

CU WebEM User Guide

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Summary of changes

A list of changes between document issues. You can navigate through the respective changed topics.

Changes between issues 01 (2020-11-13, 5G20B) and 01A (2021-03-19, 5G20B)

Operator Certificates tab

- The chapter has been updated with additional information regarding certificates display and removal.

Automatic Management tab

- The *Manual Triggering* section has been updated with information regarding a waiting period after triggering the certificate initialization or the CMP key update request.

Certificate Revocation List tab

- Instructions for certificate revocation list (CRL) update were improved.

Session List tab

- The note on the currently existing CU WebEM sessions was enhanced.

1. Introduction to CU WebEM

CU WebEM User Guide introduces the Web Element Manager (WebEM) for administering gNB central unit (gNB-CU) in a cloud gNB. It explains how to manage parameters, certificates, user accounts, and faults. It provides information about gNB-CU properties, alarms, and statuses of cells, VMs, and X2 links.

CU WebEM overview

CU WebEM is a web-based application supporting following gNB-CU administrative and maintenance activities:

- Configuration management
- Diagnostics
- Fault management
- Performance management
- Security management
- State management
- VM management

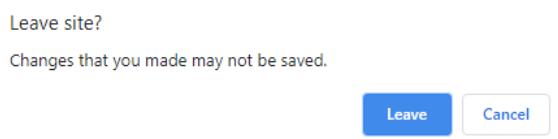
CU WebEM operates in an online mode. It requires a working connection to a gNB-CU to display up-to-date information and performance statuses. To log in to CU WebEM, you need to know a specific gNB-CU management plane (M-plane) IP address and use one of the CU WebEM supported web browsers.

To access CU WebEM, follow [Logging in to CU WebEM](#) instructions.

Note:

If you reload or close a CU WebEM page, your connection to the network element (NE) is terminated, and you need to re-authenticate. The `Cancel` button has no effect in this case, meaning that the connection is terminated even if you click the `Cancel` button.

Figure 1: CU WebEM connection termination



Note:

All graphics in *CU WebEM User Guide* are for illustration purposes only and may not be an exact representation of the application. Actual data and parameters may differ from those presented in the graphics as they are subject to the gNB-CU settings and configuration.

CU WebEM supported browsers and versions

CU WebEM supports Google Chrome and Mozilla Firefox web browsers.

It is possible to open CU WebEM using older releases of Google Chrome and Mozilla Firefox but some functionalities may not work properly. When you open CU WebEM in an unsupported browser version, a warning notification displays. Close this warning and, if possible, upgrade your browser to a supported version.

Figure 2: Example of unsupported web browser version warning

Not supported Mozilla Firefox version. Supported versions are: 77, 78, 79. CU WebEM may not work properly when opened with not supported web browser version

CU WebEM unsupported browsers

CU WebEM doesn't officially support the Chromium-based web browsers. These browsers enable you to open CU WebEM but the application may not work properly. When you open CU WebEM with the Chromium-based web browser, a proper warning notification displays. Close this warning and use Google Chrome or Mozilla Firefox supported versions.

Note:

Responsibility for problems caused by Chromium-based browsers lie with the user.

Figure 3: Example of unsupported web browser warning

This web browser is currently not supported. Please use Google Chrome or Mozilla Firefox

1.1 Logging in to CU WebEM

You can access CU WebEM by using the gNB-CU management plane (M-plane) IP address and a supported web browser.

Before you start

- The gNB-CU is operational and reachable from your local or remote network.
- Ensure you know a specific gNB-CU M-plane IP address.
- Use one of the supported browsers: Google Chrome or Mozilla Firefox. For more details, see [CU WebEM supported browsers and versions](#).
- Ensure you know your CU WebEM account credentials.

Procedure

1 Open the supported browser.

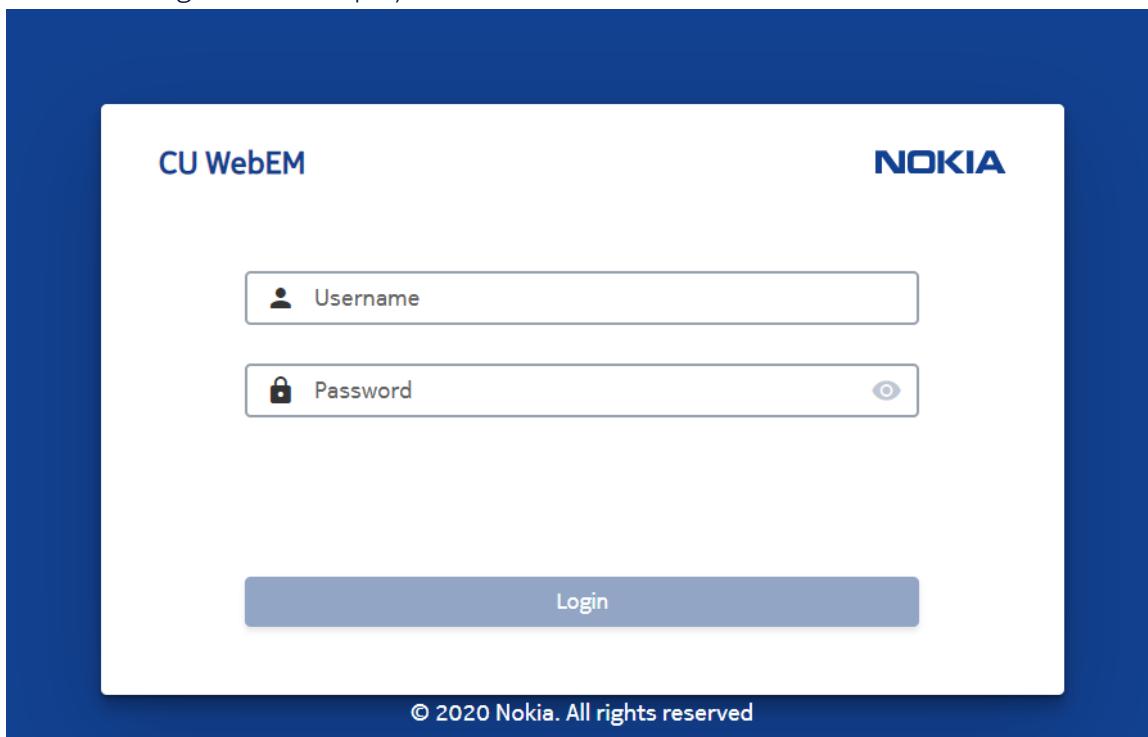
2 Type the gNB-CU M-plane IP address in the web browser address bar.

3 Press `Enter` to connect.

If you type a wrong IP address in the address bar, the `HTTP 404` error message displays. Validate the entered IP address and check your connection.

Step result

CU WebEM login screen displays.



4 Enter local account credentials.

If you press `Caps Lock`, CU WebEM will display the warning under the password text

field.



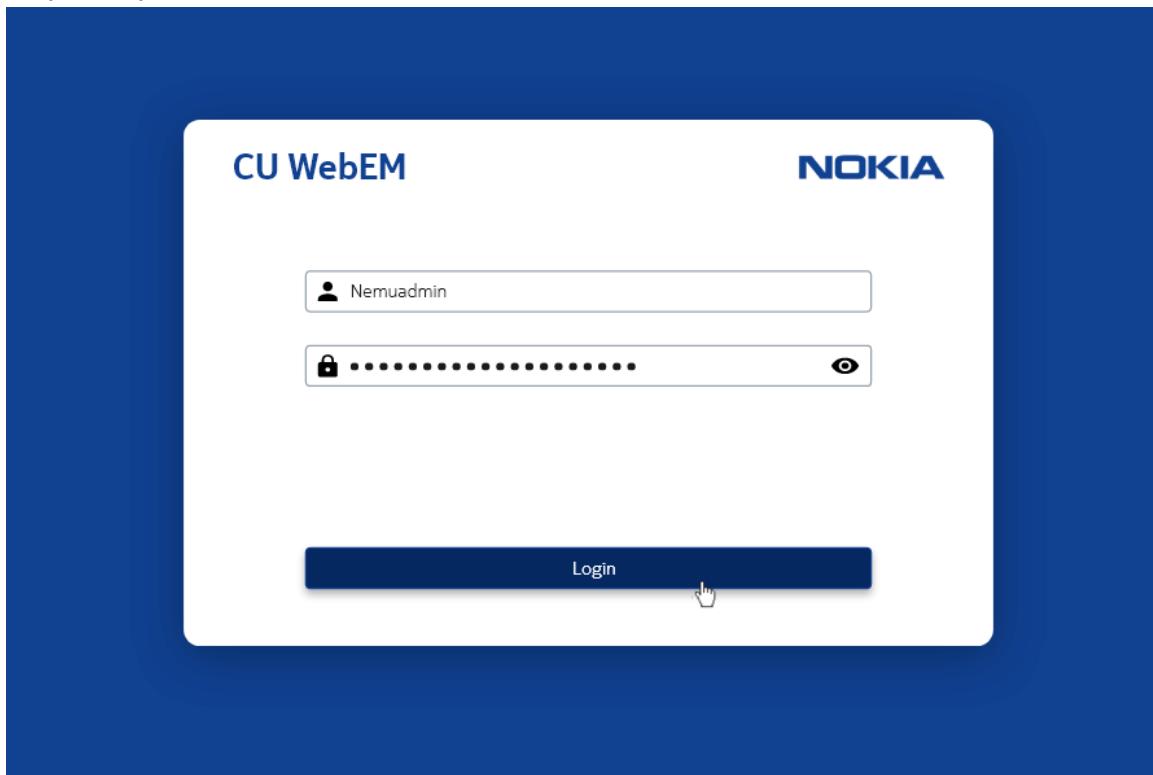
Tip:

You can reveal the hidden password by clicking the icon.

5 Click Login.

If you type an incorrect username or password, the error concerning wrong credentials displays. Validate the entered login data.

Step example



Result

No errors occurred and you are logged in to the CU WebEM.

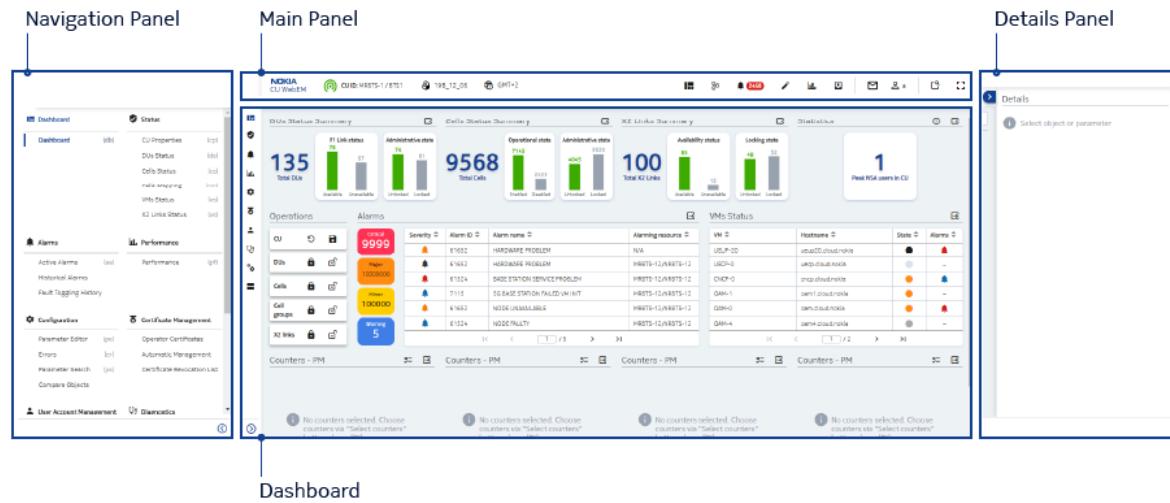
2. CU WebEM user interface

CU WebEM user interface improves user experience by organizing data in sections. You can customize CU WebEM views and display preferences.

CU WebEM contains user areas that allow you to access, display, and organize the gNB-CU data. The sections include:

- Main Panel
- Dashboard
- Navigation Panel
- Working Panel
- Details Panel
- Notifications
- View customization
- CU WebEM buttons and icons
- CU WebEM keyboard shortcuts

Figure 4: CU WebEM user interface areas



2.1 Main Panel

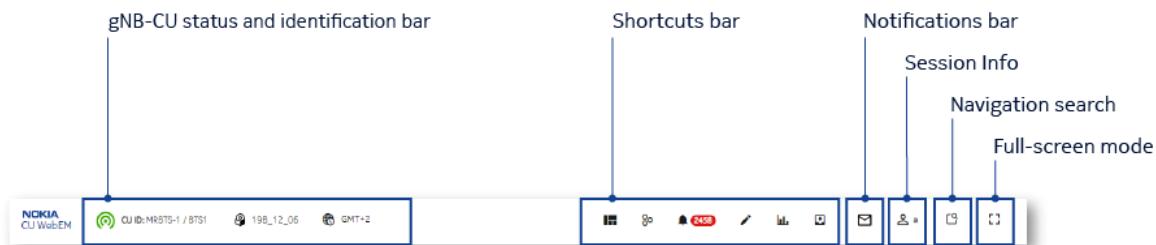
Use the **Main Panel** at the top of CU WebEM to switch between the most used views or to check session and application information.

Main Panel overview

The **Main Panel** is always visible at the top of the application page. For fast navigation, it consists of buttons directing you to particular CU WebEM views. There are six functional sections:

- [gNB-CU status and identification bar](#)
- [Shortcuts bar](#)
- [Notifications bar](#)
- [Session Info](#)
- [Navigation Search](#)
- [Full-screen mode](#)

Figure 5: **Main Panel** functional sections



gNB-CU status and identification bar

It displays the basic gNB-CU site identification information and parameters, including:

- gNB-CU MRBTS ID
- gNB-CU name
- gNB-CU software version
- gNB-CU timezone
- Real-time gNB-CU status

This section contains an icon representing the **Enabled** or the **Disabled** gNB-CU operational state. Click the **CU ID** icon to navigate to the **CU Properties** tab.

Figure 6: **gNB-CU status and identification** bar overview



Shortcuts bar

It contains the shortcut buttons working as direct links to the most important and used tabs

of CU WebEM.

Figure 7: *Shortcuts* bar overview



Table 1: *Shortcuts* bar icons and linked tabs

Icon	Related tab
■	Dashboard
❖	Cell Status
🔔	Active Alarms
✍	Parameter Editor
📊	Performance
📸	Snapshot



Tip:

For the CU WebEM icons and buttons description, see [CU WebEM buttons and icons](#).

Notifications bar

It lists all the historical action messages that appeared during the current CU WebEM browser session. For more information, see [Notifications](#).

Session Info

It displays a dialog box with details on the current CU WebEM browser session, application logs, login credentials, and the help file. After clicking the button, you can:

- check the last log-in timestamp.
- check your token expiration date and time.
- [renew your session token](#).
- check your password expiration date.
- check information about invalid log-in attempts before the last successful login.
- [open or download CU WebEM User Guide in a PDF format](#).
- [log out from the application](#).

Renewing CU WebEM session token

After you log in to CU WebEM successfully, you receive a bearer token which is set to 60 minutes. Information about remaining session expiration time displays for the following timeframes:

Token expiration timeframe	Timeframe indicator
≤ 30 minutes before session timeout	Black timer displays on the status bar next to a user name. 
≤ 10 minutes before session timeout	Red timer displays on the status bar next to a user name. 
≤ 60 seconds before session timeout	Red countdown timer displays on the status bar next to a user name. 

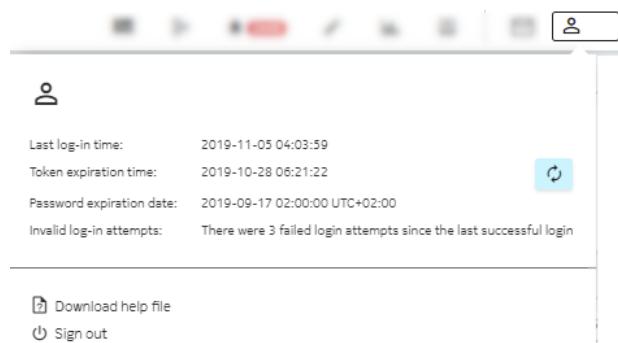
Figure 8: Location of CU WebEM session logout timer on the [Main Panel](#)



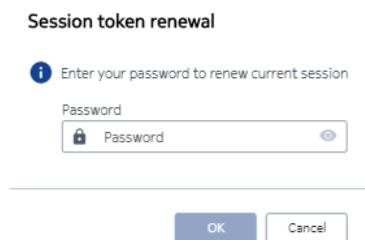
Tip:

If the bearer token expires, the application will log you out immediately. Log in to CU WebEM to assign new session token.

You can extend your session time and renew your token before it expires. Click the  [Renew session](#) button in the [Session Info](#) panel.

Figure 9: Renewing token session

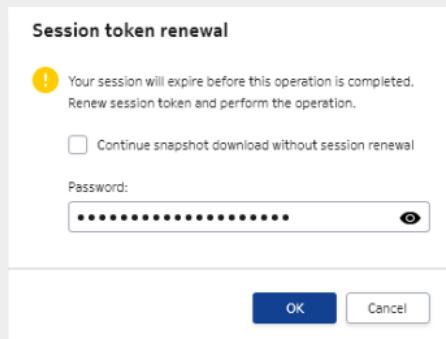
In the dialog window provide your CU WebEM password. Click **OK** to confirm the operation.

Figure 10: Session token renewal

Tip:

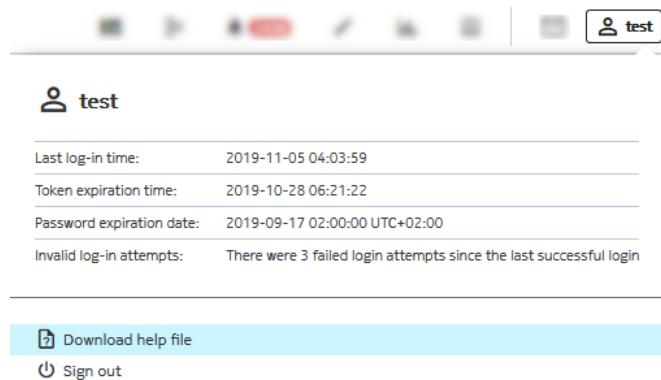
If you perform an operation which requires more time than a default bearer token session time, remember to renew your session token.

In the **Snapshot** tab, you can extend session time before starting snapshot collection. For more information, see [Collecting gNB-CU log files](#).



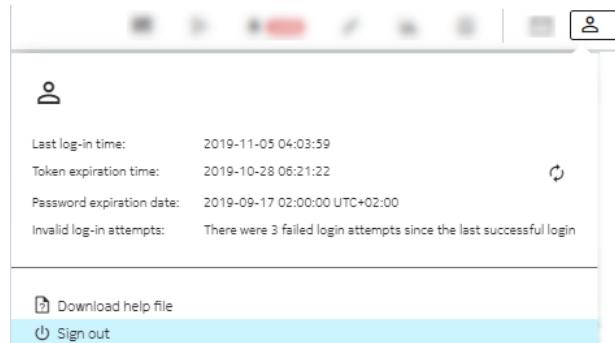
Downloading CU WebEM User Guide

To download *CU WebEM User Guide* in a PDF format, click **Download help file** and select whether you prefer to **Open File** or **Save File** on the workstation.

Figure 11: Downloading a help file

Logging out from CU WebEM

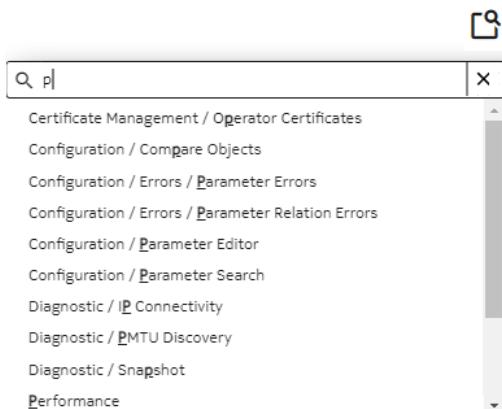
To log out from CU WebEM, in the **Session Info** panel click **Sign out**. This action redirects you to the CU WebEM login window.

Figure 12: Logging out from CU WebEM

Navigation Search in CU WebEM

It allows you to for a specific view among all CU WebEM sections. After clicking the icon, a search modal window opens. Type a search phrase in the modal window. As a result, you receive all matching sentences in alphabetical order. By default, the **Navigation Search** displays first ten entries. Scroll down to display the rest of the search results.

Figure 13: **Navigation Search** modal window



 **Tip:**

For easy access to the **Navigation Search**, press **CTRL+SHIFT+F**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

To close the **Navigation Search** modal window, press **ESC** or click on any application area outside the modal window.

Full-screen mode

It enables to toggle between full-screen mode and standard mode. To enable the full-screen mode functionality, click the  icon in the **Main Panel**.

 **Tip:**

For easy access to the full-screen mode, press **F11**.

To toggle to normal screen mode, click the  icon available in the full-screen mode.

 **Tip:**

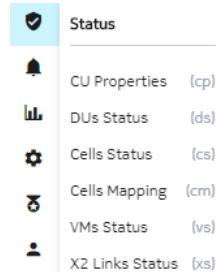
To exit the full-screen mode, press **ESC**.

2.2 Navigation Panel

The **Navigation Panel** provides direct links between different views and tabs in CU WebEM.

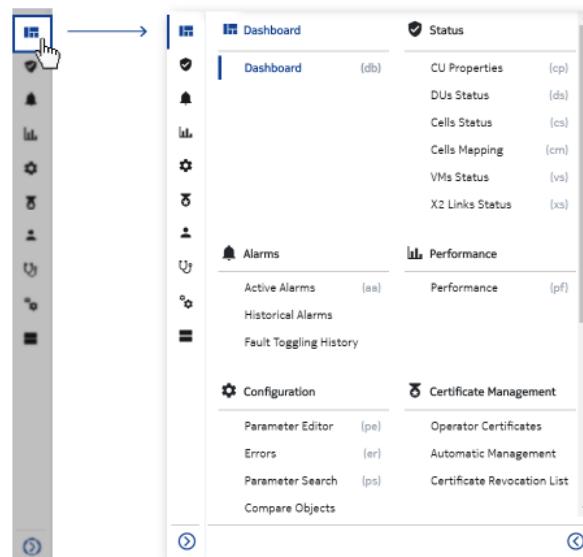
The **Navigation Panel** displays all views and tabs on the left side of the application interface. By default, it is folded, and CU WebEM views are represented by icons. Click on a category icon to display all available views from that category.

*Figure 14: Example of **Navigation Panel** category views*



You can also click the icon to expand a vertical menu and display all categories names. To close this pane, click the icon.

*Figure 15: **Navigation Panel** overview*



2.3 Working Panel

The **Working Panel** is the main CU WebEM working area.

The **Working Panel** is a working area that displays information on a selected CU WebEM

view. It consists of two elements:

- Bar with the tabs to quickly navigate between the available tabs
- Toolbar with action buttons to quickly perform various operations or customize displayed information

Figure 16: Working Panel overview

Severity	Appear	Alarm ID	Alarm name	Fault ID	Fault name	Alarming object
●	2020-07-20 13:23:05	61652	HARDWARE FAULTS	N/A	N/A	N/A
●	2020-07-20 13:23:05	61652	HARDWARE PROBLEM	61652	Hardware Problem notminate	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61524	BASE STATION SERVICE PROBLEM	61652	BASE STATION SERVICE PROB,DH	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	7115	SG BASE STATION FAILED VM INT	6450	SG Base Station Failed VM INT	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61652	NODE UNAVAILABLE	61652	NODE UNAVAILABLE	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61524	NODE FAULTY	61652	NODE FAULTY	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61652	HARDWARE PROBLEM	N/A	N/A	N/A
●	2020-07-20 13:23:05	61652	HARDWARE PROBLEM	61652	Hardware Problem notminate	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61524	BASE STATION SERVICE PROBLEM	61652	BASE STATION SERVICE PROB,DH	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	7115	SG BASE STATION FAILED VM INT	6450	SG Base Station Failed VM INT	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61652	NODE UNAVAILABLE	61652	NODE UNAVAILABLE	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61524	NODE FAULTY	61652	NODE FAULTY	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61652	HARDWARE PROBLEM	N/A	N/A	N/A
●	2020-07-20 13:23:05	61652	HARDWARE PROBLEM	61652	Hardware Problem notminate	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61524	BASE STATION SERVICE PROBLEM	61652	BASE STATION SERVICE PROB,DH	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	7115	SG BASE STATION FAILED VM INT	6450	SG Base Station Failed VM INT	NRBT5-12/NRBT5-12
●	2020-07-20 13:23:05	61652	NODE UNAVAILABLE	61652	NODE UNAVAILABLE	NRBT5-12/NRBT5-12

Available functionalities and options in the **Working Panel** depend on the selected view.

For detailed descriptions of these functionalities, see:

- [Status view](#)
- [Alarms view](#)
- [Performance view](#)
- [Configuration view](#)
- [Certificate Management view](#)
- [User Account Management view](#)
- [Diagnostics view](#)

Extended information from the **Working Panel** is available in the [Details Panel](#).

i Note:

A specific type of working area in CU WebEM is the [Dashboard](#).

Some information from the working area can be edited. Additionally, the views can be changed. There is the [Split view](#) that allows dividing screen into two working areas. For more information, see [Selecting the Split View](#).

2.4 Details Panel

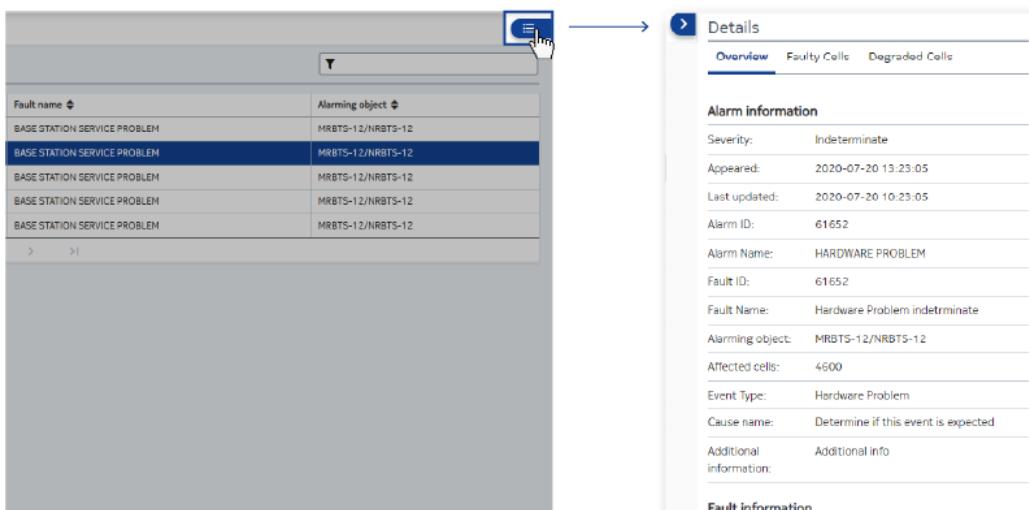
The **Details Panel** displays more information about items selected in the **Working Panel**.

The **Details Panel** displays on the right side of the application and provides additional information about items selected in the **Working Panel**. Information and number of tabs in the **Details Panel** varies depending on the view and the selected item. For detailed descriptions of these functionalities, see:

- [DUs Status Details Panel](#)
- [Cells Status Details Panel](#)
- [VMs Status Details Panel](#)
- [X2 Links Status Details Panel](#)
- [Alarms Details Panel](#)
- [Performance Details Panel](#)
- [Configuration view](#)
- [Certificate Management view](#)
- [Diagnostics view](#)

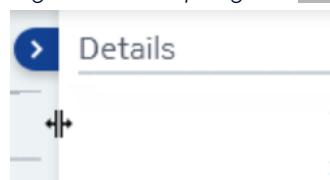
To expand the **Details Panel**, click the  button in a particular view. To hide it, click the  button.

Figure 17: Displaying the Details Panel



To manually adapt the size of the **Details Panel**, drag the vertical line between the **Working Panel** and the **Details Panel**.

Figure 18: Adapting the Details Panel view layout



2.5 Notifications

Notifications in CU WebEM inform you about action statuses, errors, and other user login statuses. They appear as toast messages and are also available in the [Notifications bar](#).

Operation Notifications

Notifications inform about the performed operations and user activities in a single CU WebEM session. The operation name and operation status displays in the form of toast messages and notifications list in the [Main Panel](#).

There are four types of notification messages informing about the operation status:

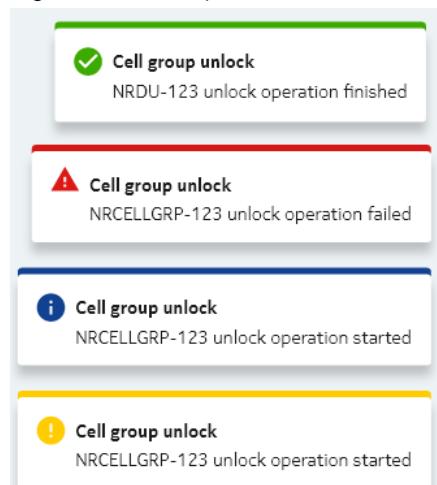
Started ⓘ It displays when the operation has started. This message has the blue information sign icon.

Finished ✅ It displays when the operation is successfully finished. This message has the green tick icon.

Failed ⚠ It displays when the operation cannot be performed. This message has the red exclamation mark icon.

Warning ! It displays when there is a warning related to the operation. This message has the yellow exclamation mark icon.

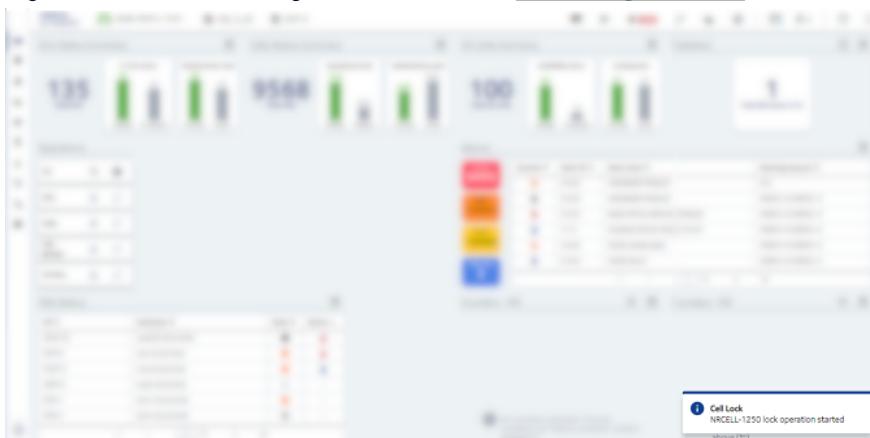
Figure 19: Examples of notification messages



Toast messages

When you trigger an operation in CU WebEM, a toast message appears in the lower-right corner of the application. It displays the current status of the activity and remains visible for a short period of time. Historical toast messages from this session are available in [Main Panel](#) ► [Notifications](#).

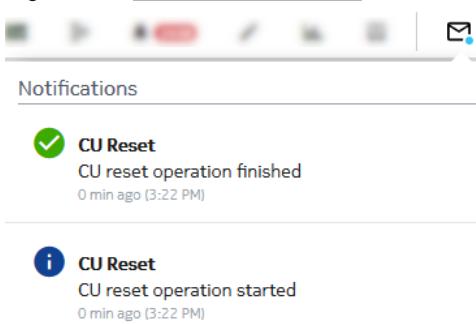
Figure 20: Toast messages location in the Working Panel



Notification Panel

Choose the button from the [Main Panel](#) to see all historical toast messages displayed during a single CU WebEM browser session. If there are new notifications available, the icon has a green dot displayed .

Figure 21: Notifications bar overview



2.6 View customization

Customization of the CU WebEM interface allows you to switch between different views of the data presentation.

Switching between different views

CU WebEM introduces various types of data presentation. There is a possibility to switch between views thanks to special buttons presented in [Table: CU WebEM data presentation options](#).

Table 2: CU WebEM data presentation options

Button	Reference
 Plot view	For more information, see Selected counters plot view .
 Table view	For more information, see Table view .
 Widget view	For more information, see Status view .

Table view

In table view mode, each row represents a unique piece of data, for example, alarms, counters, or information related to objects. There are two types of tables used in CU WebEM:

- Non-editable, which only display information.
- Editable, which allow you to organize and customize displayed information by sorting, filtering, or changing column width.

CU WebEM enables you to customize table layout. Additionally, you can sort and filter data in tables.

