NSP
Network Services Platform
Release 26.4

Getting Started Guide

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Contents

About this document

Purpose

The *NSP Getting Started Guide* helps all new users get familiar with the Network Services Platform (NSP) product and provides tips about how and where to get more information in the documentation suite.

Scope

The *NSP Getting Started Guide* covers topics targeted to new users.

Document support

Customer documentation and product support URLs:

- Documentation Center
- Technical support

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1 Getting started with NSP Release 26.4

Product basics for new users

1.1 Why use NSP?

1.1.1 Overview

NSP offers a variety of benefits for network management, including areas such as automation, optimization, and monitoring.

The purchased feature packages, selected installation options, and operator privilege levels determine which elements are available to network operators. For more information about installation options and feature packages, see the *NSP System Architecture Guide*.

1.1.2 Automation

NSP uses automation to provide a faster, more flexible network management solution. This automation function spans multiple components in NSP, allowing for the provisioning of intelligent, adaptive services across multiple domains and use cases.

Service Management

Service management allows operators to provision a service based on service templates that are configured using intent types imported from network intents, which allows for faster service creation and deployment. It can also make use of operator-defined intent types for dynamic network resource selection and automated provisioning. These intent types utilize NSP's real-time view of the network to map service connection requests to the best available tunnels/paths in order to meet the customer's network efficiency goals.

Path Control

Path Control leverages complex algorithms, applied via policies, to automate the rerouting of service paths based on operator-specified constraints. This allows for the provisioning of services that automatically respond to network changes in order to maintain optimization targets.

Intents

NSP allows you to create and execute intent-based automation flows which let you implement network-level planning and design. Intents translate high-level goal to necessary network configuration, and the NSP generates and validates the configuration and continually verifies the state of the network.

Workflows

NSP allows you to create and execute workflows that can be used to define automated procedures and closed loop automation.

1.1.3 Optimization

The NSP unifies service automation with network optimization, allowing network operators to deliver on demand network services cost-effectively and with scalability. Real-time network path

computation and optimization is centralized to leverage network-wide views and KPI driven to rapidly adapt to changing network conditions.

Service Management

NSP's service management function allows operators to provision a service based on constraints and on an optimization target. The service is created along with the required infrastructure to fulfill these criteria. Operators can quickly and easily deploy services in a changing environment. Operators can change the optimization objective and PIR/CIR representing the bandwidth that will be used by the service.

Path Control

The NSP supports transport network optimization using path control. Path Control provides a view of the IGP topology and PCE LSPs. It also displays the status of the IGP network and provides functionality to optimize the network resources. This can be done globally or locally e.g. optimizing the LSPs passing specific links only.

Path Control leverages centralized, intelligent network control capabilities so that operators can rapidly adapt to changing demand and traffic patterns and run their networks more efficiently. It accepts path connection requests from OSS and orchestration systems, and from physical/virtual network elements. Path Control calculates optimal paths through the network for a given set of business and technical constraints by leveraging centralized views of all available assets/topologies and their current state.

1.1.4 Assurance

The NSP enables operators to report, supervise, and predict issues using different areas that provide an end-to-end view of any network. Report generation provides full visibility of network capacity and inventory, event correlation reveals the root causes of network problems, and automated troubleshooting and dynamic scaling resolves issues in real-time. In addition, a comprehensive REST NBI allows for integration of other systems.

Network Map and Health

Network Map and Health provides information for physical and virtual network elements, and can integrate with existing orchestration, OSS, and portal solutions, providing end-to-end visibility. Operators can explore IP/MPLS and Ethernet services through service topology maps and view details about service components such as SAPs, sites, and SDP bindings. Visualization tools combined with KPI data, alarm correlation, and event timelines help operators quickly identify problems as they emerge. Comprehensive monitoring with summarized aggregate KPIs enables fast problem detection and impact analysis; event timeline and alarm correlation focuses operator investigations on genuine root causes.

Object Troubleshooting

Object Troubleshooting provides extensive troubleshooting tools for selected equipment and services to resolve problems quickly.

Current Alarms

Current Alarms monitors alarms for IP/MPLS, Ethernet, optical, and integrated IP/optical network elements, both physical and virtual. Operators can drill down from top-level summaries of overall

network health to individual element alarms, including root causes and impact analysis. Alarm information gathered in Current Alarms is integrated across the entire NSP, creating a single assurance solution for all network domains.

In an NSP deployment that includes the NFM-P, alarms are raised in response to NE SNMP traps. For MDM-managed devices, NE alarms are displayed if they are supported by the installed MDM adaptors.

1.1.5 Monitoring

The NSP monitors the managed network, internal system processes, and user activity to provide source data for applications and utilities.

Telemetry

The NSP uses SNMP and gNMI protocols along with accounting file collection to collect and process telemetry and accounting statistics from managed NEs. The NSP uses this data to provide monitoring, analysis, visualization, and baseline analytics functions. The supported telemetry types are defined using YANG in NE artifact bundles and translated to objects in the managed network using custom resource (CR) definitions.

The following NSP areas enable you to configure, manage, and review YANG-based telemetry data from NEs:

- **Data Collection and Analysis, Management**
  filters and stores telemetry data; can be configured to publish telemetry data to Kafka topics for subscriber notification, and to collect accounting file output.
  DCA functions provide event-driven telemetry baselining with anomaly detection and can be used for closed-loop automation or similar applications.
- **Data Collection and Analysis, Visualizations**
  presents historical and real-time telemetry data as graphs
- **Data Collection and Analysis, Analytics Reports**
  provides end to end historical analytics and reporting from physical inventory to services to application-level insights for IP/MPLS and microwave networks
  Historical data stored in an auxiliary database is presented as lists, charts, or graphs.
- **OAM Tests**
  In NSP, you can create supported OAM tests on managed NEs.
  Tests can be created for any service. No additional configuration is required on the service for testing to be performed.

Internal system processes

An NSP cluster continually monitors the local server processes for errors and excessive resource consumption. The connectivity to other components and integrated systems is also checked regularly. NSP displays an alarm when a system process, resource, or connectivity fault is detected.

User activity

Users and System Security displays session information for each NSP user, such as authentication success or failure, and the actions of the user.

You can also configure an NSP or NFM-P system to export the user activity logs in syslog format to a remote server.

1.1.6 Microwave awareness (MWA)

In networks where multiple Wavence UBT-SA devices are linked to a single 7250 IXR or 7705 SAR NE, the NSP provides microwave awareness. With MWA, the NSP considers the router and its linked UBTs as a single logical site, while still providing a management path for each of the UBT-SAs.

The UBT SAs are linked to their associated routers either by LLDP links in the NFM-P, or by physical links. Physical links may be created manually in the NFM-P, or by using a Nokia-provided workflow in Workflows. When the NSP detects MWA links, it automatically adjusts the display of the routers and their associated UBT-SA devices in the Network Map view.

Nokia also provides workflows that allow you to perform backup and restore, and software upgrades, on the UBT-SAs linked to a 7250 IXR or 7705 SAR. Contact your Nokia representative for more information about Nokia-provided workflows.

1.1.7 Network Slicing

End-to-end network slicing is a technology for concurrent delivery of differentiated 5G services and a key component of moving 5G use-cases toward a service-driven evolution that supports meeting SLAs deterministically across end-to-end network resources. Network slices are independent, logical self-contained networks representing common physical or virtual network infrastructure that extends from end devices to application servers and includes all intermediate functions and domains.

See the following documents for more information about network slicing:

- *NSP Transport Slice Controller Guide*

1.2 System components

1.2.1 Overview

The NSP architecture accommodates a wide variety of network management functions and interworking capabilities. In addition to the core system elements, an NSP deployment may include appliances, other products, and multiple interfaces to in-house or third-party systems. For example, an NSP deployment can include the NFM-P component and could integrate with one or more WaveSuite product components.

The purchased feature packages, selected installation options, and operator privilege levels (role-based access) determine which elements are available to NSP users. For more information about installation options and feature packages, see the *NSP System Architecture Guide*. For information about access administration, see the *NSP System Administrator Guide* .

Table 1-1 NSP system component overview

Component	Description
Common nspOS components	The following components make up the base NSP platform: • Login—grants SSO access to NSP, GUI clients, and other resources • Entry point for NSP • NSP user authentication • Session Manager—tracks and manages SSO sessions • REST API Gateway—acquires NSP REST API tokens and locates specific NSP APIs • PKI service—generates and distributes TLS artifacts for an NSP deployment
VSR-NRC	The Virtual Service Router - Network Resources Controller (VSR-NRC) acts in a Virtual Network Function (VNF) capacity to perform topology discovery. The VSR-NRC is based on the SROS software, and implements the southbound protocols of NSP's path control function, which consist of the Path Computation Element (PCE) function, with PCEP, BGP-LS and IGP protocols, and the OpenFlow Controller (OFC).
NFM-P	The NFM-P is a network management system that functions as an NSP component. It simplifies routine operations and allows the bulk provisioning of network objects. The system is designed using industry standards such as Java, XML/SOAP, REST, and WebDAV. The NFM-P uses open-standard interfaces that allow the system to interoperate with a variety of other network monitoring and management systems.
WaveSuite	The WaveSuite product includes the WaveSuite Network Operations Center (WS-NOC), an optical controller that can be integrated with NSP to enable the discovery and management of cross-domain links between IP and optical networks For more information about this type of integration, see the *NSP IP Optical Coordination Guide*.
Data stores	The NSP uses various forms of persistent storage for statistics and network data model information. In addition to the NSP PostgreSQL database, an NSP deployment may include an NSP auxiliary database, and for classic management, an NFM-P database.

1.3 Deployment flexibility

1.3.1 Flexibility

NSP software is licensed and sold based on feature packages or automation packages. These packages provide the ability to fully customize an NSP deployment according to your network type, management requirements, and desired outcomes.

See “NSP product offerings” in the *NSP System Architecture Guide* for information about NSP feature packages. See 4.2 “Delivery” (p. 53) for information about NSP software delivery.

1.3.2 Deployment options

The NSP supports a number of recommended deployment types that address a variety of network-management scenarios. A deployment option may require the purchase of multiple feature packages, and may require the installation of various NSP components and separate products.

The *NSP Installation and Upgrade Guide* provides details about the following supported deployment options.

