSR) enclosure(s).
- Provides filtering, data feed, tracing, decoding, and SNMP functions.
- Enables the selective collection and storage of diameter traffic within one or more instances of PMF and IXP.
- Provides nodal diameter troubleshooting.
- Provides data export for diameter messages.
- Supports both IPv4 and IPv6 traffic simultaneously.
- Provides KPI tracking using ProTrace application as well as viewing KPIs in graphic format using ProPerf dashboard configured at installation.
- Provides filtering for alarms using ProTraq Cell filter (see system alarms online help).
- Uses diameter protocol exclusively.

  Note: The DIH system can use other protocols if the Diameter mode has not been selected and system is in Standard mode. (Default setting is Standard mode. For more information on selecting Diameter mode, see Centralized Configuration Manager Administration online help, "Setting System to Diameter Mode."

The Diameter Protocol

The diameter protocol has evolved from the Radius protocol and enables diameter applications to extend the base protocol by adding new commands and/or attributes, such as those for use of the Extensible Authentication Protocol (EAP).

The diameter protocol provides for an Authentication, Authorization, and Accounting (AAA) framework that overcomes the limitations of RADIUS, (a protocol that handles AAA and EAP), which cannot effectively deal well with remote access, IP mobility and policy control. The Diameter protocol defines a policy protocol used by clients to perform Policy, AAA and Resource Control. This allows a single server to handle policies for many services.

As mentioned above, Diameter protocol provides AAA functionality, but in addition it is made more reliable by using TCP and SCTP instead of UDP. The Diameter protocol is further enhanced by the development of the 3rd Generation Partnership Project (3GPP) IP Multimedia Subsystem (IMS). Through the use of extensions, the protocol was designed to be extensible to support Proxies, Brokers, Strong Security, Mobile-IP, Network Access Servers (NASREQ), Accounting and Resource Management.

Setting User Preferences

Users can set User Preferences that apply across all the NSP applications. These include

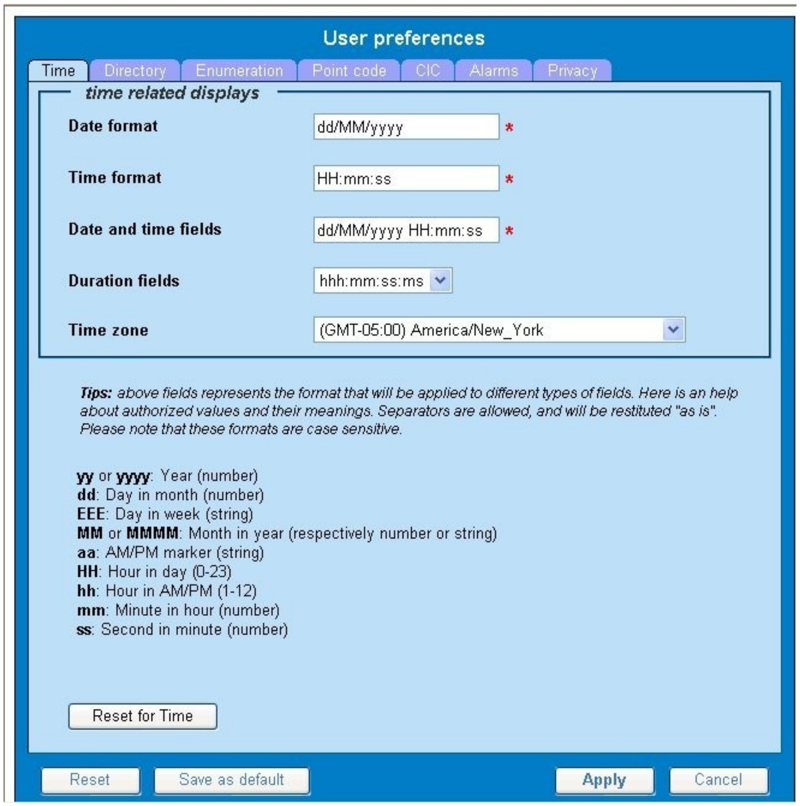
- Time specifications (date format, time zone, etc.)
- Directory names (for exporting, uploading, and downloading)
- Enumeration values (numerals vs. text)
- Point code specifications
- CIC specifications
- Default alarm colors
- Default object privacy privileges

Setting Time Format

Follow these steps to set the time format:

1. Click **User Preferences** on the Application board.
   The User Preferences page is displayed.
2. Click the **Time** tab.
   The Time page is displayed. The red asterisk denotes a required field.

   Note: Use the tips on the page to help you configure the time format.



Date format: dd/MM/yyyy *

Time format: HH:mm:ss *

Date and time fields: dd/MM/yyyy HH:mm:ss *

Duration fields: hhh:mm:ss:ms

Time zone: (GMT-05:00) America/New_York

Tips: above fields represents the format that will be applied to different types of fields. Here is an help about authorized values and their meanings. Separators are allowed, and will be restituted "as is". Please note that these formats are case sensitive.

yy or **yyyy**: Year (number)
dd: Day in month (number)
EEE: Day in week (string)
MM or **MMMM**: Month in year (respectively number or string)
aa: AM/PM marker (string)
HH: Hour in day (0-23)
hh: Hour in AM/PM (1-12)
mm: Minute in hour (number)
ss: Second in minute (number)

Figure 1: Time Formatting Page

3. Enter the format for these time-related displays.
   - **Date format**
   - **Time format**
   - **Date and time fields**
4. Select the formats for these time-related displays by using the drop-down arrow.
   - **Duration fields**
   - **Time zone**

   Note: You must choose your time zone to get local time.
5. If you want to reset the time-related displays to default settings, click **Reset for Time**. (The bottom **Reset** button resets all the tabbed pages to default settings.)
6. Click **Apply** to save settings.

Setting Directory Preferences

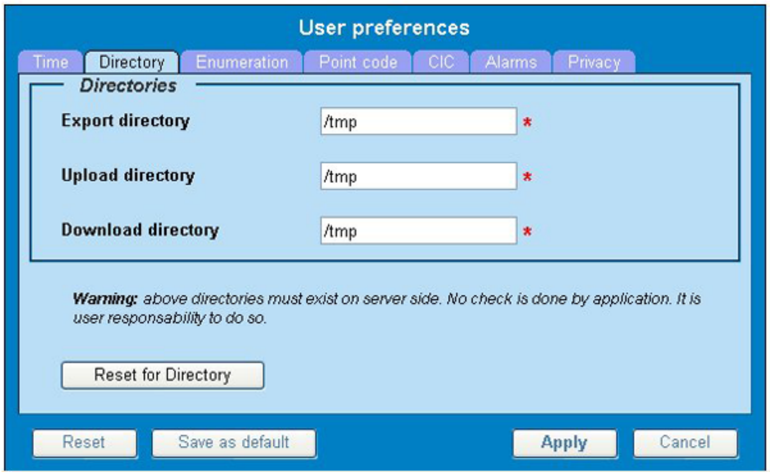
Use the User Preferences feature to set the Export, Upload and Download directory paths for your system. These paths define where xDR's, dictionary files and other elements are stored.

Follow these steps to set the directory preferences.

1. Click **User Preferences** on the Application board.

   The User Preferences page is displayed.

2. Click the **Directory** tab.
   The Directory page is displayed. The red asterisk denotes a required field.



Export directory /tmp *

Upload directory /tmp *

Download directory /tmp *

Warning: above directories must exist on server side. No check is done by application. It is user responsability to do so.