Sorting table data

You can sort the data in the table by clicking the sort  icon on the right of the column header name. You can switch between ascending and descending data order. When the sort symbol points up  , the column is in ascending order. When the sort symbol points down  , the column is in descending order. You can also arrange data in the tables by using special sorting  buttons.

Filtering table data

Filtering options in CU WebEM differ depending on the view or tab. There are three ways to filter specific data in a table:

- By defining filter directly in the column header.
- By using filter panel at the top of the [Working Panel](#).

- By using dedicated filter buttons available in the table.

To deactivate an active filter, click again a filtering button or delete the defined text from the filter box.

Changing column width

You can customize the table view by changing width of columns. Move the mouse to the right boundary line of the column header until it changes to an icon. Drag the boundary line to the right to make the selected column wider. Drag the boundary line to the left to make the selected column narrower.

Navigating between table data

A large amount of information in the table is divided and displayed as additional table pages.

To navigate between pages, use a text field in a table footer  /  or table functional buttons:

 First page

 Previous page

 Next page

 Last page

2.7 CU WebEM buttons and icons

The list of buttons and icons available in CU WebEM

Buttons in CU WebEM user interface

The CU WebEM user interface introduces common buttons for tasks and actions, unless there is a specific information in the **Description** column provided in [Table: Common CU WebEM buttons and icons](#).

 **Tip:**

When you hover the mouse over the button, it displays a tooltip with the button name.



Table 3: CU WebEM feature buttons

Button	Description
Alarms 	Links to the Alarms view or the Active Alarms tab.
Cell Status 	Links to the Cell Status tab.
Certificate Management 	Links to the Certificate Management view.
Configuration 	Links to the Configuration view.
Copy 	In the Parameter Editor tab, it copies an object. In the Operator Certificates tab, it copies to clipboard.
CU ID 	Represents the gNB-CU operational state as Enabled or Disabled . It links to the CU Properties .
CU timezone 	Displays information about a gNB-CU timezone and shows the difference in hours from Greenwich Mean Time.
CU software version 	Displays information about an active gNB-CU software release version.
Dashboard 	Links to the Dashboard view.
Diagnostics 	Links to the Diagnostics view.
Navigation search 	Works as a search feature and looks for a specific item.
Notifications 	Displays notifications related to current session activities.
Parameter Editor 	Links to the Parameter Editor tab.

Button	Description
Performance 	Links to the Performance view.
Snapshot 	Links to the Snapshot tab.
Session info 	Shows details about the current session, password, and allows to download help.
Settings 	Links to the Settings view.
Split view 	Links to the Split view .
Status 	Links to the Status view.
User Account Management 	Links to the User Account Management view.

Table 4: Common CU WebEM buttons and icons

Button or icon	Description
Actions 	Activates additional operations on the selected item.
Activate 	Activates a gNB-CU VNF activity mode in the cu Properties .
Activate plan 	Activates a successfully validated plan in the Configuration view.
Add item 	It adds a list item or a structure.
Available notifications 	Informs about new notifications available in the Notifications bar.
Clear 	Clears the selected items from the list.
Close Details Panel 	Hides information displayed in the Details Panel .
Collapse 	Hides additional information of the tree view.
Collapse all 	Hides all additional information of the tree view.

Button or icon	Description
 Configure	Allows you to select the data presented on the widget.
 Create plan	Allows creating a new configuration plan from the scratch or based on chosen plan in the Configuration view.
 Create delta plan	Allows preparing a configuration plan based on the current plan available in the Configuration view.
 Deactivate	Deactivates a gNB-CU VNF activity mode in the CU Properties.
 Delete plan	Removes a chosen configuration plan.
 Exit full-screen mode	Switches over from full-screen mode to windowed mode.
 Expand	Shows the data in the first section of the tree view.
 Expand all	Shows the entire hierarchy of the tree view.
 Export or Save	Exports a file or object using its current name.
 Filter	Activates a filter drop-down list and displays only specified data.
 Filter by	Activates a filter drop-down list and displays only specified data.
 Fix errors	Troubleshoots the errors that occurred during a validation in the Configuration view.
 Full-screen mode	Activates a full-screen view.
 First page	Guides to the first page of wizards or task flows.
 Group	Groups cells.
 Import	Imports a file or object to CU WebEM.
 Last page	Guides to the last page of wizards or task flows.
 Load SCF file	Allows uploading a configuration plan in the Configuration view.

Button or icon	Description
Lock 	Locks a specific gNB-CU operation.
Mandatory parameter 	In the Configuration, it indicates a mandatory parameter.
Next page 	Guides to the next page of wizards or task flows.
Open details panel 	Displays additional information about the selected item in the Details Panel.
Plot view 	Displays a timeline with counter values.
Previous page 	Guides to the previous page of wizards or task flows.
Redirect to view 	Redirects to a dedicated view or tab.
Remove 	Removes the selected entry from the list in the DU Status, Cell Status.
Remove item 	It removes a list item or a structure.
Renew session 	It renews the session token.
Reset or Revert 	In the Status view and Dashboard, it sets again gNB-CU properties. In the Parameter Editor, it reverts a chosen object.
Restore default view or Restore default parameter value 	As Restore default view, it brings back a default view settings. As Restore parameter, it restores a parameter default value.
Save 	Saves a file or object using its current name.
Select counters 	Opens a menu, in which you can select the counters displayed on the widget.
Show additional info 	Displays a tooltip with additional information.
Show password 	Reveals the hidden password.
Sort 	Enables sorting data in the table format. It arranges data in ascending  or descending order  .

Button or icon	Description
Switchover or Switch views 	In the Split views , it switches the Top view with the Bottom view . In the Mapping Cells , it allows selecting one of a gNB-CU VNF activation operations.
Table view 	Displays a list of items in a table format.
Unlock 	Unlocks a specific gNB-CU operation.
Validate plan 	Allows verification of a chosen configuration plan in the Configuration view.
Widget view 	Displays a list of items in a widget format.

Status indicators

CU WebEM informs about status of alarms and VMs by using specific status-indicator colors and icons. For more information, see [Alarms view](#), [Dashboard](#), and [VMs Status tab](#).

Table 5: Alarm status icons

Status	Description
Critical 	Informs about a critical severity defect.
Indeterminate 	Defect results are not defined.
Major 	Informs about a major severity defect.
Minor 	Informs about a minor severity defect.
Warning 	Informs about a fault event.

Table 6: VM status icons

Status	Description
Degraded 	Indicates a VM runtime state as available for use but with a loss in performance.
Dependency 	Indicates a VM runtime state as of dependent services.
Failed 	Indicates a VM runtime state as failed.
Not installed 	Indicates a VM runtime state as not installed.
Offline 	Indicates a VM runtime state as off (not running) and processes are shut down.
Off duty 	Indicates a VM runtime state as not engaged in performance.
Online 	Indicates a VM runtime state as on (running) and able to run activities.
Power off 	Indicates a VM runtime state as suspended (not terminated).

2.8 CU WebEM keyboard shortcuts

Use predefined keyboard shortcuts to navigate easier and quicker between views and tabs in CU WebEM.

In CU WebEM, keyboard shortcuts are predefined. You can activate them by pressing the keys on your keyboard in a proper manner. Check details of keyboard shortcuts in [List of keyboard shortcuts in CU WebEM](#).

 **Note:**

A comma separator (,) in a shortcut keys means that you need to press one key sequentially after another.

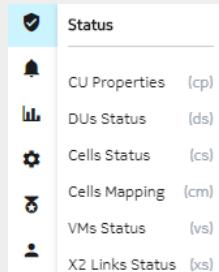
A plus sign (+) in a shortcut keys means that you need to press multiple keys at the same time.

When the keyboard shortcuts functionality is active, shortcuts work as a part of a larger

string. For example, if you type "ABCDB", which includes "DB", it will navigate you to the [Dashboard](#). Keyboard shortcuts do not work if the cursor is placed in a text fields, for example, in a filter box, or if any modal window is active.

 **Tip:**

Active CU WebEM shortcut keys combinations display when you place the mouse over the icons in the [Navigation Panel](#).



You can disable keyboard shortcuts in [Navigation Panel](#) > [Settings](#) > [Layout Settings](#) by switching off a toggle button in the [Keyboard shortcuts](#) section. For more information, see [Settings view](#).

Table 7: List of keyboard shortcuts in CU WebEM

Shortcut keys	Description
D,B	Navigates to the Dashboard .
C,P	Navigates to the CU Properties .
D,S	Navigates to the DUs Statuses .
C,S	Navigates to the Cell Status .
C,M	Goes to the Cells Mapping .
V,S	Goes to the VMs Status .
X,S	Goes to X2 Links Status .
A,A	Goes to the Active Alarm .
P,F	Goes to the Performance .
P,E	Goes to the Parameter Editor .
E,R	Goes to the Errors .
P,S	Goes to the Parameter Search .
S,N	Goes to the Snapshot
S,W	Goes to the Split View .
CTRL+SHIFT+F	Opens the Navigation Search .
ESC	Exits Full-screen mode .
F11	Toggles to Full-screen mode .
F11 or ESC	Exits the Navigation Search .

3. Dashboard

The **Dashboard** is a central area that displays after logging into CU WebEM. It provides high-level information about a gNB-CU and allows you to perform basic management operations.

Dashboard overview

The **Dashboard** opens automatically after logging into CU WebEM. To navigate to the **Dashboard**, go to **Navigation Panel** ▶ **Dashboard**.

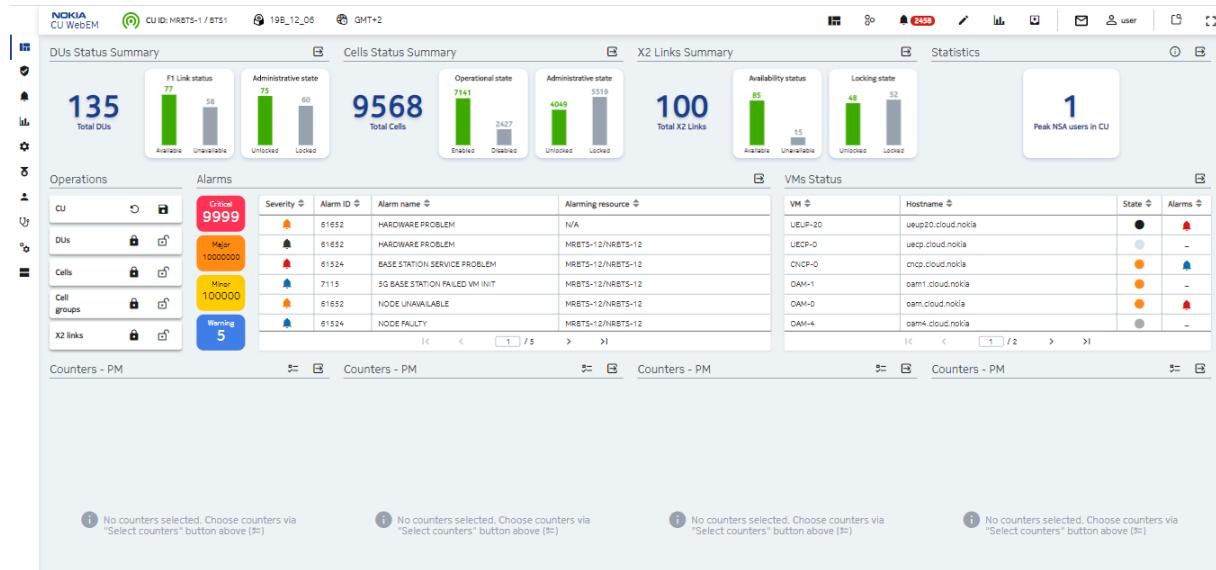
Tip:

For easy access to the **Dashboard**:

- press the **D** key, and then **B**.
- click on the Nokia CU WebEM  logo or the  icon in the **Main Panel**.

The **Dashboard** allows monitoring a gNB-CU condition and performance. It consists of interactive blocks, called widgets, that present a summary of a gNB-CU state and operability aspects related to:

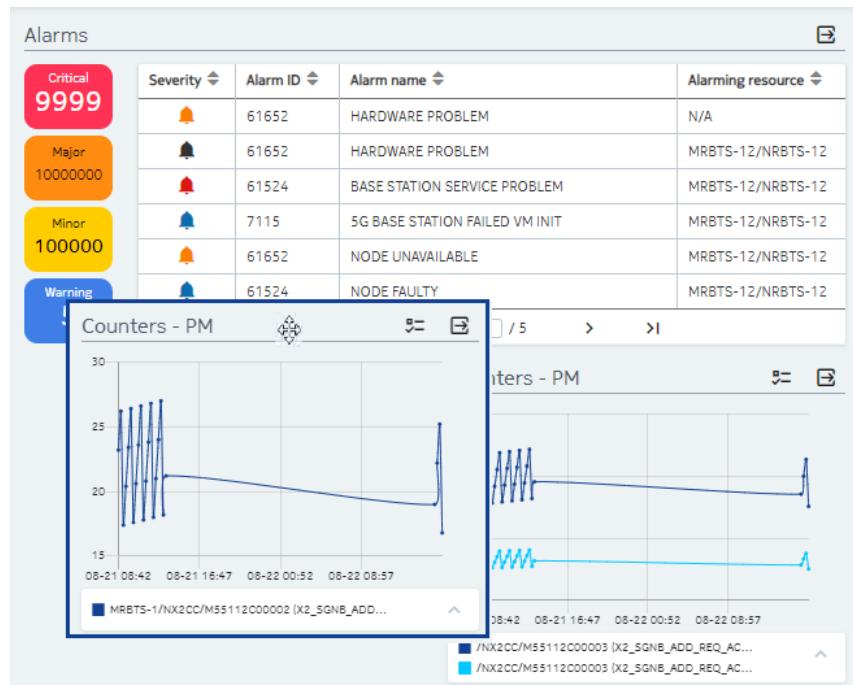
- [gNB distributed unit \(gNB-DU\) status](#)
- [Cells statuses](#)
- [X2 links statuses](#)
- [Statistics about peak non-standalone \(NSA\) users in a gNB-CU](#)
- [gNB-CU operations execution](#)
- [gNB-CU alarms](#)
- [gNB-CU VMs](#)
- [Counters](#)

Figure 22: **Dashboard** main view

The **Dashboard** widgets work as links. Click the widget to navigate to CU WebEM views with original source of data presented on it. To go to linked CU WebEM view, you can also click the button next to the name of each widget.

Arranging the Dashboard

The **Dashboard** widgets have a predefined location. You can arrange CU WebEM widgets to suit your preferred application layout. You can drag the chosen widget and drop it in a place you want it to appear on the **Dashboard**.

Figure 23: Customizing the `Dashboard` layout

3.1 Dashboard widgets

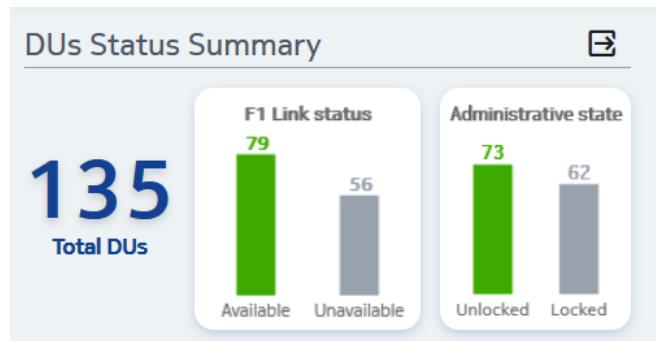
Use CU WebEM widgets to easily monitor a gNB-CU state and perform basic management operations.

DUs Status Summary

This widget presents statistical and numerical values about gNB-DUs managed by gNB-CU. It contains information about:

- Total number of gNB-DUs
- F1 link status, either Available or Unavailable
- gNB-DU administrative state, either Unlocked or Locked

Click the widget to navigate to the `DUs Status` tab and see the list of all configured gNB-DUs grouped by F1 link status or administrative state criteria. For more information, see [DUs Status tab](#).

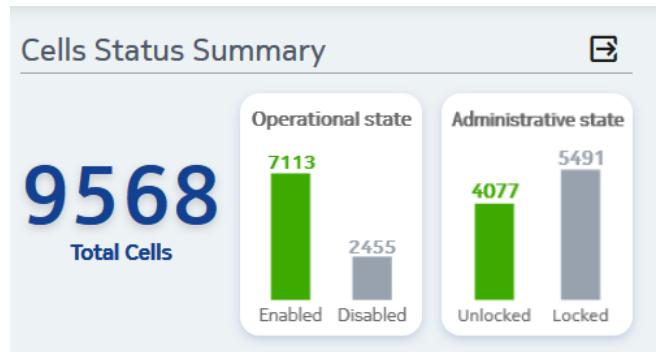
Figure 24: *DUs Status Summary* widget

Cells Status Summary

This widget presents summarized information about:

- Total number of cells configured in a gNB-CU
- Cells operational state, either `Enabled` or `Disabled`
- Cells administrative state, either `Unlocked` or `Locked`

Click the widget to navigate to the `Cells Status` tab and see all configured cells grouped by operational state or administrative state criteria. For more information, see [Cells Status tab](#).

Figure 25: *Cells Status Summary* widget

X2 Links Summary

This widget presents statistical and numerical values across all X2 links. It contains the summarized information about:

- Total number of X2 links
- X2 link status, either `Available` or `Unavailable`
- X2 administrative state, either `Unlocked` or `Locked`

Click the widget to navigate to the [X2 Links Status](#) tab and see the list of available X2 links grouped by their status and state. For more information, see [X2 Links Status tab](#).

Figure 26: [X2 Links Summary](#) widget



Statistics

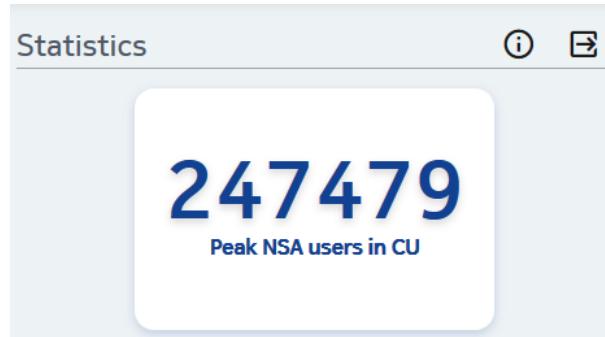
This widget presents a value of a gNB-CU PM counter

`M55131C00001 (PEAK_NUMBER_OF_NSA_USERS CU)`, representing a peak number of non-standalone (NSA) users in a gNB-CU.

You can display a tooltip with detailed information about the counter value by clicking the ⓘ icon.

Click the widget to navigate to the [Performance](#) tab and see information about counters. For more information, see [Performance view](#).

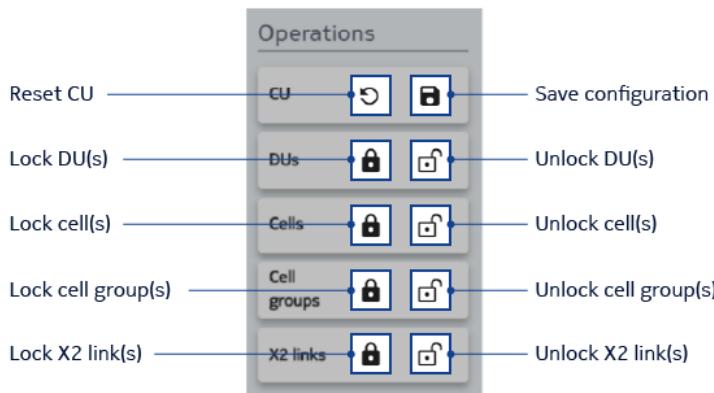
Figure 27: [Statistics](#) widget



Operations

This widget allows performing basic operational actions on a gBN-CU, controlled gNB-DUs, cells, cell groups, and X2 links.

Figure 28: `Operations` widget



Each operation has a dedicated button assigned. Click the button to trigger a chosen operation. Operation status displays a toast notification which you can also check in `Main Panel` ▶ `Notifications`.

For detailed instructions on possible operations, see:

- [Resetting a gNB-CU](#)
- [Saving a gNB-CU SCF file](#)
- [Locking gNB-DUs](#)
- [Unlocking gNB-DUs](#)
- [Locking cells](#)
- [Unlocking cells](#)
- [Locking cell groups](#)
- [Unlocking cell groups](#)
- [Locking X2 links](#)
- [Unlocking X2 links](#)

Alarms widget

This widget presents a summary of information available in the `Alarms` view. It consists of two elements:

- `Alarm Summary`, which presents consolidated information about the number and severity types of alarms occurring on a gNB-CU. Click on the widget buttons to navigate to the `Active Alarms` tab.
- `Active Alarms`, which presents a list of active alarms with an overview on alarm severity and alarming resource.

For more information, see [Alarms view](#).

Figure 29: **Alarms** widget

The screenshot shows the 'Alarms' widget interface. On the left, there is a summary section with four colored boxes: Critical (red, 9999), Major (orange, 10000000), Minor (yellow, 100000), and Warning (blue, 5). To the right is a detailed table of active alarms:

Severity	Alarm ID	Alarm name	Alarming resource
Critical	61652	HARDWARE PROBLEM	N/A
Major	61652	HARDWARE PROBLEM	MRBTS-12/NRBTS-12
Minor	61524	BASE STATION SERVICE PROBLEM	MRBTS-12/NRBTS-12
Warning	7115	5G BASE STATION FAILED VM INIT	MRBTS-12/NRBTS-12
Critical	61652	NODE UNAVAILABLE	MRBTS-12/NRBTS-12
Warning	61524	NODE FAULTY	MRBTS-12/NRBTS-12

Below the table, there are navigation buttons: < < 1 / 5 > >.

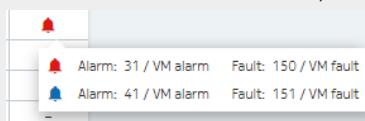
VMs Status

This widget presents all gNB-CU VMs, including their names, host names, availability statuses, and VM alarms. The icon with respective color displays a proper VM availability status and related alarms. For more information, see [VMs Status tab](#).



Tip:

The VM alarm icon displays the highest severity if more alarms exist on a VM. For more details about VM alarms, hover over the icon to display a pop-up window.

Figure 30: **VMs Status** widget

The screenshot shows the 'VMs Status' widget interface. It displays a table of VMs with the following columns: VM, Hostname, State, and Alarms. The table includes the following data:

VM	Hostname	State	Alarms
UEUP-20	ueup20.cloud.nokia	●	!
UECP-0	uecp.cloud.nokia	○	-
CNCP-0	cncp.cloud.nokia	○	!
OAM-1	oam1.cloud.nokia	○	-
OAM-0	oam.cloud.nokia	○	!
OAM-4	oam4.cloud.nokia	○	-

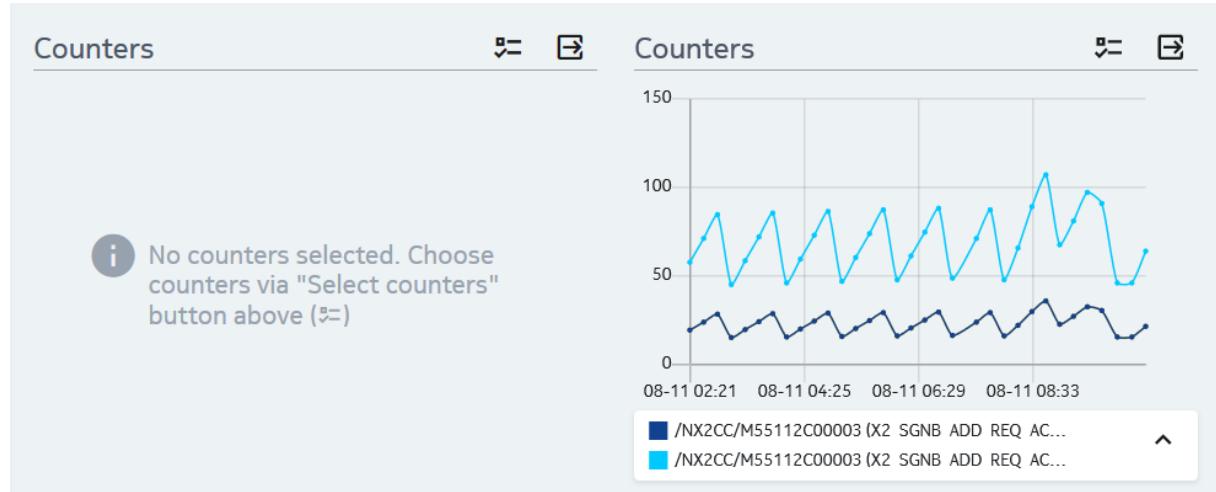
Below the table, there are navigation buttons: < < 1 / 2 > >.

Counters widget

This widget presents a set of user selected gNB-CU counters in the form of time-series based line charts. For more information, see [Selected counters plot view](#).

By default, the charts are not available on the [Dashboard](#). You can select up to four separate charts displaying counter values. For instructions, see [Selecting widget counters](#).

Figure 31: [Counters](#) widget

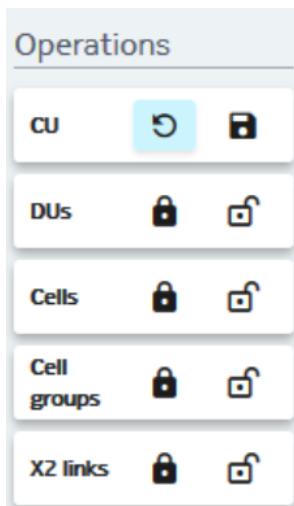


3.2 Resetting a gNB-CU

The [Operations](#) widget allows you to perform a gNB-CU reset.

Procedure

- 1 Go to [Dashboard](#) > [Operations](#) widget > CU Operations.**
- 2 Click [CU Reset](#).**



3 Click **OK**.

Reset CU



You are about to reset CU gNB

Do you want to proceed?

OK

Cancel

Step result

CU reset operation is successfully executed when the toast notifications with `CU reset operation started` and `CU reset operation finished` statuses are displayed in the bottom right corner.



CU Reset

CU reset operation started

**CU Reset**

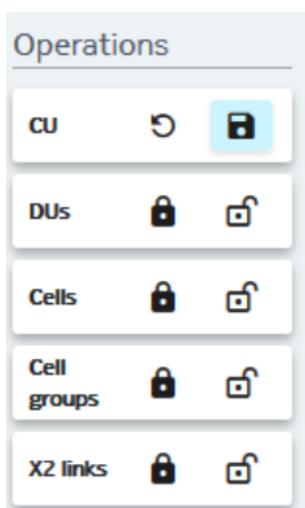
CU reset operation finished

3.3 Saving a gNB-CU SCF file

The **Operations** widget allows you to download a gNB-CU site configuration file (SCF).

Procedure

- 1 Go to Dashboard > Operation widget > CU Operations.**
- 2 Click Save configuration.**



Step result

The toast notifications with `Save CU configuration started` and `Save CU configuration finished` statuses are displayed in the bottom right corner.



 **Save CU Configuration**
Save CU configuration finished

Result

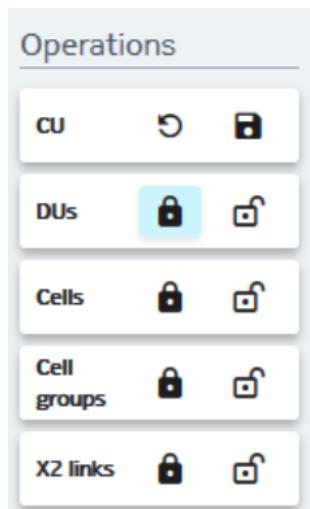
The SCF file in an XML format is automatically saved in the default download location.

3.4 Locking gNB-DUs

The **Operations** widget allows you to lock selected gNB distributed units (gNB-DUs).

Procedure

- 1 Go to Dashboard > Operations widget > DUs Operations.**
- 2 Click **Lock DU**.**



- 3 Select gNB-DUs that you want to lock.**

You can select multiple gNB-DUs within one operation or use a quick filter toolbar to display gNB-DUs with the **Unlocked** status identified by NRDU ID and DU name.



Tip: You can remove selected gNB-DUs from the list by clicking the **X** icon.

Step example

Lock DU(s)

DU(s) to be locked:

<input checked="" type="checkbox"/> NRDU-1 / DU name	NRDU-1 / DU name
<input type="checkbox"/> NRDU-2 / DU name	
<input type="checkbox"/> NRDU-4 / DU name	
<input type="checkbox"/> NRDU-5 / DU name	
<input type="checkbox"/> NRDU-7 / DU name	
<input type="checkbox"/> NRDU-8 / DU name	
<input type="checkbox"/> NRDU-10 / DU name	
<input type="checkbox"/> NRDU-11 / DU name	
<input type="checkbox"/> NRDU-13 / DU name	
<input type="checkbox"/> NRDU-14 / DU name	

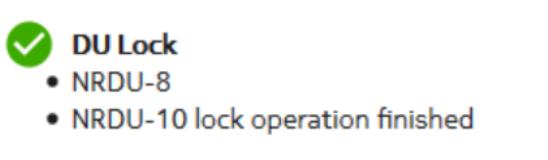
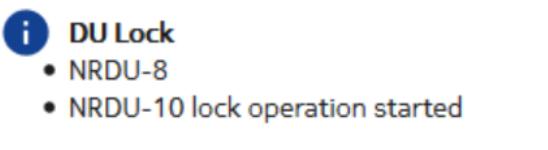
OK

Cancel

4 Click **OK**.

Step result

The toast notifications with `<NRDU-ID> lock operation started` and `<NRDU-ID> lock operation finished` statuses are displayed in the bottom right corner. Notifications are aggregated for all gNB-DUs selected during the operation.

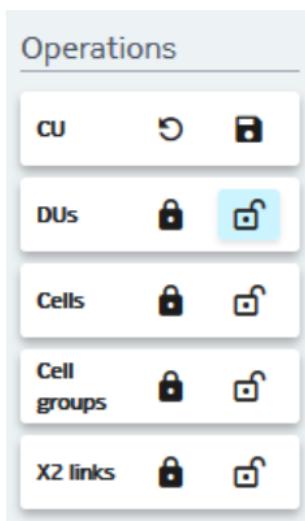


3.5 Unlocking gNB-DUs

The **Operations** widget allows you to unlock selected gNB-DUs.

Procedure

- 1 Go to Dashboard > Operations widget > DUs Operations.**
- 2 Click **Unlock DU**.**



- 3 Select gNB-DUs that you want to unlock.**

You can select multiple gNB-DUs within one operation or use a quick filter toolbar to display gNB-DUs with the **Locked** status identified by NRDU ID and DU name.



Tip:

You can remove gNB-DUs from the list by clicking the **X** icon.

Step example

Unlock DU(s)

DU(s) to be unlocked:

<input checked="" type="checkbox"/> NRDU-0 / DU name
<input type="checkbox"/> NRDU-3 / DU name
<input type="checkbox"/> NRDU-6 / DU name
<input type="checkbox"/> NRDU-9 / DU name
<input type="checkbox"/> NRDU-12 / DU name
<input type="checkbox"/> NRDU-15 / DU name
<input type="checkbox"/> NRDU-18 / DU name
<input type="checkbox"/> NRDU-21 / DU name
<input type="checkbox"/> NRDU-24 / DU name
<input type="checkbox"/> NRDU-27 / DU name
<input type="checkbox"/> NRDU-30 / DU name

OK

Cancel

4 Click **OK**.

Step result

The toast notifications with `<NRDU-ID> unlock operation started` and `<NRDU-ID> unlock operation finished` statuses are displayed in the bottom right corner. Notifications are aggregated for all gNB-DUs selected during the operation.

DU Unlock
NRDU-0 unlock operation started

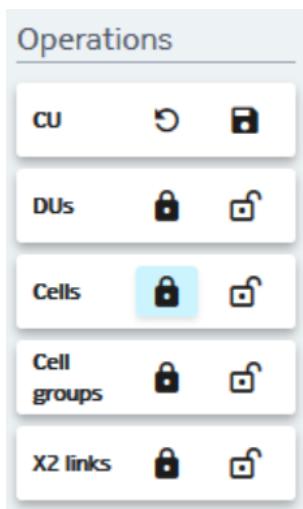
DU Unlock
NRDU-0 unlock operation finished

3.6 Locking cells

The **Operations** widget allows you to lock selected cells.

Procedure

1 Go to **Dashboard** > **Operations** widget > **Cells Operations**.

2 Click Lock cells.**3 Select cells that you want to lock.**

You can select multiple cells within one operation or use a quick filter toolbar to display cells with the **Unlocked** status identified by NRCELL ID and cell name.