1. high-availability and disaster recovery
2. MDM
3. MDM plus classic mediation
4. resource control
5. simulation

1.3.3 Network growth

NSP components can be installed in stages to allow for the growth and diversification of a given deployment. For example, an IP-only NSP deployment can be expanded to include optical network management components and products. You can also add auxiliary databases, and flow collectors and controllers in support of flow-based reporting.

See the *NSP Installation and Upgrade Guide* for specific system deployment information.

1.4 Northbound interfaces

1.4.1 NSP APIs

NSP has various APIs through which an OSS client application can configure and retrieve network management information. For an overview of APIs, see “NSP APIs” in the *NSP System Architecture Guide*.

APIs are documented on the Network Developer Portal. For more information about the Network Developer Portal, see 3.6 “Network Developer Portal” (p. 51)

1.5 NSP users

1.5.1 User roles and responsibilities

The following table shows the typical job functions for users of the NSP and identifies the areas of the product people in those roles are most likely to use.

Table 1-2 NSP user roles

User role	Description	NSP areas typically used in this role
Developers	Application developers use the NSP REST API to provision and monitor network objects, and to subscribe to real-time network event notifications. The REST API supports service assurance, and IP/MPLS and optical network management functions.	Network Intents Workflows API Model Driven Configurator Artifacts
Network engineers	A network engineer is responsible for device configuration, NE software and script management.	Device Management • Configuration • Backup and restore • Upgrade Workflows Network Intents Object Troubleshooting Current Alarms
Network designers	A network designer is involved in network planning work, including IP/optical network connectivity, routing management, and network optimization.	Device Management • Configuration Path Control • MPLS, Infrastructure Workflows Network Map and Health
Administrators	An NSP system administrator can manage all NSP functional areas, including system security, user account management, user access control, system component management, and database management.	System Health File Server Map Layouts and Groups Users and System Security Artifacts
Operators	A network operator takes care of routine tasks, including network fault detection and troubleshooting, equipment health, and service infrastructure monitoring.	Analytics Current Alarms Data Collection and Analysis Network Map and Health OAM Tests Object Troubleshooting
Service delivery staff	Service delivery staff are responsible for multi-layer service provisioning and assurance.	Service Management Object Troubleshooting

1.5.2 User access and security

See “NSP User Security” in the *NSP System Administrator Guide* for information about user management, user access control, and user session management.

1.6 User interfaces

1.6.1 Client-based applications

The NFM-P GUI client provides an extensive IP/MPLS network management interface as part of the Platform feature package. See the *NSP NFM-P Classic Management User Guide* for information about this application.

1.6.2 NSP dashboards and UI

NSP provides a web-based UI in which the main menu and dashboards are the primary methods of navigation through the product. The included dashboards are Network Map and Health, Object Troubleshooting, and Transport Slice Controller. Each dashboard surfaces important metrics into at-a-glance visuals and allows for drill-down into details in other product views.

Network Map and Health and Object Troubleshooting dashboards

The Network Map and Health and Object Troubleshooting dashboards, which can be opened from the main menu in the top-left corner of the NSP UI, combine information and functions from previously different applications into one view, providing a broad perspective on network management. The *NSP Troubleshooting Guide* provides information about end-to-end troubleshooting scenarios relating to NSP assurance functions.

Transport Slice Controller (TSC) dashboard

The Transport Slice Controller dashboard provides a summary of the overall health of all transport slices in the network, as well as allowing drill-down into health views on a per-slice basis. The TSC dashboard displays details about L0/L1/L2/L3 services and tunnels/paths used during the realization of transport slices, and provides pro-active monitoring telemetry data and reports on transport slices. See *NSP Transport Slice Controller Guide* for more information and how to access the TSC dashboard.

1.6.3 APIs

For OSS users, NSP functions are available using the REST and RESTCONF APIs. The NSP APIs are documented on the Network Developer Portal.

Product changes for returning users

1.7 New features

1.7.1 Overview

The NSP Release Description lists and describes significant features introduced in the release.

The following topics provide a summary of notable changes to the platform and UI, or links to further details.

1.8 NSP platform changes

1.8.1 Notable platform changes

See “What’s new?” in the *NSP Installation and Upgrade Guide* for information about the significant changes to installation and upgrade procedures release over release.

See “What’s new?” in the *NSP Planning Guide* for a list of port changes and other notable platform changes in the current release.

1.9 NSP UI changes

1.9.1 Notable UI changes in this release

NSP Release 26.4 introduces UI customization features, as well as an onboarding wizard for initial turn-up.

See the following topics in the *NSP System Administrator Guide* for more details:

- UI customization
- onboarding

1.9.2 Major UI changes introduced in NSP 23.11

Starting with *NSP Release 23.11*, the user interface (UI) has changed to integrate previously individual applications into a more unified UI that is easily navigated from a main menu.

Note: When zooming in, the NSP UI might not render well in the browser window, causing some items on the screen to be no longer accessible. This behavior applies to the Help Center as well.

The functions delivered by some former applications are directly accessible via the new menu in a one-to-one mapping. For example, the former Artifact Administrator is now accessible via Artifacts. Other applications may now be accessible via multiple main menu items, based on their functionality. For example Network Supervision’s functionality is now available in Network Map and Health as well as Object Troubleshooting.

Table 1-3, “Menu access in NSP Release 23.11 and later” (p. 16) lists the former applications, their new menu access, and their corresponding user guide documentation.

Table 1-3 Menu access in NSP Release 23.11 and later

Former application	New menu access	Documented in
Analytics	Data Collection and Analysis, Analytics Reports	*NSP Analytics Report Catalog*
Artifact Administrator	Artifacts	*NSP Network Automation Guide*
Cross Domain Coordinator	IP/Optical Coordination	*NSP IP/Optical Coordination Guide*
Device Administrator	Device Discovery Device Management	*NSP Device Management Guide*
Fault Management	Current Alarms Network Map and Health	*NSP Network and Service Assurance Guide*
Group Manager	Maps Layouts and Groups	Documented in the *NSP System Administrator Guide*
Insights Administrator	OAM Tests Data Collection and Analysis, Management	*NSP Data Collection and Analysis Guide*
Insights Viewer	Data Collection and Analysis, Visualizations	*NSP Data Collection and Analysis Guide*
Intent Manager	Network Intents	*NSP Network Automation Guide*
IP/MPLS Optimization	Path Control	*NSP Path Control and Simulation Guide*
IP/MPLS Simulation	Path Simulation	*NSP Path Control and Simulation Guide*
Modeled Device Configurator	Model Driven Configurator	*NSP Device Management Guide*
Network Supervision	Network Map and Health Object Troubleshooting	*NSP Network and Service Assurance Guide*
Resource Administrator	Network Intents	*NSP Network Automation Guide*
Service Fulfillment	Service Management	*NSP Service Management Guide*
Service Supervision	Network Map and Health Object Troubleshooting	*NSP Network and Service Assurance Guide*
Transport Slice Controller	Network Map and Health, Overview	*NSP Transport Slice Controller Guide*
User Manager	Users and System Security	Documented in the *NSP System Administrator Guide*
Workflow Manager	Workflows	*NSP Network Automation Guide*

2 Using the NSP

2.1 NSP UI overview

2.1.1 Overview

The NSP UI provides access to all NSP functions, including direct access to product documentation. Availability of functions depend on which NSP installation options you specify during system deployment, as well as on your user access permissions. Please refer to 1.5 “NSP users” (p. 12) to help guide you through assigning NSP functions to user roles.

The main starting point for most users is **Network Map and Health**, **Overview** as shown in Figure 2-1, “Banner bar” (p. 17). Once you drill down from this default view, you start navigating in context.

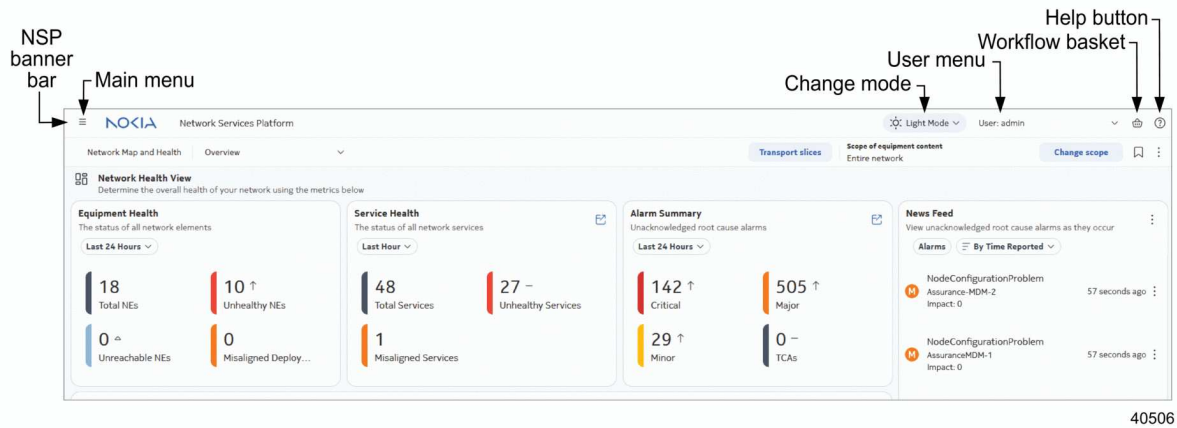
This section explains how to recognize and use common features of the NSP UI.

2.1.2 Banner bar

The NSP banner bar is accessible at the top at of every view and comprises the following elements:

- “Main menu” (p. 18)
- “User menu” (p. 19)
- “Help button” (p. 19)

Figure 2-1 Banner bar



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Main menu

The NSP main menu provides access to the major functional areas of NSP. It is your primary navigation tool within the NSP UI. Main menu contents may vary depending on the feature packages installed and on your individual user permissions.

To access the main menu, click ☰on the top left corner of the NSP banner bar.

As detailed in Table 2-1, “NSP Main menu and views” (p. 17), the major NSP functions are categorized within the menu under the following functional areas:

- NETWORK FUNCTIONS
- PROGRAMMING
- NSP ADMINISTRATION
- SECURITY

Note: You may see only a subset of the items in the main menu, depending on which feature packages have been licensed and which installation options selected for the deployment.