Figure 2: Directory Page

3. Type in the following:

   - **Export directory**
   - **Upload directory**
   - **Download directory**

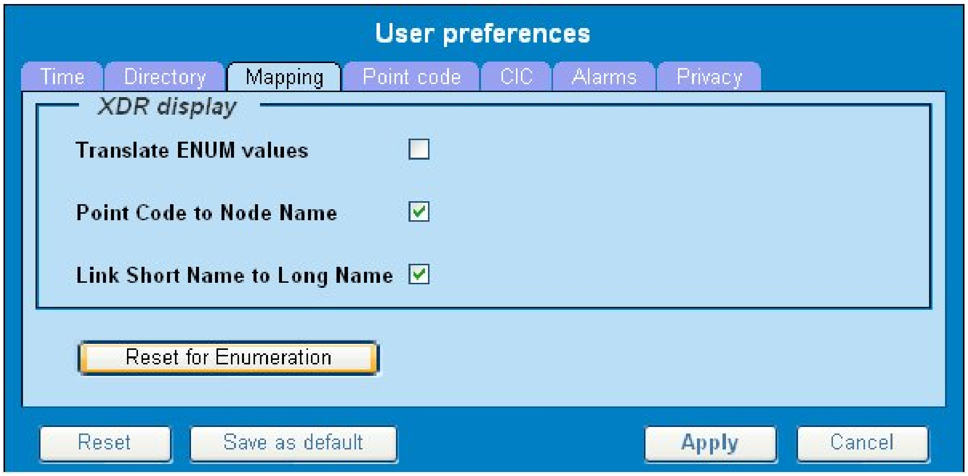
4. If you want to reset the directories to default settings, click **Reset for Directory.** (The bottom **Reset** button resets all the tabbed pages to default settings.)
5. Click **Apply** to save your settings.

Setting Mapping Preferences

You can set the Mapping settings using the User Preferences feature.

Follow these steps to set Mapping preferences.

1. Click **User Preferences** in the Application board.
   The User Preferences page is displayed.
2. Click the **Mapping** tab .
   The Mapping page is displayed.



Translate ENUM values □

Point Code to Node Name ☑

Link Short Name to Long Name ☑

Figure 3: Mapping Page

3. Check **Translate ENUM values** to display text instead of numerals.

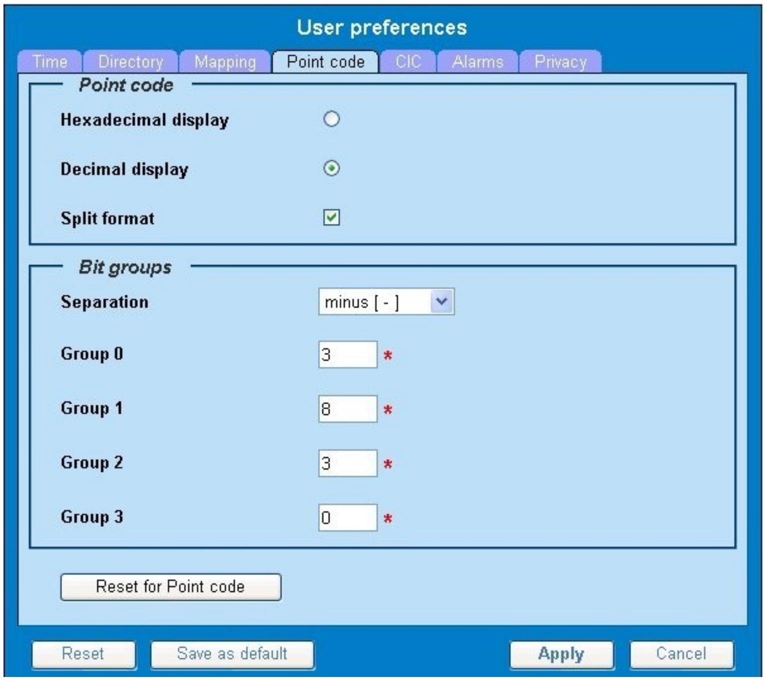
   Enumeration is used by xDRs to display text values instead of numeric. (For example, rather than showing the numeral for Alarm Severity, the user interface will show the actual word, such as "Major" or "Critical.")
4. Check **Point Code to Node Name** to display the custom (user-defined) name of the node. Otherwise, the Point Code value is displayed.
5. Check **Link Short Name to Long Name** to display the custom (user-defined) link name or the Eagle link name. Otherwise, the short name is displayed, which is the name that begins with an asterisk (*).
6. To reset the Mapping values to the default, click **Reset for Enumeration**. (The bottom **Reset** button resets all the tabbed pages to default settings.)
7. Click **Apply** to save the changes.

Setting Point Code Preferences

The User Preferences feature enables you to set the Point Code preferences for your system. A Point Code is a unique address for a node (Signaling Point), used to identify the destination of a message signal unit (MSU).

Follow these steps to set the Point Code preferences.

1. Click **User Preferences** in the Application board.
   The User Preferences page is displayed.
2. Click the **Point Code** tab.
   The Point Code page is displayed. The red asterisk denotes a required field.



Point code

Hexadecimal display ○

Decimal display ●

Split format ☑

Bit groups

Separation minus [-]

Group 0 3 *

Group 1 8 *

Group 2 3 *

Group 3 0 *

Figure 4: Point Code Tab

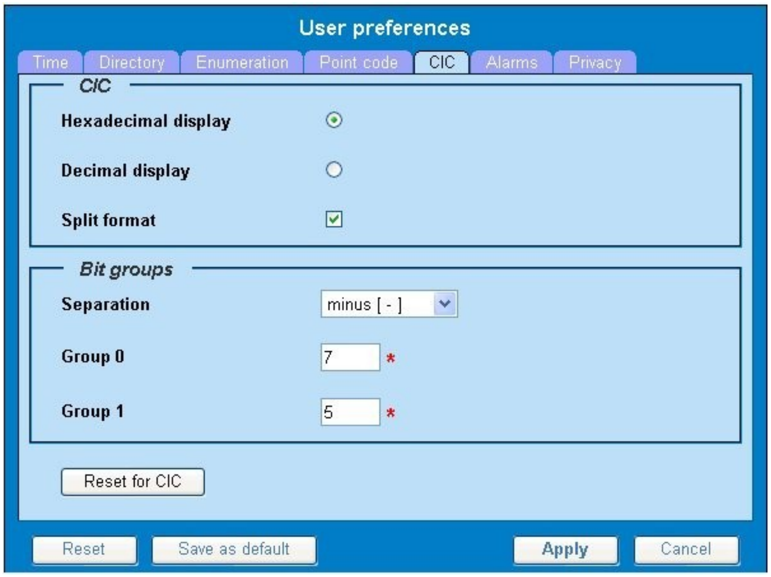
3. Select either **Hexadecimal display** or **Decimal display**.
4. Select or de-select **Split format**.
   If **Split format** is checked, the Bit groups settings in the box below are active. If **Split format** is not checked, Bit groups settings are not applicable.
5. If you selected Split format above, go to the next step. If you did not select Split format, go to step *Step 8*.
6. In the Bit groups panel, use the drop-down box to select the **Separation** type .
7. Type in values for **Groups 0-3**.
8. To reset the point code preferences to default settings, click **Reset for Point code**. (The bottom **Reset** button resets all the tabbed pages to default settings.)
9. Click **Apply** to save your settings.