You can remove cells from the list by clicking the **X** icon.

Step example

Lock cell(s)

Cell(s) to be locked:

NRDU-0

- NRCELL-250 / Cell name 587
- NRCELL-500 / Cell name 1173
- NRCELL-1000 / Cell name 2345
- NRCELL-1250 / Cell name 2932
- NRCELL-1750 / Cell name 4104
- NRCELL-2000 / Cell name 4690
- NRCELL-2500 / Cell name 5863
- NRCELL-2750 / Cell name 6449
- NRCELL-3250 / Cell name 7622
- NRCELL-3500 / Cell name 8208

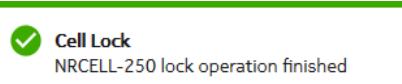
NRDU-0 / NRCELL-250

OK Cancel

4 Click **OK**.

Step result

The toast notifications with <NRCELL-ID> lock operation started and <NRCELL-ID> lock operation finished statuses are displayed in the bottom right corner. Notifications are aggregated for all cells selected during the operation.



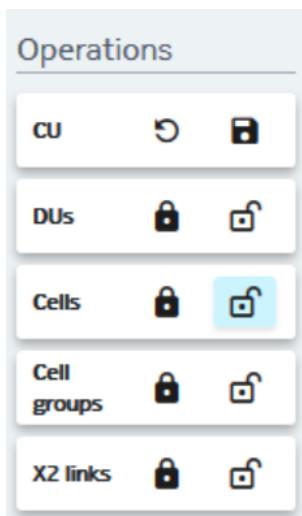
3.7 Unlocking cells

The **Operations** widget allows you to unlock selected cells.

Procedure

1 Go to **Dashboard** > **Operations** widget > **Cells Operations**.

2 Click **Unlock cells**.



3 Select cells that you want to unlock.

You can select multiple cells within one operation or use a quick filter toolbar to display cells with the **Locked** status identified by NRCELL ID and cell name.



You can remove cells from the list by clicking the **X** icon.

Step example

Unlock cell(s)

Cell(s) to be unlocked:

NRDU-0

- NRCELL-0 / Cell name 0
- NRCELL-250 / Cell name 587
- NRCELL-750 / Cell name 1759
- NRCELL-1500 / Cell name 3518
- NRCELL-2250 / Cell name 5277
- NRCELL-3000 / Cell name 7036
- NRCELL-3750 / Cell name 8794
- NRCELL-4500 / Cell name 10553
- NRCELL-5250 / Cell name 12312

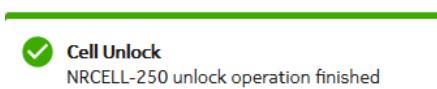
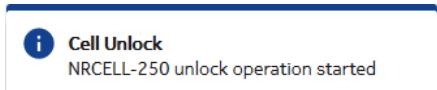
NRDU-0 / NRCELL-250
X

OK
Cancel

4 Click **OK**.

Step result

The toast notifications with <NRCELL-ID> unlock operation started and <NRCELL-ID> unlock operation finished statuses are displayed in the bottom right corner. Notifications are aggregated for all cells selected during the operation.

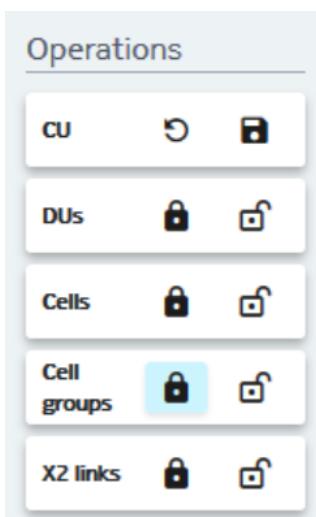


3.8 Locking cell groups

The Operations widget allows you to lock selected cell groups.

Procedure

- 1 Go to Dashboard > Operations widget > Cell groups Operations.**
- 2 Click Lock Cell groups.**



- 3 Select cells groups that you want to lock.**

You can select multiple cell groups within one operation or use a quick filter toolbar to display cells with the Unlocked status identified by NRCELLGRP ID. Cell groups on list

are grouped under serving gNB-DU that can be identified by NRU-DU ID.

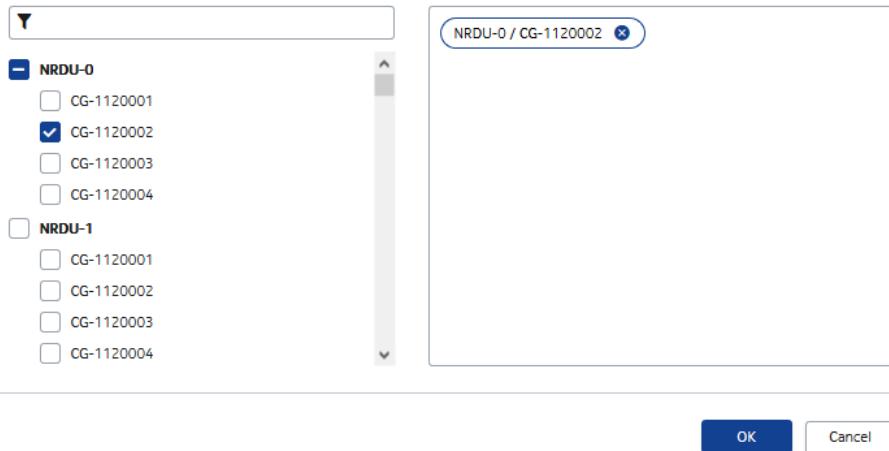
Tip:

You can remove cell groups from the list by clicking the  icon.

Step example

Lock cells group(s)

Cells Group(s) to be locked:



NRDU-0

- CG-1120001
- CG-1120002
- CG-1120003
- CG-1120004

NRDU-1

- CG-1120001
- CG-1120002
- CG-1120003
- CG-1120004

NRDU-0 / CG-1120002 

OK Cancel

4 Click .

Step result

The toast notifications with `<NRCELLGRP-ID> lock operation started` and `<NRCELLGRP-ID> lock operation finished` statuses are displayed in the bottom right corner. Notifications are aggregated for all cells groups selected during the operation.

 **Cell Group Lock**
NRCELLGRP-1120002 lock operation started

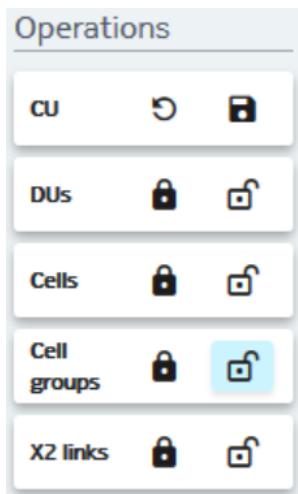
 **Cell Group Lock**
NRCELLGRP-1120002 lock operation finished

3.9 Unlocking cell groups

The **Operations** widget allows you to unlock selected cell groups.

Procedure

- 1 Go to Dashboard > Operations widget > Cell groups Operations.**
- 2 Click **Unlock Cells groups**.**



- 3 Select cell groups that you want to unlock.**

You can select multiple cell groups within one operation or use a quick filter toolbar to display cells with the **Locked** status identified by NRCELLGRP ID. Cell groups on list are grouped under serving gNB-DU that can be identified by NRDU ID.



Tip:

You can remove cell groups from the list by clicking the **X** icon.

Step example

Unlock cells group(s)

Cells Group(s) to be unlocked:

NRDU-0

- CG-1120001
- CG-1120002
- CG-1120003
- CG-1120004

NRDU-1

- CG-1120001
- CG-1120002
- CG-1120003
- CG-1120004

NRDU-0 / CG-1120002

OK Cancel

4 Click **OK**.

Step result

The toast notifications with `<NRCELLGRP-ID> lock operation started` and `<NRCELLGRP-ID> lock operation finished` statuses are displayed in the bottom right corner. Notifications are aggregated for all cells groups selected during the operation.

i Cell Group Unlock
NRCELLGRP-1120002 unlock operation started

✓ Cell Group Unlock
NRCELLGRP-1120002 unlock operation finished

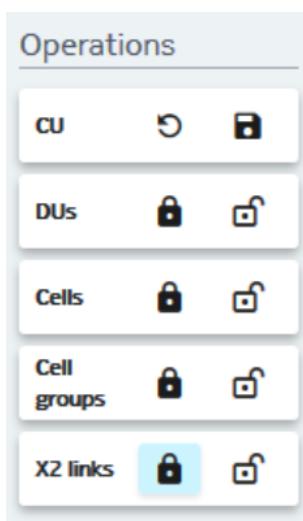
3.10 Locking X2 links

The **Operations** widget allows you to lock selected X2 links.

Procedure

1 Go to **Dashboard** > **Operations** widget > **X2 links Operations**.

2 Click on **Lock X2 links**.



3 Select X2 links that you want to lock.

You can select multiple X2 links within one operation or use a quick filter toolbar to display X2 links with the **Unlocked** status identified by LTEENB ID and eNodeB ID.



Tip:

You can remove X2 links from the list by clicking the **X** icon.

Step example

Lock X2 Link(s)

X2 link(s) to be locked:

<input type="checkbox"/>	LTEENB-1 / 12
<input type="checkbox"/>	LTEENB-3 / 12
<input type="checkbox"/>	LTEENB-5 / 12
<input type="checkbox"/>	LTEENB-7 / 12
<input checked="" type="checkbox"/>	LTEENB-9 / 12
<input checked="" type="checkbox"/>	LTEENB-11 / 12
<input type="checkbox"/>	LTEENB-13 / 12
<input type="checkbox"/>	LTEENB-15 / 12
<input type="checkbox"/>	LTEENB-17 / 12
<input type="checkbox"/>	LTEENB-19 / 12

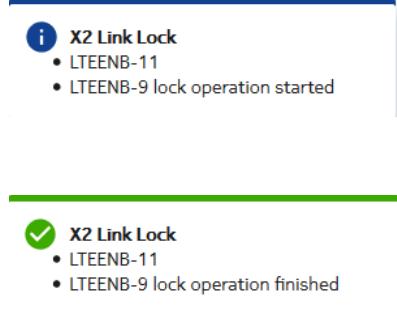
LTEENB-11 / 12 **X** LTEENB-9 / 12 **X**

OK Cancel

4 Click **OK**.

Step result

The toast notifications with <LTEENB-ID> lock operation started and <LTEENB-ID> lock operation finished statuses are displayed in the bottom right corner. Notifications are aggregated for all X2 links selected during the operation.

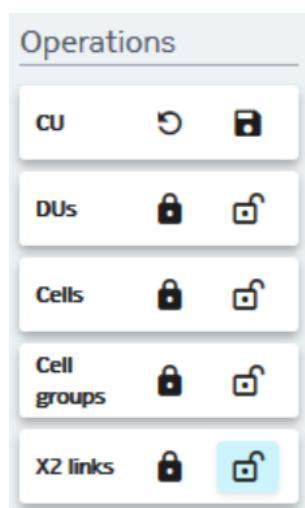


3.11 Unlocking X2 links

The **Operations** widget allows you to unlock selected X2 links.

Procedure

- 1 Go to Dashboard > Operations widget > X2 links Operations.**
- 2 Click Unlock X2 links.**



- 3 Select X2 links that you want to unlock.**

You can select multiple X2 links within one operation or use a quick filter toolbar to

display X2 links with the **Locked** status identified by LTEENB ID and eNodeB ID.

Tip:

You can remove X2 links from the list by clicking the **X** icon.

Step example

Unlock X2 Link(s)

X2 link(s) to be unlocked:

X2 Link
<input checked="" type="checkbox"/> LTEENB-0 / 12
<input checked="" type="checkbox"/> LTEENB-2 / 12
<input type="checkbox"/> LTEENB-4 / 12
<input type="checkbox"/> LTEENB-6 / 12
<input type="checkbox"/> LTEENB-8 / 12
<input type="checkbox"/> LTEENB-9 / 12
<input type="checkbox"/> LTEENB-10 / 12
<input type="checkbox"/> LTEENB-11 / 12
<input type="checkbox"/> LTEENB-12 / 12
<input type="checkbox"/> LTEENB-14 / 12

LTEENB-0 / 12 X LTEENB-2 / 12 X

OK Cancel

4 Click **OK**.

Step result

The toast notifications with `<LTEENB-ID> unlock operation started` and `<LTEENB-ID> unlock operation finished` statuses are displayed in the bottom right corner. Notifications are aggregated for all X2 links selected during the operation.

- i** **X2 Link Unlock**
 - LTEENB-0
 - LTEENB-2 unlock operation started

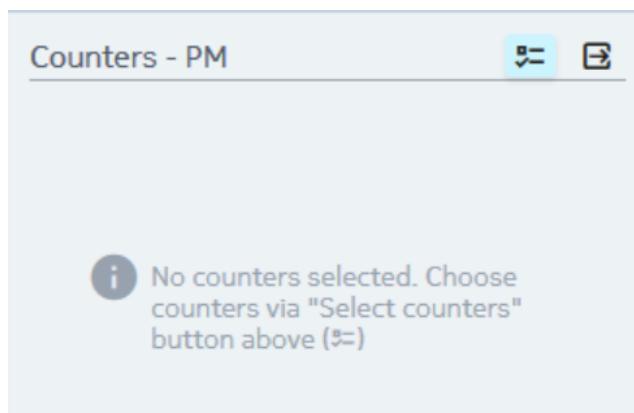
- ✓** **X2 Link Unlock**
 - LTEENB-0
 - LTEENB-2 unlock operation finished

3.12 Selecting widget counters

You can select counters that you want to display on the **Counters** widget.

Procedure

- 1 Go to **Dashboard** > **Counters** widget.
- 2 Click **Select counters**.



- 3 Select a managed object class (MOC) in the **Select object classes** section.

You can select multiple object classes within one operation or use a quick filter toolbar to display preferred data.



Tip:

You can remove redundant MOCs from the list by deselecting them.

Step example

Select counters to display

Select object class(es):

Select counter:

Select all

- NR BTS
- MNC
- SD
- NR CEL
- NRCUOO
- ETHIF
- BRGPRT

Signalling Measurements

- ▶ NR X2-C Interface signalling NRCELL level (NX2CC)
- ▶ NR X2-C Interface signalling NRCELL level (NX2CC)
- ▶ NR X2-C Interface signalling NRCELL level (NX2CC)

Step result

The list of measurements and counters available for a selected MOC is displayed in the `Select counter` section.

4 Select a counter in the `Select counter` section.

Select and expand a measurement for which you want to display a selected counter.

Note:

In the `Counter selection` section, only one counter can be selected at a time. To add more counters to the list, follow steps 3–5.

Step example

Select counters to display

The screenshot shows three panels side-by-side:

- Select object class(es):** A dropdown menu with a filter icon. Below it is a list of objects with checkboxes:
 - Select all
 - NR BTS
 - MNC
 - SD
 - NRCEL
 - NRCUUO
 - ETHIF
 - BRGPRT
- Select counter:** A dropdown menu with a filter icon. Below it is a tree view of measurement categories:
 - ▼ Signalling Measurements
 - NR X2-C Interface signalling NRCELL level (NX2CC)
 - M55112C00002 (X2_SGNB_ADD_REQ_ACK_SENT) (Selected)
 - M55112C00003 (X2_SGNB_RECONF_RECEIVED)
 - NR X2-C Interface signalling NRCELL level (NX2CC)
 - NR X2-C Interface signalling NRCELL level (NX2CC)
- Select object(s):** A dropdown menu with a filter icon. Below it is a list of objects with checkboxes:
 - Select all
 - NR BTS-1
 - NR BTS-2
 - NR BTS-3
 - NR BTS-4

Tip:

In the `Select counter` section there are three actions buttons available:

`Group by measurement group`

Click the button to enable or disable grouping by the measurement functionality.

`Expand All`

Click the button to expand the tree view.

`Collapse All`

Click the button to collapse displayed data.

Step result

The list of objects available for the selected counter is displayed in the `Select objects` section.

5 Select object.

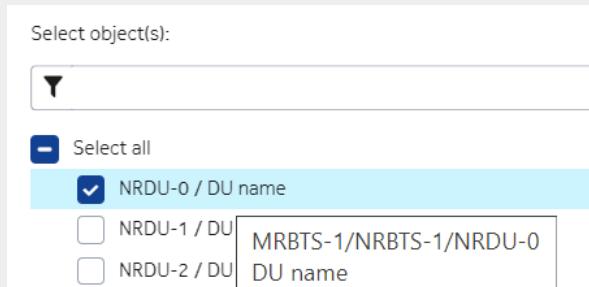
You can select multiple objects for a selected counter within one operation or use a quick filter toolbar to display preferred data.

Note:

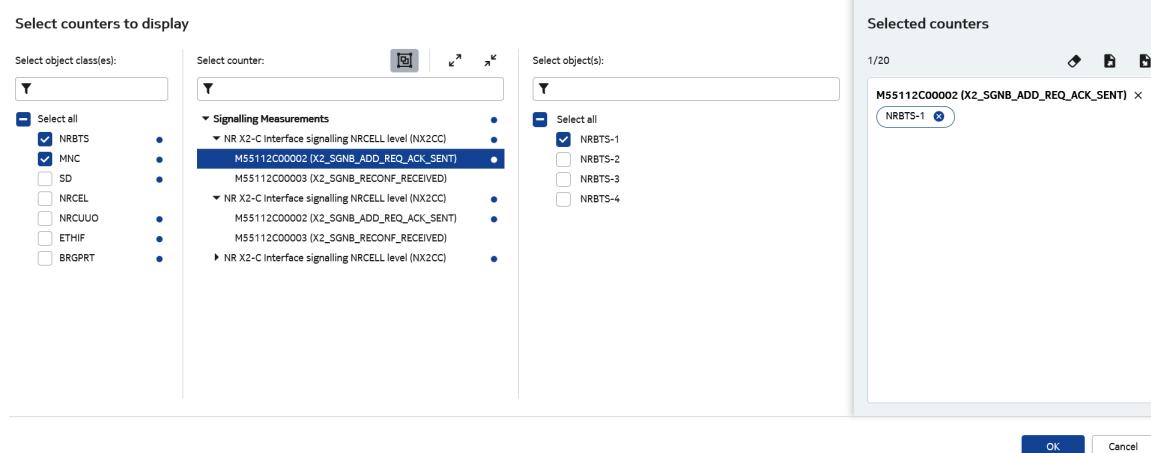
You can select only 20 counters in the `Select objects` section. If you choose the `Select all` option and there are more than 20 counters available, a warning notification displays about exceeded limit.

Tip:

Hover the mouse over the selected object to display a tooltip with a full object name.



Step example



Step result

The list of counters is displayed in the `Selected counters` section.

Tip:

You can remove redundant counters from the list by clicking the  icon.

 **Tip:**

In the **Selected counters** section you can:

 **Clear selection**

Click this button to remove all selected counters.

 **Export selection**

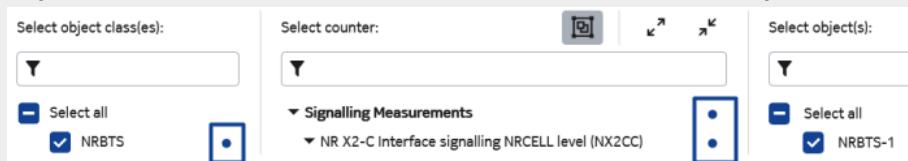
Save the list of the selected counters. For instructions, see [Exporting counters selection](#).

 **Import selection**

Upload the list of the selected counters. For instructions, see [Importing counters selection](#).

 **Tip:**

When you select an object instance, the blue dot displays next to the managed object class and measurements related to the selected object instance.



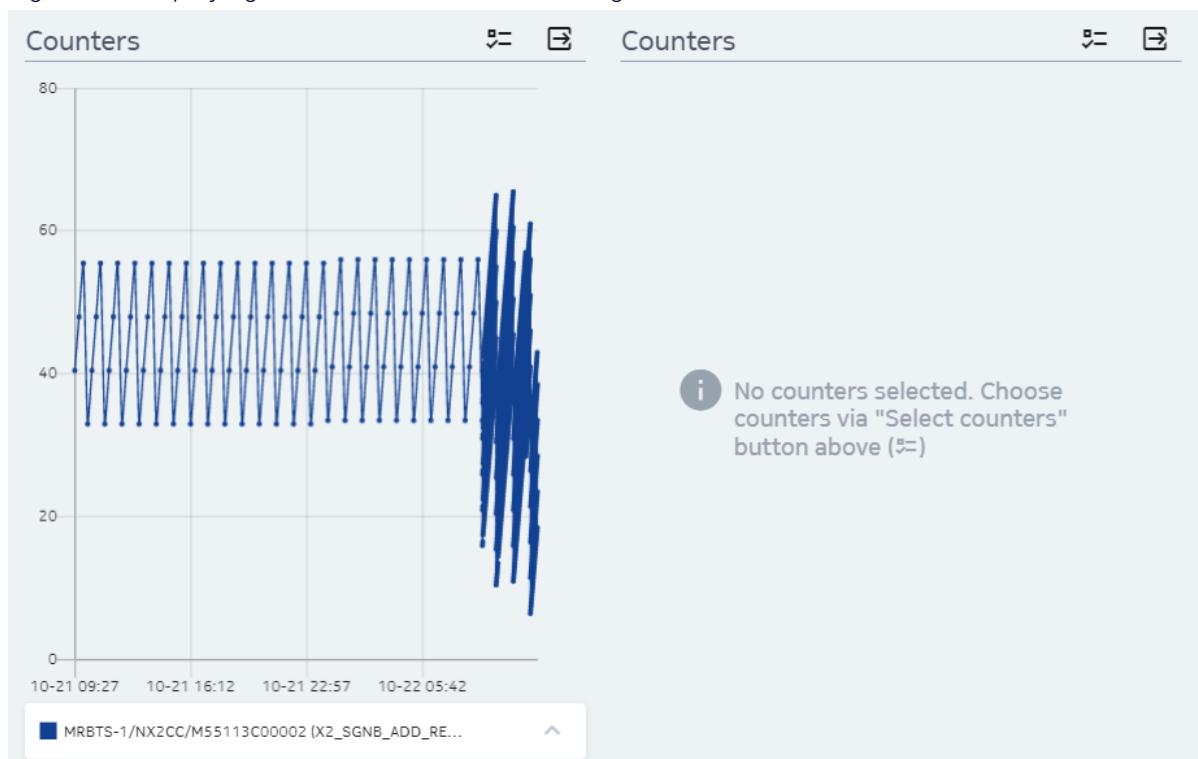
6 [Optional] Add more counters to the list by following steps 3–5.

7 Click **OK**.

Result

Selected counters are presented in the form of time-series based line chart.

Figure 32: Displaying selected counters on the widget



4. Status view

The **Status** view provides a set of options and functionalities that allow you to monitor and configure gNB-CUs.

4.1 CU Properties tab

The **CU Properties** tab allows you to check gNB-CU states, properties, and IP addresses.

CU Properties overview

To navigate to the **CU Properties** tab, go to **Navigation Panel** > **Status** > **CU Properties**.

Tip:

For easy access to the **CU Properties**, press the **C** key, and then **P**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Figure 33: **CU Properties** tab main view

	IP addresses	IPv4	IPv6
F1 interface	Control Plane User Plane	– 255.144.1.11	0:0:0:0:ffff:a90:10c 0:0:0:0:ffff:ff90:10b
NG interface	Control Plane User Plane	– 255.24.1.11	0:0:0:0:ffff:a80:10b 0:0:0:0:ffff:ff18:10b
X2 interface	Control Plane User Plane	– 128.24.1.24	0:0:0:0:ffff:8018:11b 0:0:0:0:ffff:8080:11b
Xn interface	Control Plane User Plane	128.128.1.24 –	0:0:0:0:ffff:8080:11b –

IP addresses	IPv4	IPv6
DNS	110.27.115.90 / 111.27.115.90	–

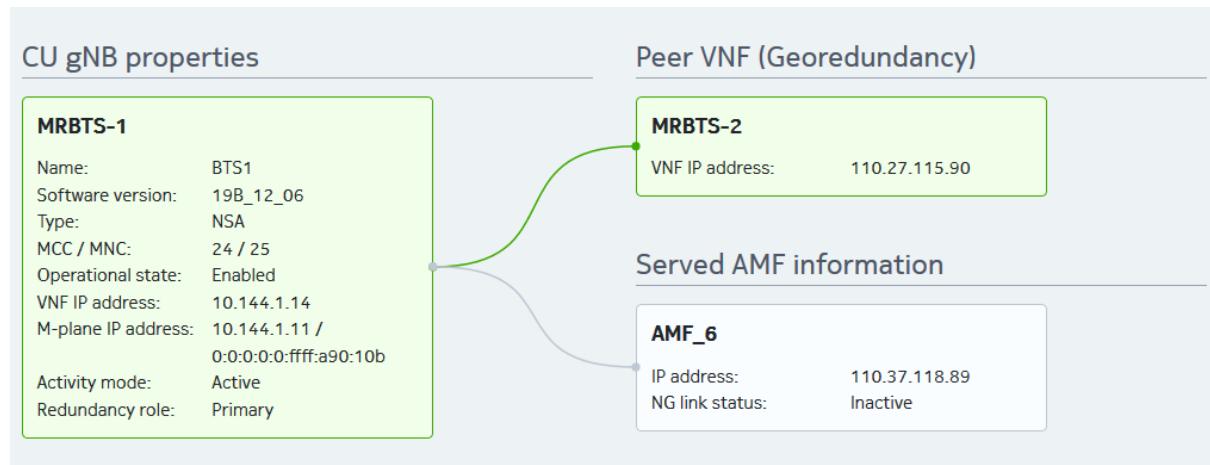
CU Properties information

The **CU Properties** tab displays the most important information and statuses about a gNB-CU and its surrounding network elements. You can check the following data:

gNB-CU properties	It displays information about: <ul style="list-style-type: none">• gNB-CU ID• gNB-CU name• gNB-CU software version• gNB-CU operational state, either Enabled or Disabled• gNB-CU type, either non-standalone (NSA), standalone (SA), or both types•• Mobile country code (MCC) / mobile network code (MNC)• Virtualized network function (VNF) IP address• Management plane (M-plane) IPv4 and IPv6 addresses• Activity mode, either Active or Inactive• Redundancy role
Peer VNF	It supports geographical redundancy for the VNF feature by displaying information about: <ul style="list-style-type: none">• Peer VNF MRBTS ID• Peer VNF IP address
Served AMF information	It displays information about: <ul style="list-style-type: none">• Access and Mobility Management Function (AMF) name• AMF IP address• NG link status, either Active or Inactive
gNB-CU IP addresses	It displays information about control plane (C-plane) and user plane (U-plane) IP addresses of: <ul style="list-style-type: none">• F1 interface• NG interface• X2 interface• Xn interface
Other IP Addresses	It displays information about domain name system (DNS) IP address.

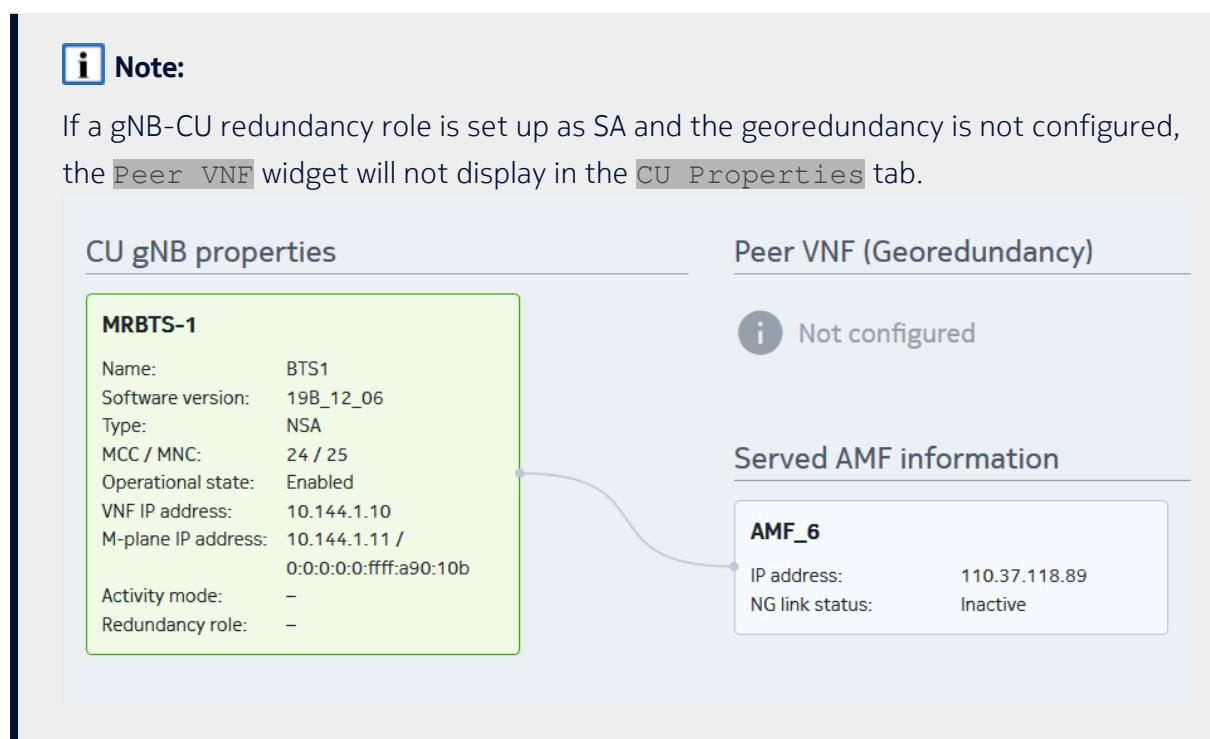
The **CU Properties** tab introduces a visual presentation of the connection statuses between:

- the **gNB-CU Properties** widget and the **Peer VNF** widget.
- the **gNB-CU Properties** widget and the **Served AMF information** widget.

Figure 34: Visual presentation of the **CU Properties** widgets

The connection status displays as a line joining both widgets and it uses the status color identification where:

- green represents **Active** status.
- gray represents **Inactive** status.



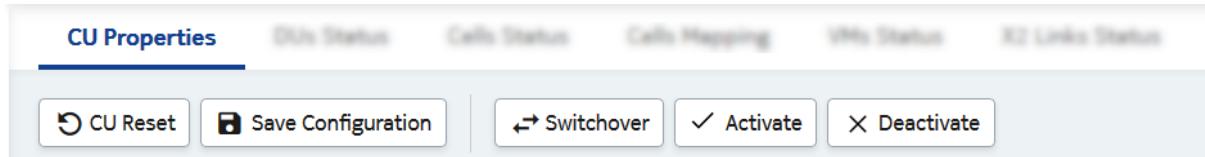
CU Properties toolbar

Under the **CU Properties** tab, there is a toolbar with functional buttons for quick execution of a gNB-CU supported operations. It allows you to:

- reset a gNB-CU.

- save the SCF file.
- switch between gNB-CU VNF states.
- activate a gNB-CU VNF current mode.
- deactivate a gNB-CU VNF current mode.

Figure 35: CU Properties toolbar



Resetting a gNB-CU

Click the **CU Reset** button. In the dialog box, click **OK** to proceed. After a while, a notification appears in the bottom right corner informing you about the operation status.

For detailed description of this operation, see [Resetting a gNB-CU](#).

Saving the SCF file

Save locally a site configuration file (SCF) in XML format containing a list of gNB-CU configuration parameters. Click the **Save Configuration** button to trigger a file download operation. Select **Save File** and click **OK** to download the SCF file. After a while, a notification informing you about the operation status appears in the bottom right corner. The file is automatically saved in the default download location.

For detailed description of this operation, see [Saving a gNB-CU SCF file](#).