Table 2-1 NSP Main menu and views

Functional areas	Views
NETWORK FUNCTIONS	Network Map and Health • Network Health View • Network Map View • Network Inventory View
	Object Troubleshooting
	Current Alarms
	OAM Tests
	Device Management
	Model Driven Configurator
	Network Mediation
	WaveSuite - Network Operations Center
	IP/Optical Coordination
	Device Discovery
	Data Collection and Analysis • Management • Visualizations • Analytics Reports
	Service Management
	Path Control
	Path Simulation
PROGRAMMING	Developer Portal
	Network Intents
	Workflows

Table 2-1 NSP Main menu and views (continued)

Functional areas	Views
NSP ADMINISTRATION	System Health
	Map Layouts and Groups
	File Server
	Users and System Security
	Artifacts
	Centralized License Manager
SECURITY	Users and System Security Network Security

User menu

The user menu provides access to release information, linked URLs, and settings. Users can also change their password or sign out of NSP.

For more information about global user menu settings, see the *NSP System Administrator Guide*.

Help button

A ? button on the right-hand side of the NSP banner bar gives you access to the NSP user documentation. You can read Quick Help topics related to the current view, or click **OPEN HELP CENTER** at the bottom of the Quick Help menu to open the full NSP Help Center in a new browser tab. You can use the Help Center to search documentation delivered on-product. For more information about the NSP Help Center and its functionalities, see 3.2 “NSP Help Center ” (p. 47).

2.1.3 Layouts

NSP UI layouts include dashboards, maps, diagrams, lists, and graphs.

The following topics offer more in-depth information about layouts and contextual options:

- 2.6 “How do I navigate a dashboard?” (p. 24)
- 2.8 “How do I navigate a map or a diagram?” (p. 27)
- 2.9 “How do I navigate a list?” (p. 30)
- 2.11 “How do I navigate a graph?” (p. 34)

2.1.4 Keyboard-based navigation

You can use the keyboard to navigate and interact with many NSP views. Keyboard navigation allows you to highlight and select interactive elements using keystrokes instead of a pointing device.

Table 2-2 NSP UI accessibility options

Keystroke	Action
Tab	Advance to next element
Shift + Tab	Return to previous element
Shift + F10 Shift + Fn + F10 in Apple/OSX	Open contextual menu
Ctrl + c Command + c in Apple/OSX	Copy
Ctrl + v Command + v in Apple/OSX	Paste
Space	Activate a selection in a checkbox, expansion, or drop-down menu.
Enter	Open folder or expandable object such as tile Invoke action on button or menu item Activate a selection in a link, an option in autocomplete, or expand a menu bar
Ctrl + enter (Windows / Linux) Command + enter (Apple/OSX)	Open the context menu on a table column
F5 Shift + Fn + F5 in Apple/OSX	Refresh
Esc	Close tool tip or menu
Arrow	After tile in matrix selected using Tab key, navigate among tiles Up and down arrows for navigation through items in open contextual or pop-up menu Up and down arrows for navigation between table rows Left and right arrows for navigation across table column headers
Ctrl + down arrow	Navigate to the last row of a table
Ctrl + up arrow	Navigate to the first row of a table
Shift + right or left arrow	Reorder data-table columns in selected header

2.2 How do I set the color scheme in NSP?

2.2.1 Setting the color scheme in NSP

Starting with *NSP Release 25.8*, the NSP UI color scheme can be changed from its default, **Light Mode** to **Dark Mode** or **Enhanced Dark Mode**.

To change to color scheme locate ☼**Light Mode** in the NSP banner bar as shown in Figure 2-1, “Banner bar” (p. 17). Then click the drop-down menu and select either dark or enhanced dark mode.

2.3 How do I navigate between views?

2.3.1 Views and breadcrumbs

NSP opens with its default landing page, **Network Map and Health**, **Overview**. To navigate into an area of NSP, select a function in the main menu. This opens the function's default view.

Procedures in the NSP user documentation refer to opening NSP functions from the main menu. For example, the procedure step **"Open Device Management**, **ZTP Process"** involves clicking on Device Management in the main menu and then selecting the ZTP Process view from the view selector.

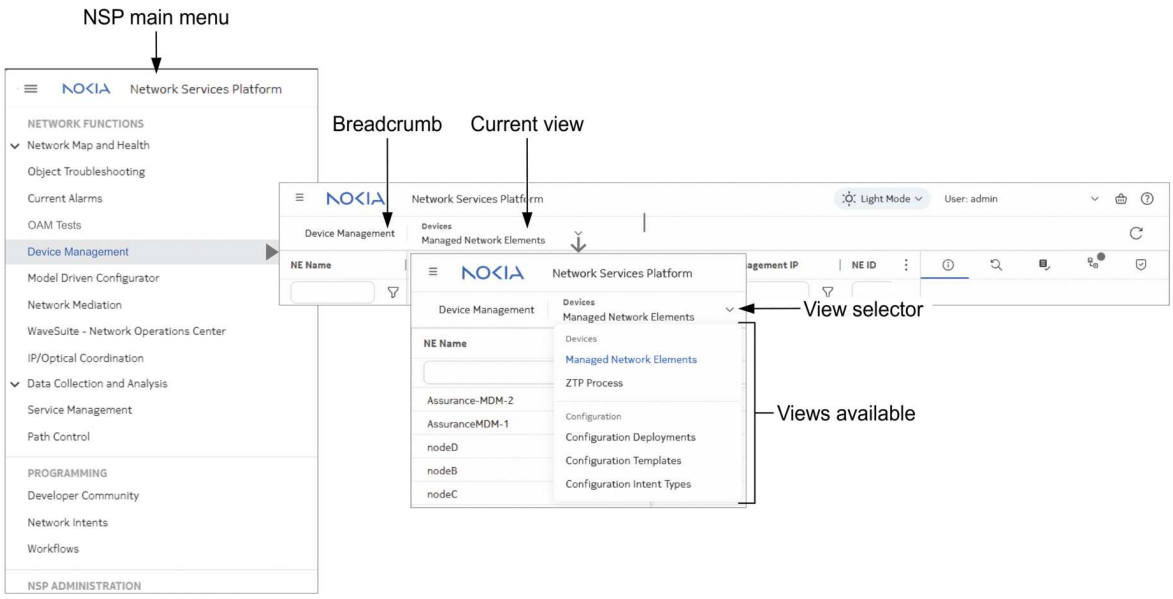
The NSP UI uses breadcrumbs that orient you to your current main menu selection and allow you to navigate easily between different views. For example, Figure 2-2, "Navigation flow" (p. 20) shows how to navigate from **Device Management**, **Managed Network Elements** (the default view) to a different view by clicking the view selector. This opens a drop-down menu of other Device Management views. To return to the default view, click the breadcrumb **Device Management**.

If you have navigated to a list using a **VIEW ALL** function (available in some views), clicking on the first element of the breadcrumb takes you back through the previous breadcrumb views.

Clicking the Nokia logo from any view will take you back to the default view.

Other common navigational starting points are, for example, "Objects" (p. 30) and "Object links" (p. 30) in maps or diagrams, or row actions in lists as described in 2.9 "How do I navigate a list?" (p. 30).

Figure 2-2 Navigation flow



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2.4 Why do some views open in new browser tabs?

2.4.1 Experiencing different browser behaviors

NSP's navigation seeks to reduce clutter and the number of browser tabs opened when changing views. Some views may open in new tabs to facilitate referencing information against the current view or to allow you to continue working in the current view while, for example, a plotter works in another tab.

In general, you can predict the behavior based on the verb in the navigation item:

- View/View in – navigates to another page in NSP in the same browser tab
- Show/Show in – shows something on the same page, for example another area in a dashboard, in the same browser tab
- Open/Open in – opens the view in a new browser tab

Utilities such as plotters, NE sessions, and watchlists open in new browser tabs.

2.5 What is the info panel?

2.5.1 Interacting with the info panel

The info panel displays on the right of various views and offers details about a selected object in maps, diagrams, lists, or graphs.

In most cases, the panel expands by default when opening a view. If it doesn't, it can be displayed with < or hidden with >. The info panel can also be expanded by clicking ⓘ(Summary); however, it can only be collapsed using >.

The info panel's ⓘ(Summary) provides more in-depth information about a selected object. This can be, for example, an NE in a list or an object in a map or diagram. Depending on context, the info panel may also display information such as (Legend), (Watched Filters), (Mediation Policies), (Reachability Policies), and so on.

See the following examples for view/info panel combinations:

- Figure 2-3, "Info panel collapsed" (p. 23) and Figure 2-4, "Info panel expanded and object selected" (p. 24)

Figure 2-3 Info panel collapsed

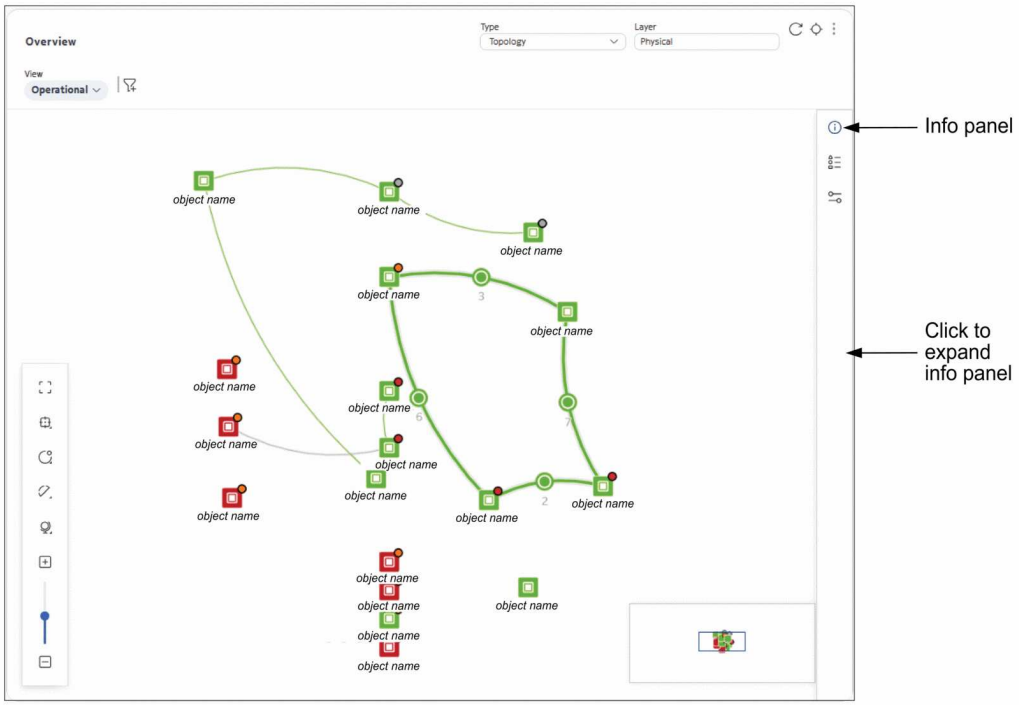

Figure 2-4 Info panel expanded and object selected

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2.6 How do I navigate a dashboard?