Setting CIC Preferences

The Circuit Identification Code (CIC) provides a way to identify which circuit is used by the Message Signaling Unit (MSU). This is important in ProTrace applications. Use the User Preferences feature to set the CIC settings for your system.

Complete these steps to set the CIC preferences:

1. Click **User Preferences** in the Application board.
   The User preferences page is displayed.
2. Click the **CIC** tab.
   The CIC page is displayed. The red asterisk denotes a required field.



CIC

Hexadecimal display ●

Decimal display ○

Split format ☑

Bit groups

Separation: minus [-]

Group 0: 7 *

Group 1: 5 *

Figure 5: CIC Page

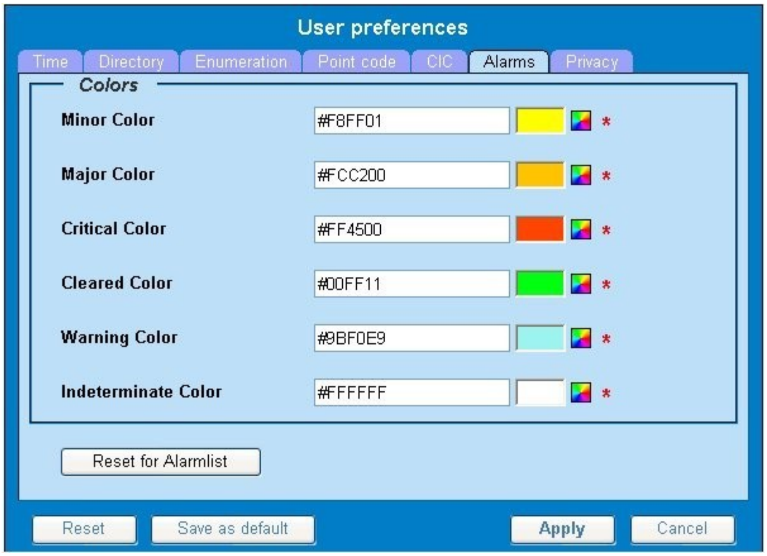
3. Select either **Hexadecimal display** or **Decimal display**.
4. Select or de-select **Split format**.
   If **Split format** is checked, the Bit groups settings in the box below are active. If **Split format** is not checked, Bit groups settings are not applicable.
5. If you selected Split format above, go to the next step. If you did not select Split format, go to step *Step 8*.
6. In the Bit groups panel, use the drop-down box to select **Separation** type..
7. Type in values for **Group 0** and **Group 1**.
8. If you want to reset CIC preferences to the default, click **Reset for CIC**. (The bottom **Reset** button resets all the tabbed pages to default settings.)
9. Click **Apply** to save your settings.

Setting Alarms Preferences

Use the Alarms tab in User Preferences to define the default colors that indicate alarm severity. The colors are displayed in the Perceived Severity column of alarms tables and on object icons in maps.

Follow these steps to modify alarm status colors.

1. Click **User Preferences** in the Application board.
   The User preferences page is displayed.
2. Click the **Alarms** tab.
   The Alarms page is displayed. The red asterisk denotes a required field.



Colors

Minor Color	#F8FF01 *
Major Color	#FCC200 *
Critical Color	#FF4500 *
Cleared Color	#00FF11 *
Warning Color	#9BF0E9 *
Indeterminate Color	#FFFFFF *

Figure 6: Alarms Page

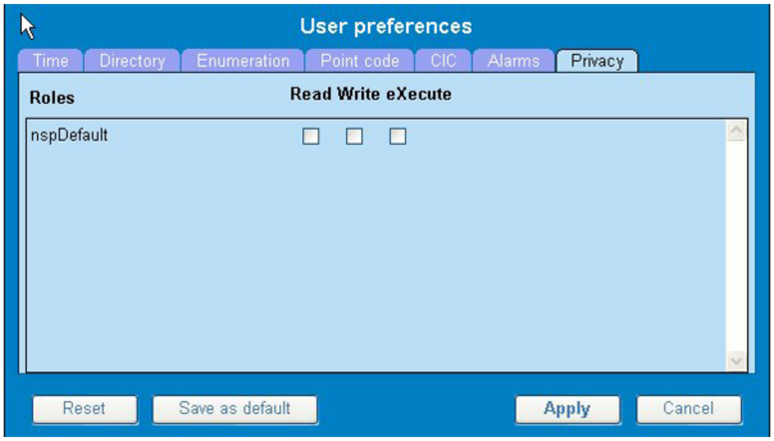
3. Click the color palette (icon on the right side of the screen) associated with the alarm status color(s) you want to modify.
   A pop-up palette window is displayed.
4. Click the color you want for the type of alarm.
   The color palette pop-up is closed and the color box for the alarm displays the selected color. The number for the color is also displayed.
5. If you want to reset the Alarm preferences to the default, click **Reset for Alarmlist**. (The bottom **Reset** button resets all the tabbed pages to default settings.)
6. Click **Apply** .
   The changes do not take effect until you log out of and in again to NSP.

Setting Default Object Privacy

All NSP users can set default access privileges for Objects (data) they create in NSP applications. An owner has full rights to modify or delete the object . Other users are assigned to a Profile and have access to these Objects through that Profile's associated Privacy Roles.

To enter the default Object Privacy (data) settings, follow these steps:

1. Click **User preferences** in the Application board menu.
   The User Preferences window is displayed. The **Time** tab is active by default.
2. Click the **Privacy** tab .
   The Privacy page is displayed.



User preferences

Roles	Read	Write	eXecute
nspDefault	□	□	□

Figure 7: Privacy Page

3. Click the appropriate box to select **Read**, **Write**, or **eXecute**. If you want the role to have no access to the selected object(s), ensure that no box is checked.
4. Click **Save as default**.
5. To reset all the tabbed pages to default settings, click **Reset**.
6. Click **Apply**.
   The settings are saved.

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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:

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

<u>TAC Regional Support Office Hours:</u>

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- **Caribbean and Latin America (CALA)**

  <u>Phone:</u>

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

  <u>TAC Regional Support Office Hours (except Brazil):</u>

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

  - **Argentina**

    <u>Phone:</u>

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

    <u>Phone:</u>

    0-800-891-4341 (toll-free)

    <u>TAC Regional Support Office Hours:</u>

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    <u>Phone:</u>

    1230-020-555-5468
  - **Colombia**

    <u>Phone:</u>

    01-800-912-0537
  - **Dominican Republic**

    <u>Phone:</u>

    1-888-367-8552
  - **Mexico**

    <u>Phone:</u>

    001-888-367-8552
  - **Peru**

    <u>Phone:</u>

    0800-53-087
  - **Puerto Rico**

    <u>Phone:</u>

    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

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    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

DIH Documentation Library

DIH 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 DIH documentation library of online help.

- Centralized Configuration Manager Administration Online Help
- Alarm Forwarding Administration Online Help

- Diagnostic Utility Administration Online Help
- ProTrace Online Help
- System Alarms Online Help
- ProPerf Online Help
- ProTraq Configuration Online Help
- Data Feed Export Online Help
- System Alarms Online Help

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**.

Diameter Intelligent Hub (DIH) - Copyright, Notice, Trademarks, and Patents

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Patents

This product may be covered by one or more of the following U.S. and foreign patents:

U.S. Patent Numbers:

6,456,845; 6,765,990; 6,968,048; 7,043,001; 7,155,512; 7,206,394; 7,215,748; 7,231,024; 7,286,516; 7,286,647; 7,401,360; 7,706,343; 7,844,033; 7,860,799;

Foreign Patent Numbers:

None.