Switchover between gNB-CU VNF states

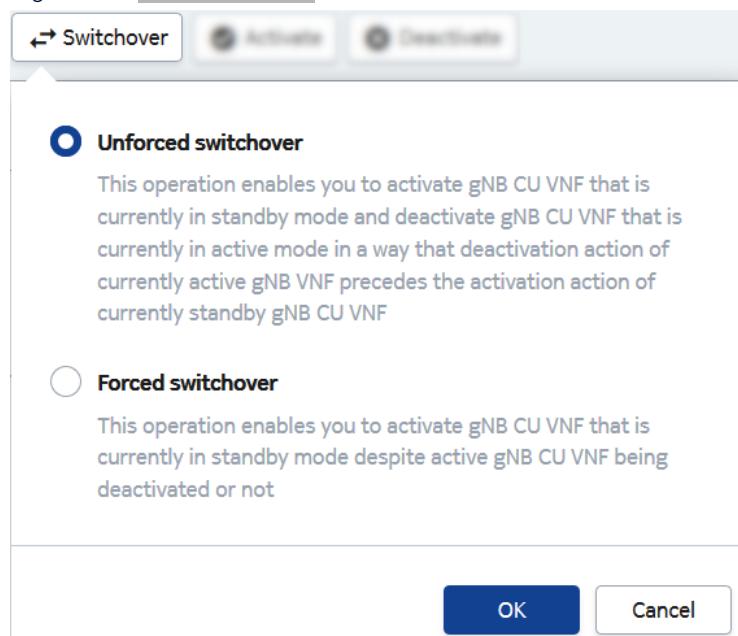
Click the **Switchover** button and select one of the following operations:

Unforced switchover

This operation enables you to activate a gNB-CU VNF in **Standby** mode, and deactivate a gNB-CU VNF that is in **Active** mode. The deactivation of the gNB-CU VNF that is in **Active** mode precedes the activation of the gNB-CU VNF that is in **Standby** mode.

Forced switchover

This operation enables you to activate a gNB-CU VNF in **Standby** mode, despite the active gNB-CU VNF being deactivated or not.

Figure 36: *Switchover* menu

Activating a gNB-CU VNF

You can manually change the activity mode of a gNB-CU VNF from `Standby` to `Active` mode. This functionality is available when a redundancy role is set to `Standalone`. After clicking the `Deactivate` button, a pop-up window displays and this action requires confirmation.

To trigger this operation, click the `✓ Activate` button and confirm the action in the pop-up window. The toast notifications display in the bottom right corner with an operation status.

Deactivating a gNB-CU VNF

You can manually change the activity mode of a gNB-CU VNF activity mode from `Active` to `Standby` mode.

To trigger this operation, click the `X Deactivate` button and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

4.2 DUs Status tab

The `DUs Status` tab provides information about properties and states of all gNB distributed units (gNB-DUs) managed by the gNB-CU. It also allows you to execute various gNB-DU supported operations.

DUs Status overview

To navigate to the **DUs Status** tab, go to **Navigation Panel** > **Status** > **DUs Status**.



Tip:

For easy access to the **DUs Status**, press the **D** key, and then **S**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Figure 37: **DUs Status** tab main view

The screenshot shows the **DUs Status** tab in the CU WebEM interface. At the top, there is a header bar with the Nokia logo, CU ID: MRBTS-1 / BTS1, date: 19B_12_06, and time: GMT+2. Below the header, the navigation tabs are **CU Properties**, **DUs Status** (which is selected), **Cells Status**, **Cells Mapping**, **VMs Status**, and **X2 Links Status**. Underneath the tabs, there are several filter and export options: **Configure**, **Filter**, **Sort**, **Restore Default View**, **Table View**, and **Export**. The main area displays 23 gNB-DU status cards arranged in a grid. Each card contains the following information:

- ID:** NRDU-0 / 0, NRDU-1 / 100000, NRDU-2 / 200000, NRDU-3 / 300000, NRDU-4 / 400000, NRDU-5 / 500000, NRDU-6 / 600000, NRDU-7 / 700000, NRDU-8 / 800000, NRDU-9 / 900000, NRDU-10 / 1000000, NRDU-11 / 1100000, NRDU-12 / 1200000, NRDU-13 / 1300000, NRDU-14 / 1400000, NRDU-15 / 1500000, NRDU-16 / 1600000, NRDU-17 / 1700000, NRDU-18 / 1800000, NRDU-19 / 1900000, NRDU-20 / 2000000, NRDU-21 / 2100000, NRDU-22 / 2200000, NRDU-23 / 2300000.
- DU name:** DU name (e.g., NRDU-0 / 0).
- F1 link status:** Available or Unavailable.
- Administrative state:** Unlocked or Locked (indicated by a padlock icon).
- Cell statistics:** Total number of available cells (e.g., 20, 24, 26) and cell IDs (e.g., 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30).
- Alarms:** A bell icon indicating the presence of alarms.

DUs Status widgets

When you access the **DUs Status** tab, the information about gNB-DUs displays on the widgets. Each **DUs Status** widget represents one gNB-DU and contains information about:

- NRDUs ID
- gNB-DU ID and name
- F1 link status, either **Available** or **Unavailable**
- gNB-DU administrative state, either **Unlocked** or **Locked**

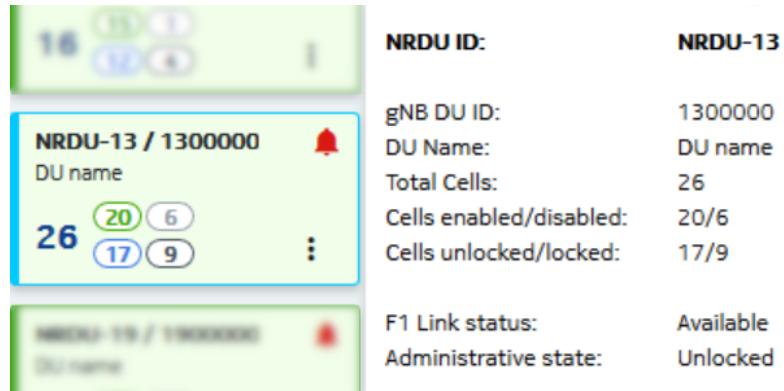


If the gNB-DU state is **Locked**, the widget contains the locker icon.

- Total number of available cells in a gNB-DU
- gNB-DU cells statistics, either in the **Enabled** or **Disabled** cells state
- gNB-DU cells statistics, either in the **Unlocked** or **Locked** cells state
- gNB-DU alarms, including information about a reported alarm ID and fault ID

- **Actions** menu, allowing you to execute various gNB-DU supported operations

Figure 38: **DUs Status** widget



The **DUs Status** introduces special action buttons for quick execution of gNB-DU supported operations:

DU Lock

It is available only on the gNB-DUs with the **Unlocked** status. To trigger this operation, click **Lock DU** and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

DU Unlock

It is available only on the gNB-DUs with the **Locked** status. To trigger this operation, click **Unlock DU** and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

Show Cells

It redirects to the **Cells Status** tab, which displays a filtered content with the chosen gNB-DU cells.

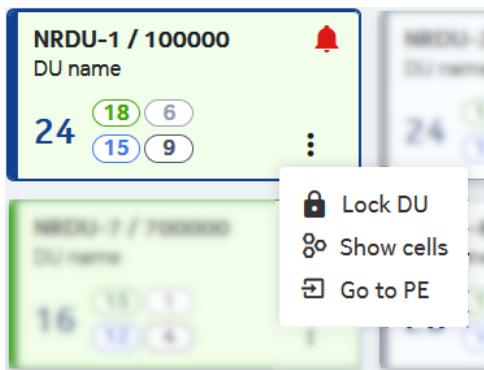
Go to Parameter Editor (PE)

It redirects to the **Parameter Editor** view, which displays a content of the **NRDU** objects for a selected gNB-DU widget.



Tip:

These action buttons are accessible directly from the **DUs Status** widgets as the **Actions** menu and from the [DUs Status Details Panel](#).

Figure 39: **DU Status Actions** menu

The **DUs Status** widgets use a color identification where:

- green represents the **Available** F1 link status.
- gray represents the **Unavailable** F1 link status.

Figure 40: **DUs Status** color identification matrix

The tooltip contains default text information about parameters and states which displays on the **DUs Status** widget, except alarm information, which has a separate tooltip.

Tip:

If more than one alarm exists on a gNB-DU, the highest severity level alarm displays. When you hover over the icon representing a gNB-DU alarm, a pop-up window displays with additional information about alarms.

The selected widget allows you to execute the gNB-DU supported operations and display the [DUs Status Details Panel](#).

DUs Status view customization

Under the **DUs Status**, there is a toolbar with functional buttons for easy content customization. The toolbar allows you to:

- configure the DUs Status widgets.
- filter the DUs Status data.
- sort the DUs Status data.
- restore a default DUs Status view.
- switch between the DUs Status table-based and widget-based views.
- export the DUs Status data to a CSV file.

Figure 41: *DUs Status* toolbar



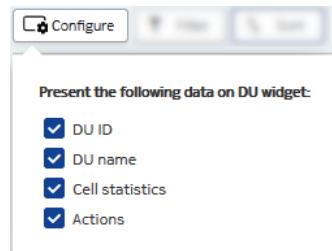
Configuring the *DUs Status* widgets

You can customize the *DUs Status* widgets and display only the desired information. Click the **Configure** button to select or deselect the following *DUs Status* widget elements:

- gNB-DU ID
- gNB-DU cells statistics
- gNB-DU cells statistics
- Actions menu

Deselect elements from the list to hide them on the widgets. Select elements from the list to expand widget information. The *DUs Status* widget adapts automatically to the preferred widget content.

Figure 42: *DUs Status* configuration menu



Filtering the *DUs Status* data

You can filter data in the *DUs Status* by using a search box and typing the NRDU ID or the gNB-DU ID value.

You can also use a special button to display preferred filtering results. Click the **Filter** button and provide one or multiple filtering criteria:

NRDU ID

Type the value and press **ENTER**.

NRDU name	Type the value and press ENTER .
Administrative state	Tick the Administrative state checkbox and select the Locked or Unlocked state.
F1 link status	Tick the F1 link status checkbox and select the Available or Unavailable status.

Figure 43: **DUs Status** filtering menu

The screenshot shows a filtering interface for DUs. At the top, there's a 'Filter' button with a dropdown arrow. Below it, the 'Filter DUs by:' section includes fields for 'NRDU ID' (containing '1') and 'NRDU name'. Under 'Filter DUs by:', there are two main sections: 'Administrative state:' and 'F1 link status:'. Both sections have a checked checkbox and two radio button options: 'Locked' (selected) and 'Unlocked' for the first, and 'Available' (selected) and 'Unavailable' for the second.

Sorting the **DUs Status** data

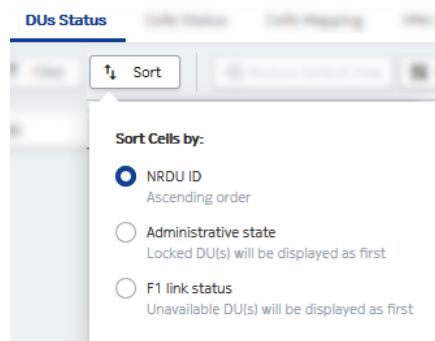
You can arrange the **DUs Status** data in a certain order. Click the **Sort** button and select one of the sorting criteria:

NRDU ID It displays widgets by the NRDU ID value in ascending order.

Administrative state It displays on top the gNB-DUs in the **Locked** state.

F1 link status It displays on top the gNB-DUs with the **Unavailable** status.

Figure 44: DUs Status sorting menu



Restoring a default DUs Status view

You can restore the DUs Status view to default settings by clicking the **Restore Default View** button.



Tip:

The button becomes active only after you perform the **Configure**, **Filter**, or **Sort** actions.

Switching between the DUs Status table-based and widget-based views

You can display the DUs Status data in a table format. To enable this option, click the **Table View** button. Buttons related to gNB-DU states, properties, and actions are similar in both the table-based view and the widget-based view. For more information, see [DUs Status widgets](#).

You can go back to the widget-based view by clicking the **Widget View** button.

Figure 45: DUs Status table view

Status	NRDU ID	gNB DU ID	DU name	Total cells	Cells enabled / disabled	Cells unlocked / locked	Actions
● - 🔒	NRDU-0	0	DU name	18	16 / 2	13 / 5	
● - 🔒	NRDU-1	100000	DU name	22	18 / 4	15 / 7	
● - 🔒	NRDU-2	200000	DU name	20	17 / 3	14 / 6	
● - 🔒	NRDU-3	300000	DU name	20	16 / 4	13 / 7	
● - 🔒	NRDU-4	400000	DU name	24	18 / 6	15 / 9	
● - 🔒	NRDU-5	500000	DU name	18	14 / 4	11 / 7	
● - 🔒	NRDU-6	600000	DU name	24	17 / 7	14 / 10	
● - 🔒	NRDU-7	700000	DU name	16	13 / 3	10 / 6	
● - 🔒	NRDU-8	800000	DU name	20	15 / 5	12 / 8	
● - 🔒	NRDU-9	900000	DU name	26	20 / 6	17 / 9	
● - 🔒	NRDU-10	1000000	DU name	20	16 / 4	13 / 7	

Exporting the DUs Status data to a CSV file

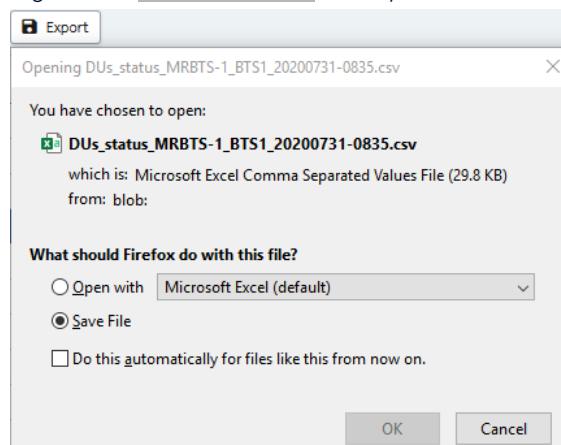
You can save a CSV file locally with information available on the DUs Status widgets. Click

the **Export** button to trigger a file download operation. Select **Save File** and click **OK**. After a while, a notification informing you about the operation status appears in the bottom right corner. The file is automatically saved in the default download location.

Note:

Despite the current **DU Status** customization, filtering, or sorting actions, the downloaded file contains all default gNB-DU statuses and properties.

Figure 46: **DUs Status** file export



DUs Status Details Panel

To see more details of the selected **DUs Status** information, click the **≡** button. The **DUs Status Details Panel** contains two tabs:

Overview

It provides information about DU properties, DU state, and DU cells statistics.

Parameters

It provides information about the **NRDU** object parameters names and values. You can display all the parameters values by expanding a tree view. You can also display only a selected parameter by using a filtering option.

Both tabs contain the action buttons which are also available directly on the **DUs Status** widgets:



Lock DU

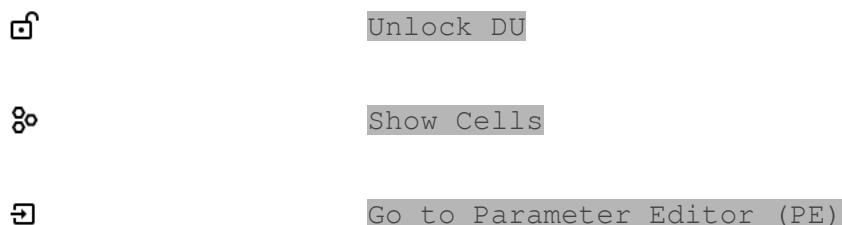


Figure 47: `DUs Status Details Panel`

The screenshot shows the 'Overview' tab selected in the navigation bar. The main content area is divided into several sections: 'DU properties' (NRDU ID: NRDU-3, gNB DU ID: 300000, DU name: DU name), 'DU states' (F1 link status: Available, Administrative state: Locked), and 'DU cells statistics' (Total cells: 16, Cells enabled / disabled: 15 / 1, Cells unlocked / locked: 12 / 4).

4.3 Cells Status tab

The `Cells Status` tab provides information about properties and states of all cells managed by a gNB-CU. It allows you to execute various operations supported on individual cells and cell groups.

Cells Status overview

To navigate to the `Cells Status` tab, go to `Navigation Panel` ▶ `Status` ▶ `Cells Status`.

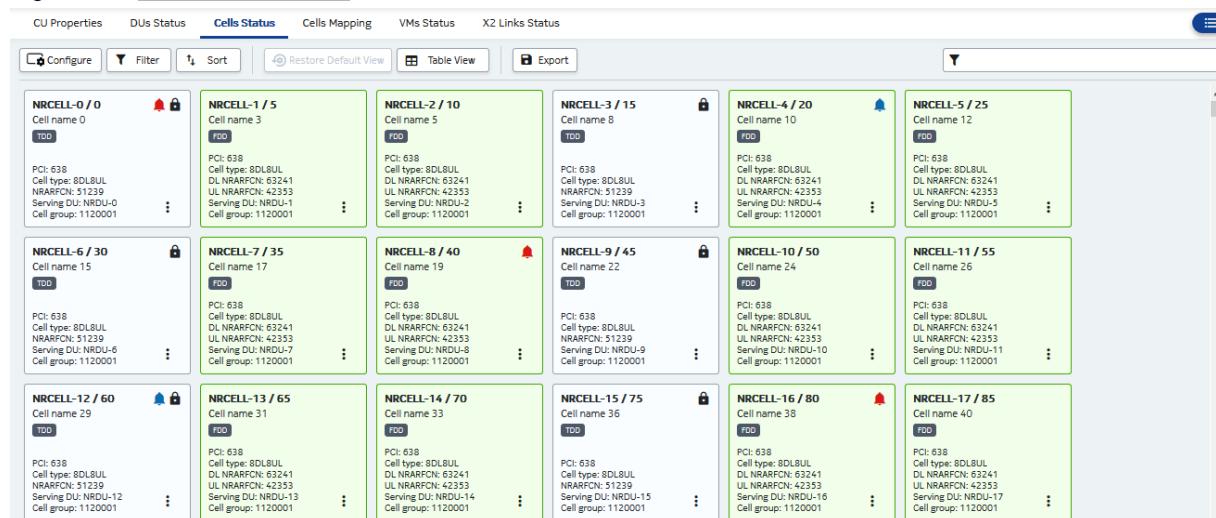
Tip:

For easy access to the `Cells Status`, choose one of the following options:

- Press the `C` key, and then `S`.
- Click the  icon in the `Main Panel`.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Figure 48: `Cells Status` tab main view



Cell ID / Name	Technology	PCI	Cell Type	DL NRARFCN	UL NRARFCN	Serving DU	Cell Group
NRCELL-0 / 0	TDD	638	8DL8UL	51239	42333	NRDU-0	1120001
NRCELL-1 / 5	FDD	638	8DL8UL	63241	42333	NRDU-1	1120001
NRCELL-2 / 10	FDD	638	8DL8UL	63241	42333	NRDU-2	1120001
NRCELL-3 / 15	TDD	638	8DL8UL	51239	42333	NRDU-3	1120001
NRCELL-4 / 20	FDD	638	8DL8UL	63241	42333	NRDU-4	1120001
NRCELL-5 / 25	FDD	638	8DL8UL	63241	42333	NRDU-5	1120001
NRCELL-6 / 30	TDD	638	8DL8UL	51239	42333	NRDU-6	1120001
NRCELL-7 / 35	FDD	638	8DL8UL	63241	42333	NRDU-7	1120001
NRCELL-8 / 40	FDD	638	8DL8UL	63241	42333	NRDU-8	1120001
NRCELL-9 / 45	TDD	638	8DL8UL	51239	42333	NRDU-9	1120001
NRCELL-10 / 50	FDD	638	8DL8UL	63241	42333	NRDU-10	1120001
NRCELL-11 / 55	FDD	638	8DL8UL	63241	42333	NRDU-11	1120001
NRCELL-12 / 60	TDD	638	8DL8UL	51239	42333	NRDU-12	1120001
NRCELL-13 / 65	FDD	638	8DL8UL	63241	42333	NRDU-13	1120001
NRCELL-14 / 70	FDD	638	8DL8UL	63241	42333	NRDU-14	1120001
NRCELL-15 / 75	TDD	638	8DL8UL	51239	42333	NRDU-15	1120001
NRCELL-16 / 80	FDD	638	8DL8UL	63241	42333	NRDU-16	1120001
NRCELL-17 / 85	FDD	638	8DL8UL	63241	42333	NRDU-17	1120001

Cells Status widget

When you access the `Cells Status` tab, the information about cells displays on the widgets. Each widget contains the following information:

- NRCELL ID
- Cell ID and name
- Cell technology, either `TDD` or `FDD`

Tip:

If the cell technology is `FDD`, additional information about Downlink NRARFCN and Uplink NRARFCN displays on the widget.

- Physical Layer Cell (PCI)
- Cell type
- Serving gNB-DU ID
- Cell group ID
- Cells operational state, either `Enabled` or `Disabled`

- Cells administrative state, either **Locked** or **Unlocked**

Tip:

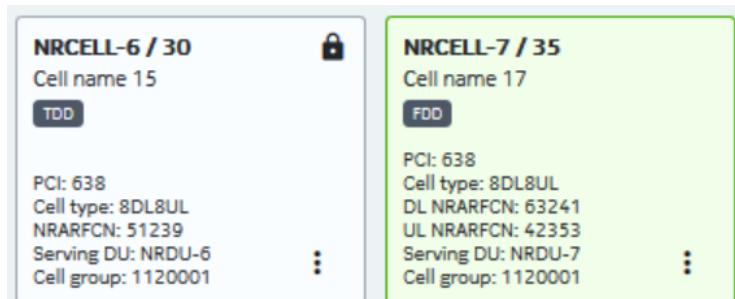
If cells state is **Locked**, the widget contains the locker  icon.

Note:

The cells administrative state displayed on this widget refers to cell locking or unlocking in a gNB-CU only. The cells administrative state changes done by you in a gNB-DU are not reflected in a gNB-CU, and vice versa.

- Cells alarms, including information about a reported **Alarm ID** and **Fault ID**
- Actions** menu, allowing you to execute various operations supported on cells

Figure 49: *Cells Status* widget



The **Cells Status** introduces the special actions buttons for quick execution of supported operations:

Cell Lock 

It is available only on the cells with the **Unlocked** state. To trigger this operation, click **Lock cell** and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

Cell Unlock 

It is available only on the cells with the **Locked** state. To trigger this operation, click **Unlock cell** and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

Go to Parameter Editor (PE) 

It redirects to the **Parameter Editor** view, which displays the content of the **NRCELL** object for a selected cells widget.

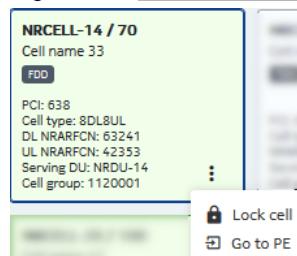
Note:

Cell **Unlock** and **Cell Locked** states in CU WebEM refer to a gNB-CU only. Cell locking or unlocking will fail if it has already been done in a gNB-DU.

Tip:

These action buttons are accessible directly from the **Cells Status** widgets as **Actions** menu and from the [Cells Status Details Panel](#).

Figure 50: **Cells Status Action** menu



The **Cells Status** widgets use a color identification where:

- green represents the **Enabled** cells operational state.
- gray represents the **Disabled** cells operational state.

Figure 51: **Cells Status** color identification matrix

NRCELL-14 / 70 Cell name 33 FDD PCI: 638 Cell type: 8DL8UL DL NRARFCN: 63241 UL NRARFCN: 42353 Serving DU: NRDU-14 Cell group: 1120001	NRCELL-15 / 75 TDD Cell name 36 PCI: 638 Cell type: 8DL8UL NRARFCN: 51239 Serving DU: NRDU-15 Cell group: 1120001
NRCELL-20 / 100 FDD Cell name 47 PCI: 638 Cell type: 8DL8UL DL NRARFCN: 63241 UL NRARFCN: 42353 Serving DU: NRDU-20 Cell group: 1120001	NRCELL-21 / 105 TDD Cell name 50 PCI: 638 Cell type: 8DL8UL NRARFCN: 51239 Serving DU: NRDU-21 Cell group: 1120001

The tooltip contains default text information about parameters and states which displays on

the **Cells Status** widget, except alarm information, which has a separate tooltip.

Tip:

If more than one alarm exists on the **Cells Status** widget, the highest severity level alarm displays. When you hover over the icon representing a cell alarm, a pop-up window displays with additional information about alarms.

The selected widget allows you to execute cell supported operations and display the [Cells Status Details Panel](#).

Cells Status view customization

Under the **Cells Status** tab, there is a toolbar with functional buttons for easy content customization. The toolbar allows you to:

- [configure the Cells Status widgets](#).
- [filter the Cells Status data](#).
- [sort the Cells Status data](#).
- [restore a default Cells Status view](#).
- [switch between the Cells Status table-based and widget-based views](#).
- [export the Cells Status data to a CSV file](#).

Figure 52: **Cells Status** toolbar



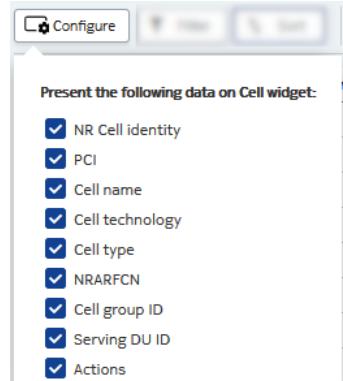
Configuring the **Cells Status** widgets

You can customize the **Cells Status** widgets and display only the desired information. Click the **Configure** button and select or deselect the following **Cells Status** widget elements:

- NRCELL ID
- PCI
- Cell name
- Cell technology
- Cell type
- NRARFCN
- Cell group ID
- Serving gNB-DU ID
- Actions menu

Deselect elements from the list to hide them on the widgets. Select elements from the list to expand widget information. The **Cells Status** widget automatically adapts to the preferred widget content.

Figure 53: **Cells Status** configuration menu



Filtering the **Cells Status** data

You can filter data in the **Cells Status** by using a search box and typing the NRCELL ID or the cell name value.

You can also use a special button to display preferred filtering results. Click the **Filter** button and choose one or multiple filtering criteria:

NRCELL ID Type the value and press **ENTER**.

Cell name Type the value and press **ENTER**.

Serving DU ID Type the value and press **ENTER**.

Cells operational state Tick the **Operational state** checkbox and select the **Enabled** or **Disabled** state.

Cells administrative state Tick the **Administrative state** checkbox and select the **Locked** or **Unlocked** state.

Figure 54: `Cells Status` filtering menu**Filter cells by:**

NRCELL ID:

Cell name:

Serving DU ID:

 Operational state:

- Enabled
- Disabled

 Administrative state:

- Locked
- Unlocked

Sorting the `Cells Status` data

You can arrange the `Cells Status` data in a certain order. Click the Sort button and select one of the sorting criteria:

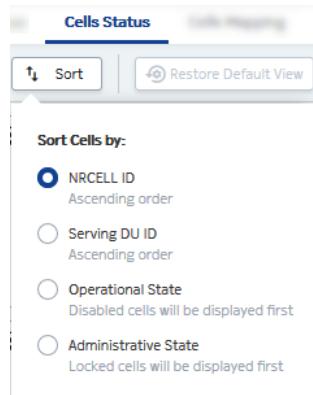
NRCELL ID It displays widgets by the NRCELL ID value in ascending order.

Serving DU It displays widgets by a serving gNB-DU in ascending order.

Operational State It displays on top the cells in the `Disabled` state.

Administrative State It displays on top the cells in the `Locked` state.

Figure 55: Cells Status sorting menu



Restoring a default Cells Status view

You can restore the Cells Status view to default settings by clicking the Restore Default View button.

Tip:

The button becomes active only after performing the Configure, Filter, or Sort actions.

Switching between the Cells Status table-based and widget-based views

You can display the Cells Status data in a table format. To enable this option, click the Table View button. Buttons related to the cells states, properties, and actions are similar in both the table-based view and the widget-based view. For more information, see [Cells Status widget](#).

You can go back to the widget-based view by clicking the Widget View button.

Figure 56: Cells Status table view

CU Properties								DUS Status	Cells Status	Cells Mapping	VMs Status	X2 Links Status		
Status	NRCELL ID	gNB DU ID	DU name	Total cells	Cells enabled / disabled	Cells unlocked / locked	Actions							
	NRDU-0	0	DU name	20	15 / 5	12 / 8								
	NRDU-1	100000	DU name	24	18 / 6	15 / 9								
	NRDU-2	200000	DU name	24	17 / 7	14 / 10								
	NRDU-3	300000	DU name	16	15 / 1	12 / 4								
	NRDU-4	400000	DU name	24	17 / 7	14 / 10								
	NRDU-5	500000	DU name	20	16 / 4	13 / 7								

Exporting the Cells Status data to a CSV file

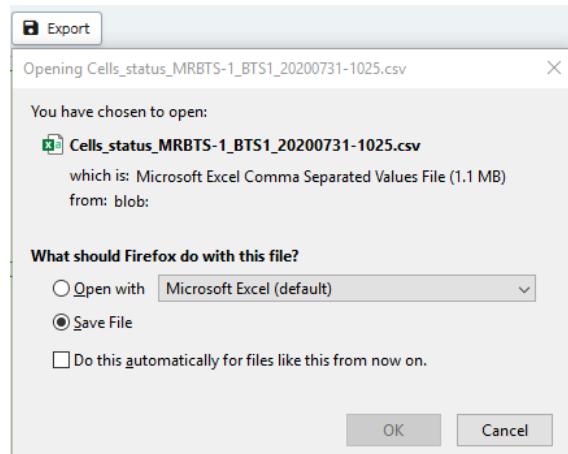
You can save a CSV file locally containing information available on the Cells Status widgets. Click the Export button to trigger a file download operation. Select Save File

and click **OK**. After a while, a notification informing you about the operation status appears in the bottom right corner. The file is automatically saved in the default download location.

Note:

Despite the current **Cells Status** customization, filtering, or sorting actions, the downloaded file contains all default cells statuses and properties.

Figure 57: **Cells Status** file export



Cells Status Details Panel

To see more details of the selected **Cells Status**, click the **≡** button. The **Cells Status Details Panel** contains two tabs:

Overview

It provides information about cell properties and cell states.

Parameters

It provides information about the **NRCELL** object parameters names and values. You can display all the parameters values by expanding a tree view. You can also display only a selected parameter by using a filtering option.

Both tabs contains action buttons which are also available directly on the **Cells Status** widgets:



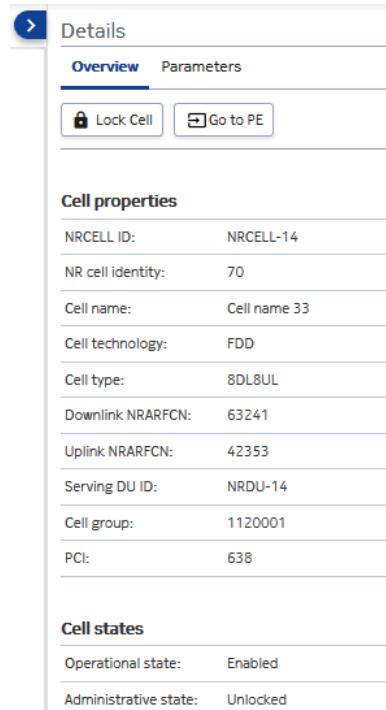
Lock Cell



Unlock Cell

 Go to Parameter Editor (PE)

Figure 58: Cells Status Details Panel



The screenshot shows the 'Details' tab selected in the navigation bar. Below it, the 'Overview' tab is active. Under 'Cell properties', there is a table with the following data:

NRCELL ID:	NRCELL-14
NR cell identity:	70
Cell name:	Cell name 33
Cell technology:	FDD
Cell type:	8DL8UL
Downlink NRARFCN:	63241
Uplink NRARFCN:	42353
Serving DU ID:	NRDU-14
Cell group:	1120001
PCI:	638

Below this is a 'Cell states' section with two entries:

- Operational state: Enabled
- Administrative state: Unlocked

At the bottom of the panel are two buttons: 'Lock Cell' and 'Go to PE'.

4.4 Cells Mapping tab

The **Cells Mapping** tab allows you to check cells status for each gNB distributed unit (gNB-DU) property. It also supports various operational actions related to gNB-DU and cells.

Cells Mapping overview

To navigate to the **Cells Mapping**, go to **Navigation Panel** > **Status** > **Cells Mapping**.