2.6.1 Interacting with a dashboard

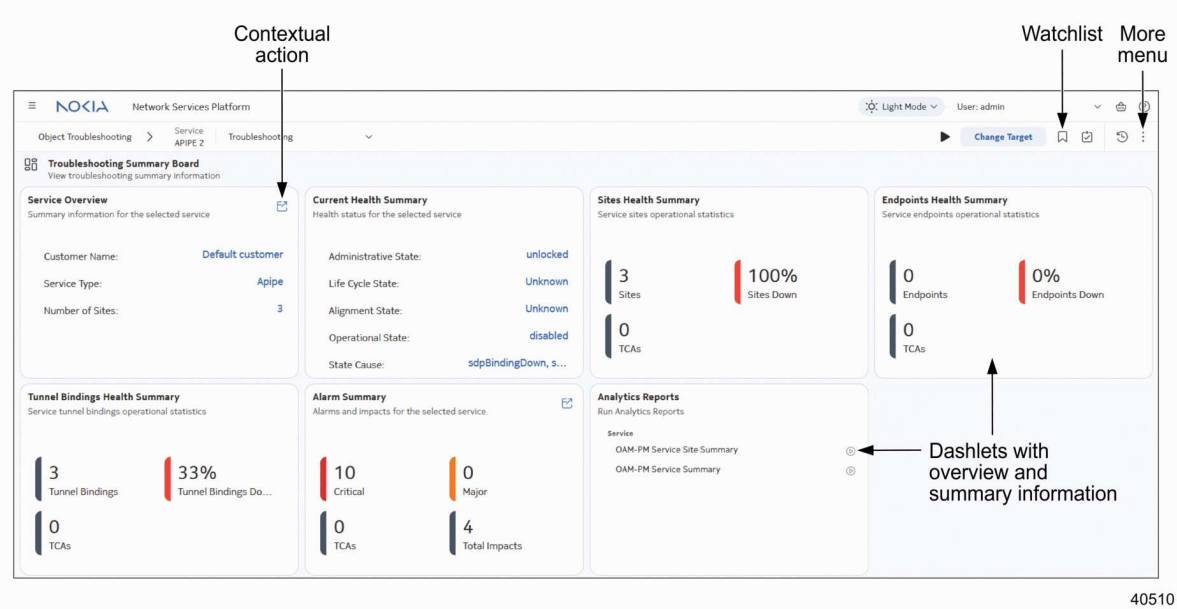
A dashboard is a summary of a functional area within NSP. For example, the Network Map and Health dashboard summarizes information about the network, including KPI trending information as shown in Figure 2-1, “Banner bar” (p. 17). See the *NSP Network and Service Assurance Guide* for detailed descriptions of KPI trending indicators and how to check KPI trending.

The Object Troubleshooting dashboard summarizes information about specific objects which may include NEs, services, ports, links, and so on.

Contextual actions in a dashboard may include linking to other areas of NSP, filtering information, or adding an object to a watchlist.

Figure 2-5, “Dashboard overview” (p. 25) shows some of the elements a dashboard may contain.

Figure 2-5 Dashboard overview



2.7 How do I customize a dashboard?

2.7.1 Editing a dashboard layout

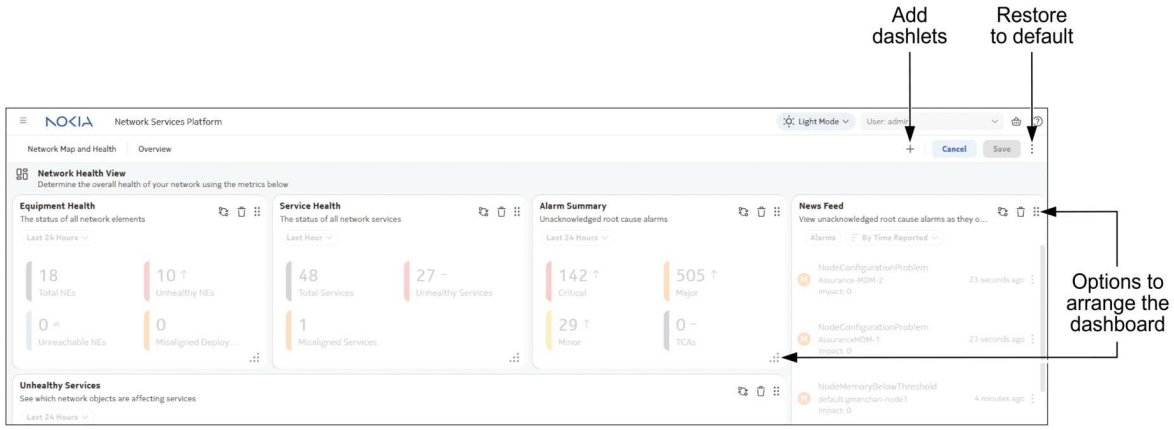
You can customize a dashboard to suit your personal requirements by rearranging and re-sizing dashlets. You can also hide dashlets you don't need to see, with the option to re-display them later. The changes you make are saved under your login name and are maintained in future NSP sessions.

Note: Upgrading to NSP Release 25.11 or later from any earlier release may cause the Dashboard config to be outdated and the dashlets to display an error message. If the blue banner appears in the banner bar, follow "To return your dashboard to default layout settings" in Step 1 to restore your dashboard. Once reset, you may customize your dashboard layout again.

When adding dashlets to a dashboard, consider that each displayed dashlet uses a portion of available system resources; an excessive number of dashlets can lead to degraded system performance. When adding dashlets to your dashboard, consider removing any dashlets that you don't need.

Figure 2-6, "Dashboard in edit mode" (p. 26) shows actions you can take to customize a dashboard.

Figure 2-6 Dashboard in edit mode



Steps

1. In the breadcrumb banner of the dashboard, click ⋮, **Edit dashboard**.

   The dashboard is placed in Edit mode. Complete any of the following tasks to change your dashboard:

   - To resize a dashlet, click and drag the resize handle at the corner of the dashlet.
   - To move a dashlet, hover the mouse pointer over the dashlet and then click and drag the dashlet to the desired position. Release the mouse button when the dashlet is in the correct position.
   - To remove a dashlet from the dashboard, click (Delete) on the dashlet you want to remove. Click **DELETE** to confirm the removal.
   - To add a currently-hidden dashlet to the dashboard, click +. The Add Dashlet form opens. Select the dashlet you want to add to the dashboard and click **ADD**.

     If the Add Dashlet form is empty, all available dashlets are already displayed for this context.
   - To replace a dashlet with a currently-hidden dashlet, click (Replace) on the dashlet you want to replace. The Replace Dashlet form opens. Select the dashlet you want to add to the dashboard and click **REPLACE**.

     If the Replace Dashlet form is empty, all available dashlets are already displayed for this context.
   - To return your dashboard to default layout settings click ⋮, **Reset to default layout**. Click **RESET** to confirm your action.

2. When you have finished changing your dashboard layout and want to save it, click **SAVE**, and then **SAVE AS DEFAULT** to confirm your changes.

   To exit the editing mode without saving the changes to your dashboard layout, click **CANCEL**, and then **EXIT** to confirm your action.

2.8 How do I navigate a map or a diagram?

2.8.1 Interacting with a map or a diagram

Each map or diagram layout comprises various common components, including:

- “Palette controls” (p. 29)
- “Objects” (p. 30)
- “Object links” (p. 30)
- Info panel

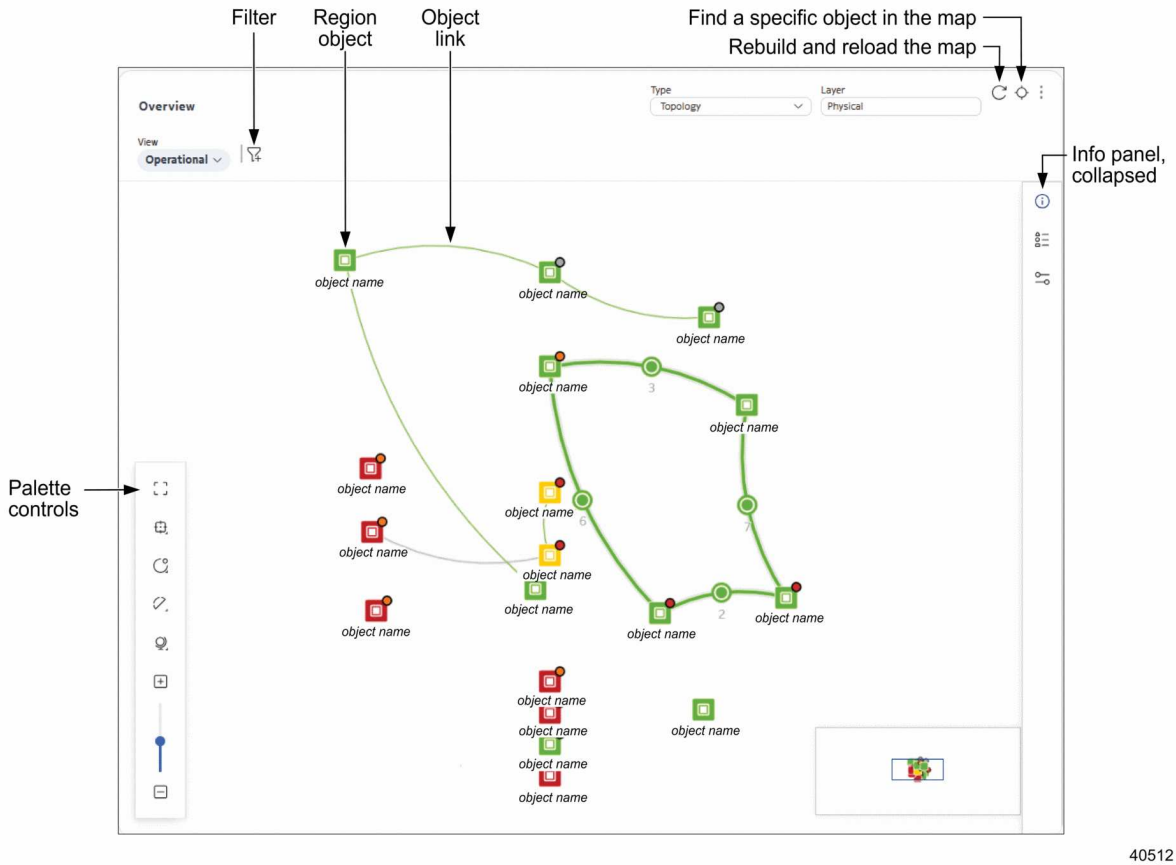
See Figure 2-7, “Common map layout” (p. 26) for a general map overview and Figure 2-8, “Common diagram layout” (p. 29) for a general diagram overview. You can click anywhere in the white space of a map or diagram and drag it to adjust the viewing area in any direction.