Chapter 2

About NSP Security

Topics:

NSP Security Principles

The Network Software Platform (NSP) Security application provides the means to authorize user access to NSP applications and features and to maintain data integrity. The Security application enables the System Administrator to apply the following:

- Authentication (System Access) - Makes sure users are who they claim to be. Authentication is controlled by
  - User IDs created in an underlying LDAP directory or an external LDAP database
  - Passwords
- Authorization (Application Access) - Makes sure the user has access only to specified applications or features within applications. Several mechanisms are used: system operating mode, token availability, and role definitions.The user must first be authenticated. Each user is identified by a profile, which contains that user's authorization role.
- Privacy (Data Access) - Protects the sensitive data objects from unauthorized use by assuring that only users with the appropriate Read/Write/Execute privileges gain access.

Note: NSP employs a Web-based interface to control system access. This facility controls

- User login and logout
- NSP Administrator's ability to force disconnect and set access level
- Tekelec Customer Service's setting values for purchased user tokens (licenses)

Security Menu and Toolbar

For details about what these Menu options and toolbar icons provide, see *Using the Security Application*.

Table 1: Display Menu

Menu Option	Description
Users	Displays the list of users with user name, description, email address, profile, restricted access status, date and time of last login, and number of active sessions. From this page, you can perform actions such as add users, modify existing users, and unlock accounts.
Privacy roles	Displays the list of Privacy roles, including description, number of users in that role, and number of objects to which that role has access.
Profiles	Displays the list of defined Profiles, with description and the number of users within each profile
Objects	Displays the list of objects within NSP, including the type of object, owner, and the date created.

Table 2: Action Menu

Menu Option	Description
Password settings	Displays a dialog for configuring password criteria. Examples are number and type of characters, lifetime of the password (before it must be changed), and whether the password is generated automatically or manually.
Filter access	Displays a dialog to define which subset of users can access NSP during times of restricted access.
Transfer ownership	Displays a dialog to change ownership for all of an individual's objects.
Manage tokens	Dislays a read-only dialog that shows the number of purchased tokens (licenses) and the maximum number allowed per user.
Security notice	Displays a dialog for security text to be used on the login page.

Table 3: File Menu

Menu Option	Description
Import	Displays a dialog for importing files of user definitions, passwords, email addresses, roles, and profiles. This feature is especially beneficial in importing bulk loads of user information.
Export users	Displays a dialog for generating a list of existing NSP user definitions, passwords, email addresses, and profiles.
Export profiles	Displays a dialog for generating a list of existing NSP profiles with descriptions and associated roles.
Export roles	Displays a dialog for generating a list of existing NSP roles and their descriptions.

Table 4: Help Menu

Menu Option	Description
User manual	Opens on-line help text for the NSP application in use.
About security	Provides version and copyright information about NSP as well as contact information for Tekelec support.

Table 5: Security Toolbar Icons

Icon or Field	Description
▶	Navigation arrow - use to move back and forth among records. This example is the arrow to move to the next record. Other combinations of arrows move to the next page, final record, etc.
✚	Add Record - adds a record to the list

Icon or Field	Description
✎	Edit Record - modifies the selected record
✕🗑	Delete Record - deletes the selected record
🔍	Filter - displays a dialog enabling you to define filters for the list of users
🔓	Unlock - unlocks the selected user account
🔑	Reset password - resets the selected user's password. Resetting can be by manually entering a new password or by having the system automatically generate a password.
⇥	Logout - logs the selected user out of the application.
↻	Refresh - resets the display to include the most current data
Records Per Page 11	Records per Page - sets the number of records to view per page
↩	Change Records per Page - resets display to include the number of Records per Page
1 / 11	Record Number/Total Number of Records - shows the number of the selected record / total number of records available
✓	Count on Demand - provides the total number of records in the database
👥	Privacy - modifies the privacy settings of the selected object
👤	Owner - changes the owner of the selected object

Note: Do not use the Function Keys (F1 through F12) when using NSP. Function keys work in unexpected ways. For example, the F1 key does not open NSP help but opens the help for the browser in use. The F5 key does not refresh a specific screen, but refreshes the entire session and results in a loss of any entered information.

Security Components

Users

From the system's viewpoint, each user has a unique identity. This identity is created by combining a user id and a password. A user can be a person or a software entity, such as a Java client.

When users are added to the PIC system, the system administrator assigns each user a password and a user profile. Authorization roles and privacy roles are assigned to a user profile. The Authorization roles and privacy roles control the level of user access to NSP applications, features, and data objects.

Passwords are typically alphanumeric, with a minimum and maximum number of characters.

This guide explains security procedures performed by the NSP Administrator.

Roles

Roles used to define application and feature access are:

- Pre-defined - Roles used to establish access to application resources. These are mapped to NSP-defined users in LDAP (Users, Power Users and Managers).
- Organizational - Roles defined by the customer. These are defined as global roles (for example: GPRS, UMTS, PSTN, Lyon, Mulhouse, and so on).

NSP Security involves two types of roles: Authorization Roles and Privacy Roles.

Authorization Roles

In NSP, there are ten pre-defined user Authorization roles: The NSP Administrator is the supervisory role that can assign roles to other users. In addition, the NSP Administrator has all the privileges of the other roles.

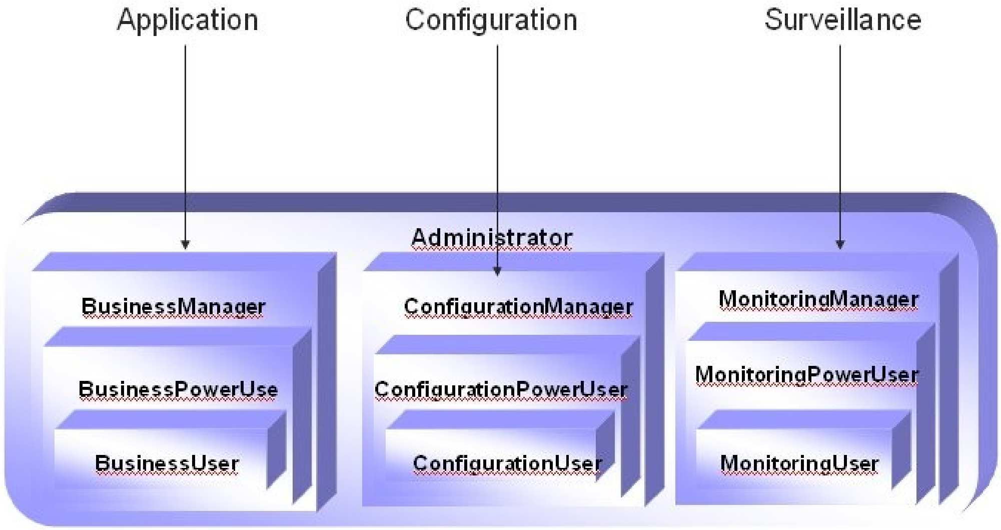


Figure 8: User Matrix

NSP's user policy divides Authorization roles into a matrix of families and levels, which are assigned to profiles at the time of profile creation. The role families are

- Application (Business)- provides full or partial access to ProPerf and ProTrace.
- Configuration - provides full or partial access to the following applications: ProPerf, ProTraq, Alarm Forwarding, and DataFeed.
- Surveillance (Monitoring) - provides access to System Alarms, Diagnostic Utility.