Tip:

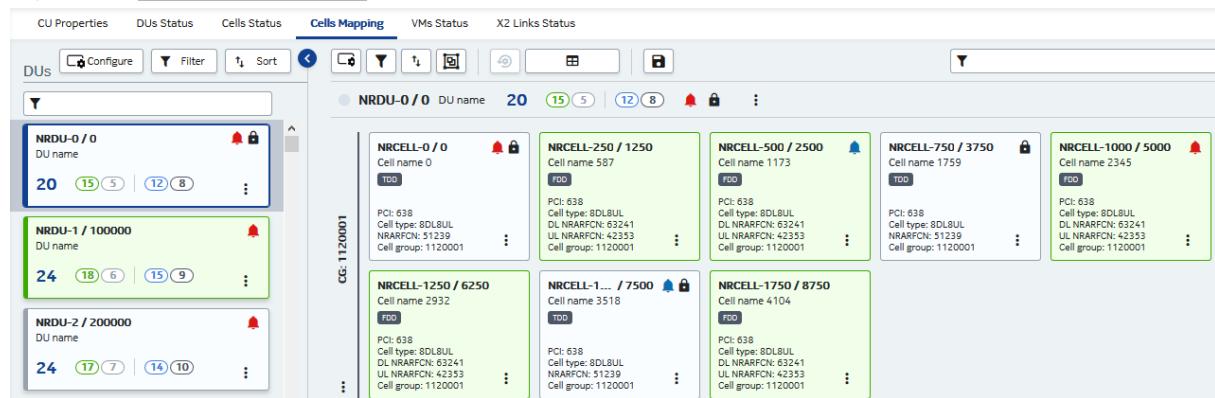
For easy access to the **Cells Mapping**, press the **C** key, and then **M**.
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

The **Cells Mapping** combines functionalities from the **DUs Status** tab and the **Cells Status** tab. It introduces a better presentation and state control of cells grouped by selected gNB-DUs. It splits the **Working Panel** into two vertical working areas:

- **DU Selection** panel on the left
- **Cells** panel on the right

You can display the cells for only one gNB-DU at a time. In the **DU Selection** panel, select a gNB-DU for which you want to display related cells in the **Cells** panel.

Figure 59: Cells Mapping tab sections



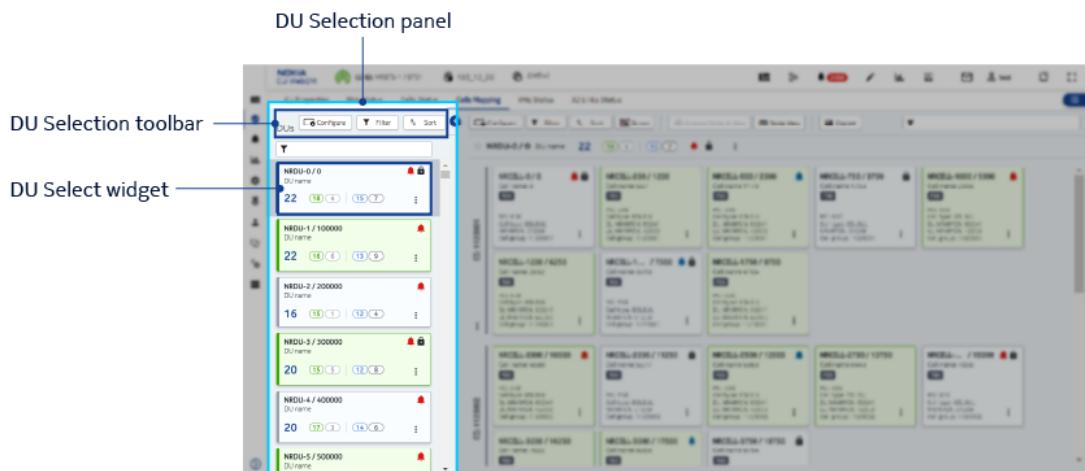
DU Selection panel

Use this working area to select gNB-DUs for which cells statuses display in the **Cells** panel. The **DU Selection** panel is a widget-based view. It contains a toolbar with functional buttons for easy content customization. The **DU Selection** panel works similarly to the **DUs Status** tab and allows you to:

- display gNB-DU information in the form of widgets.
- configure the content of gNB-DU widgets.
- filter gNB-DU widgets.
- sort gNB-DU widgets.
- execute gNB-DU supported operations, including **Lock DU**, **Unlock DU**, **Go to Parameter Editor (PE)**.
- display the **Details Panel**.

For more information, see [DUs Status tab](#).

Figure 60: DU Selection panel



Cells panel

This working area displays cell information for a selected gNB-DU. The **Cells** panel is a widget-based view. It contains a toolbar with functional buttons for easy content customization. The **Cells** panel works similarly to the **Cells Status** tab and allows you to:

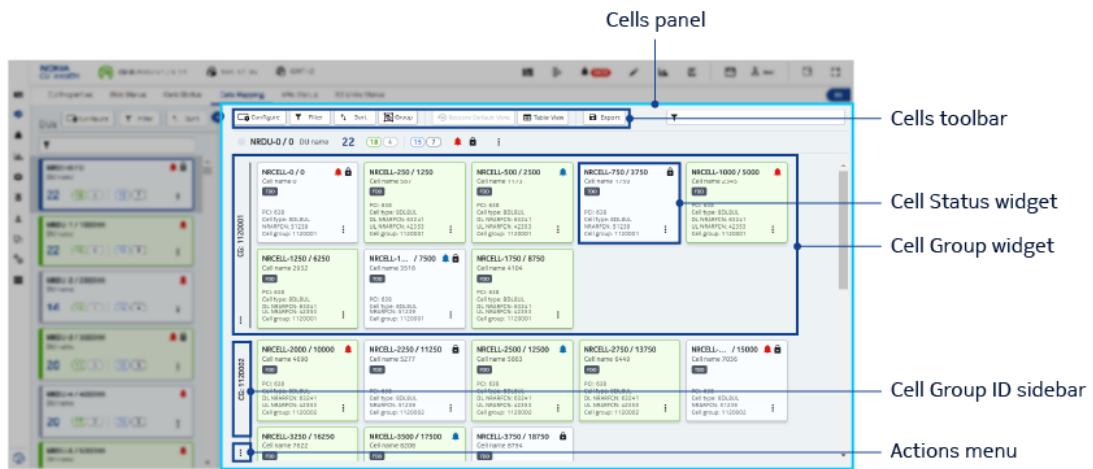
- display cells information in the form of widgets.
- configure the content of cells widgets.
- filter cells widgets.
- sort cells widgets.
- group cells under **Cell Group** widget.
- execute cells supported operations, including **Lock cell**, **Unlock cell**, **Go to Parameter Editor (PE)**.
- restore a default **Cells Status** view.
- switch between the **Cells Status Table View** and **Widget View**.
- export the **Cells Status** data to a CSV file.
- display the **Details Panel**.

For more information, see [Cells Status tab](#).

To customize the **Cells** panel data you can:

- Hide the **DU Selection** panel. Click the **X** icon to collapse the panel.
- Adapt the size of the **Cells Mapping** by using a drag-and-drop option.

Figure 61: Cells panel



Cell Group widget

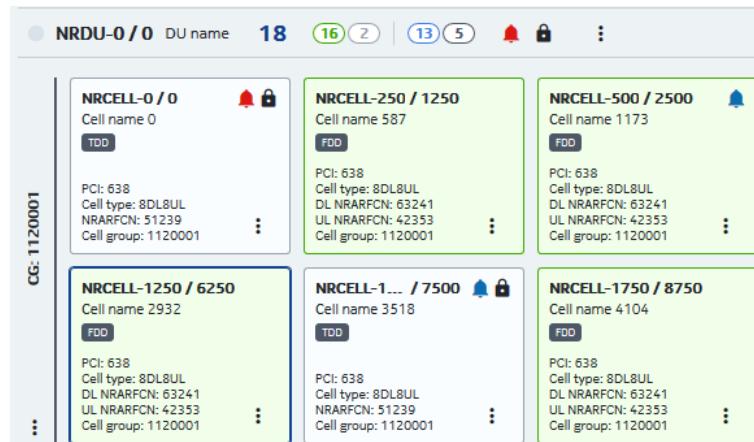
The Cell Groups widget consists of the following elements:

Cell Group ID sidebar It displays as the widget left sidebar.

Actions menu It allows you to execute various operations supported for cell groups. This menu is available on the Cell Group ID sidebar.

Cells Status widgets It is a set of the Cells Status widgets assigned under a selected gNB-DU.

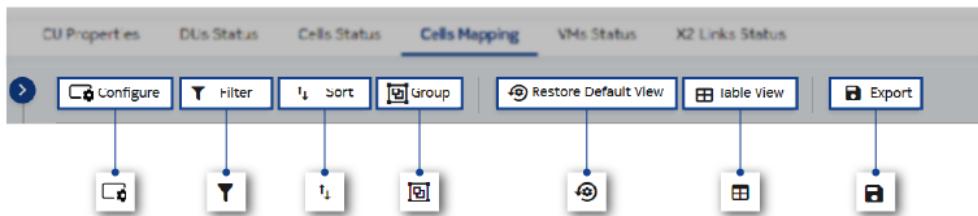
Figure 62: Cells Group widget



The Cell Groups widget introduces special actions buttons for the following operations:

- Cell Group Lock**  To trigger this operation, click `Lock cell group` and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.
- Cell Group Unlock**  To trigger this operation, click `Unlock cell group` and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.
- Go to Parameter Editor (PE)**  It launches to the `Parameter Editor` view, which displays the content of the `NRCELLGRP` object for a selected cell group widget.
- Group**  To disable this widget, click `Group` and deselect the `Cell group` option. To enable this widget, click the `Group` button on the toolbar and select the `Cell group` option.
- Restore Default View**  To enable the `Cell Group` default view, click `Restore Default View`. This button becomes active only after performing the `Group` action.
- Table view**  You can switch between the widget-based mode and the table-based mode views.
- Export**  You can save a CSV file locally containing information available on the `Cells Group` widgets.

Figure 63: `Cell Mapping` toolbar layout



 **Tip:**

Depending on the browser window size, the toolbar layout changes from the icon buttons to text and icon buttons.

4.5 VMs Status tab

The **VMs Status** tab allows you to monitor the states of all VMs that build up a gNB-CU.

VMs Status overview

To navigate to the **VMs Status** tab, go to **Navigation Panel** ➤ **Status** ➤ **VMs Status**.

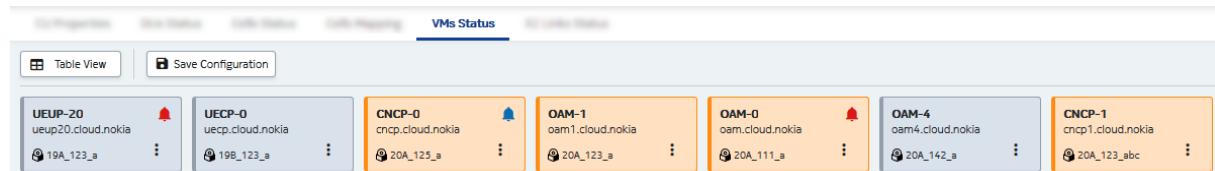


Tip:

For easy access to the **VMs Status**, press the **V** key, and then **S**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Figure 64: **VMs Status** tab main view



VMs Status widget

When you access the **VMs Status** tab, the information about VMs displays on the widgets. Each widget contains information about:

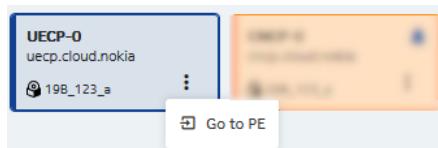
- VM name
- VM hostname
- VM software version
- VM availability status



Tip:

The VM status uses a proper status color identification. For more information, see [VM Statuses](#).

- VNFC operational state, either **Enabled** or **Disabled**
- VM alarms, including information about a reported **Alarm ID** and **Fault ID**
- **Actions** menu, redirecting to the **Parameter Editor** view

Figure 65: **VMs Status** widget

The **VMs Status** widgets use the color identification for VM statuses where:

- green represents the **Online** VM status.
- red represents the **Failed** VM status.
- orange represents the **Degraded** VM status.
- gray represents either the **Not installed**, **Offline**, or **Power off** VM status.
- black represents the **Off duty** VM status.
- white represents the **Dependency** VM status.

For more information, see [Table: VM status icons](#).

The tooltip contains default text information about parameters and states which display on the **VMs Status** widget, except alarm information, which has a separate tooltip.

Tip:

If more than one alarm exists on the **VMs Status** widget, the highest severity level alarm displays. When you hover over the icon representing a VM alarm, a pop-up window displays with additional information about alarms

The selected widget allows you to execute VM supported operations and display [VMs Status Details Panel](#).

VMs Status view customization

Under the **VMs Status** tab, there is a toolbar with functional buttons for easy content customization. It allows you to:

- [switch between the **VMs Status** table-based and widget-based views](#).
- [export the **VMs Status** data to a CSV file](#).

Switching between the **VMs Status** table-based and widget-based views

You can display the **VMs Status** widget data in a table format. To enable this option, click the **Table View** button. Buttons related to VM states, properties, and actions are similar in both the table-based view and the widget-based view. For more information, see [VMs Status widget](#).

You can go back to widget-based view by clicking the **Widget View** button.

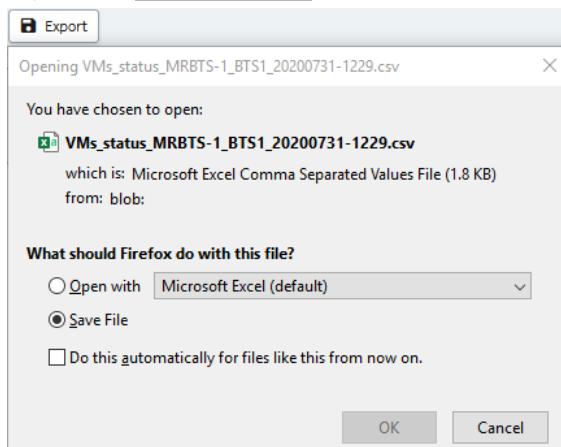
Figure 66: **VMs Status** table view

Status	VM name	Hostname	Software version	Actions
● !	UEUP-20	ueup20.cloud.nokia	19A_123_a	Edit
● -	UECP-0	uecp.cloud.nokia	19B_123_a	Edit
● !	CNCP-0	cncp.cloud.nokia	20A_125_a	Edit
● -	OAM-1	oam1.cloud.nokia	20A_123_a	Edit
● !	OAM-0	oam.cloud.nokia	20A_111_a	Edit
● -	OAM-4	oam4.cloud.nokia	20A_142_a	Edit
● -	CNCP-1	cncp1.cloud.nokia	20A_123_abc	Edit

Exporting the **VMs Status** data to a CSV file

You can save a CSV file locally containing information available on the **VMs Status** widgets. Click the **Export** button to trigger a file download operation. Select **Save File** and click **OK**. After a while, a notification appears in the bottom right corner informing you about the operation status. The file is automatically saved in the default download location.

Figure 67: **VMs Status** file export



VMs Status Details Panel

To see more details of a selected VM status, click the **Cells Status Details Panel** button. The **Cells Status Details Panel** contains two tabs:

Overview

It provides information about VM properties, VM states, VM internal and external IP addresses.

Parameters

It provides information about parameters names and values related to the VNFC object representing a selected VM widget. You can also display only a selected parameter by using a filtering option.

Both tabs contain the `Go to Parameter Editor (PE)` button, which is also available directly on the `VMs Status` widgets.

Figure 68: `VMs Status Details Panel`

VM properties	
VM name:	UECP-0
Hostname:	uecp.cloud.nokia
Software version:	19B_123_a

VM states	
Availability status:	Power Off
Operational state:	Enabled

VM IP address	
Internal:	10.145.23.15
internal_e1:	8001:0db8:85a3:0000:0000:8a2e:0370:7544
internal_srv:	9001:0db8:85a3:0000:0000:8a2e:0370:1224

4.6 X2 Links Status tab

The `X2 Links Status` tab provides information on properties and states of all connected LTE eNBs and related X2 links.

X2 Link Status overview

To navigate to the `X2 Link Status`, go to `Navigation Panel` ▶ `Status` ▶ `X2 Link Status`.



Tip:

For easy access to the `X2 Link Status` tab, press the `X` key, and then `S`.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Figure 69: X2 Links Status tab main view

LTEENB-0 / 12	LTEENB-1 / 12	LTEENB-2 / 12	LTEENB-3 / 12	LTEENB-4 / 12	LTEENB-5 / 12
MCC / MNC: 245 / 127 IP: 127.0.0.1	MCC / MNC: 245 / 127 IP: 127.0.0.1	MCC / MNC: -- / -- IP: --	MCC / MNC: 245 / 127 IP: 127.0.0.1	MCC / MNC: 245 / 127 IP: 127.0.0.1	MCC / MNC: 245 / 127 IP: 127.0.0.1
LTEENB-6 / 12	LTEENB-7 / 12	LTEENB-8 / 12	LTEENB-9 / 12	LTEENB-10 / 12	LTEENB-11 / 12
MCC / MNC: 245 / 127 IP: 127.0.0.1					
LTEENB-12 / 12	LTEENB-13 / 12	LTEENB-14 / 12	LTEENB-15 / 12	LTEENB-16 / 12	LTEENB-17 / 12
MCC / MNC: 245 / 127 IP: 127.0.0.1	MCC / MNC: -- / -- IP: --	MCC / MNC: 245 / 127 IP: 127.0.0.1			
LTEENB-18 / 12	LTEENB-19 / 12	LTEENB-20 / 12	LTEENB-21 / 12	LTEENB-22 / 12	LTEENB-23 / 12
MCC / MNC: 245 / 127 IP: 127.0.0.1	MCC / MNC: -- / -- IP: --	MCC / MNC: 245 / 127 IP: 127.0.0.1			

X2 Links Status widget

When you access the X2 Links Status tab, the information about X2 link statuses displays on the widgets. Each widget contains information about:

- LTEENB ID
- eNodeB ID
- MCC / MNC
- LTE eNB IP address
- X2 link status, either Available or Unavailable
- X2 link administrative state, either Locked or Unlocked



Tip:

If the X2 link state is Locked, the widget displays the locker icon.

- X2 links alarms, informing you about a reported alarm ID and fault ID
- Actions menu, allowing you to execute various X2 link supported operations

Figure 70: X2 Links Status widget

LTEENB ID:	LTEENB-17
eNodeB ID:	12
MCC/MNC:	245/127
IP address:	127.0.0.1
X2 link status:	Available
Locking state:	Unlocked

The X2 Link Status introduces the special actions buttons for quick execution of X2 link

supported operations. These include:

Lock X2 Link

It is available on the X2 link in the `Unlocked` state. To trigger this operation, click the `Lock X2 Link` button and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

Unlock X2 Link

It is available on the X2 link in the `Locked` state. To trigger this operation, click the `Unlock cell` button and confirm the action in a pop-up window. The toast notifications display in the bottom right corner with an operation status.

Go to Parameter Editor (PE)



It redirects to the `Parameter Editor` view, which displays the content of the `LTEENB` object related to a chosen `X2 Links Status` widget.



Tip:

These action buttons are accessible directly from the `X2 Links Status` widgets as the `Actions` menu and in the [X2 Links Status Details Panel](#).

The `X2 Links Status` uses the color identification related to X2 links in a gNB-CU where:

- green represents the `Available` X2 link connection.
- red represents the `Unavailable` X2 link connection.

The tooltip contains default text information about parameters and states which display on the `X2 Link Status` widget, except alarm information, which has a separate tooltip.



Tip:

If more than one alarm exists on the `X2 Links Status` widget, the highest severity level alarm displays. When you hover over the icon representing a cell alarm, a pop-up window displays with additional information about alarms.

The selected widget allows to execute X2 links supported operations and display the [X2 Links Status Details Panel](#).

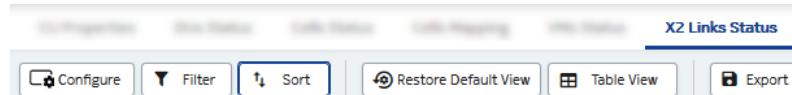
X2 Links Status view customization

Under the `X2 Links Status`, there is a toolbar with functional buttons for easy content

customization. The toolbar allows you to:

- configure the X2 Links Status widgets.
- filter the X2 Links Status data.
- sort the X2 Links Status data.
- switch between X2 Links Status table-based and widget-based views.
- export the X2 Links Status data to a CSV file.
- restore a default X2 Links Status view.

Figure 71: X2 Links Status toolbar



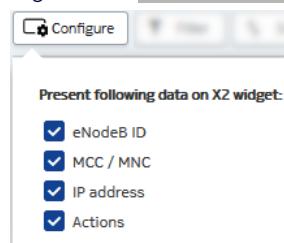
Configuring the X2 Links Status widgets

You can customize the X2 Links Status widgets and display only the desired information. Click the **Configure** button and select or deselect the following VMs Status widget elements:

- eNodeB ID
- MCC / MNC
- IP address
- Actions

Deselect elements from the list to hide them on the widgets. Select elements from the list to expand the widget information. The X2 Links Status widget automatically adapts to the preferred widget content.

Figure 72: X2 Links Status configuration menu



Filtering the X2 Links Status data

You can filter data in the X2 Links Status by using a search box and typing the LTEENB ID value.

You can also use a special button to display preferred filtering results. Click **Filter** and choose one or multiple filtering criteria:

LTEENB ID	Type the value and press ENTER .
eNodeB ID	Type the value and press ENTER .
X2 link status	Tick the X2 link status checkbox and select the Available or Unavailable status.
Administrative state	Tick the Locking state checkbox and select the Locked or Unlocked state.

Figure 73: **X2 Link Status** filtering menu



Filter cells by:

LTEENB ID:

eNodeB ID:

X2 link status:
 Available
 Unavailable

Locking state:
 Locked
 Unlocked

Sorting the **X2 Links Status** data

You can arrange the **X2 Links Status** data in a certain order. Click **Sort** and select one of the sorting criteria:

LTEENB ID It displays widgets by the LTEENB ID in ascending order.

X2 link status It displays on top the X2 links in the **Unavailable** state.

Locking state It displays on top the X2 links in the **Locked** state.

Figure 74: X2 Link Status sorting menu

**Sort X2 links by:**

- LTEENB ID
Ascending order
- X2 link status
Unavailable X2 links will be displayed as first
- Locking state
Locked X2 links will be displayed as first

Restoring a default X2 Links Status view

You can restore the X2 Links Status view to default settings by clicking the **Restore Default View** button.

**Tip:**

The button becomes active only after performing the **Configure**, **Filter**, or **Sort** actions.

Switching between X2 Links Status table-based and widget-based views

You can display the X2 Links Status widget data in a table format. To enable this option, click the **Table View** button. Buttons related to X2 link states, properties, and actions are similar in both the table-based view and the widget-based view. For more information, see [X2 Links Status widget](#).

You can go back to the widget-based view by clicking the **Widget View** button.

Figure 75: X2 Links Status table view

X2 Links Status					
Status	LTEENB ID	eNodeB ID	MCC / MNC	IP address	Actions
-	LTEENB-2	12	-/-	-	
-	LTEENB-16	12	-/-	-	
-	LTEENB-22	12	-/-	-	

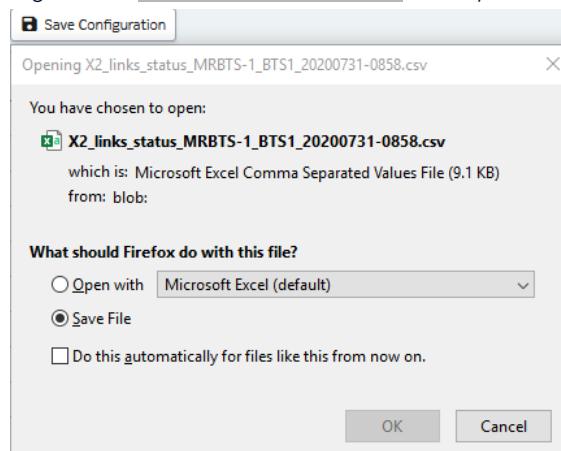
Exporting the X2 Links Status data to a CSV file

You can save a CSV file locally containing information available on the X2 Link Status widgets. Click the **Export** button to trigger a file download. Select **Save File** and click **OK**. After a while, a notification appears in the bottom right corner informing you about the operation status. The file is automatically saved in the default download location.

Note:

Despite the current the `X2 Links Status` customization, filtering, or sorting actions, the downloaded file contains all default X2 links statuses and properties.

Figure 76: `X2 Links Status` file export



X2 Links Status Details Panel

To see more details of a selected `X2 Links Status`, click the  button. The `X2 Links Status Details Panel` contains two tabs:

Overview

It provides information about X2 link properties and X2 link states.

Parameters

It provides information about the `LTEENB` object parameters names and values. You can display all the parameters values by expanding a tree view. You can also display only a selected parameter by using a filtering box option.

Both tabs contain the action buttons, which are also available directly on the `X2 Links Status` widgets:



`Lock X2 Link`



`Unlock X2 Link`



`Go to Parameter Editor (PE)`

Figure 77: X2 Links Status Details Panel

The screenshot shows a web-based interface titled "X2 Links Status Details Panel". At the top, there is a navigation bar with tabs: "Details", "Overview" (which is currently selected), and "Parameters". Below the tabs are two buttons: "Lock X2 Link" and "Go to PE".

The main content area is divided into sections:

- X2 link properties:**

LTEENB ID:	LTEENB-31
eNodeB ID:	12
MCC / MNC:	- / -
IP address:	-
- X2 link states:**

X2 link status:	Unavailable
Locking state:	Unlocked

5. Alarms view

The **Alarms** view provides information on active alarms, historical alarms, and fault toggling history. It also allows you to save an alarm list to a file.

Alarms overview

The **Alarms** view provides detailed information about malfunctions occurring on the gNB components. This functionality requires a working connection between CU WebEM and the gNB-CU to display the real-time notifications related to a network condition.

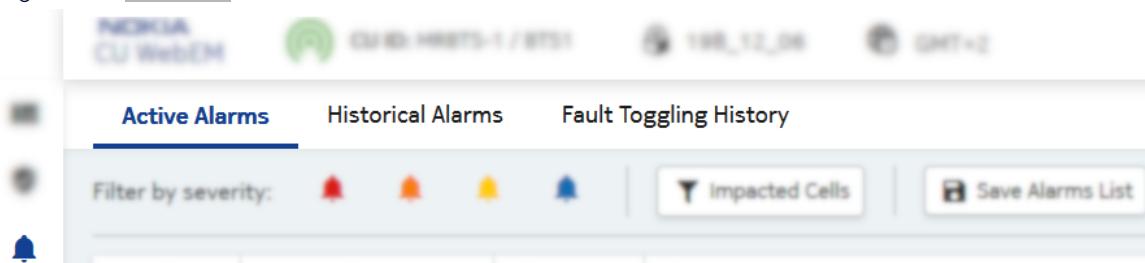
Note:

If the connection between CU WebEM and a gNB-CU goes down or an application server fails, the unavailable data error notification displays. Always ensure you have a working connection to see updates, raised alarms, and cleared alarms on a gNB-CU.

The **Alarms** view has three tabs:

- Active Alarms, which displays the real-time alarms raised on a gNB-CU.
- Historical Alarms, which displays the past alarms cleared on a gNB-CU.
- Fault Toggling History, which displays the alarms cleared within a short period of time.

Figure 78: **Alarms** tabs



5.1 Active Alarms and Historical Alarms tabs

The **Active Alarms** and **Historical Alarms** tabs provide information on the real-time and past alarms raised on a gNB-CU. They allow you to download the active or historical alarms lists.

Active Alarms tab

To navigate to the Active Alarms tab, go to [Navigation Panel](#) ► [Alarms](#) ► [Active Alarms](#).



Tip:

For easy access to the Active Alarms:

- press the [A](#) key, and then [A](#).
- click the icon in the [Main Panel](#).

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

The Active Alarms displays all effective alarms raised on a gNB-CU. This data updates every 5 s.



Note:

Due to a 5 s data update interval, there is a slight latency in displaying raised alarms information.

Figure 79: Active Alarms main view

	Severity	Appeared	Alarm ID	Alarm name	Fault ID	Fault name	Alarming object
	2020-07-20 13:23:05	61652		HARDWARE PROBLEM	N/A	N/A	N/A
	2020-07-20 13:23:05	61652		HARDWARE PROBLEM	61652	Hardware Problem indeterminate	MRBTS-12/NRBTS-12
	2020-07-20 13:23:05	61524		BASE STATION SERVICE PROBLEM	61652	BASE STATION SERVICE PROBLEM	MRBTS-12/NRBTS-12
	2020-07-20 13:23:05	7115		5G BASE STATION FAILED VM INIT	6450	5G Base Station Failed VM INIT	MRBTS-12/NRBTS-12
	2020-07-20 13:23:05	61652		NODE UNAVAILABLE	61652	NODE UNAVAILABLE	MRBTS-12/NRBTS-12
	2020-07-20 13:23:05	61524		NODE FAULTY	61524	NODE FAULTY	MRBTS-12/NRBTS-12
	2020-07-20 13:23:05	61652		HARDWARE PROBLEM	N/A	N/A	N/A
	2020-07-20 13:23:05	61652		HARDWARE PROBLEM	61652	Hardware Problem indeterminate	MRBTS-12/NRBTS-12
	2020-07-20 13:23:05	61524		BASE STATION SERVICE PROBLEM	61652	BASE STATION SERVICE PROBLEM	MRBTS-12/NRBTS-12

Historical Alarms tab

To navigate to the Historical Alarms tab, go to [Navigation Panel](#) ► [Alarms](#) ► [Historical Alarms](#).

The Historical Alarms displays all alarms cleared on a gNB-CU. This data updates every 5 s.

Figure 80: *Historical Alarms* main view

	Severity	Appeared	Cleared	Alarm ID	Alarm name	Fault ID	Fault name	Alarming object
1	Blue Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	7652	BASE STATION SERVICE PROBLEM	N/A	N/A	MRBTS-12/NRBTS-12
2	Orange Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	345	BASE STATION SERVICE PROBLEM	4297	NTP Server 10.34.154.154	MRBTS-12/NRBTS-12
3	Yellow Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	7652	BASE STATION SERVICE PROBLEM	4404	Timing accuracy not guaranteed to be within configu...	MRBTS-12/NRBTS-12
4	Blue Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	345	BASE STATION SERVICE PROBLEM	4297	NTP Server 10.34.154.154	MRBTS-12/NRBTS-12
5	Red Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	7652	BASE STATION SERVICE PROBLEM	4404	Timing accuracy not guaranteed to be within configu...	MRBTS-12/NRBTS-12
6	Orange Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	345	BASE STATION SERVICE PROBLEM	4297	NTP Server 10.34.154.154	MRBTS-12/NRBTS-12
7	Blue Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	7652	BASE STATION SERVICE PROBLEM	N/A	N/A	MRBTS-12/NRBTS-12
8	Orange Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	345	BASE STATION SERVICE PROBLEM	4297	NTP Server 10.34.154.154	MRBTS-12/NRBTS-12
9	Yellow Bell	2020-07-20 13:23:05	2020-07-20 20:23:05	7652	BASE STATION SERVICE PROBLEM	4404	Timing accuracy not guaranteed to be within configu...	MRBTS-12/NRBTS-12

Active Alarms and Historical Alarms view customization

When you access the **Active Alarms** and **Historical Alarms** tabs, the information on alarms displays in tables and contains the following:

- Alarm severity type
- Alarm ID
- Alarm name
- Alarming object name
- Fault occurrence date and time
- Fault ID and name

The **Historical Alarms** table contains an additional column, named **Cleared**, which indicates the time when the gNB-CU alarms were cleared.

You can customize the **Active Alarms** and **Historical Alarms** table views and perform the following actions:

Change column width

Adapt the size of columns by dragging and dropping the vertical line between the columns.

Sort data in columns

Arrange alarm information in different order by clicking the sort icon.

Navigate between pages

Display content on the previous or next pages.

Filter data in the table

Display desired alarm information by using the text field search box and typing an alarm value, such as Alarm ID, Fault ID, or Fault Name.

For more information, see [Table view](#).

Active Alarms and Historical Alarms toolbar

Under the `Active Alarms` and `Historical Alarms` tabs, there is a toolbar with functional buttons for easy content customization.

Figure 81: Alarms toolbar buttons



The toolbar allows you to:

- [filter alarms by severity level](#).
- [filter alarms by impacted cells](#).
- [save the alarms list to a CSV file](#).

Filtering alarms by severity level

You can display the list of alarms of a chosen defect impact level. Use a quick filter located in a toolbar by clicking one or multiple buttons corresponding to a chosen alarm severity level.

Table 8: Alarm severity level icons

Icon	Severity level
	Critical
	Major
	Minor
	Warning

If you apply all filters at once, the table shows all available data. To turn off the filter, click the selected severity buttons again.