In addition, in maps, you can add filters, change the view, rebuild and reload the map, or find a specific object in the map.

In diagrams, the following actions are available for selected alarm objects:

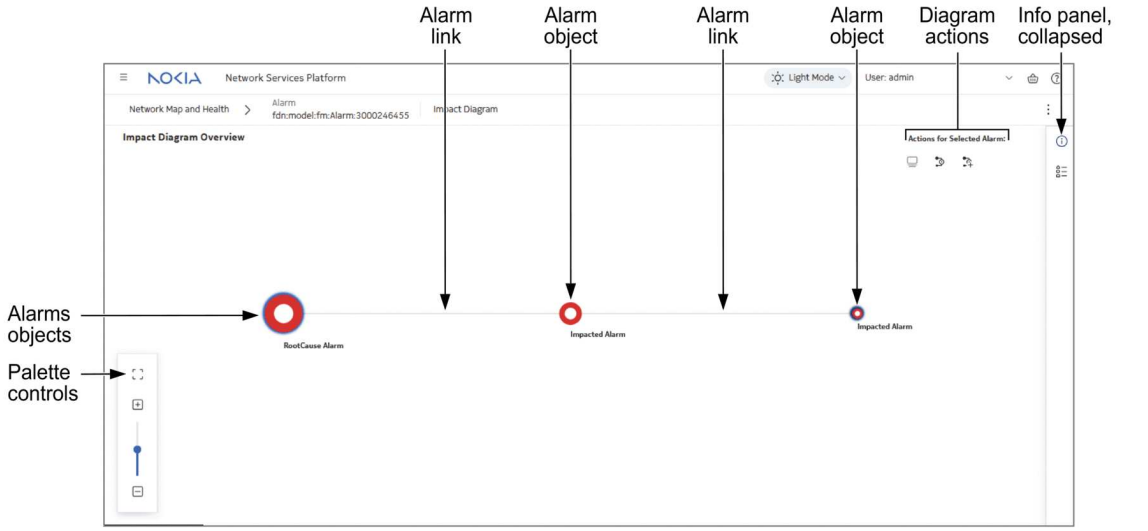
- (Open affected object) – opens in new browser tab
- (View root causes) – opens in-place
- (View root causes (New Tab)) – opens in new browser tab

Figure 2-7 Common map layout



Note: NEs and routers must be assigned to a region to appear on the map layout. If they are not assigned to a region, they can be manually assigned to one.

Figure 2-8 Common diagram layout



Palette controls

Palette controls are used to adjust the behavior and appearance of maps and diagrams. Available palette controls may vary by content.

Table 2-3 Palette controls

Palette control	Action
Fit to screen	Zoom the map or diagram to fit the selected region to available screen area.
Adjust clustering	Show cluster health. Display or hide region and zone boundaries. Option to move all contained objects when moving a region or zone. Display options for connectors to any NEs/routers that are external to a region or zone: • Group external NEs/routers with their immediate parent zone or region; the map displays all connectors to zones or subzones that contain the external NEs. This option shows greater detail. • Group external NEs/routers with their top-level region; the map displays a single connector to the region icon. This option shows less detail.
Adjust vertices	Adjust icon size for NEs/routers, zones, and regions. Show/hide text labels for map objects.

Table 2-3 Palette controls (continued)

Palette control	Action
Adjust links	Show or hide links between NEs/routers, zones, and regions. Adjust link curvature and threshold.
Map view	Turn on Bird's-eye View (shows entire map in small inset). Adjust the opacity of the background map.
Zoom	Zoom into and out from the map or diagram.

Objects

In maps, click and drag a region object to change its location, if desired. The existing link(s) between the object being moved and the object(s) staying in place remain intact.

Hovering over any region object in a map displays a partial summary of what is shown in the info panel for that selected object.

Right-clicking a region object displays options that include, for example, showing the object in the network element list or adding it to the watchlist. 2.4 "Why do some views open in new browser tabs?" (p. 22) explains the expected browser tab behavior when selecting those options.

In diagrams, hovering over any alarm object displays a partial summary of what is shown in the info panel for that selected alarm.

Object links

In maps, an object link represents the physical link(s) between at least two objects. You can adjust the way links are displayed in maps and diagrams using palette controls; see Table 2-3, "Palette controls" (p. 29).

In diagrams, links represent relationships between alarms. For example, as shown in Figure 2-8, "Common diagram layout" (p. 29), a RootCause Alarm may be connected to multiple impacted alarm objects, indicating their relationship to each other.

In maps, hovering over a link may display a partial summary of what is shown in the info panel for that selected link.

Right-clicking an object link in a map may display options that include, for example, viewing it in Current Alarms or in the link list. 2.4 "Why do some views open in new browser tabs?" (p. 22) explains the expected browser tab behavior when selecting those options.

2.9 How do I navigate a list?

2.9.1 Interacting with a list

Lists share a common layout that generally comprise various components as shown in Figure 2-9, "Common list layout" (p. 32). This may include:

- Columns and column headers

Lists display information based on which view was selected in the view selector. Column headers group related data in each column. For example, the column header Severity groups the severity levels in **Network Map and Health**, **Current Alarms**. You can scroll the list left/right or up/down to see more of the available data, if applicable.

- Rows and row actions

  Rows contain information based on the view selected. For example, in Device Management, the Managed Network Elements view displays table rows representing individual NEs. You can right-click a row or click ⋮ (Table row actions) for contextual menus.

  Some list views allow you to select multiple objects. This slightly changes the location of some contextual menus. For example, selecting multiple objects in **Device Management**, **Managed Network Elements** moves the options **Enable Anti-theft Mode...** and **Push password...** into the banner bar.

  If you hover over any cell, you can use the right-click option **Copy** to copy that cell's value. If you select the row first, the same action copies the values of the entire row.

  Note: This behavior continues until you deselect the row using CTRL (in Windows) or Command (in macOS) + click the selected row.

- Table settings and actions

  In ⋮ (Table settings & actions) you can, for example, clear filters or compact rows. The selection you make affects the entire list.

- "Filters" (p. 32)

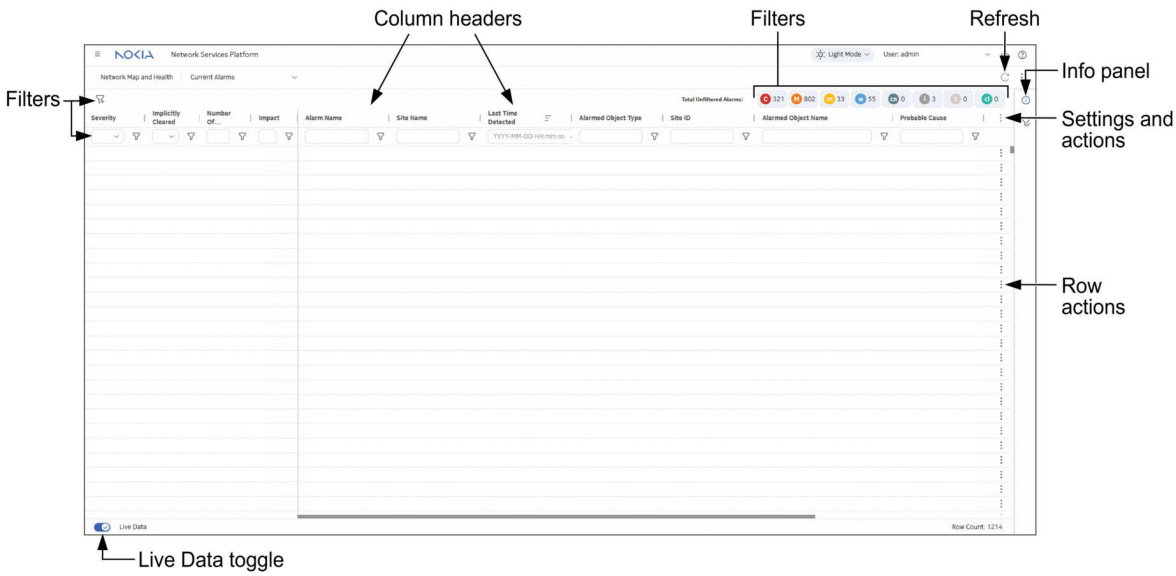
- Info panel

When needed, the lists are paginated. Use the page controls at the bottom of the screen to navigate between pages.

Note: If the total number of pages is not available from the data source, the page control shows "more" instead of the total, for example, 1/more. In this situation, entering a higher page number in the page number field displays the next page. For example, from page 1, if you enter 4, page 2 is displayed. This prevents problems caused by attempting to navigate to a page that does not exist. After the last page has been displayed, the page control shows the total number of pages and you can navigate to a specific page by number.

The list view is refreshed automatically when the optional Auto-refresh toggle is enabled at the bottom left corner of the screen. Use (Refresh) to refresh manually.

Figure 2-9 Common list layout



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Filters

Depending on the view selected, lists can be filtered in the following ways:

- use the input fields located just below the column headers.
- use (Filter menu) to filter using an alphabetic string or use the drop-down for a timeframe.
- use (Search for a filter to apply) for advanced filtering.
- use the filtering tabs located on the right-hand side above the column headers as shown in Figure 2-9, “Common list layout” (p. 32). Alarms can be sorted by severity. For example, “C” filters objects with critical severity only; “M” filters those with major severity; and so on.

Individual dashlets can be filtered by timeframe. For example, in **Network Map and Health**, **Overview**, some dashlets show the default time range “Last Hour.” This can be adjusted by choosing a different value from the drop-down options.

To configure the way information is displayed in lists, see 2.10 “How do I manage the display of listed information?” (p. 33).

2.10 How do I manage the display of listed information?

2.10.1 Description

You can configure and save display preferences for the columns in any list view as follows.