The role levels, which define the degree of privilege in application access, are

- User - Allows user access to object data
- Power User - Allows user access to NSP application critical functions
- Manager - Allows a user to manage NSP applications

These tables map authorization roles to specific functions in each application in the NSP toolbox. (The X denotes the role that can perform the related function. An empty cell means that role cannot perform the function.)

Table 6: Authorization Role Map for Applications

Application	Feature	Authority	Business Manager	Business Power User	Business User
ProTrace	Sessions	List/Execute	X	X	X
	Queries	List/Execute	X	X	X
		Edit/Add/Delete	X	X	
	Results	Upload	X	X	
		Download	X	X	X
		Delete	X	X	
	Roles	Change	X	X	
	PDUs	xDR Layout (View)	X		
		Field Hiding	X	X	
	Full decoding	xDR Layout (View)	X		
		Field Hiding	X	X	
	Decoded SMS	xDR Layout	X		
		Field Hiding	X	X	
	Trace	Start	X		
	xDR	View	X	X	X
		Field Hiding	X	X	X
ProPerf	Dashboard view	List/Execute	X	X	X
ProDiag	Counters	View	X	X	X
		Reset	X	X	

Table 7: Authorization Role Map for Configuration Applications

Application	Feature	Authority	Configuration Manager	Configuration Power User	Configuration User
Alarm Forwarding	Configuration	All	X		
ProTraq	Start Configurations	Consult	X	X	X
		Create	X		
		Update	X		
		Change Rights	X		
		Delete	X		
	Applying Configurations	Consult	X	X	X
		Set	X		
		Activate	X		
		Deactivate	X		
		Change Rights	X		
		Delete	X		
ProTraq Historical	Historical Protraq	Create	X		
		Modify	X		
		Delete	X		
		Export	X		
ProPerf	Dashboard Configuration	Consult	X	X	X
		Create	X	X	
		Update	X	X	
		Delete	X	X	
CCM	Host, Application, Session, Site, Dictionary	Consult	X	X	X
		Modify	X		
		Delete	X		
	Applying Configurations	Activate	X		
		Deactivate	X		
		Set	X		
		Delete	X		
DataFeed	All functions	All	X		

Table 8: Authorization Role Map for Surveillance Applications

Object	Feature	Authority	Monitor Manager	Monitor Power User	Monitor User
System Alarms	Alarm	List	X	X	X
		Terminate	X	X	
Diagnostic Utility	Counters	View	X	X	
		Reset	X	X	

Privacy Roles

Privacy roles establish the levels of access to the data objects used by the applications. Profiles link users to privacy roles, which in turn are linked to read/write/execute permissions for the data objects. A given object can offer different permission levels to different roles and indirectly to different profiles.

Object-data access privileges (read/write/execute) imply the following:

- Read (R)- Users can only view an object in a list. They cannot modify or add information in any way.
- Write (W) - Users can modify an object. Write includes read access. This also covers privacy privileges for that object.
- Execute (X) - Users can view, modify, or delete an object in a list

This information is used at the programming level with user authorization roles to define user profiles.

Table 9: Application Privacy Roles

Application	Object Class	eXecute	Write	Read
ProTrace	xDR session	Open session	N/A	View session in list
	Session view	Open all sessions	N/A	View in list tree. (See privacy dependencies in *Managing Object Privacy*.)
	Link view	Open all sessions	N/A	View in list tree. (See privacy dependencies in *Managing Object Privacy*.)
	Queries	Execute query	Modify query	View and read query Save it with a new name
ProTraq Configuration	ProTraq Config	Apply/ activate/...	Modify	View configuration
	Statistic sessions	Open session	N/A	View session in list

Application	Object Class	eXecute	Write	Read
	Alarms	N/A	N/A	(See privacy dependencies in *Managing Object Privacy*.)
ProPerf	Dashboard	View dashboard	Modify config	View panel & KPI list in dashboard
Alarm Forwarding	Filters	N/A	N/A	N/A
Centralized Configuration Manager	Host	Run discover	Modify & delete	View attributes
	Applications, Data Server MSW, ICP, IMF	Run discover (when applicable)	Modify & delete	View attributes
	xDR session	N/A	Modify & delete	View attributes
	Dictionary, Protocol, Stack	N/A	N/A	N/A
	Session View	N/A	Modify & delete	View attributes
	Link View	N/A	Modify & delete	View attributes
	Network Elements	N/A	Modify & delete	View attributes
	Monitoring Groups	N/A	Modify & delete	View attributes

Profiles

Profiles are structures that make it easier to grant users access to NSP applications and data structures. A user is assigned to one profile, which defines the Authorization role and Privacy role for that user. Authorization roles define the user's access to NSP applications and its features. Privacy roles link users to NSP data objects.

NSP Security Model

Profiles map users to privacy and authorization roles. Before users can access NSP applications and data, the following must be defined:

- Users
  - Each user is assigned to a profile
- Roles
  - In profiles, privacy roles must be associated with users (data object access)

- In profiles, authorization roles must be associated with users (application/feature access)

Figure 9: Profile Overview shows two different profiles linked to two separate sets of users in the hypothetical NET department. The NET department manages SS7 network surveillance. Some users need to perform configuration tasks and other users need to run pre-defined queries and pre-defined dashboards. For more on the hypothetical application of the NSP Security Model, see *Profile 1* and *Profile 2*.

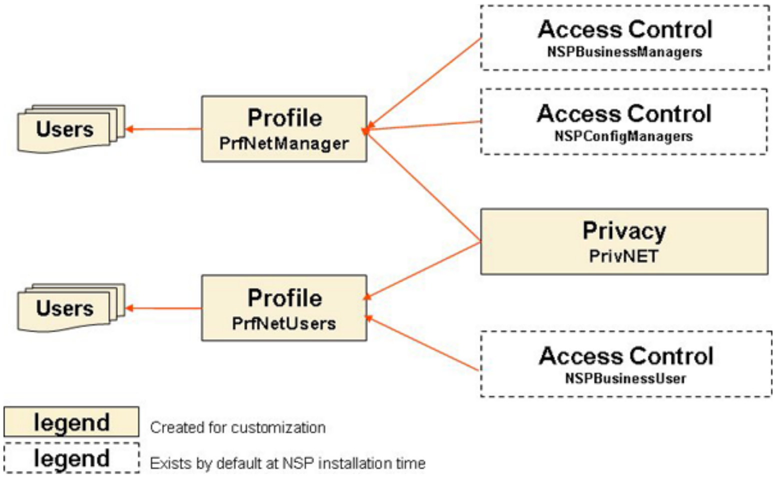


Figure 9: Profile Overview

Notes:

- A role can be mapped to more than one profile.
- A profile should include, at the minimum, one role for application/feature access and one role for data access.
- Many users can share the same profile.

For information on setting up Security in NSP, see “*Using the Security Application*."

Profile 1

Profile - PrfNetManager

Access Control privileges - for authorization roles NSPConfigManager and NSPBusinessManager. (These roles have almost no restriction on feature access.)

Privacy role - PrivNET

Profile 2

Profile - PrfNetUsers

Access Control privileges - for authorization role NSPBusinessUser. (Users with this profile can execute queries on sessions and can view dashboards.)

Privacy role - PrivNET

Chapter 3

Using the Security Application

Topics:

Overview

NSP Security features are created and managed directly through the Web interface using the Security application. Once profiles, roles, and users have been defined, you can configure Privacy settings for the data.

Users must be authenticated to use NSP. A user is an individual or a group that has a unique userid and password.