Figure 82: **Alarms** view severity quick filter

Filter by severity:								
Severity	Appeared	Alarm ID	Alarm name	Fault ID	Fault name	Alarming object		
	2020-07-20 13:23:09	81524	BASE STATION SERVICE PROBLEM	81852	BASE STATION SERVICE PROBLEM	HR8TS-12/NR8TS-12		
	2020-07-20 13:23:09	81524	BASE STATION SERVICE PROBLEM	81852	BASE STATION SERVICE PROBLEM	HR8TS-12/NR8TS-12		
	2020-07-20 13:23:09	81524	BASE STATION SERVICE PROBLEM	81852	BASE STATION SERVICE PROBLEM	HR8TS-12/NR8TS-12		
	2020-07-20 13:23:09	81524	BASE STATION SERVICE PROBLEM	81852	BASE STATION SERVICE PROBLEM	HR8TS-12/NR8TS-12		
	2020-07-20 13:23:09	81524	BASE STATION SERVICE PROBLEM	81852	BASE STATION SERVICE PROBLEM	HR8TS-12/NR8TS-12		

Filtering alarms by the impacted cells

You can filter data in the **Active Alarms** and **Historical Alarms** tabs by clicking the **Impacted Cells** button and choosing one or multiple filtering criteria:

Faulty cells Tick a checkbox to display automatically the filtering results.

Degraded cells Tick a checkbox to display automatically the filtering results.

Cell ID Type the value and press **ENTER** to display results.

Figure 83: **Impacted Cells** filtering menu

Filter by:

Faulty cells
 Degraded cells

Filter by cell ID:

Saving an alarms list to a CSV file

You can save a CSV extension file locally containing a list of active or cleared alarms on a gNB-CU. Click the **Save Alarms List** button to trigger a file download. Select **Save File** and click **OK**. After a while, a notification informing you about the operation status

appears in the bottom right corner. The file is automatically saved in the default download location.

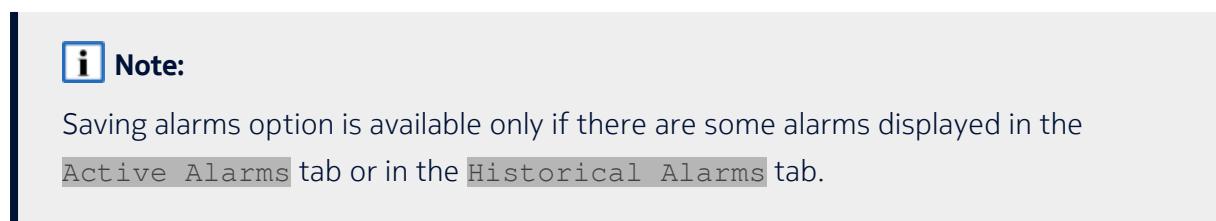
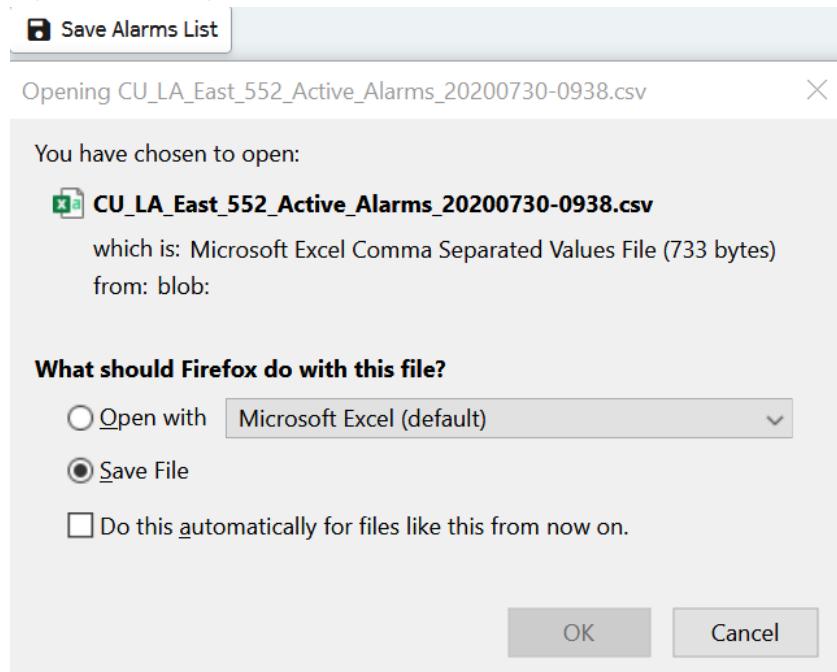


Figure 84: Saving an alarms list to a file



Alarms Details Panel

In the Active Alarms and Historical Alarms tabs, you can check more details of a chosen alarm. Select the table row with the alarm which you want to display and click the  button. The Details Panel opens on the right side of the application.

The Details Panel contains three tabs:

Overview

It displays detailed information about alarms, alarming object, event type and cause. It also provides fault details and guidance on how to deal with the fault.

Faulty Cells

It displays a list of faulty cells and allows data filtering.

Degraded Cells

It displays a list of degraded cells and allows data filtering.

Figure 85: Alarms Details Panel

Details

Overview **Faulty Cells** **Degraded Cells**

Alarm information

Severity:	Major
Appeared:	2020-07-20 13:23:05
Last updated:	2020-07-20 10:23:05
Alarm ID:	61652
Alarm Name:	NODE UNAVAILABLE
Fault ID:	61652
Fault Name:	NODE UNAVAILABLE
Alarming object:	MRBTS-12/NRBTS-12
Affected cells:	4600
Event Type:	NODE UNAVAILABLE
Cause name:	Determine if this event is expected
Additional information:	Additional info

Fault information

Meaning:	Determine if this event is expected
----------	-------------------------------------

5.2 Fault Toggling History tab

The **Fault Toggling History** tab provides statistics on the faults raised and cleared in a short period of time. It allows you to save a fault toggling history list to a file.

Fault Toggling History overview

To navigate to the **Fault Toggling History** tab, go to [Navigation Panel](#) ▶ [Alarms](#) ▶ [Fault Toggling History](#).

The **Fault Toggling History** provides statistics on the faults raised and cleared in a short period of time, and which don't give further information for fault analysis. There are two state categories of toggling faults available in CU WebEM:

- **Active** state related to the faults raising alarms that are currently suppressed while the

- fault toggling suppression condition is still met).
- **Inactive** state related to the faults raising alarms that were suppressed in the past after the gNB-CU startup.

Figure 86: *Fault Toggling History* main view

State	Appeared	Fault ID	Fault Name	Fault Source	Node ID	Last 10 s	Last minute	Last hour	Last day
Select		100	FR_1936_Unit (module) temperature is high	MRBTS-123/NRBTS-123/NRCEL-1111	32	2	4	6	8
Active	2018-03-26 13:45:05	101	FR_1937_Unit (module) temperature is high	MRBTS-123/NRBTS-123/NRCEL-1112	33	3	5	7	9
Active	2018-03-26 13:45:05	102	FR_1936_Unit (module) temperature is high	MRBTS-123/NRBTS-123/NRCEL-1111	32	2	4	6	8
Active	2018-03-26 13:45:05	103	FR_1937_Unit (module) temperature is high	MRBTS-123/NRBTS-123/NRCEL-1112	33	3	5	7	9
Active	2018-03-26 13:45:05	104	FR_1936_Unit (module) temperature is high	MRBTS-123/NRBTS-123/NRCEL-1111	32	2	4	6	8

The *Fault Toggling History* data presents statistics for the configured toggling faults collected since the gNB-CU startup. This information includes:

- State category of available toggling faults
- Timestamps of last events when a toggling alarm has been raised for the original fault
- Fault ID
- Fault name
- Fault source
- Node ID
- Number of times when a toggling alarm was raised for the original fault in the last 10 s, in the last minute, last hour, or last day after a gNB-CU startup

Fault Toggling view customization

You can customize the *Fault Toggling History* table view and perform the following actions:

- | | |
|---------------------------------|--|
| Change column width | Adapt the size of columns by dragging and dropping the vertical line between the columns. |
| Navigate between pages | Display content on the previous or next pages. |
| Filter data in the table | Display desired Fault Toggling History information by using the text field search box and typing an alarm value, such as Fault ID, Fault Name, Fault Source, or Node ID. |

Select state data

Display state data by selecting from a drop-down list either **Active** or **Inactive**.

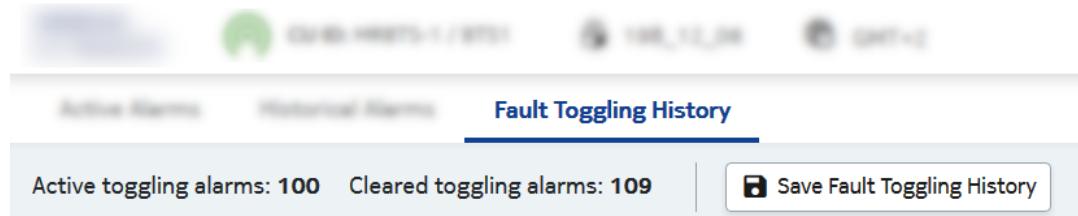
For more information, see [Table view](#).

Fault Toggling History toolbar

Under the **Fault Toggling History** tab, there is a toolbar which:

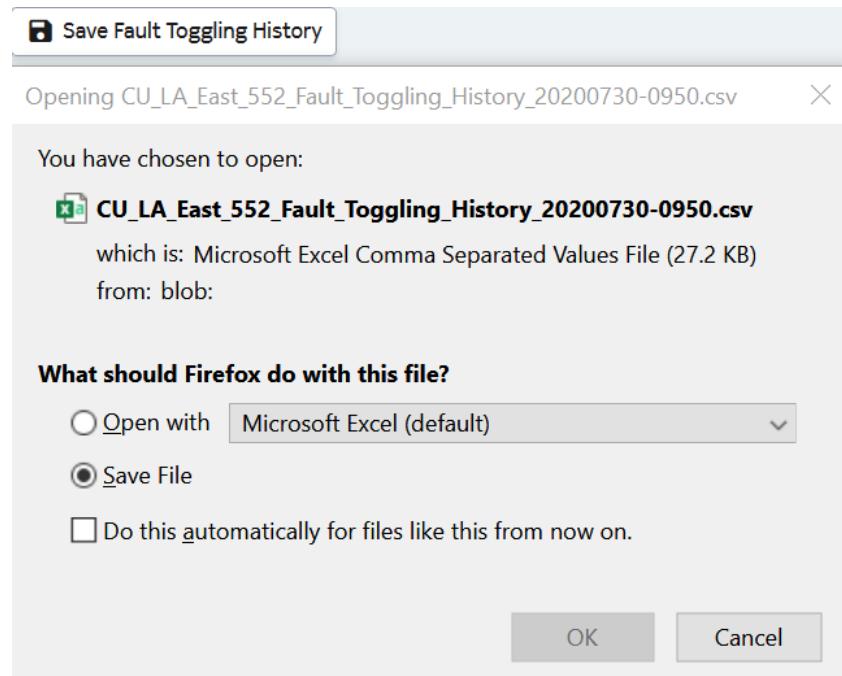
- presents a summary of active and cleared toggling alarms.
- enables you to save a file containing a list of fault toggling history.

Figure 87: **Fault Toggling History** toolbar



To locally save a file with a fault toggling history list, click the **Save Fault Toggling History** button and download the list. Select **Save File** and click **OK**. After a while, a notification informing you about the operation status appears in the bottom right corner. The file is automatically saved in the default download location.

Figure 88: Saving the *Fault Toggling History* file



6. Performance view

The **Performance** view allows you to monitor multiple counter values for a specific time period.

Performance overview

To navigate to the **Performance** view, go to **Navigation Panel** ▶ **Performance**.



Tip:

For easy access to the **Performance** tab, choose one of the following options:

- Press the **P** key, and then **F**.
- Click the **Metrics** icon in the **Main Panel**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

The **Performance** view displays the counters and their values at time intervals. This functionality requires a working connection between CU WebEM and the gNB-CU to display the real-time counter values.



Note:

If the connection between CU WebEM and a gNB-CU goes down or the application server fails, the unavailable data error notification displays. Always ensure you have a working connection to see updates on a gNB-CU.

Figure 89: **Performance** main view

The screenshot shows the CU WebEM Performance main view. At the top, there is a toolbar with various icons for navigation and settings. Below the toolbar, the title bar displays "NOKIA CU WebEM", "CUID: MRBTS-1 / BT51", "198_12_06", and "GMT+2". The main area is titled "Selected Counters" and contains a table with the following data:

Counter	M55117C00002 (X2_SGNB_ADD_REQ_ACK_SENT)
Full Path	MRBTS-1/NRBTS-1/NX2CC
Unit	Integer number
2020-10-22 20:09:23	9
2020-10-22 20:09:13	7
2020-10-22 20:09:03	5
2020-10-22 20:08:53	14.8
2020-10-22 20:08:43	12.8
2020-10-22 20:08:33	10.8
2020-10-22 20:08:23	8.8

There is a toolbar with functional buttons for easy content customization. The toolbar allows you to:

- select counters.

- select the time interval.
- switch between the Performance table-based and plot views.
- save the counters list data to a CSV file.
- save the counters chart view to a PNG file.

Figure 90: **Performance** toolbar

Selected counters table view

You can display selected counters in the table view mode. The table contains information about counters or counters groups, including:

- Counter ID
- Counter abbreviated name
- Full path
- Counter measurement unit
- Counter collecting interval start time
- Counter value

Figure 91: **Selected Counters** table view

Selected Counters		
Counter	MOC00 (X2_SGNB_ADD_REQ_ACK_SENT)	MOC01 (X2_SGNB_ADD_REQ_ACK_SENT)
Full Path	MRBTS-12/NRBTS-54321/NRCEL-0/NR_Cell Utilization	MRBTS-12/NRBTS-54321/NRCEL-0/NR_Cell Utilization
Unit	Integer number	Integer number
2020-08-12 09:26:35	8	8
2020-08-12 09:11:31	6.1	6.1
2020-08-12 08:56:28	10.2	10.2
2020-08-12 08:41:28	8.7	8.7
2020-08-12 08:26:28	7.2	7.2
2020-08-12 08:11:28	5.7	5.7
2020-08-12 07:56:28	10.1	10.1
2020-08-12 07:41:28	8.6	8.6
2020-08-12 07:26:28	7.1	7.1
2020-08-12 07:11:28	5.6	5.6
2020-08-12 06:56:28	10	10
2020-08-12 06:41:28	8.5	8.5
2020-08-12 06:26:28	7	7
2020-08-12 06:11:28	5.5	5.5

Switching between the **Performance** table-based and plot views

To enable the chart-based view, click the **Plot View** button. You can return to the table-based view by clicking the **Table View** button. For more information about the **Plot View**, see [Selected counters plot view](#).

Exporting the **Selected Counters** list to a CSV file

You can save a CSV extension file locally with information available on the **Selected Counters** panel.

i Note:

Before you save the file, ensure that the counters are present in the **Performance** tab. An empty counters list disables a download option.

Click the **Save Counters List** button to trigger a file download operation. Select **Save File** and click **OK**. After a while, a notification appears in the bottom right corner informing you about the operation status. The file is automatically saved in the default download location.

Tip:

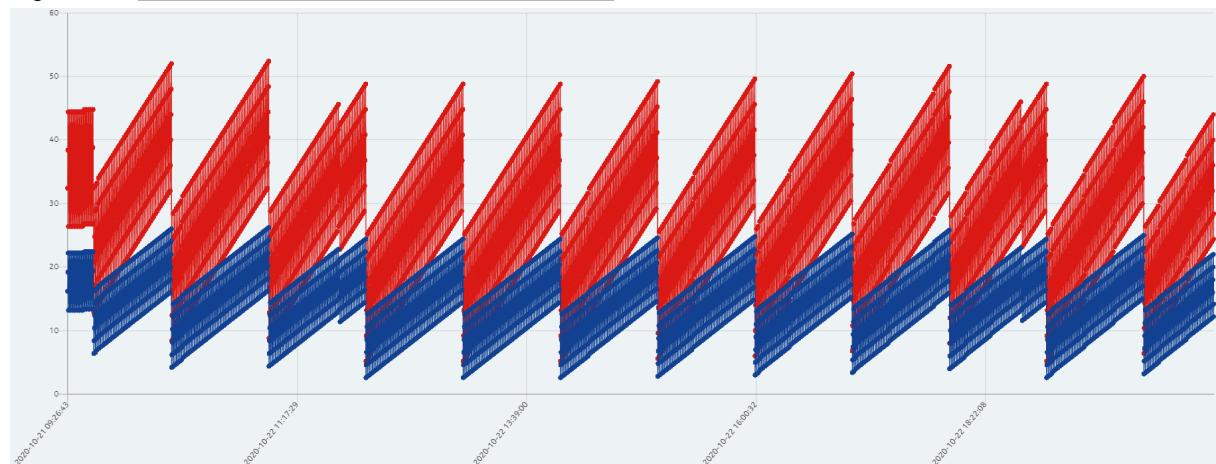
Ensure there is no redundant data customization, such as filtering, as the downloaded **Counter List** matches the data from the **Selected Counters**.

Selected counters plot view

The **Counters Plot View** presents a set of gNB-CU counters in the form of time-series based line charts. The charts present visualized information about values of selected counters over time where:

- horizontal (X) axis represents time.
- vertical (Y) axis represents the selected counter value.

Figure 92: **Selected Counters Plot View**

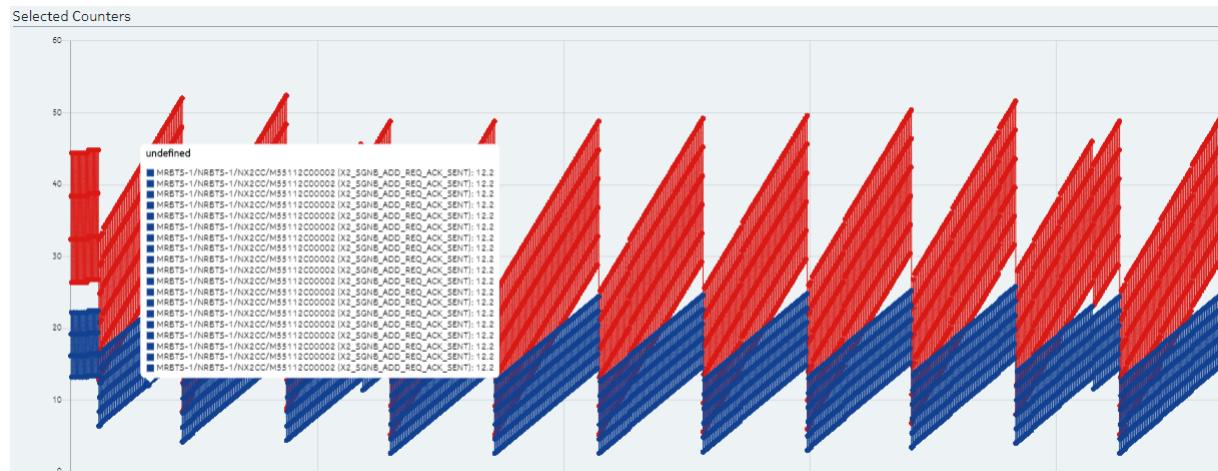


In the chart, the counters display in the form of sample points (dots). When you hover over the sample point, a tooltip displays. It contains the sample timestamp, the counter name, and the sample value.

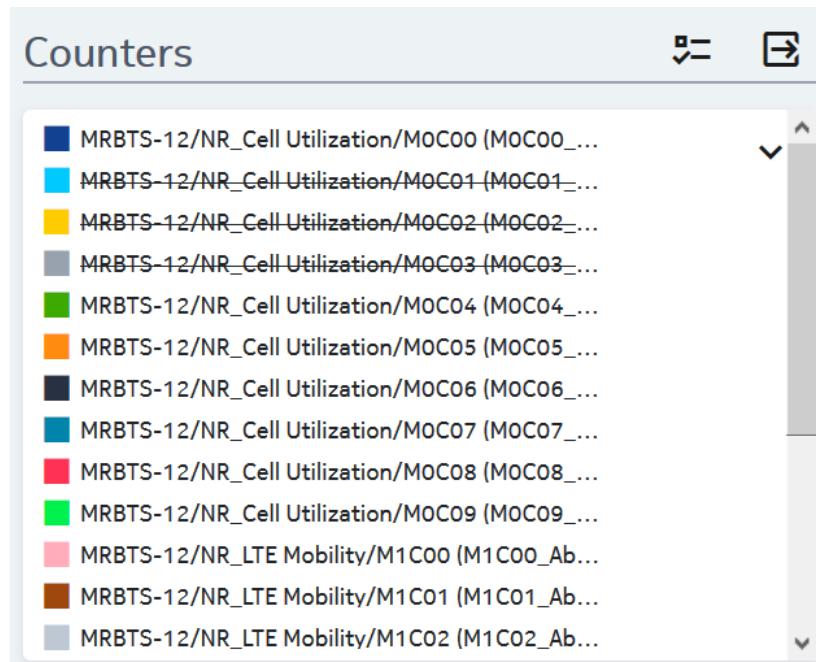
Note:

If there are more counters of the same value, the sample points overlap. Hover over the sample point to see a tooltip with a counter name. The tooltip also displays the counters with similar value and timestamps.

Figure 93: *Counters* sample tooltip



For easier identification of displayed counters, each counter displays in a different color and the chart contains a color-based legend. Click the \wedge button to expand the legend menu with counters colors, object IDs, and counters names. To collapse the legend list, click the \vee button. To display only particular counters, click the counter you want to remove from the chart grid. The hidden counter is crossed out on the legend. To display again a counter in the chart, click its name again.

Figure 94: *Counters* widget chart legend

Saving the counters chart view to a PNG file

You can save a snapshot in a PNG format locally with information available in the chart in the **Plot View**. Click the **Save Counters List** button to trigger an image download operation. The file is automatically saved in the default download location.

Note:

Before you save the image, ensure that the counters are present in the **Selected Counters** chart. An empty counters list disables a download option.

Note:

If the time interval for the selected counters is configured, only the values of the counters in the selected interval are displayed. You can find them in the chart and in the downloaded file.

Performance Details Panel

Click the button to open the **Performance Details Panel**. The list of all selected counters displays. Click the button next to the counter ID to expand the window with the following information:

- Counter ID, name and abbreviated name

- Counter unit
- Counter detailed description

To collapse this window, click the \wedge button next to the counter ID.

Figure 95: Performance Details Panel

The screenshot shows the 'Performance Details Panel' with the 'Details' tab selected. Under 'Counters information', the 'MOC00' counter is expanded, displaying its details:

- Name: Number of A4 measurement activations for Measurement Based IMLB
- Unit: Integer number
- Abbreviation: X2_SGNB_ADD_REQ_ACK_SENT
- Description: This measurement represents the number of times the eNB activates A4 measurements for Idle Mode Load Balancing (IMLB) in the UE. The counter is updated in the LTE cell, where A4 IMLB activation is sent by the eNB (with separate counters for each E-UTRA carrier frequency for which A4 measurements are activated)

Below MOC00, there are collapsed sections for MOC01 and MOC02.

6.1 Selecting counters

You can select counters to be displayed in the **Performance** tab.

Procedure

1 Go to **Navigation Panel** > **Performance**.



Tip:

For easy access to the **Performance** tab, press the **P** key, and then **F**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

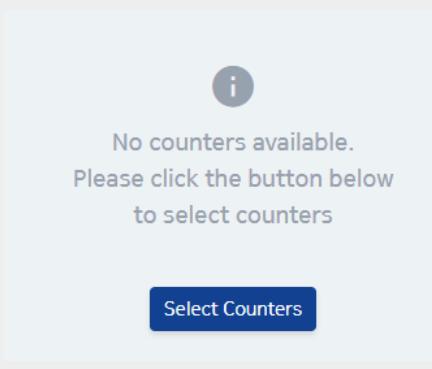
2 Click **Select Counters**.

The **Select Counters** button is available on the left of a toolbar.



Tip:

If no counters are selected in the `Performance` tab, the `Select Counters` button is also available in the working area.

**3 Select a managed object class (MOC) in the `Select object classes` section.**

You can select multiple object classes within one operation or use a quick filter toolbar to display preferred data.

Tip:

You can remove redundant MOCs from the list by deselecting them.

Step example

Select counters to display

Select object class(es):

Select counter:

Select all

- NR BTS
- MNC
- SD
- NR CEL
- NRCUOO
- ETHIF
- BRGPRT

Signalling Measurements

- ▶ NR X2-C Interface signalling NRCELL level (NX2CC)
- ▶ NR X2-C Interface signalling NRCELL level (NX2CC)
- ▶ NR X2-C Interface signalling NRCELL level (NX2CC)

Step result

The list of measurements and counters available for a selected MOC is displayed in the `Select counter` section.

4 Select a counter in the `Select counter` section.

Select and expand a measurement for which you want to display a selected counter.

Note:

In the `Counter selection` section, only one counter can be selected at a time. To add more counters to the list, follow steps 3–5.

Step example

Select counters to display

The screenshot shows three panels side-by-side:

- Select object class(es):** A dropdown menu with a filter icon. Below it is a list of checkboxes:
 - Select all
 - NR BTS
 - MNC
 - SD
 - NRCEL
 - NRCUUO
 - ETHIF
 - BRGPRT
- Select counter:** A dropdown menu with a filter icon. Below it is a tree view of counters:
 - ▼ Signalling Measurements
 - NR X2-C Interface signalling NRCELL level (NX2CC)
 - M55112C00002 (X2_SGNB_ADD_REQ_ACK_SENT)
 - M55112C00003 (X2_SGNB_RECONF_RECEIVED)
 - NR X2-C Interface signalling NRCELL level (NX2CC)
 - NR X2-C Interface signalling NRCELL level (NX2CC)
- Select object(s):** A dropdown menu with a filter icon. Below it is a list of checkboxes:
 - Select all
 - NR BTS-1
 - NR BTS-2
 - NR BTS-3
 - NR BTS-4

Tip:

In the `Select counter` section there are three actions buttons available:

`Group by measurement group`

Click the button to enable or disable grouping by the measurement functionality.

`Expand All`

Click the button to expand the tree view.

`Collapse All`

Click the button to collapse displayed data.

Step result

The list of objects available for the selected counter is displayed in the `Select objects` section.

5 Select object.

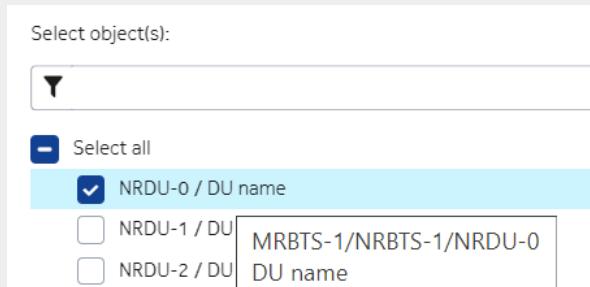
You can select multiple objects for a selected counter within one operation or use a quick filter toolbar to display preferred data.

Note:

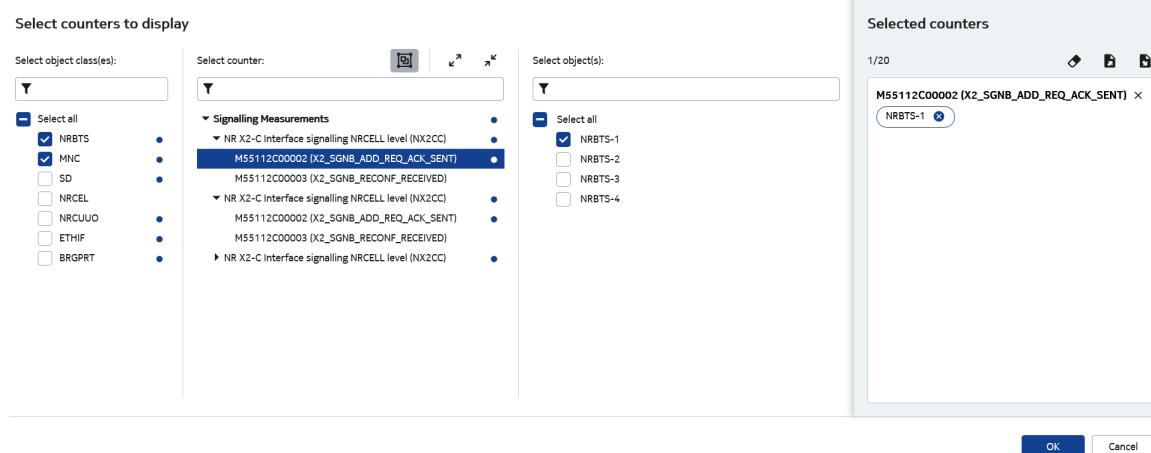
You can select only 20 counters in the `Select objects` section. If you choose the `Select all` option and there are more than 20 counters available, a warning notification displays about exceeded limit.

Tip:

Hover the mouse over the selected object to display a tooltip with a full object name.



Step example



Step result

The list of counters is displayed in the `Selected counters` section.

Tip:

You can remove redundant counters from the list by clicking the  icon.

 **Tip:**

In the `Selected counters` section you can:

 **Clear selection**

Click this button to remove all selected counters.

 **Export selection**

Click this button to save the list of the selected counters. For instructions, see [Exporting counters selection](#).

 **Import selection**

Click this button to upload the list of the selected counters. For instructions, see [Importing counters selection](#).

Selected counters

1/20



 **Tip:**

When you select an object instance, the blue dot displays next to the managed object class and measurements related to the selected object instance.

Select object class(es):	Select counter:	Select object(s):
<input type="button" value="▼"/> <input checked="" type="checkbox"/> Select all	<input type="button" value="▼"/> <input checked="" type="checkbox"/> Signalling Measurements	<input type="button" value="▼"/> <input checked="" type="checkbox"/> Select all
<input checked="" type="checkbox"/> NR BTS	<input checked="" type="checkbox"/> NR X2-C Interface signalling NRCELL level (NX2CC)	<input checked="" type="checkbox"/> NR BTS-1

6 [Optional] Add more counters to the list by following steps 3–5.

7 Click **OK**.

Result

Selected counters are displayed in the `Table view`.

6.2 Exporting counters selection

You can save a list of counters to a file and load it anytime to display your preferred counters selection.

Purpose

CU WebEM allows you to export the list of:

- counters selected in the **Performance** view.
- counters selected and displayed in **Dashboard** > **Counters** widget.

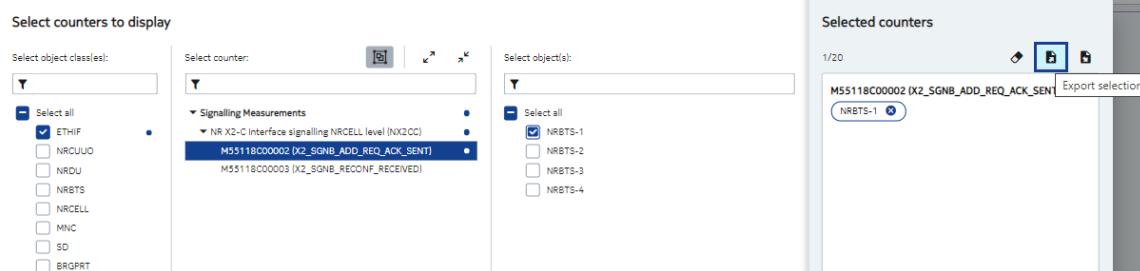
Before you start

To save the list of the chosen counters, select the counters which you want to display:

- in the **Performance** tab. For instructions, see [Selecting counters](#).
- on the **Counters** widget. For instructions, see [Selecting widget counters](#).

Procedure

1 Click **Export Selection**.



Step result

A toast notification with the **File successfully exported** status is displayed in the bottom right corner.



Result

The file in a JSON format is automatically saved in the default download location.

6.3 Importing counters selection

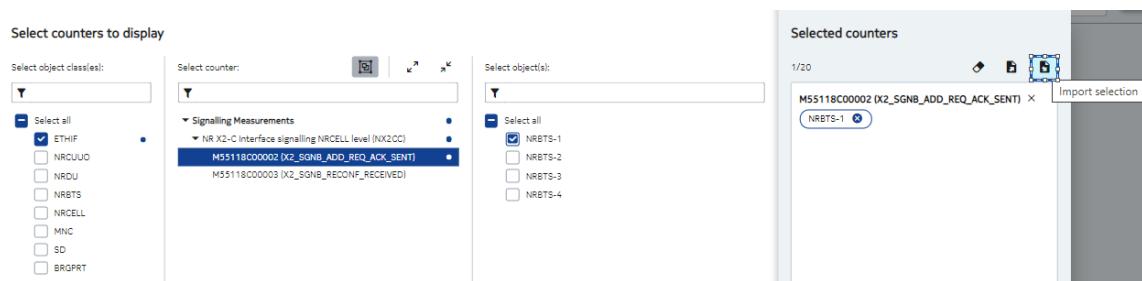
You can load a file with a previously exported list of counters to display the preferred counters.

Before you start

The counters selection file has been imported and saved on the workstation. For instructions, see [Exporting counters selection](#).

Procedure

1 Click **Import Selection**.



2 Select the desired counters selection file from the workstation.

Step result

The selected file name is displayed in the text box and the **Open** button is activated.