You have the following options:

- rearrange the sequence of columns
- re-size columns
- pin columns to the left or right of your display
- filter attributes
  NOTE: Filtering inputs are not saved for the next session.
- auto-size individual columns or all columns to fit data
- sort column lists based on selected attributes
  NOTE: Column sorting changes are not saved for the next session.
- show/hide columns
- export column data to CSV, XLSX, or XML

2.10.2 Steps

1

Open a list view. The columns specific to the service, service component, or inventory object are displayed.

2

Configure the following column display preferences. To reset the columns to the settings at the start of the session, hover over the column heading and click ☰, **Reset columns**. To see more columns, scroll to the right.

a. To rearrange the left-to-right sequence of columns, click and drag on a column heading.

b. To resize columns, hover over the vertical line between two columns, then click and drag when the arrows appear.

c. To pin columns, hover over the column heading and click ☰, **Pin column**. Then click **Pin left**, **Pin right**, or **No pin**.

d. Some columns provide a filtering field that users can populate with characters in order to refine their search.

To filter attributes, the following rules govern this process:

- By default, when a column will return an alphabetic string - such as a name - the filtering uses the “Contains [...]” logic
- By default, when a column will return a numeric string - such as a port - the filtering uses the “Equals (=)” logic

- The user can override this by clicking inline with the filtering field and choosing an alternate logic

e. To auto-size one or more columns to fit data, hover over the column heading(s) and click , **Autosize this column** or **Autosize all columns**. You can also use (Table settings & actions), **Autosize all columns**.

f. To sort list objects in ascending or descending order, click on a column header to sort the data. You can perform multi-column sorting by holding down the SHIFT key while clicking the column header. The sort icon is only visible for columns that are already sorted.

g. To clear column sorting or filters, click (Table settings & actions), **Clear Sorting** or **Clear Filters** .

h. To show or hide columns, click (Table settings & actions), **Manage columns**. Deselect the columns you want to hide, or select the columns you want to show. Click APPLY.

Note: In the **Service Management**, **Services** view, columns can be shown for custom attributes that have been added by augmenting the existing service models. For more information, visit the Network Developer Portal.

i. To export column data to CSV, XLSX, or XML, click (Table settings & actions), **Export (.cvs)**, **Export (.xlsx)**, or **Export (.xml)**.

Note: When this action is performed, only the data loaded into memory will be exported. Additional data from the database will be excluded.

Note: There are columns in multiple grids where sorting and/or filtering is not supported.

END OF STEPS

2.11 How do I navigate a graph?

2.11.1 Interacting with a graph

Graphs are visual representations of statistical information based on the view chosen. For example, **Network Map and Health**, **Top Problems** describes the total number of times an alarm appears within the network.

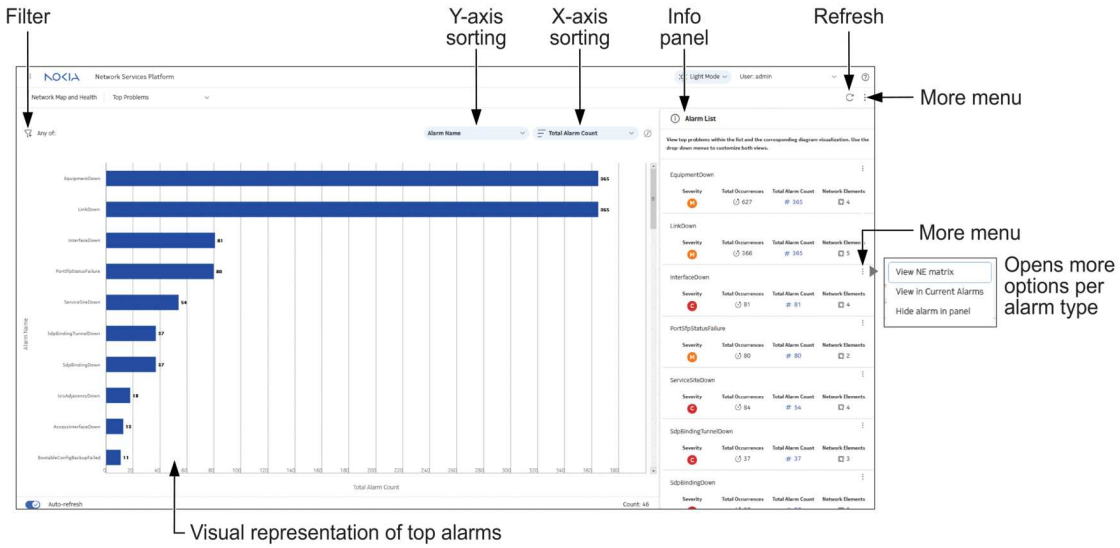
Graphs can be filtered and sometimes sorted based on x- and y-axes. See for example Network Map and Health, Top Problems in Figure 2-10, “Common graph layout” (p. 35).

, (More Menu), **Settings** provides access to Fault Management and Network Assurance settings.

The graph view is refreshed automatically when the Auto-refresh toggle at the bottom left corner is enabled. Use (Refresh) to manually refresh.

The info panel lists each item of the diagram visualization in more detail. For example, the **Network Map and Health**, **Top Problems** info panel shows a detailed alarm list with more menu options.

Figure 2-10 Common graph layout



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2.12 What is a watchlist?

2.12.1 Using a watchlist

A watchlist helps you monitor and navigate directly to the NEs and services that you deem most important.

You can add, view, or remove an object from the watchlist.

Figure 2-11, “Using a watchlist” (p. 36) shows the process for adding a watchlist location.

Adding an object to a watchlist

To add an object to your watchlist, for example in Object Troubleshooting, select an NE or service when prompted. In Troubleshooting Summary Board view, click ⋮, **Add to Watchlist**. This saves the object to the watchlist; the view remains the same.

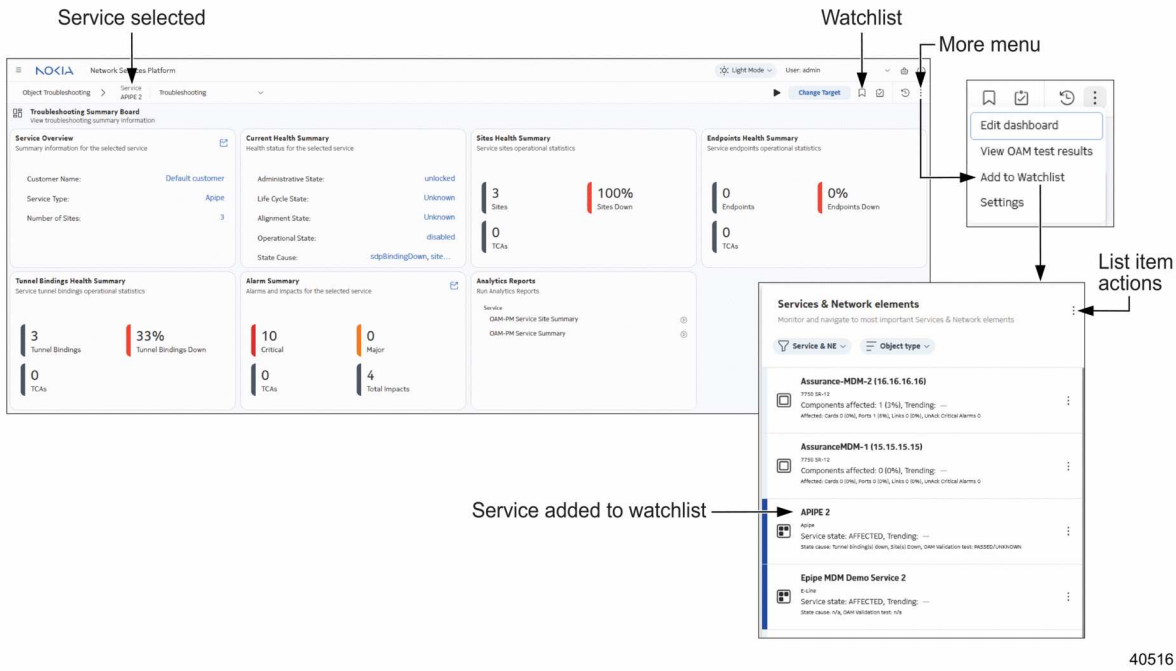
Viewing an object in a watchlist

To view the items on your watchlist, click (Watchlist). A new browser tab opens displaying all the objects already added to the list. You can filter by object or sort by object type or name. The bar to the left of an object displays a lighter or darker color depending on how many other items are affecting it.

Removing an object from a watchlist

To remove an object previously added to the watchlist, open the watchlist and click ⋮(List item actions), **Remove from Watchlist**. You will not be prompted to confirm your action. Removal of a watchlist item is instant.

Figure 2-11 Using a watchlist



See the *NSP Network and Service Assurance Guide* for more information about the watchlist.

2.13 How do I check recently-executed workflows?

2.13.1 Using the Workflow Basket

The NSP banner has a **Workflow Basket** button (🧺) in the NSP banner bar as shown in Figure 2-1, “Banner bar” (p. 17). It lists the 10 most recently-executed workflows in NSP, along with their execution status. It has a cross-launch button to **Workflows**, **Executions**.

You can open workflow objects from the list by clicking on them. They open in the **Execute Workflow** form, which displays workflow execution status, workflow YAML or JSON code, and workflow output.

To view a complete list of executed workflows in NSP, click 🧺(Workflow Basket), ☰(View all executions in Workflows). This cross-launches to the **Workflows**, **Workflow Executions** list.

2.14 Why am I being signed out?

2.14.1 NSP timeout behaviors

When working in NSP, you may have multiple browser tabs open. This happens, for example, when opening the Help Center or when plotting data while you continue working in other browser tabs. Some of those NSP tabs have auto-refresh behaviors that do not require user interaction to keep them active.

NSP has two types of inactivity timeouts:

- Timeout after UI session inactivity

  If you have not interacted with NSP for 60 minutes, you will be signed out of the session on all browser tabs. To restart the session, you can sign back into NSP on any of the open tabs. Should a tab still display the sign-in page when you switch tabs after signing back into NSP, you can refresh the tab to bypass the sign in and return to the previous view.
- Timeout after sign-in page inactivity

  When the sign-in page is displayed on any tab, you must sign in within 30 minutes. If you do not sign in within that time frame on any of the tabs, a warning message is displayed, and you must enter the sign-in credentials again.