Note: Do not use the Function Keys (F1 through F12) when using NSP. Function keys work in unexpected ways. For example, the F1 key does not open NSP help but opens the help for the browser in use. The F5 key does not refresh a specific screen, but refreshes the entire session and results in a loss of any entered information.

Opening the Security Application

To open the NSP Security application, follow these steps:

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.

1. Log in to NSP.
   The Application Board is displayed.
2. Click the **Security** icon.
   The Security application is opened and the Users page is displayed.

Managing Users

In the NSP Security application, you can manage users by

- Viewing users
- Adding users
- Modifying users
- Removing users

For more information about the role of users in NSP Security, see "*Users*."

Viewing Users

The NSP Administrator can see a list of all defined users on the Users page.

In the Security menu, select **Display ➤ Users**.
The Users page is displayed.

Note: The Users page is the default view when the Security application is activated.

Table 10: Columns in the Users table

Column Name	Description
User Name	The user's name as defined when the record is created.
Description	A brief explanation entered when the record is created.
Mail	The user's email address
Profile	The profile to which the user is assigned. For more information, see *Managing Profiles*.
Access Status	★ Restricted access (user allowed to log in NSP under controlled access conditions). This status is useful for troubleshooting. ★ Built-in (profile cannot be modified). 🔒 Locked (too many invalid login attempts). Use the unlock button to reset. ⊗ Inactive (password is expired). Use the reset password botton to reset. ⧉ Externally managed user.
Last Login	Date and time stamp for user's most recent login.
Sessions	Number of tokens the current user has in use.

Adding Users

The NSP Administrator can add users for the NSP applications. Complete these steps to create a new user.

1. In the Security menu, select **Display ➤ Users**.
   The Users page is displayed.
2. Click the Add Record icon.
   The User settings window is displayed.
3. Enter the name of the user in the **Name** field.

   The system allows a maximum of 30 alphanumeric characters. Special characters (e.g., + or *) are not allowed, with the exception of a period (.) or hyphen (-).
4. Type the password in the **Password** field.

You can make up a password or click the Automatic password icon for a system-generated password.

5. Enter the same password in the **Confirm Password** field.
6. Enter a description (optional) for the user.

   The system allows a maximum of 255 alphanumeric characters.
7. Enter the email address for the user.
8. Assign a user profile from the **Profile** drop-down menu.
9. If the user should have restricted access, check the **Restricted access** box.
10. Click **Apply** to save the data.
    You are returned to the User page, and the new user record is displayed at the bottom of the Users list.

Modifying Users

The NSP Administrator can modify existing user records.

1. In the Security menu, select **Display** ➤ **Users**.
   The Users page is displayed.
2. Select the user record to be modified.
3. Click the Edit Record icon.
   The User settings window is displayed with data fields populated.
4. Make the necessary changes to the record.

   See *Adding Users* for an explanation of the fields.
5. Click **Apply**.
   The record displayed in the list reflects the changes.

Removing Users

The NSP Administrator can remove user records. Complete these steps to remove a user.

Note: A user who owns objects cannot be deleted until the ownership is transferred. The following error message is displayed: "Unable to delete an owning user (try to transfer ownership)." To transfer ownership, see *Changing Object Privacy*.

1. In the Security menu, select **Display** ➤ **Users**.
   The Users page is displayed.
2. In the Users list, select the User record to be removed.
3. Click the Delete Record icon.
4. Click **OK** at the prompt.
   The record for that User is deleted from the Users list.

Managing Privacy Roles

The NSP Security application supports Privacy Role management through the following activities:

- Viewing Privacy Roles
- Adding Privacy Roles
- Modifying Privacy Roles
- Removing Privacy Roles

For more information about profiles in NSP Security, see “*Managing Object Privacy*."

Viewing Privacy Roles

The NSP Administrator can view all defined Privacy Roles. Complete this action to open the Privacy roles page:

In the Security menu bar, select **Display ➤ Privacy Roles**

Table 11: Privacy Role Columns

Column Name	Description
Role	The name of the privacy role as defined when the record is created.
Description	A brief summary entered when the record is created.
Users	The number of users granted this role through their profiles.
Objects	The number of data objects linked to this role.

Creating Privacy Roles

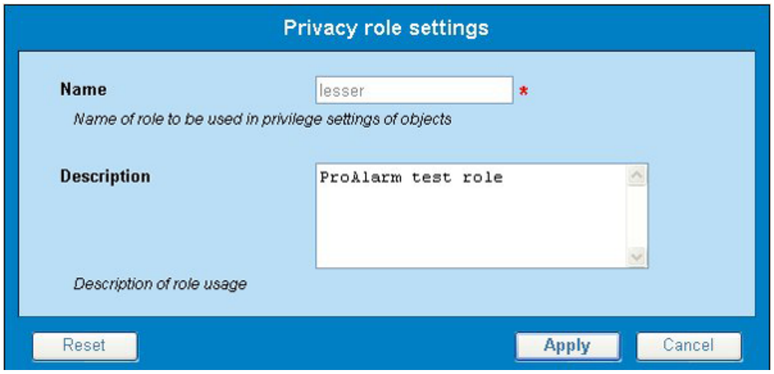
The NSP Administrator can add new Privacy Roles. Complete these steps to create a Privacy Role:

1. In the Security menu bar, select **Display ➤ Privacy roles**.
   The Privacy role page is displayed.
2. Click the Add Record icon .
   The Privacy role settings window is displayed.
3. Enter the **Name** of the Privacy role.
4. Enter a **Description**. (optional).
5. Click **Apply** to save the Privacy role data.
   You are returned to the Privacy roles page, where the new record is listed.

Modifying Privacy Roles

The NSP Administrator can modify existing Privacy Role records. Complete these steps to modify a privacy role:

1. In the Security menu bar, select **Display** ➤ **Privacy roles**.
   The Privacy roles page is displayed.
2. Select the User record to be modified.
3. Click the Edit Record icon .
   The Privacy roles settings window is displayed with data fields populated.



Privacy role settings

Name lesser *

Name of role to be used in privilege settings of objects

Description ProAlarm test role

Description of role usage

Figure 10: Privacy Roles Settings Window

4. Make the necessary modifications.
5. Click **Apply** to save the updated information.
   You are returned to the Privacy roles page, where the the list reflects the changes.

Removing Privacy Roles

The NSP Administrator can remove Privacy Roles. Complete these steps to remove a privacy role:

1. Select **Display** ➤ **Privacy roles** .
   The Privacy roles page is displayed.
2. Select the User record to be removed.
3. Click the Delete Record icon.
4. Click **OK** at the prompt.
   The Privacy roles list is modified to remove the record.

Managing Profiles

The NSP Security application supports Profile management through the following activities:

- Viewing Profiles
- Adding Profiles

- Modifying Profiles
- Removing Profiles

For more information about profiles in NSP Security, see "*Profiles*."

Viewing Profiles

The NSP Administrator can view all defined profiles.

Select **Display** ➤ **Profiles** .
The Profiles list is displayed.

The three columns in the Profiles page are described below:

Table 12: Columns in Profiles Page

Column Name	Description
Profile Name	The name given to the profile when the record is created
Description	A brief summary entered when the record is created
Users	The number of users assigned to each profile

Creating Profiles

The NSP Administrator can create new profiles. Authorization roles and privacy roles are assigned to a profile in the system (but are not visible in the profile record in the Profiles listing). Complete these steps to create a profile:

1. In the Security menu bar, select **Display** ➤ **Profiles** .
2. Click the Add Record icon .
   The Profile settings window is displayed with the General page active by default.
3. Enter the profile **Name**.
   The system allows a maximum of 30 alphanumeric characters. Special characters (e.g., + or *) are not allowed, with the exception of a period (.) or hyphen (-).
4. Enter a **Description** (optional).
5. Click the **Roles** tab.
   The Roles page is displayed.
6. In the **Authorization** section, click the box beside the appropriate Authorization role(s) for the profile.