3 Click **Open** to upload the file.

Step result

The toast notification with the `File successfully imported` status is displayed in the bottom right corner. The file with counters selection is uploaded and displayed on the widget.



6.4 Selecting counters interval

The **Performance** view allows you to determine the intervals for the selected counters and display counter values for a specific time frame.

Before you start

To display counter values for a specific time frame, remember to select the counters in the **Performance** tab. For instructions, see [Selecting counters](#).

Procedure

1 Go to **Navigation Panel** > **Performance**.



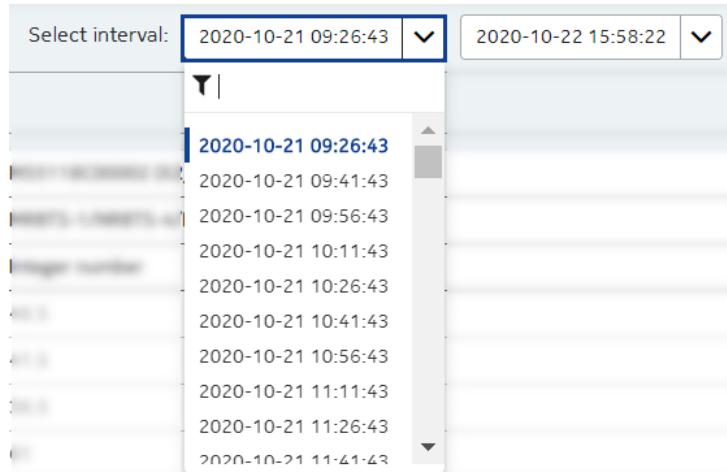
Tip:

For easy access to the **Performance** tab, press the **P** key, and then **F**.
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Select the start interval time.

From the toolbar **Select interval** drop-down list select the start time of the desired time interval.

Step example

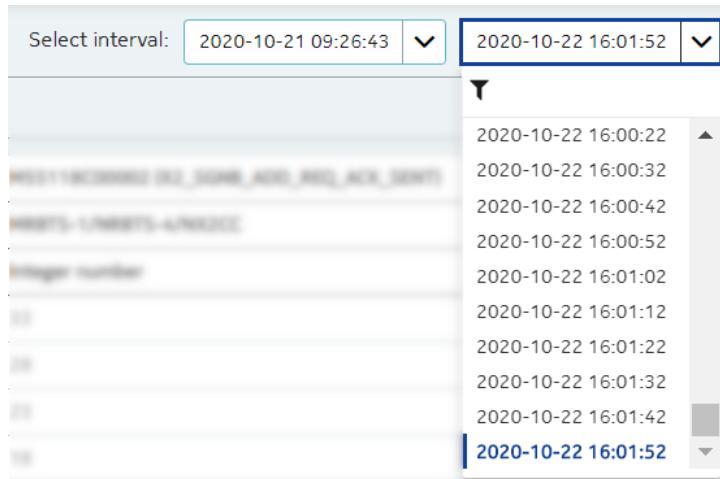


3 Select the end interval time.

From the toolbar **Select interval** drop-down list select the end time of the desired

time interval.

Step example



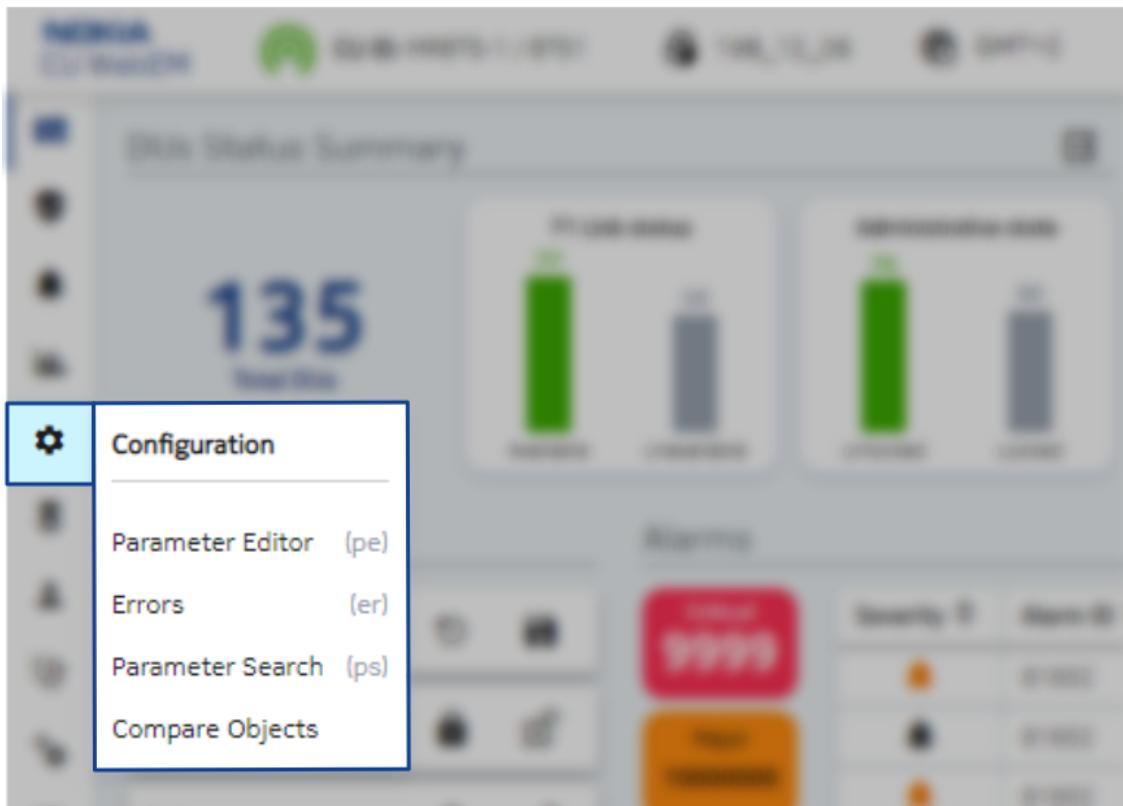
Result

Information on displayed counters automatically adapts to a selected interval time frame. This functionality works both in the [Table View](#) and the [Plot View](#).

7. Configuration view

The **Configuration** view provides information on current, inactive, planned, and delta configurations. It allows you to search for parameters, manage configuration plans, and handle errors. It also enables you to compare chosen objects.

To navigate to the **Configuration** tab, from **Navigation Panel** click the  **Configuration** icon.



Configuration overview

The **Configuration** view consists of four tabs:

- **Parameter Editor**, where you can manage configuration plans.
- **Errors**, where you can investigate the results of a plan validation.
- **Parameter Search**, which allows you easy search for parameters.
- **Compare Objects**, where you can compare the properties of two chosen objects within the configuration plan.

You can easily switch between tabs in the top menu.

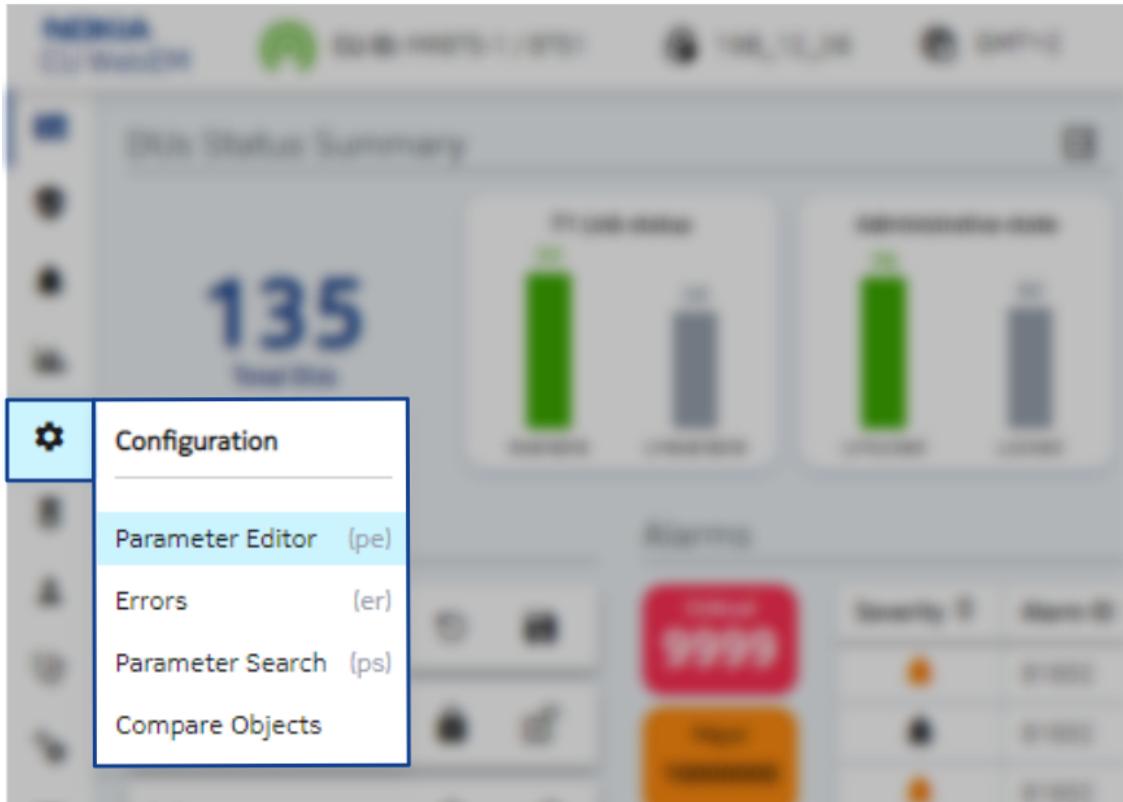


7.1 Parameter Editor tab

The **Parameter Editor** tab provides detailed information on current, inactive, and planned configurations. It allows you to manage configuration plans by creating new plans, validate and activate plans, or remove them. In the **Parameter Editor** tab you can also modify existing plans by adding or removing objects and modifying parameters.

To navigate to the **Parameter Editor** tab, go to **Navigation Panel** ▶ **Configuration** ▶ **Parameter Editor**.

*Figure 96: Accessing the **Parameter Editor** tab*



Tip:

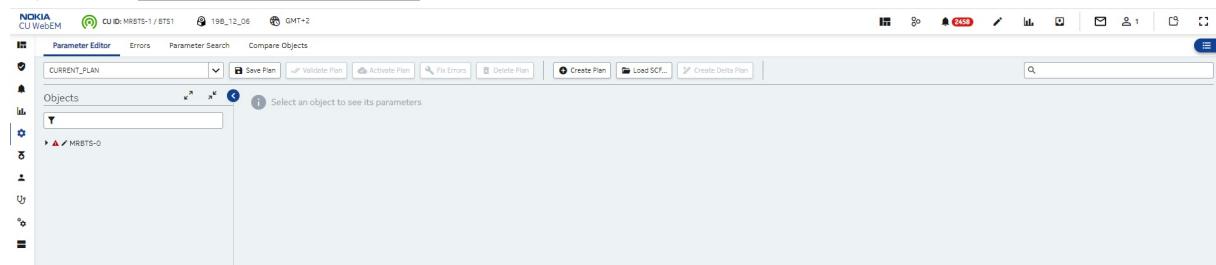
For easy access to the **Parameter Editor** tab, press the **P** key, and then **E**.
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Parameter Editor overview

The **Parameter Editor** main view consists of several sections:

- Top Menu
- Objects panel
- Main Section
- Parameter Search window

Figure 97: Parameter Editor main view

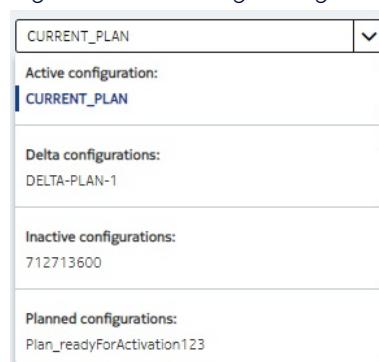


There are four types of configuration plans available in the **Parameter Editor** tab:

- Active configuration
- Delta configurations
- Inactive configurations
- Planned configurations

You can select the configuration plan from the drop-down list.

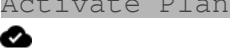
Figure 98: Selecting configuration plan



Note:

The names of the configuration plans shown in [Figure: Selecting configuration plan](#) are examples.

There are four options associated with configuration plans:

Button	Description
 Save Plan	Saves changes in the configuration plan.
 Validate Plan	Verifies the correctness of a chosen configuration plan.
 Activate Plan	Activates a successfully validated plan.
 Fix Errors	Troubleshoots errors that occurred during validation.
 Delete Plan	Removes a chosen configuration plan.

 **Note:**

Currently available options depend on a chosen configuration plan.

 **Tip:**

You can easily access other tabs for a chosen configuration plan. Select the button from top menu.

[Parameter Editor](#) [Errors](#) [Parameter Search](#) [Compare Objects](#)

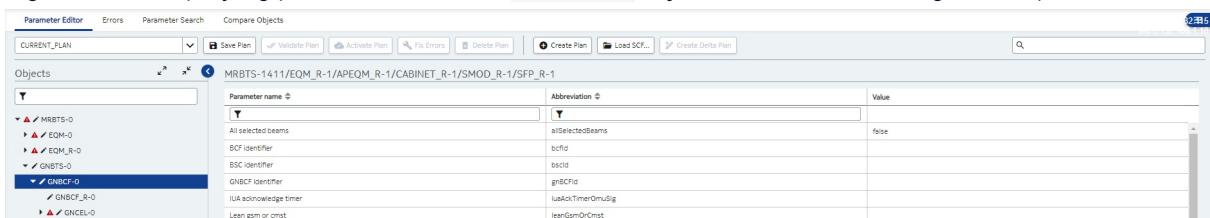
In the [Parameter Editor](#) tab, there are three options not associated with any plan:

Button	Description
 Create Plan	Creates a new configuration plan from the scratch or based on a chosen plan.
 Load SCF File	Uploads a ready configuration plan to CU WebEM.
 Create Delta Plan	Allows to prepare a configuration plan based on the current one.

In the [Objects](#) panel, choose the object to see its configuration. You can expand the structure tree and select the object or start typing its name in the filtering box. For detailed structure view, expand all items using the  icon. To collapse the structure, click the  icon. You can collapse the [Objects](#) panel by clicking the  icon.

Figure 99: *Objects* panel

The main section contains a table with parameters related to a selected object.

Figure 100: Displaying parameters for the *GNBCF-0* object in the active configuration plan

To search for a chosen object parameter, start typing its name in the respective window.



For detailed information regarding a chosen object, click the icon on the right-hand side.

To search for the parameter within a chosen plan, start typing its name in the search window on the right-hand side.

Note:

Using the search window takes you to the **Parameter Search** tab automatically.

Active configuration

In the **Active configuration** view, you can see the current configuration plan, meaning the collection of active objects and parameters.

Select the object to display a table with parameters, their abbreviated names, and values.

Figure 101: Active configuration plan view

The screenshot shows a software interface for managing configuration plans. At the top, there's a toolbar with various buttons like 'Save Plan', 'Validate Plan', 'Fix Errors', etc. Below the toolbar is a navigation bar with 'CURRENT_PLAN' selected. The main area has two sections: 'Objects' on the left and a large table on the right. The 'Objects' section shows a tree view of objects under 'MRBTS-1411/EQM_R-1/APEQM_R-1/CABINET_R-1/SMOD_R-1/SFP_R-1'. The table on the right lists parameters with columns for 'Parameter name', 'Abbreviation', 'Value', and 'Action' (with icons for edit, delete, and copy). Some parameters have status icons (green checkmark, red exclamation mark) next to them.

Parameter name	Abbreviation	Value	Action
Activate 1xCSFB	act1xCSFB	false	
Activate Support of 8 EPS Bearers	act8EPSBearers	false	
Activate A3-based Scell selection	actA3SelSelect	false	
Activate AACB alarms counters and status	actAACBAlarms	false	
Activate CFR based access class barring	actACBarringCFR	false	
Activate automatic access class barring per PLMN	actACBarringPlmn	false	
Activate RRC connection triggered access class barring	actACBarringRrcConn	None	
Activate RACH load triggered access class barring	actACBarringRrcReq	false	

Note:

The **Active configuration** plan is active, you can display the configuration details but editing is not possible. The **Save Plan** option is available in the **Active configuration** plan view.

Delta configurations

The **Delta configurations** view contains a plan based on the **Active configuration**. In this view, you can modify parameters and add objects.

Note:

You can create only one configuration plan under **Delta configurations**.

Figure 102: Delta configurations plan view

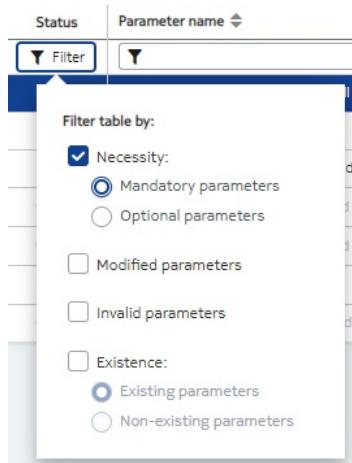
The screenshot shows a software interface for managing configuration plans. At the top, there's a toolbar with various buttons like 'Save Plan', 'Validate Plan', 'Fix Errors', etc. Below the toolbar is a navigation bar with 'DELTA-PLAN' selected. The main area has two sections: 'Objects' on the left and a large table on the right. The 'Objects' section shows a tree view of objects under 'MRBTS-1411/EQM_R-1/APEQM_R-1/CABINET_R-1/SMOD_R-1/SFP_R-1'. The table on the right lists parameters with columns for 'Status', 'Parameter name', 'Abbreviation', 'Value', and 'Action' (with icons for edit, delete, and copy). Some parameters have status icons (green checkmark, red exclamation mark) next to them. A 'Filter' button is located at the top of the table.

Status	Parameter name	Abbreviation	Value	Action
Filter				
*	Configuration identifier	configDN		
*	Date of last service	dateOfLastService		
*	Date of manufacture	dateOfManufacture		
▲	Inventory unit type	InventoryUnitType		
▲	Inventory unit identifier	invUnitId		
*	Manufacturer data	manufacturerData		
*	Parent distinguished identifier	parentDN		

The table provides detailed information on parameters, such as:

- **Status**, where the * icon indicates **Mandatory** parameters, and the ▲ icon indicates **Invalid** parameters. The **Filter** button enables searching by parameter status.

Figure 103: Filtering by parameter status



- **Parameter name**, where the full name of the parameter is displayed. For easy searching, start typing the parameter name in the filtering window.



- **Abbreviation**, where the abbreviated name of the parameter is displayed. For easy searching, start typing the parameter abbreviated name in the filtering window.



- **Value**, where you can find the current parameter value. You can edit this value by manually inserting the new one or selecting it from the drop-down list.
- **Action**, where you can easily manage parameters using:
 - to set a default value for a parameter.
 - to add a structure or a simple list element.
 - to remove a parameter.

Note:

You can easily set default values for parameters with defined default values.

For instructions on how to activate the plan, see [Activating configuration plan](#).

Inactive configurations

Inactive configurations plans are stored in the gNB. Details of these configurations are not available in CU WebEM. You can activate a chosen configuration plan using the **Activate Plan** button.

Figure 104: Inactive configurations plan view



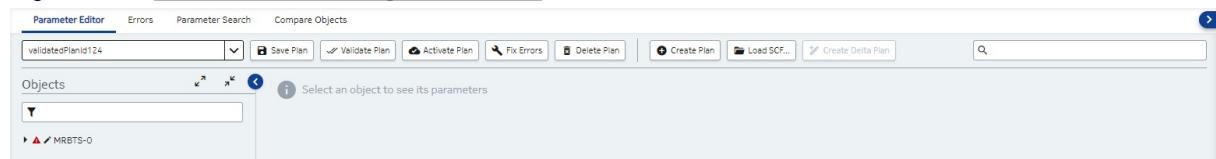
For instructions on how to activate the plan, see [Activating configuration plan](#).

Planned configurations

In the [Planned configurations](#) view, you can see the saved configuration plans.

Note:

There are maximum three configuration plans allowed under [Planned configurations](#).

Figure 105: [Planned configurations](#) main view

To display configuration plan structure, expand the [Object](#) panel.

You can easily manage a selected object using:

- to add a new object.
- to copy an existing object.
- to remove an object.

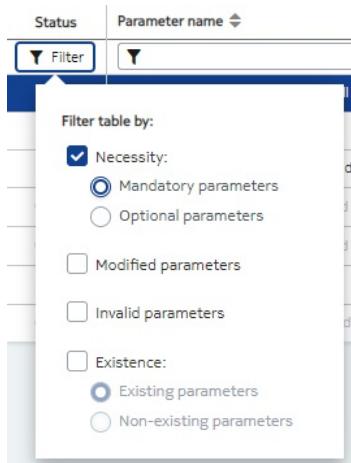
To display a table with related parameters, select an object.

Objects	Status	Parameter name	Abbreviation	Value	Action
MRBTS-1411/EQM_R-1/APEQM_R-1/CABINET_R-1/SMOD_R-1/SFP_R-1					
CONNECTOR-0		Offload to UTRAN allowed	allowLBtoUtran	true	
CONNECTOR-1		Auto adaptation to freq. layers of all neighbour cells	autoAdapt	false	
BBMOD-1	*	Auto adaptation for IMB	autoAdaptIMB	true	
BBMOD-2	*	Carrier aggregation blocking allowed	caBlockingAllowed	forbidden	
SMOD-0		Frequency layer list high priority CSFB to TD-SCDMA	frequencyListHighPriorityCsma		
CONNECTOR-0					
EAC_IN-0					

The table provides information on parameters, such as:

- [Status](#), where the * icon indicates [Mandatory](#) parameters, and the ! icon indicates [Invalid](#) parameters. The button enables searching by parameter status.

Figure 106: Filtering by parameter status



- **Parameter name**, where the full name of parameter is displayed. For easy searching, start typing parameter name in the filtering window.



- **Abbreviation**, where the abbreviated name of parameter is displayed. For easy searching, start typing parameter abbreviated name in the filtering window.



- **Value**, where you can find current parameter value. You can edit this value by manually inserting the new one or selecting it from the drop-down list.
- **Action**, where you can easily manage parameters using:
 - to set a default value for a parameter.
 - to add a structure or a simple list element.
 - to remove a parameter.

For instructions on how to activate the plan, see [Activating configuration plan](#).

7.2 Creating new configuration plan

In the **Parameter Editor**, you can create a new configuration plan from scratch or based on an existing plan.

Procedure

1 Log in to CU WebEM.

2 Go to **Navigation Panel > **Configuration** > **Parameter Editor**.**



Tip:

For easy access to the **Parameter Editor** tab, press the **P** key, and then **E**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

3 From the top menu, select **+Create Plan.**

Step result

The new window pops up.

Plan name: *

<Enter data>

Plan name cannot be empty

Plan description:

<Enter description>

Duplicate plan from:

CURRENT_PLAN

OK Cancel

4 Name the new plan.

5 [Optional] Fill in the **Plan description window.**

6 [Optional] Duplicate the configuration from the already existing plan.

Tick the **Duplicate plan from** box and, from the drop-down list, choose the plan you want to duplicate.

Step example

Plan name: *

Plan description:

Duplicate plan from:

OK
Cancel

Step result

Every object and parameter from the chosen plan is duplicated to the new plan.

7 Click **OK**.

Step result

Creating new plan operation has started. The notification appears in the bottom right corner.



The successful operation notification appears after a while in the bottom right corner.



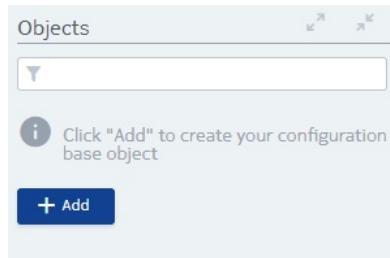
The new configuration plan is successfully created and visible under the **Planned configurations** view.

i Note:

You can create maximum three plans under **Planned configurations**. To create another configuration plan, delete one of the existing plans.

8 Create the configuration base object.

8.1 Click **+** **Add**.



Step result

The new window pops up.

8.2 Insert the ID of the added object.

Step example

A screenshot of a modal dialog box. The title bar says 'MRBTS ID: *'. Inside the box, there is a text input field containing the number '1'. At the bottom are two buttons: a blue 'OK' button and a white 'Cancel' button.

8.3 Click **OK**.

Step result

The successful operation notification appears in the bottom right corner and the new object is visible in the **Objects** panel.

Add Object
Add object operation finished

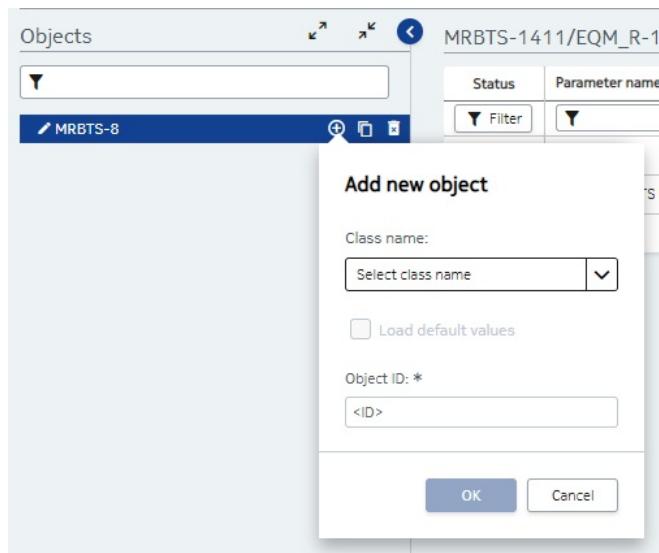
9 Set values for new object parameters.

10 Add a new object in the **Objects** panel.

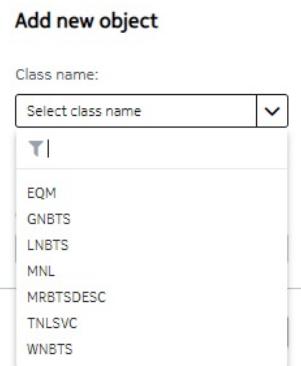
10.1 Click the **+** icon.

Step result

The new window pops up.



10.2 From the drop-down list, select a class name.



10.3 [Optional] Load the default value for a chosen object class.

You can automatically set the default values for objects with defined default values. Tick the `Load default values` box.

 Load default values

10.4 Insert the ID of the added object.

Step example

Add new object

Class name:

Load default values

Object ID: *

OK **Cancel**

10.5 Click **OK**.

Step result

The successful operation notification appears in the bottom right corner and the new object is visible in the **Objects** panel.



11 Manage created objects using:

- to add a new object.
- to copy an existing object.
- to remove an object.

Result

- The new configuration plan is created.
- New objects are added and parameter values are defined.
- The new plan is visible in the **Planned configurations** view.

Note:

For instructions on how to validate the new configuration plan, see the [Validating configuration plan](#) chapter in the *CU WebEM User Guide* document.

7.3 Creating new configuration plan by loading SCF file

In the **Parameter Editor**, you can upload a site configuration file (SCF) with a configured plan.

Before you start

Make sure that:

- the SCF file containing full CU configuration is available on your workstation or local drive.
- the SCF file is in the XML format and it's compliant with RAML2.0/2.1 syntax.
- the maximum number of plans allowed in CU WebEM is not reached.

You can create maximum three plans under the **Planned Configurations** view. To create another configuration plan, delete one of the existing plans.

Procedure

1 Go to **Navigation Panel > **Configuration** > **Parameter Editor**.**



Tip:

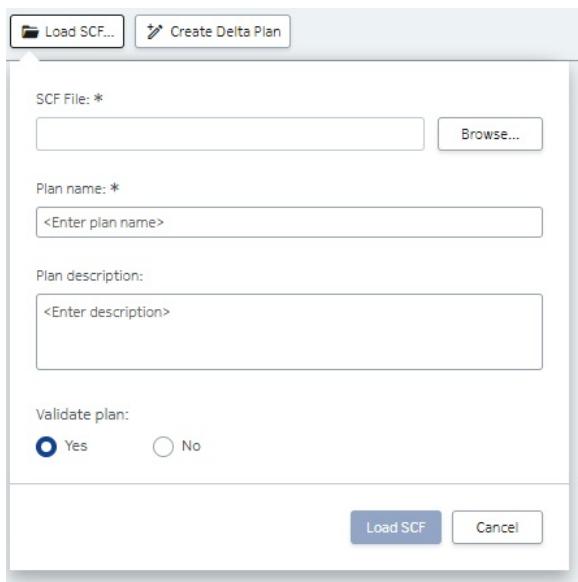
For easy access to the **Parameter Editor** tab, press the **P** key, and then **E**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Select **Load SCF File.**

Step result

The new window pops up.



3 Click **Browse and navigate to the SCF file on your local PC.**

4 Name the new plan.

5 [Optional] Fill in the **Plan description window.**

6 [Optional] Validate the new plan.

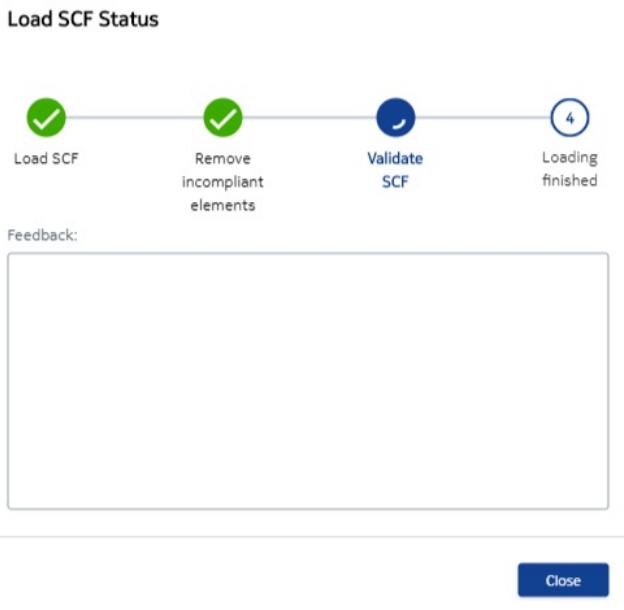
Validation is required to activate any configuration plan. To validate the SCF file while loading it, tick **Yes**.

Step example

Figure 107: Creating an example plan by uploading a test SCF file

7 Click **Load SCF.**

Step result



Once the progress is finished, click `Close`.

Result

The new configuration plan is uploaded and visible in the `Planned Configurations` view.

Note:

For validation results, see [Errors tab](#).

For instructions on how to validate the new configuration plan, see [Validating configuration plan](#).

7.4 Creating delta configuration plan

In the `Parameter Editor`, you can copy the `Active Configuration` plan to the `Delta Plan`.

Before you start

Make sure that the maximum number of plans allowed in CU WebEM is not reached.

i Note:

There is one delta plan allowed in the `Delta Configurations` view. To create another delta plan, delete the existing one.

Procedure

- 1 Go to `Navigation Panel` > `Configuration` > `Parameter Editor`.

Tip:

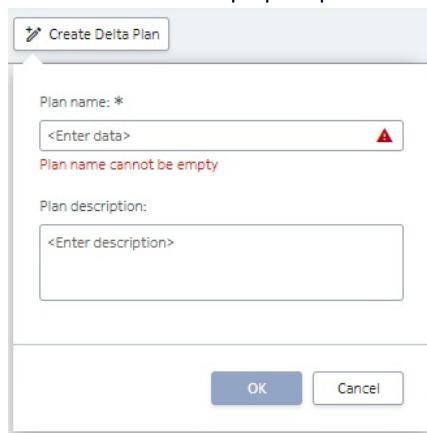
For easy access to the `Parameter Editor` tab, press the `P` key, and then `E`.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

- 2 Select the `Create Delta Plan` option from the top menu.

Step result

The new window pops up.



- 3 Name the new plan.

- 4 [Optional] Fill in the `Plan description` window.

Step example

Plan name: *

Plan description:

OK **Cancel**

5 Click **OK**.

Step result

The creation of the delta configuration plan has started. The notification appears in the bottom right corner.



The successful operation notification appears after a while in the bottom right corner.



The new configuration plan is ready and visible under the `Delta Configurations` view.

6 [Optional] Manage the objects using:

- to add a new object.
- to copy an existing object.
- to remove an object.

i Note:

For instructions on how to validate the new configuration plan, see [Validating configuration plan](#).

7.5 Validating configuration plan

In the **Parameter Editor**, you can validate a configuration plan.

Procedure

- 1 Go to **Navigation Panel** > **Configuration** > **Parameter Editor**.