In both cases of inactivity, the 30- and 60-minute time-frames are defaults and can be adjusted as needed by the administrator. See *NSP System Administrator Guide* for more information.

2.15 How do I change my user settings?

2.15.1 Purpose

Use this procedure to configure your NSP UI preferences. See the *NSP System Administrator Guide* for information about settings that NSP administrators can configure to change how the interface looks for all users.

2.15.2 Steps

1

To customize user preferences, from the NSP banner bar, click **User**, **Settings**.

2

Click **User Preferences** and configure your settings as needed.

- **Global settings** let you personalize your settings when you are signed in. Here, you specify the **Polling Time** interval for NSP information display updates.
- **Row color with severity** provides the option to display the alarm severity color in your alarm tables.

3

Click **SAVE** when you have finished changing your settings.

END OF STEPS

2.16 How do I change my password?

2.16.1 Purpose

Use this procedure to change your own NSP login password.

2.16.2 Steps

1

Click **User**, **Change Password** from the NSP banner bar.

2

In the **Change password** form, type your current NSP login password in the **Enter current password** field.

3

Type a new password in the **Enter new password** field and then type it again in the **Confirm new password** field.

4

Click **OK**.

When you log out of NSP, the new password is required at your next login.

END OF STEPS

3 Documentation

3.1 Documentation architecture

3.1.1 NSP documents and tools

The following table lists the documents and resources in the NSP documentation collection. The delivery locations and formats are explained in subsequent sections.

Table 3-1 NSP documents and tools

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Alarm Search Tool	The Alarm Search Tool in the on-product Help Center contains a searchable list of alarms that are relevant to the NSP installation; the list expands dynamically when new artifacts and adaptors are installed in the system. A comprehensive version of the Alarm Search Tool containing all possible alarms for all supported NEs is delivered to the Doc Center and updated as new adaptor artifacts are released.	HTML	HTML	No	Yes
Analytics Report Catalog	The NSP Analytics Report Catalog provides information about the reports that NSP Analytics can generate.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Artifact Guides	NSP supports the management of many devices over model-driven interfaces through adaptor artifacts, which provide mapping between the devices and the NSP. For each NE family that is managed this way, there is an adaptor artifact guide that details the support and limitations. Artifact documentation is updated and delivered regularly, on cadence with the artifacts themselves.	No	PDF, starting with NSP 25.8	Yes	Yes
Classic Management	The NSP NFM-P Classic Management User Guide provides information about using the NFM-P to manage service-aware IP/MPLS networks, including GUI operations, device and network management, and policy and service management.	HTML	HTML PDF	No	Yes
CLM User Guide	The CLM User Guide describes how to configure and use the Centralized License Manager. This document applies to users of an independent CLM deployment as well as those who use a CLM deployment that is integrated with NSP.	HTML	HTML PDF	No	Yes
Data Collection and Analysis Guide	The NSP Data Collection and Analysis Guide introduces NSP Data Collection and Analysis functions to operators and administrators by describing usage and features.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Device Configuration Intent Type Catalog	The NSP Device Configuration Intent Type Catalog lists and provides brief descriptions of the available NSP product intent type artifacts. The document is updated each time new or modified device configuration artifact bundles are delivered, which can happen off-cycle from NSP releases.	No	PDF	Yes	Yes
Device Management Guide	The Device Management Guide provides information about device management using NSP to operators and administrators by describing usage and features. For information about device management using NFM-P, see the NSP NFM-P Classic Management User Guide.	HTML	HTML PDF	No	Yes
Enterprise Guide	The NSP Enterprise Guide describes the supported use-cases for Enterprise deployments of the NSP.	HTML	HTML PDF	No	Yes
Getting Started Guide	The NSP Getting Started Guide (this guide!) is designed to provide a starting place for both new and returning NSP users.	HTML	HTML PDF	No	Yes
Glossary	The NSP Glossary is intended to expand acronyms and define unique terms that are used throughout NSP guides and products. This guide is not intended to define industry-standard terms and will only provide spell-outs in those cases.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Host Environment Compatibility Reference	The HECR provides information about virtualization environments, NSP and RHEL OS compatibility, NSP and Kubernetes compatibility, and HPE SPP compatibility. This document is reissued regularly	No	PDF	No	Restricted
Installation and Upgrade Guide	The NSP Installation and Upgrade Guide is intended for a technology officer, network planner, or system administrator who intends to perform a Network Services Platform deployment function.	HTML	HTML PDF	No	Yes
IP/Optical Coordination Guide	The IP/Optical Coordination Guide introduces the IP/Optical Coordination GUI to operators and administrators by describing usage and features.	HTML	HTML PDF	No	Yes
Network and Service Assurance Guide	The NSP Network and Service Assurance Guide shows you how to monitor and troubleshoot your network for optimal performance. It introduces the Network Services Platform, or NSP, to technology officers and network operators by describing the tools used for network performance monitoring, including NE and service KPIs, alarm management, OAM testing, performance plots, and map views.	HTML	HTML PDF	No	Yes
Network Automation Guide	The Network Automation Guide introduces NSP network automation functions to operators and administrators by describing usage and features.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Network Element Compatibility Guide (Current)	The current NSP NFM-P Network Element Compatibility Guide identifies the compatibility between the supported releases of the NFM-P and the network elements it manages via classic mediation. This document is reissued regularly to communicate support for NEs as they are released and tested.	No	PDF	No	Restricted
Network Element Compatibility Guide (Legacy)	The Legacy NSP NFM-P Network Element Compatibility Guide archives information formerly published in the current version of the guide. Once a year, as an NFM-P release ages out of active support, this document is reissued to archive the information.	No	PDF	No	Restricted
NFM-P Statistics Search Tool	This tool provides a filterable interface for viewing NFM-P performance or accounting statistics information. The NSP HTML collection on the Doc Center provides launch points to each statistic type from the Additional Resources menu. If you download the tool as a ZIP for offline use, the files stats.html and acc-stats.html launch the performance and accounting statistics views, respectively.	No	HTML ZIP	No	Yes
Path Control and Simulation Guide	This document provides important contextual information and procedures that will enable readers to use NSP's path control and simulation functions.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Planning Guide	The NSP Planning Guide is intended for technology officers, network planners, and system administrators who need the information required to plan a successful deployment of the Nokia Network Services Platform, or NSP. The reader is encouraged to become familiar with the NSP architecture, the relevant components for both IP and optical networks, and the virtualization, system, and network requirements.	HTML	HTML PDF	No	Yes
Release Description	The NSP Release Description is intended to assist network planners and administrators by providing high-level feature descriptions for the release, along with the schedule for delivery. This document is cumulative for a major release cycle, for example NSP 25.4 through 25.11, and then resets with the next release, such as NSP 26.4.	HTML	HTML PDF	No	Yes
Release Notice	The NSP Release Notice covers known issues related to the installation, deployment, and operation of the NSP - including the optionally deployable Classic Mediation (NFM-P) component and the Centralized License Manager (CLM).	No	PDF	No	Restricted
Security Hardening Guide	The NSP Security Hardening Guide is a reference document for increasing NSP security at the physical, OS, transport, user, and application levels.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Service Management Guide	This document is intended to manage services.	HTML	HTML PDF	No	Yes
Service Pack Notes	NSP Service Pack Notes accompany every NSP service pack (patch) delivered on the software download site. These documents list the fixes delivered in the service pack and describe how to install it.	No	No	Yes	No
Statistics Management Guide	The NSP NFM-P Statistics Management Guide describes statistics management using the NFM-P. Supported performance and accounting statistics are searchable in the Statistics Search Tool.	HTML	HTML PDF	No	Yes
System Administrator Guide	The NSP System Administrator Guide is intended for operators who have NSP system administrator privileges and need to understand or perform Network Services Platform system management or maintenance. The guide describes how to perform operations for system and component configuration, security, access, and database management.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Document or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
System Architecture Guide	The NSP System Architecture Guide describes the Network Services Platform architecture and interoperation with other systems from a high-level perspective. The audience is a technology officer, network planner, or system administrator who requires a broad technical understanding of the NSP system structure and design methodology.	HTML	HTML PDF	No	Yes
Telemetry Statistics Search Tool	The NSP Telemetry Statistic Search Tool lists telemetry types available for statistics collection. There are two versions of the tool, one available on the Doc Center, containing a complete database of telemetry statistics, and one available on-product which is dynamically updated and which contains only statistics that are relevant to your network.	HTML	HTML	No	Yes
Transport Slice Controller Guide	The Transport Slice Controller Guide introduces the Transport Slice Controller to operators and administrators.	HTML	HTML PDF	No	Yes
Troubleshooting Guide	The NSP Troubleshooting Guide provides information about using NSP, NFM-P tools, and other functions to troubleshoot customer services and the NSP network management domain.	HTML	HTML PDF	No	Yes
Use Case Catalog Sample Procedures	This guide is a multi-release document that provides tested procedures with release-specific sample commands from different NSP releases, depending on the use case.	HTML	HTML PDF	No	Yes

Table 3-1 NSP documents and tools (continued)

Docu-ment or resource	Description	Help Center (on product)	Doc Center	Software download site	Public access
Wavence Device Support Guide	NSP NFM-P Wavence Device Support Guide describes how to discover, configure, and manage Wavence devices using the NFM-P and NSP. The guide is intended for network planners, administrators, and operators and is to be used in conjunction with other guides in the NFM-P and NSP documentation suite where management of Wavence devices does not differ from other network elements. Nokia recommends that you review the entire NSP NFM-P Wavence Device Support Guide before you attempt to manage Wavence devices.	HTML	HTML PDF	No	Yes

3.2 NSP Help Center

3.2.1 Content

NSP user documentation is delivered in an on-product application, called NSP Help Center. During NSP installation, the NSP Help Center loads a base set of guides relevant to any deployment, along with the guides associated with any installed components such as NFM-P.

3.2.2 Context-sensitive help

When you click the ? button in an NSP banner bar, a Quick Help menu opens with suggested topics related to the current view. Short topics may be read in-line, whereas longer topics open in the NSP Help Center.

3.2.3 Browsing

From the Help Center home page, you can browse guides under the following menus:

- OVERVIEW
- INSTALL AND COMMISSION
- OPERATE AND MAINTAIN
- MONITOR AND TROUBLESHOOT
- REFERENCE

You can also browse within a guide using the table of contents tree in the left navigation panel.

Use the breadcrumb to return to search results or the home page. Use the browser back button to return to any previously visited page.