   Authorization roles are predefined by the system.
7. In the Privacy section, click the box(es) beside the appropriate **Privacy** role(s) for the profile.

   Privacy roles are defined in "*Creating Privacy Roles*"
8. Click the **Applications** tab.
   The Applications page is displayed.

9. Click the box beside any applications to which this profile should not have access.
10. Click **Apply** to save the profile data.
    The new record is displayed at the bottom of the Profiles list.

Modifying Profiles

The NSP Administrator can modify existing profile records. Complete these steps to modify a profile:

1. In the Security menu bar, select **Display ➤ Profiles**.
2. Select the record to be modified.
3. Click the Edit Record icon .
   The Profile settings window is displayed.
4. Make the necessary modifications.

   See *Creating Profiles* for information on the options in the Profile settings window.
5. Click **Apply** to save the updated information.
   The record, with changes, is displayed in the list.

Removing Profiles

The NSP Administrator is permitted to remove profile records. Complete these steps to remove a profile.

1. In the Security menu bar, select **Display ➤ Profiles.**
2. Select the record in the list to be modified.
3. Click the Delete Record icon .
4. Click **OK** at the prompt.
   The profile is deleted.

Managing Object Privacy

When a user tries to access an object in an NSP application, NSP checks access rights. Access rights are established by one of the following:

- System defaults (RWX for owner and administrator), or
- Settings customized by the object owner

Note: R=Read, W=Write, and X=eXecute.

Privileges for one object are automatically calculated based on other related objects. One change in Privacy for an object can be cascaded to many others. Thus, to perform a task, you may have to verify privileges of multiple objects. This chain of Privacy is called "Privacy dependencies."

Table 13: Privacy Dependencies in NSP

Object	Dependency
Node	Signaling Point (SP)
Signaling Point	Connected Linksets
Network View	Contained XDR session or view
Statistic session	ProTraq configuration
Protraq alarms	ProTraq configuration

The following tables list the cases in which there is a Privacy dependency.

Note: If a case is not listed in one of the tables, the object just depends on Simple Privacy.

Table 14: Configure and Execute a Query

Object	Configure	Execute	Comment
Session	R	R+X	Applies to all sessions of the view if the view is used
Query	R+W	R+X	N/A

Table 15: Configure and Display a ProPerf Dashboard

Object	Configure	Execute	Comment
Dashboard	R+W	R+X	N/A
Session	R	R	N/A

Table 16: Associate A ProTraq Configuration

Object	Configure	Comment
ProTraq Configuration	R+W	N/A
Session	R	N/A
IXP	R	N/A

Table 17: View Alarms in Map

Object	View	Comment
Map	R+X	N/A
Managed Object	R	N/A

Viewing Data Objects

The NSP Administrator can display summary records for all defined data objects. When data objects are created in NSP applications (for example, traffic classifications in Centralized Configuration Manager), the Security application adds the object records to a list. When the owner removes that object, the object's record is removed from the list. Perform this action to view a list of data objects.

Select **Display ➤ Objects**.

Table 18: Columns in Objects List

Column Name	Description
Object	The name of the object as defined when the record is created.
Type	A brief summary entered when the record is created.
Owner	The user who creates the object or to whom ownership is transferred. The owner has full access privileges to that record.
State	The status of the object: M=Modified, N=Normal, O=Obsolete.
Created	Date stamp showing when the object was created.

Setting Default Privileges for Objects

See *Setting Default Object Privacy*.

Changing Object Privacy

The NSP Administrator and data object owners can modify existing Object Privacy settings using the Security application. The Administrator has access to all listed objects. The owner has access to those records which identify him or her as the owner.

Complete these steps to change data Object access privileges.

1. In the Security menu bar, select **Display ➤ Objects**.
   The Objects page is displayed.
2. Select the Object record or records.

   If you are using Internet Explorer, you can select multiple records by pressing **CTRL** while selecting the records.
3. Click the Privacy icon.
   The Change privacy window is displayed.

   Note: If an individual record is selected, the current settings are shown. If multiple records are selected, the initial view of the settings shows unselected boxes because the individual settings vary.
4. Click the box for the appropriate Privacy setting .
5. Click **Apply** to save the changes.

Managing Login

The NSP Security Application supports user authentication in the following activities:

- Configuring passwords
- Setting restricted access groups
- Monitoring purchased tokens (licenses)
- Setting the Security notice

For more information about user authentication, see " *NSP Security Model*."

Configuring Password Requirements

The NSP Administrator can set password requirements for the NSP system, including number and type of characters, lifetime of the password before it must be changed, and whether it is generated manually or automatically. Complete these steps to set password requirements.

1. In the Security Menu, select **Action** ➤ **Password Settings** .
   The Password settings dialog is displayed.
2. Enter the appropriate values in the fields. The options are described in this table.

Table 19: Password Settings

Field or Option	Explanation
Minimum length	Minimum number of characters for password; must be at least 8.
Check quality	Defines what aspects of the password the system should check: default is to check on password length and strong is to check length, mix of characters, and history. "Mix" must include uppercase and lowercase letters, numbers, and special characters. "History" check means the password has not been used for the last x times.
History size	Number of previously used passwords to check for (in Check quality).
Minimum age	Minimum delay between two password changes. (To change the password again, the user must wait at least this amount of time.)
Maximum age	Password lifetime before it expires.
Grace period	Delay for changing expired password. After the password expires, the grace period allows the user to login, but requires the password to be changed. After the password expires, and after the grace period expires, the user will not be able to login (the account is locked).
Expire warning	Time (prior to password expiration) when the user begins to get warning notices.
Mode	Defines whether a password (initial or reset) is set manually or automatically.
Must change	Denotes whether a password (initial or reset) is temporary. A temporary password must be reset when the user first uses it.

3. To save the new settings to the system, click **Apply**.

Resetting User Passwords

The NSP Administrator uses the **Security ➤ Users** page in NSP to reset passwords.

Complete these steps to reset a password.

1. In the Security Users page, click a **User Name** in the list of Users .
2. Click the **reset password icon** .
   The Password Reset dialog is displayed with the current user **Name** already filled in.
3. Type the password in the **Password** field.

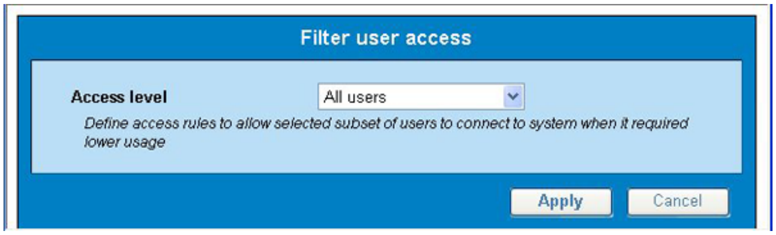
   You can make up a password or click the **Automatic password icon** for a system-generated password.
4. Type the same new password in the **Confirm password** field.
5. Click **Apply**.

   The change takes effect the next time the user logs in to NSP.

Setting Access Level

This procedure gives the NSP Administrator the ability to restrict access to the NSP system at login. Users with restricted access can use the system even when access is being controlled. Complete these steps to set the access level for a user.