3.2.4 Searching

The NSP Help Center is centered on its robust search capabilities. When you conduct a search from the home page or search results page, the NSP Help Center executes a global search across documentation for all installed NSP components. As shown in the tooltip on the search bar, the boolean operators AND/OR/NOT are supported, as are the wildcard characters * (any string) and ? (any character). Exact-phrase search strings enclosed in quotation marks are also supported.

Note: Common, non-technical terms such as “the,” “and,” “on,” and others are ignored in all searches, including exact-string searches.

Search history is tracked as follows:

- The Recent Searches list on the home page is per-user, and the Popular Searches list shows the trend across all users of the system.
- When a search result link is clicked on the search results page, it is captured in the Recent Searches list and considered for forming the Popular Search list. Navigating to a page in any other way (for example, by browsing from the browse menu or following links within a browsed document) does not make the page eligible for capture in the Recent/Popular Searches list.

Searched terms are not highlighted on the target page, but you can use the browser find function to see the hits within a page of content.

Note: Recent and Popular Search data and page visited information in the Help Center application is reset after a switch-over in a redundant and/or high availability setup.

3.2.5 Filtering

Filters on the left of the search results page display a count beside the filter facets that contain one or more hits on your searched terms. You can refine your search results by selecting one or more filter facets and clicking APPLY FILTERS.

You can filter by either or both of these facets:

- Location
  Select one or more guides or tools to narrow your search results to those areas.
- Information Type
  Select one or more content types to narrow your search results to hits that match the content type. For example, if your search term is “LSP” and you only want to see procedural information, select “Procedure” as the content type.

The content types for filtering are:

- Use cases - use-case-based material showcasing product or feature functionality
- Description - explanatory, non-procedural content
- Procedure - step-by-step instructions to complete a task

- Reference - brief look-up data, such as glossary terms
- Workflow - a sequence of procedures to complete an objective

3.2.6 NSP Help Center notable information

The following table explains the NSP Help Center handling of exceptional circumstances.

Table 3-2 Help Center notable information

Case	Description
Recent and popular search history	To avoid accumulation of a large number of records on Recent and Popular searches, NSP triggers a purge job every week, which keeps the 5000 most recent records and deletes the rest.
NSP component addition and removal	The NSP Help Center contains a base set of guides that are present in all deployment types. However, some NSP components load their own documentation to the Help Center. If an NSP component such as NFM-P is added or removed from the deployment, it could take up to 24 for its help to be added or removed from the Help Center.

3.3 Documentation delivery online

3.3.1 Doc Center

The guides in the on-product NSP Help Center are also available in the Nokia Support Portal (Doc Center) as individual PDF documents and, starting with *NSP Release 23.4*, as an HTML collection.

If you are a new user and require access to the service, contact your support representative.

3.3.2 Using the Doc Center

From the Doc Center on the Nokia Support Portal, you can:

- filter by product, release, model, category, content type, and format
- search for documents within the filtered results
- share results via email
- create a downloadable collection of your filtered documents
- sort the results by issue date, title, or document
- search inside documents
- browse the HTML collection

3.3.3 NSP HTML collection

The NSP documentation is hosted publicly on the Doc Center as an HTML collection that also embeds PDF versions of the guides. This collection contains all of the core guides available in the

on-product Help Center, as well as other resources such comprehensive, deployment-agnostic versions of the NSP AST and NSP TST.

3.3.4 AskAI

The NSP HTML collection on the Doc Center includes a chatbot called AskAI. This feature, powered by Kapa.ai, is a useful tool for finding answers within the NSP documentation set. The chatbot has access only to the specific NSP release documentation collection from which it is launched, so it provides highly accurate responses. As with all AI tools, however, users must always verify the accuracy of the chatbot's answers in the official documentation, to which links are provided in the chatbot dialog.

AskAI gives users an opportunity to click on "Good answer" or "Bad answer" in the conversation window and provides a free-form field for further feedback. Responses are anonymous and are reviewed by the NSP documentation team for potential documentation or chatbot enhancements.

3.3.5 Documentation alerts

To receive an e-mail when new or reissued NSP customer documents are available, subscribe to the notification service on the Documentation Alerts Subscription page.

3.4 Documentation tips

3.4.1 Copying and pasting commands

Exercise caution when copying commands from the user documentation and pasting them for execution.

Consider the following:

- Commands in the NSP user documentation often contain variable text that must be replaced with release- or deployment-specific values before the command can be run.
- It is safer to copy and paste commands from an HTML version of a document, if available, than from a PDF.
- Opening a PDF in a browser may introduce formatting issues that could render pasted commands inoperable. The chance of such errors is reduced but non-zero when the PDF is opened in Adobe Reader.

3.5 Providing documentation feedback

3.5.1 We want to hear from you

As noted in the front matter of each guide, you can email the NSP documentation team for Documentation Feedback. This link is embedded in the footer of each page in the on-product Help Center.

The Doc Center also provides other mechanisms to provide feedback:

- directly from a feedback widget at the bottom of any page of the NSP HTML collection hosted on the Doc Center

- in the AskAI chatbot
- via a form available under “Provide your feedback” in the footer of the Doc Center itself

3.6 Network Developer Portal

3.6.1 Introduction

The Network Developer Portal houses developer-centric information for NSP, IP Networking, and Optical Networking. While there are resources for all three products on this site, this topic focuses on NSP-related information only. Select the **NSP** drop-down menu to explore topics that cover, for example, an introduction to NSP, API documentation, a variety of tutorials, and NSP training.

The portal content is available to logged-in users only; however, registration is free.

Note: The Network Developer Portal is subject to change off release cycle.

To help you automate your networks and simplify operations, the portal provides links to NSP RESTCONF API and NSP REST API resources. This includes Swagger documentation, Yang HTML browser, and sample code collections for all of the listed NSP APIs.

Starting with NSP Release 25.4, the XML API Developer Guide, which was previously delivered in the Help Center of deployments that included NFM-P, has been migrated to Network Developer Portal.

3.6.2 Getting Started

Under **Getting Started**, you can learn more about NSP, APIs, and tools.

Clicking **Introduction to NSP** opens the NSP-dedicated product page which provides more details about NSP’s capabilities, including multi-vendor management and network automation.

The **Introduction to APIs & Tools** area provides information about developing your first NSP API Client and creating your own API samples using the Postman Development Platform.

3.6.3 Development

The information accessible via the **Deployment** menu includes:

- **API Reference**
  This page includes learning resources about NSP API; RESTONF and YANG design; accessing, authenticating, and locating NSP APIs; and Kafka and YANG notification services.
  Additionally, this area provides links to topics such as Model Driven Configuration, Device Discovery, Path Control, or Transport Slices as well as NSP administration, users and network security, and Classic NFM-P management using REST API services.
- **Artifact Development**
  This page provides information related to network intents, resource administration, and workflows.
- **Tutorials**
  The tutorials cover a wide range of topics and may include Topology API, Telemetry, External Alarm Creation, VSCode Extensions, and more.

- **Release Changes**
  This area contains a table that lists functions, their API descriptions and API types along with a notice if there have been any changes release over release.
- **Downloads**
  This page allows you to download a variety of NSP documents and REST API sample collections referenced elsewhere on the portal.
- **Archive**
  The archive page contains articles for NSP releases going back to 17.9.

3.6.4 Labs

The **Labs** menu provides access to the **NSP catalog**, the **Lab FAQ** page, **My Labs**, and **Redeem Voucher**.

The NSP lab catalog offers a variety of dedicated lab environments tailored to different network management use cases. Here, you can reserve an NSP shared lab (free) or request lab quotes (paid) for a variety of setups, including, for instance, NSP Model-driven IP Management or NSP Classic IP Management with Enhanced Optimization. This allows you to evaluate NSP and develop and test NSP-enabled OSS applications.

The lab FAQ page answers common questions about the NSP labs, including, for example, who can use the NSP labs or how to set up a VPN tunnel to the lab.

On the My Labs page you can view the labs you have set up as well as perform select administrative tasks.

3.6.5 NSP Evolution

Home directs you to a page that describes why and how to transition from NFM-P to NSP, and what type of support is offered. This site also provides a form to register for a pre-evolution assessment.

4 Software

4.1 Packaging

4.1.1 Software bundle

An NSP software bundle is a set of one or more installation files that you download and use to deploy the product.

For NSP cluster deployment, a software bundle consists of a container runtime environment and the NSP software. For NSP components that are deployed outside an NSP cluster, an NSP software bundle consists of a set of RPM installation files. Each bundle type is available for download as one or more compressed archive files.

4.1.2 Feature packages

The purchase of feature packages and the associated license keys grants the right to download and use the software. “Feature packages” are not self-contained from a software-bundling or installation perspective; a feature package simply entitles you to a particular set of features. See “NSP product offerings” in the *NSP System Architecture Guide* for information about available NSP feature packages.

After you download and extract a software bundle, and configure your installation options during installation, the feature packages you purchased are enabled and the associated features are available for your use.

4.2 Delivery

4.2.1 Product software

As a registered customer, you can download NSP software from the Nokia Support Portal. If you are a new customer and require access, contact your sales or support representative for registration information.

To access the NSP software, locate NSP (Network Services Platform) on the main page. Clicking **Downloads** opens a new browser tab on the Delivery→Downloads portal, also called ALED. This is organized by release. You navigate through the hierarchy to select and download the packages you are licensed to use according to your purchase agreement.

WS-NOC and WS-RC deliver software from separate product hierarchies in the portal.

After you select items for download and click Next, you must choose a download method. Click Help for information about the available download methods.

Note: It is strongly recommended that you verify the message digest of each NSP package or file that you download from the Nokia Support Portal. After selecting Packages→Packages.cksum, the download page lists the MD5 or SHA-256 hash value of an item for comparison with the output of the RHEL md5sum or sha256sum command. See the appropriate RHEL man page for information about using a command.

4.2.2 Service packs

Service packs, or patches, are delivered on the Nokia Support Portal in the same download area as product software. Service Pack Notes bundled with the service packs describe the fixes and provide installation instructions.

4.2.3 Adaptors

Adaptors for model-driven management of multi-vendor devices are delivered on the software download site of the Nokia Support Portal. Hardened adaptors are delivered under the NSP release structure on this site. Customer-specific adaptors are delivered in their own restricted-access Adaptors directory.

Reference adaptors and trial versions of customer-specific adaptors are delivered on the Network Developer Portal.