1. In the Security menu, select **Action ➤ Filter access** .
   The Filter user access window is displayed.



Filter user access

Access level: All users

Define access rules to allow selected subset of users to connect to system when it required lower usage

Figure 11: Filter User Access Window

2. To restrict access, select **Restricted access users** in the drop-down menu. To allow unrestricted access, select **All users** in the drop-down menu. (**All users** is the default.)
3. Click **Apply**.

   The change takes effect the next time the user logs in to NSP.

Monitoring Purchased Tokens (Licenses)

The NSP Administrator can view system settings for the number of purchased tokens (licenses), the maximum number of tokens allowed per user, and the session timeout. These tokens are assigned to active sessions and control the number of simultaneous users. The session timeout setting ranges from 15 minutes to 8 hours. The session timeout default setting is 1 hour.

Note: The information in the **Tokens** window cannot be modified in this window. This is a view-only window.

To view the Tokens dialog, perform the following steps:

1. In the Security menu, select **Action** ➤ **Manage tokens**.
   The **Tokens** dialog is displayed.
2. Click **Close** to close the window.

Forcing Disconnect

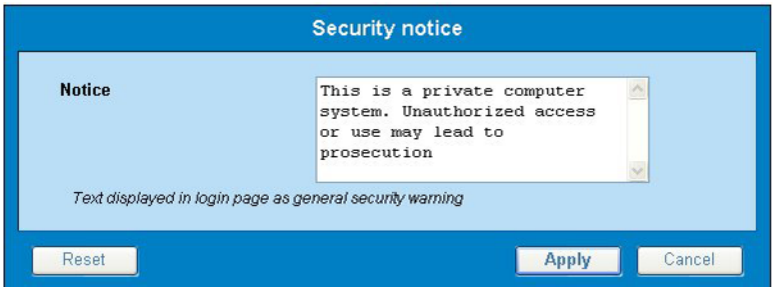
The NSP Administrator is able to free user tokens (licenses) by forcing disconnection of users.

1. In the Security Users page, select the user to be disconnected .
2. Click the Logout icon in the Security toolbar to disconnect the user from the active NSP session.
   The disconnected user's screen displays an error message on its next Web update. The system returns the session's tokens to the token pool.

Setting the Security Notice

The NSP Administrator can modify the Security Notice, which is displayed on the login page.

1. In the Security menu, select **Action** ➤ **Security Notice** .
   The Security notice window is displayed.



Security notice

Notice: This is a private computer system. Unauthorized access or use may lead to prosecution

Text displayed in login page as general security warning

Figure 12: Security Notice Window

2. Enter the appropriate text in the **Notice** field.
3. Click **Apply**.
   The notice is saved and is displayed at the bottom of the NSP login screen for all users.

   Note: The system allows only 255 alphanumeric characters.

Transferring Ownership

The NSP Administrator can change ownership for one or more data objects owned by a particular user. For example, an individual has left the company and a different employee needs to take over all the objects.

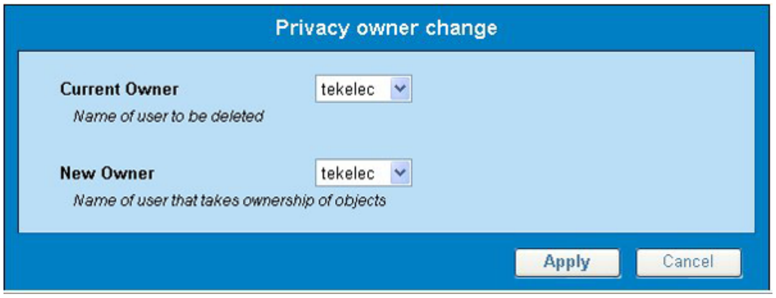
The NSP Administrator can also change the ownership for a selected object or objects. For example, an individual has shifted responsibilities and another employee needs to take over the affected rights.

Changing Overall Ownership

The NSP Administrator can change ownership for all of an individual's objects.

To change the owner Privacy rights, complete the following steps.

1. In the Security menu bar, select **Action** ➤ **Transfer ownership**.
   The Privacy owner change window is displayed.



Current Owner: tekelec
Name of user to be deleted

New Owner: tekelec
Name of user that takes ownership of objects

Figure 13: Privacy Owner Change Window

2. Select the current owner from the **Current Owner** drop-down list.
3. Select the new owner from the**New Owner** drop-down list..
4. Click **Apply** .
   The changes are saved. All of the previous owner's objects are now under new ownership.

Changing Ownership by Object

To change the owner Privacy rights by object, follow these steps:

1. In the Security menu bar, select **Display** ➤ **Objects**.
   The Objects list is displayed.
2. Select the object record or records for which the ownership is to be changed.
3. Click the Owner icon.
   The Privacy owner change window is displayed.
4. Select the new owner from the **New Owner** drop-down list.
5. Click **Apply** .
   The changes are saved. Ownership for the selected record(s) is changed.

Note: This procedure is different from changing all objects from one owner to another. See *Changing Overall Ownership*.

Importing and Exporting User Data

The NSP Security application enables the NSP Administrator to import user data, including user definitions, passwords, email address, roles, and profiles. The Security application also enables exporting of these types of data. The imported and exported data are in Comma-Separated Values (CSV) format.

Importing User Data

To import User data, follow these steps.

Note: If you have added user data to the CSV file, you must first open the file in a text editor and delete the extra commas at the end of the row for that user data. Then you can import the file. (Excel adds the commas, but they are not visible in Excel.)

1. Select **File** ➤ **Import** in the Security Menu.
   The Import security data dialog is displayed.
2. Click **Browse** beside **Users data file**. This is a required field.
   A browsing dialog is displayed.
3. Find and select the CSV file you want to import.

   ```
   NAME;DESCRIPTION;PASSWORD;MAIL;PROFILE
   Blake;;myPwd;blake.jones@tekelec.com;nspAdmin
   ```

   Figure 14: Sample CSV File (for Users)

4. Repeat steps *Step 2* and *Step 3* to find and select a Roles file and Profiles file, if you want to import these.
5. Click **Apply**.
   A message is displayed indicating that the import is in process. The files are added to the user information in the database.

Exporting User Data

To export User Data, which includes user definitions, passwords, email addresses, and profiles, perform these steps:

1. Click **File** ➤ **Export users** in the NSP Security menu.
   A File Download dialog is displayed with options to **Open**, **Save**, or **Cancel**.
2. Click the appropriate option.

   If you choose to Open the file, the User data is displayed in CSV format. You can then save the file. A dialog is displayed for you to choose where the file will be saved.

Exporting Profiles

To export existing NSP Profiles, which include Profile descriptions and associated roles, perform these steps:

1. Click **File** ➤ **Export profiles** in the NSP Security menu.
   A File Download dialog is displayed with options to **Open**, **Save**, or **Cancel**.
2. Click the appropriate option.

   If you choose to Open the file, the Profile data is displayed in CSV format. You can then save the file. If you choose to Save the file, a dialog is displayed for you to choose where the file will be saved.

Exporting Roles

To export existing NSP Roles and their descriptions, perform these steps:

1. Click **File** ➤ **Export roles** in the NSP Security menu.
   A File Download dialog is displayed with options to **Open**, **Save**, or **Cancel**.
2. Click the appropriate option.

   If you choose to Open the file, the Role data is displayed in CSV format. You can then save the file. If you choose to Save the file, a dialog is displayed for you to choose where the file will be saved.