 **Tip:**

You can choose the  icon from the Main Panel.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

- 2 Select a plan for validation.

From the drop-down list, choose the configuration plan that needs to be validated.

 **Note:**

You can validate plans from **Delta configurations** and **Planned configurations**. The  **Validate Plan** button is active in these views.

- 3 In the top menu, click  **Validate Plan**.

Step result

The validation has started, and notification appears in the bottom right corner.

 **Validate Plan**
Validate plan operation started

The validation has finished and notification appears after a while in the bottom right corner.

 **Validate Plan**
Validate plan operation finished

- 4 Check validation results.

The red dot appears on the **Errors** tab if any errors occurred during validation.



To display validation results, navigate to the [Errors](#) tab.

For errors description, see [Errors tab](#). To fix errors, see [Troubleshooting validation errors](#).

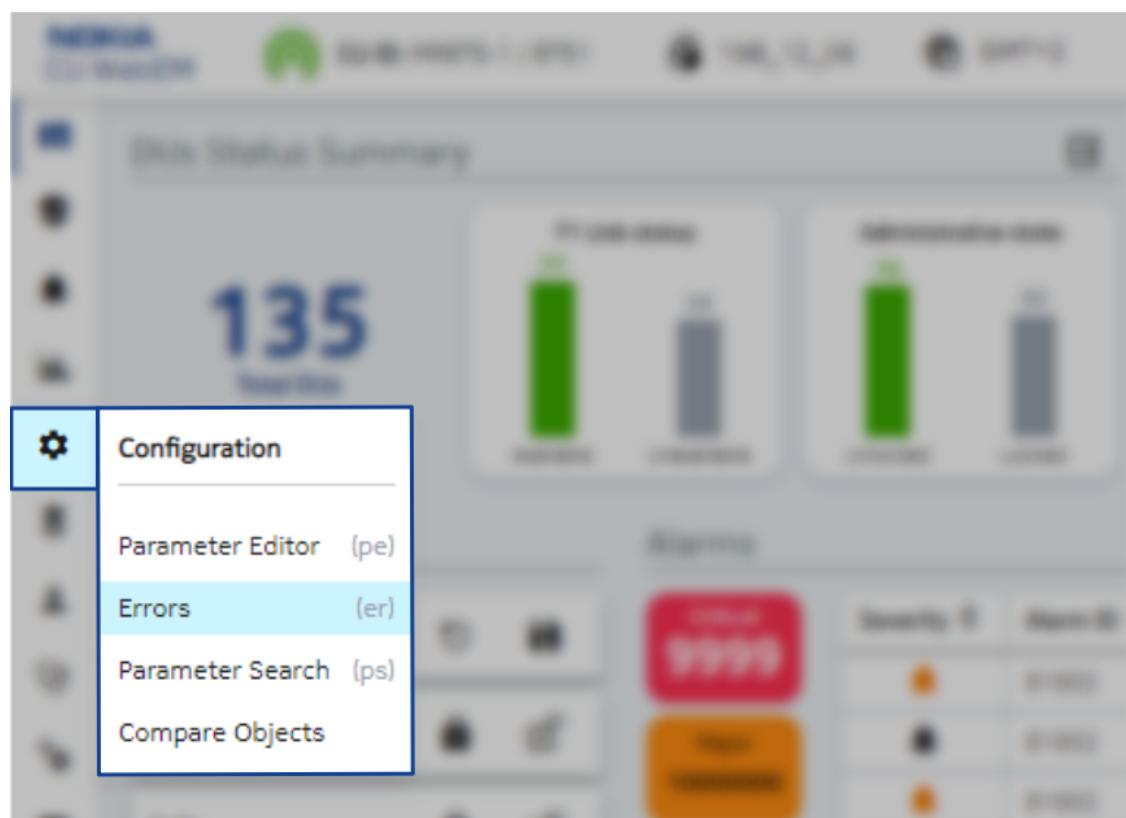
For instructions on how to activate the `xxx plan`, see [Activating configuration plan](#).

7.6 Errors tab

The [Errors](#) tab contains validation results for a chosen configuration plan. It provides detailed information on errors and enables you to easily fix them.

To navigate to [Errors](#), go to [Navigation Panel](#) ▶ [Configuration](#) ▶ [Errors](#).

Figure 108: Accessing the [Errors](#) tab main view



 **Tip:**

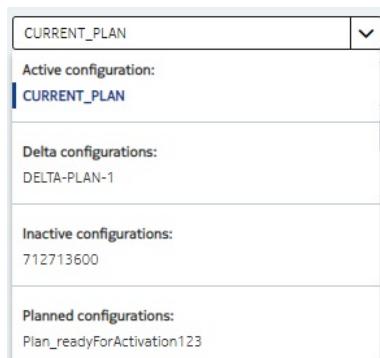
For easy access the `Errors` tab, press the `E` key, and then `R`.
 For shortcuts description, see [CU WebEM keyboard shortcuts](#).

 **Note:**

The `Errors` view displays validation results for validated configuration plans. For instructions on how to validate the plan, see [Validating configuration plan](#).

The `Errors` view is not valid for `Active configuration` or for `Inactive configuration` plans.

From the drop-down list choose the configuration plan to see detailed validation results.

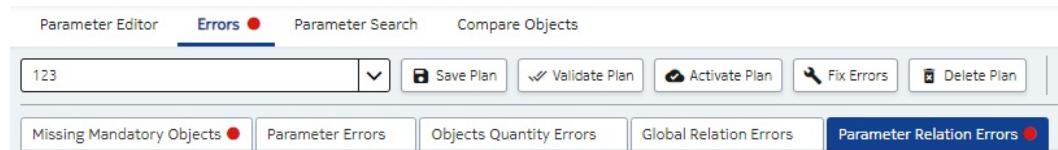


All errors are grouped into five tabs as there are five types of errors:

- [Missing Mandatory Objects](#)
- [Parameter Errors](#)
- [Objects Quantity Errors](#)
- [Global Relation Errors](#)
- [Parameter Relation Errors](#)

The red dot on the respective tab indicates the presence of a particular error type in a chosen plan.

Figure 109: Missing Mandatory Objects error and Parameter Relation Errors detected in an example 123 plan



For a detailed description of detected errors, navigate to the respective error tab.

Note:

Validation results are displayed as static data relevant for the time of the plan validation. The timestamp is visible in the upper right corner.

i Following data relevant for timestamp 2020-08-04 23:21:10

After any changes implementation, refresh the view by revalidating the plan.

Missing Mandatory Objects

This tab contains information about mandatory objects which are not present in the validated plan. Names of missing objects are listed in the `Missing object` column. The parent object of every missing object is listed in the `Parent distinguished name` column. The `Action` column enables you to add missing objects.

Figure 110: Missing Mandatory Objects main view

Missing Mandatory Objects			Parameter Errors	Objects Quantity Errors	Global Relation Errors	Parameter Relation Errors	Following data relevant for timestamp 2020-07-29 00:01:10
Missing object	Parent distinguished name						Action
EQM	NRBTS-0/EQM-X/APEQM-41						+
CABINET	NRBTS-0/EQM-X/APEQM-80						+
EQM	NRBTS-0/EQM-X/APEQM-80						+
CABINET	NRBTS-0/EQM-X/APEQM-92						+

To fix errors by manually adding objects, see [Troubleshooting missing mandatory objects](#). To automatically create all missing mandatory objects, see [Automatic creating mandatory objects and parameters](#).

Parameter Errors

This tab gathers parameters definition errors, such as missing mandatory parameter value or a value that's out of range. In this tab, you can find a table with the name of the affected parameter, its abbreviated name, and the name of its parent object. The `Value` column contains the current value of the parameter and the notification icon ▲, if any error is detected regarding this value. Click on the faulty value to display details of the detected

error. The **Value** field is editable so that you can fix the error by inserting the proper value or selecting it from the drop-down list.

Figure 111: Parameter Errors main view

Parameter Errors			
Object distinguished name	Parameter name	Abbreviation	Action
MRBTS-0/1411/EDM_X/SIMPLELIST-1	Max S1 setup retries	maxS1SetupRetry	
MRBTS-0/EDM_X/SIMPLELIST-1	GERAN carrier freq list for idle mode load balancing #1	geranCarFreqidleModel	
MRBTS-0/EDM_X/SIMPLELIST-0	GERAN carrier freq list for idle mode load balancing	geranCarFreqidleModel	
	GERAN band parameters for idle mode load balancing	geranCarFrrbd	

In the **Action** column, you can:

- restore a parameter default value.
- remove a parameter.
- go to the **Parameter Editor**.
- add a list item or a structure.
- remove a list item or a structure.

Note:

You can set the default values for parameters with defined default values.

Note:

For mandatory parameters, the **Remove** option is not supported.

To fix parameter errors, see [Troubleshooting Parameter Errors](#). To automatically create all missing mandatory objects and parameters, see [Automatic creating mandatory objects and parameters](#).

Objects Quantity Errors

This tab displays errors for objects for which the quantity is our of range. In this tab, you can find a table with the name of the affected object, the name of its parent object, but also the current and the maximum allowed quantity of objects of a particular type.

From the **Action** column, you can choose to go to the **Parameter Editor** to correct the number of instances.

Figure 112: Objects Quantity Errors main view

Objects Quantity Errors				
Object	Max. quantity	Current quantity	Parent distinguished name	Action
MPLANEWNW	1	2 (1)	MRBTS-0	
MPLANEWNW	1	2 (1)	MRBTS-0	
MPLANEWNW	1	2 (1)	MRBTS-0	
MPLANEWNW	1	2 (1)	MRBTS-0	

To fix errors, see [Troubleshooting Objects Quantity Errors](#).

Global Relation Errors

In this tab, all validation messages are listed. Messages can contain some global requirements or configuration rules that have been violated.

Figure 113: Global Relation Errors main view

Mising Mandatory Objects	Parameter Errors	Objects Quantity Errors	Global Relation Errors	Parameter Relation Errors
Validation message				
It is required that the set of MOs IPRT-*(in which IPRT.pRId is equal to 58) must not be empty				
It is required that the set of MOs IPRT-*(in which IPRT.pRId is equal to 79) must not be empty				
It is required that the set of MOs IPRT-*(in which IPRT.pRId is equal to 41) must not be empty				
It is required that the set of MOs IPRT-*(in which IPRT.pRId is equal to 77) must not be empty				

Parameter Relation Errors

In this tab, you can find parameters which have values that are in conflict with other parameter values. The table contains the name of the affected object and the error description.

Figure 114: Parameter Relation Errors main view

Mising Mandatory Objects	Parameter Errors	Objects Quantity Errors	Global Relation Errors	Parameter Relation Errors
Object distinguished name				
ABC-9				Error description
ABC-2				Whenever * CLOCK-1.syncMaster [value: true] is equal to true, it is required that CLOCK-1.syncInputList is configured
ABC-9				Whenever * CLOCK-1.syncMaster [value: true] is equal to true, it is required that CLOCK-1.syncInputList is configured
ABC-2				Whenever * CLOCK-1.syncMaster [value: true] is equal to true, it is required that CLOCK-1.syncInputList is configured
ABC-1				Whenever * CLOCK-1.syncMaster [value: true] is equal to true, it is required that CLOCK-1.syncInputList is configured
				Action



Tip:

Select the object and click the icon to reveal details of the contradiction.

In the panel, you can find the affected parameter name and abbreviation, the name of the related object, the editable **Value** column, and the **Actions** you can undertake. Use:

- to restore a parameter default value.
- to remove a parameter.
- to go to the [Parameter Editor](#).
- + to add a list item or a structure.
- - to remove a list item or a structure.

To fix errors, see [Troubleshooting Parameter Relation Errors](#).

7.7 Troubleshooting validation errors

You can fix errors that occurred during validation by configuring faulty objects and parameters.

7.7.1 Troubleshooting missing mandatory objects

Instructions how to manually add and configure every missing mandatory object.

Before you start

Note:

To automatically create all missing mandatory objects and parameters with their default values assigned, see [Automatic creating mandatory objects and parameters](#).

Procedure

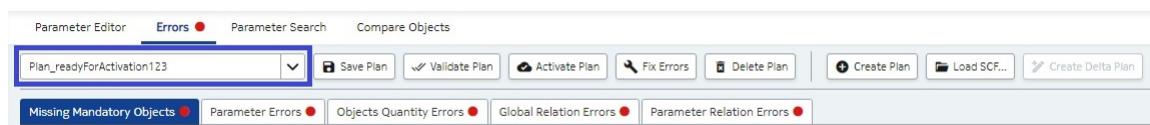
- 1 Go to **Navigation Panel** > **Configuration** > **Errors** > **Missing Mandatory Objects**.

Tip:

For easy access to the **Errors** tab, press the **E** key, and then **R**.
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

- 2 Choose the validated configuration plan to see related errors.

Select the configuration plan from the drop-down list.



Note:

The **Errors** view displays validation results for validated configuration plans. For instructions on how to validate the plan, see .

Note:

The **Errors** view is not valid for **Active configuration** and **Inactive configuration** plans.

3 Identify missing mandatory object.

In the **Missing Mandatory Objects** tab main view, find the list of missing objects and their locations.

Missing Mandatory Objects		Parameter Errors	Objects Quantity Errors	Global Relation Errors	Parameter Relation Errors	Following data relevant for timestamp 2020-07-29 00:01:10
Missing object	Parent distinguished name					Action
EQM	MR8T5-0/EQM-XIAFQDN-4-1					+
CABINET	MR8T5-0/EQM-XIAFQDN-9-0					+
EQM	MR8T5-0/EQM-XIAFQDN-8-0					+
CABINET	MR8T5-0/EQM-XIAFQDN-9-2					+

4 Add the object manually by clicking the + icon.

Step result

Object ID:
<Insert value>

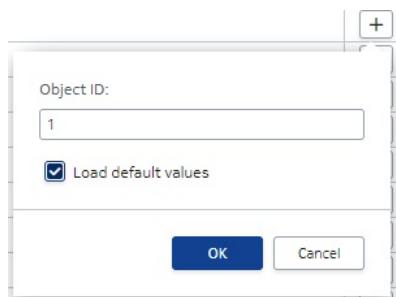
Load default values

OK Cancel

5 Insert the ID of the added object.

You can set a default value for the added object by ticking the **Load default values** box.

Step example



6 Click **OK**.

Step result

The notification pops up in the bottom right corner.

Add Object
Add object operation finished

Result

Note:

Validation results are displayed as static data relevant for the time of the plan validation. The timestamp is visible in the upper right corner.

Following data relevant for timestamp 2020-08-04 23:21:10

After any changes implementation, refresh the view by revalidating the plan.

7.7.2 Troubleshooting Parameter Errors

Instructions how to manually add and configure every missing mandatory parameter.

Before you start

i Note:

To automatically create all missing mandatory objects and parameters with their default values assigned, see [Automatic creating mandatory objects and parameters](#).

Procedure

1 Go to **Navigation Panel** > **Configuration** > **Errors** > **Parameter Errors**.

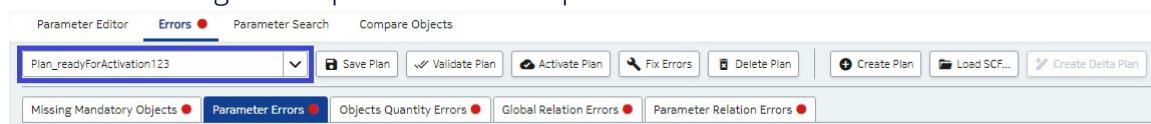
Tip:

For easy access to the **Errors** tab, press the **E** key, and then **R**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Choose the validated configuration plan to see related errors.

Select the configuration plan from the drop-down list.

**i Note:**

The **Errors** view displays validation results for validated configuration plans. For instructions on how to validate the plan, see [Validating configuration plan](#).

i Note:

The **Errors** view is not valid for **Active configuration** and **Inactive configuration** plans.

3 Identify faulty values.

The **!** icon in the **Value** column indicates an error.



Click on the faulty value to display details of the detected error.

Step example

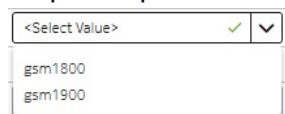
Figure 115: Value error example



4 Set the correct value.

The **Value** field is editable so you can fix the error by inserting the proper value or selecting it from the drop-down list.

Step example



5 To manage the parameters, use the **Action** column.

Use:

- ⏪ to restore a parameter default value.
- ✖ to remove a parameter.
- 🔍 to go to the **Parameter Editor**.
- + to add a list item or a structure.
- - to remove a list item or a structure.

i Note:

You can easily set the default values for parameters with defined default values.

i Note:

For mandatory parameters, the **Remove** option is not supported.

Result

Note:

Validation results are displayed as static data relevant for the time of the plan validation. The timestamp is visible in the upper right corner.

 Following data relevant for timestamp 2020-08-04 23:21:10

After any changes implementation, refresh the view by revalidating the plan.

7.7.3 Troubleshooting Objects Quantity Errors

You can fix errors by changing the number of affected objects according to the parameters value range.

Procedure

1 Go to Navigation Panel > Configuration > Errors > Objects Quantity Errors.

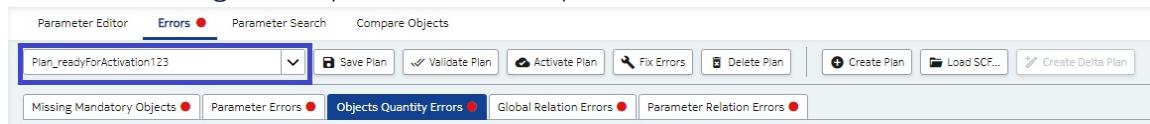
Tip:

For easy access to the **Errors** tab, press the **E** key, and then **R**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Choose the validated configuration plan to see related errors.

Select the configuration plan from the drop-down list.



i Note:

The **Errors** view displays validation results for validated configuration plans. For instructions on how to validate the plan, see [Validating configuration plan](#).

The **Errors** view is not valid for **Active configuration** and for **Inactive configuration** plans.

3 Identify quantity error objects.

The table shows discrepancies between **Current Quantity** and the **Maximum Quantity**.

Figure 116: *Objects Quantity Errors* main view

The screenshot shows a table with the following columns: Object, Max. quantity, Current quantity, Parent distinguished name, and Action. There are four rows of data, each corresponding to an object named 'MPLANENW'. The 'Max. quantity' column shows values of 1 for all rows. The 'Current quantity' column shows values of 2 (1) for all rows. The 'Parent distinguished name' column shows values of 'MRTBS-0' for all rows. The 'Action' column contains four small square icons with arrows pointing in different directions, likely for managing the objects.

Object	Max. quantity	Current quantity	Parent distinguished name	Action
MPLANENW	1	2 (1)	MRTBS-0	
MPLANENW	1	2 (1)	MRTBS-0	
MPLANENW	1	2 (1)	MRTBS-0	
MPLANENW	1	2 (1)	MRTBS-0	

Following data relevant for timestamp 2020-07-29 00:04:11

4 Correct the number of objects in the **Parameter Editor** tab.

From the **Action** column, navigate to the **Parameter Editor** tab to add or remove objects.

i Note:

Validation results are displayed as static data relevant for the time of the plan validation. The timestamp is visible in the upper right corner.

Following data relevant for timestamp 2020-08-04 23:21:10

After any changes implementation, refresh the view by revalidating the plan.

7.7.4 Troubleshooting Parameter Relation Errors

You can fix errors by changing parameter values that are in conflict. The **Error Fixing** panel provides detailed information on contradictions.

Procedure

- 1 Go to **Navigation Panel** > **Configuration** > **Errors** > **Parameter Relation Errors**.



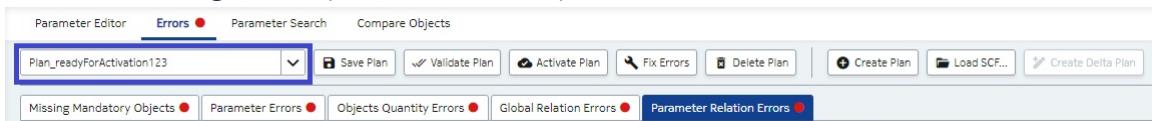
Tip:

For easy access to the **Errors** tab, press the **E** key, and then **R**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

- 2 Choose the validated configuration plan to see related errors.

Select the configuration plan from the drop-down list.



Note:

The **Errors** view displays validation results for validated configuration plans. For instructions on how to validate the plan, see [Validating configuration plan](#).

The **Errors** view is not valid for **Active configuration** and for **Inactive configuration** plans.

- 3 Select the object and click the **Error Fixing** button to reveal details of the contradiction.

Step result

The **Error Fixing** panel appears at the bottom of the page.

Figure 117: Error Fixing panel

The screenshot shows the 'Parameter Editor' interface with the 'Errors' tab selected. At the top, there are buttons for 'Save Plan', 'Validate Plan', 'Activate Plan', 'Fix Errors', 'Delete Plan', 'Create Plan', 'Load SCD...', and 'Create Delta Plan'. Below the tabs, a message says 'Following data relevant for timestamp 2020-08-06 17:43:1'. The main area has tabs for 'Missing Mandatory Objects', 'Parameter Errors', 'Objects Quantity Errors', 'Global Relation Errors', and 'Parameter Relation Errors'. The 'Parameter Relation Errors' tab is active, showing a list of objects with their descriptions and actions. Below this is a 'Error Fixing' section with a table for modifying parameter values.

Object distinguished name	Error description	Action
ABC-9	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-5	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-7	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-2	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-3	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-2	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-5	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-1	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-5	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-0	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-6	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-9	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	
ABC-8	Whenever *CLOCK-1.syncMaster.value: true is equal to true, it is required that CLOCK-1.syncupList, is configured	

Object distinguished name	Parameter name	Abbreviation	Value	Action
M88TS-0/MNL-1/MNLENL-1/PNCADM-24	Emergency ARP	emergencyArp		
	▪ RRC establishment cause to ARP mapping configurations	estCauseArpMapConfig		
MRBTS-0/MNL-1/MNLENL-1/PNCADM-94	▪ Structure 1			
	Assigned ARP pre-emption capability	preemptionCap		
MRBTS-0/MNL-1/MNLENL-1/PNCADM-94	Emergency ARP	emergencyArp		
	▪ Requested frequency bands	redFreqBands		

4 Identify faulty values.

The icon in the **Value** column indicates an error.

Click on the faulty value to display details of the detected error.

Step example

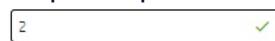
Figure 118: Value error example



5 Set the correct value.

The **Value** field is editable so you can fix the error by inserting the proper value or selecting it from the drop-down list.

Step example



Step result

The icon in the **Value** field becomes the tick icon.

6 To manage the parameters, use the **Action** column.

Use:

- to restore a parameter default value.
- to remove a parameter.

-  to go to the [Parameter Editor](#).
- + to add a list item or a structure.
- - to remove a list item or a structure.

 **Note:**

You can set the default values for parameters with defined default values.

 **Note:**

For mandatory parameters, the [Remove](#) option is not supported.

Result

 **Note:**

Validation results are displayed as static data relevant for the time of the plan validation. The timestamp is visible in the upper right corner.

 Following data relevant for timestamp 2020-08-04 23:21:10

After any changes implementation, refresh the view by revalidating the plan.

7.8 Automatic creating mandatory objects and parameters

Instructions how to automatically create mandatory objects and parameters using the [Fix Errors](#) functionality.

Before you start

 **Note:**

The  [Fix Errors](#) functionality enables you to automatically create missing mandatory objects and parameters with their default values assigned.

Note:

To create objects and parameters with their default values assigned, you need to first define the default values for them.

Procedure

1 Go to Navigation Panel > Configuration.

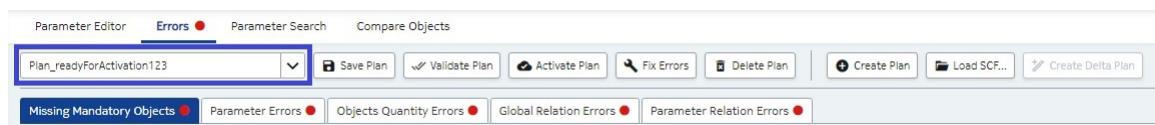
Tip:

You can choose the icon from the Main Panel.

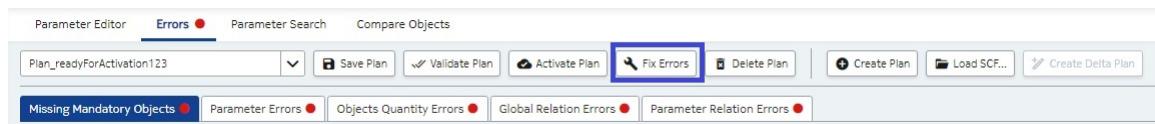
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Choose the configuration plan.

From the drop-down list, select the configuration plan you want to edit.

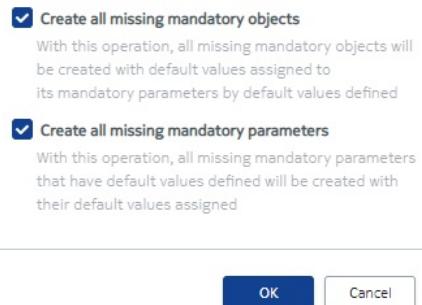


3 Click the Fix Errors button from the top menu.



4 Tick the type of missing instances you want to create and click OK.

Step example



Fixing errors operation starts and the notification window appears.

Fixed errors

Fixing errors in progress...

Close

Step result

Figure 119: Fixed errors window

Fixed errors

The following errors have been fixed:

Object distinguished name	Status
.../APEQM-97/EQM-X/APEQM-97/EQM-X/APEQM-97/EQM-X/APEQM-97	+ Added
b	+ Added
c	+ Added
d	+ Added
z	✗ Modified
x	✗ Modified
c	✗ Modified
v	✗ Modified

Close

Result

Every mandatory object and parameter is created with its default value.

i Note:

Validation results are displayed as static data relevant for the time of the plan validation. The timestamp is visible in the upper right corner.

 Following data relevant for timestamp 2020-08-04 23:21:10

After any changes implementation, refresh the view by revalidating the plan.

7.9 Activating configuration plan

In the **Parameter Editor tab**, you can activate the successfully validated plan from **Inactive configurations**, **Delta configurations**, or **Planned configurations** view.

Before you start

i Note:

You need to validate each plan before activating it.

For instructions on how to validate a new configuration plan, see [Validating configuration plan](#).

i Note:

You can activate validated plans from **Inactive configurations**, **Delta configurations**, or **Planned configurations**. The  **Activate Plan** button is active in these views.

7.9.1 Activating planned configuration

Instructions on how to activate a chosen plan from **Planned configurations**.

Before you start

Make sure that CU WebEM is opened and connection to CU is established.

Note:

To activate a plan, validate it first. For instructions on how to validate a configuration plan, see [Validating configuration plan](#).

Procedure

1 Go to **Navigation Panel > **Configuration** > **Parameter Editor**.**

Tip:

You can choose the icon from the Main Panel.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Select a plan for activation.

From the drop-down list, choose the planned configuration you want to activate.

3 In the top menu, click **Activate Plan.**

Step result

The caution window pops up.

You are about to activate Plan_readyForActivation123 configuration plan.
Full plan commissioning will be performed.

Full plan commissioning will be performed.
Caution! Reset will be performed after plan activation
 Download plan without activation
Do you want to proceed?

Execute **Cancel**

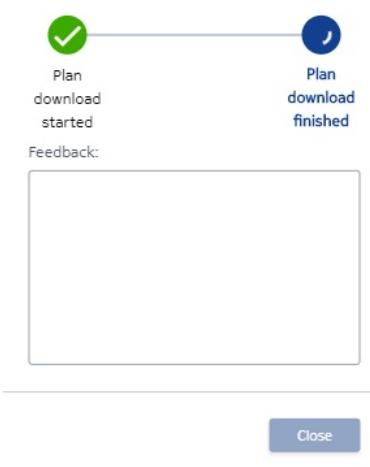
4 [Optional] Download the plan without activation.

Tick the **Download plan without activation** box to save the plan under [Inactive configurations](#).

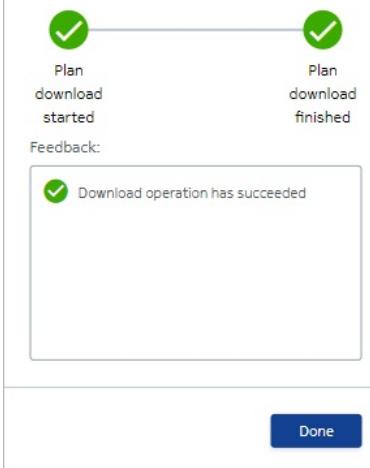
Step result

The downloading progress window appears.

Download Plan Without Activation



Download Plan Without Activation



5 Click **Execute**.

Step result

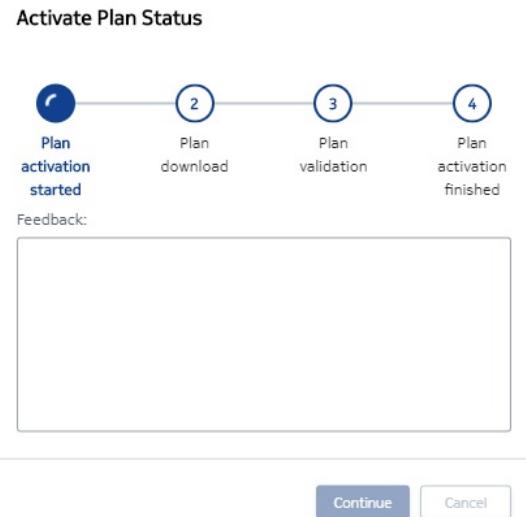
The activation process starts and a notification pops up in the bottom right corner.



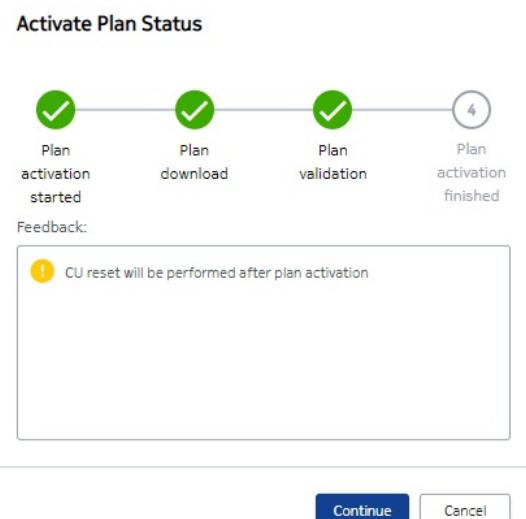
The progress window appears. The activation process consists of four phases:

1. Plan activation started
2. Plan download
3. Plan validation

4. Plan activation finished



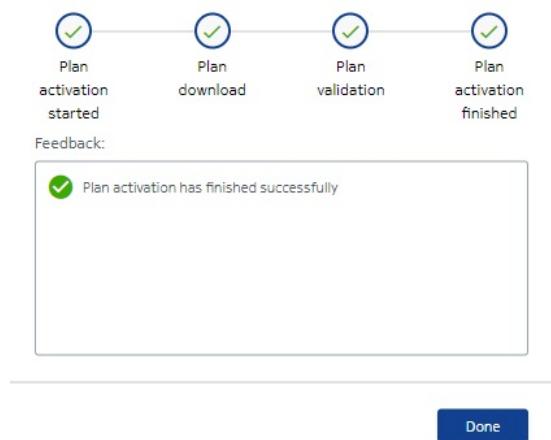
After plan validation phase, the caution window pops up.



6 Click Continue.

Result

Activate Plan Status



Once the activation process is completed, a notification pops up in the bottom right corner.



The configuration plan is activated and visible under the `Active configuration` view. CU reset is triggered.

7.9.2 Activating inactive configuration plan

Instructions how to activate a chosen plan from `Inactive configurations`.

Before you start

Make sure that CU WebEM is opened and connection to CU is established.



To activate a plan, validate it first. For instructions on how to validate a configuration plan, see [Validating configuration plan](#).

Procedure

1 Go to `Navigation Panel` > `Configuration` > `Parameter Editor`.

Tip:

You can choose the  icon from the Main Panel.
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Select a plan for activation.

From the drop-down list, choose the inactive configuration you want to activate.

3 In the top menu, click  Activate Plan.**Step result**

The caution window pops up.

You are about to activate Plan_readyForActivation123 configuration plan.
Full plan commissioning will be performed.

-  Full plan commissioning will be performed.
Caution! Reset will be performed after plan activation
 Download plan without activation

Do you want to proceed?

Execute **Cancel**

4 Click Execute.**Step result**

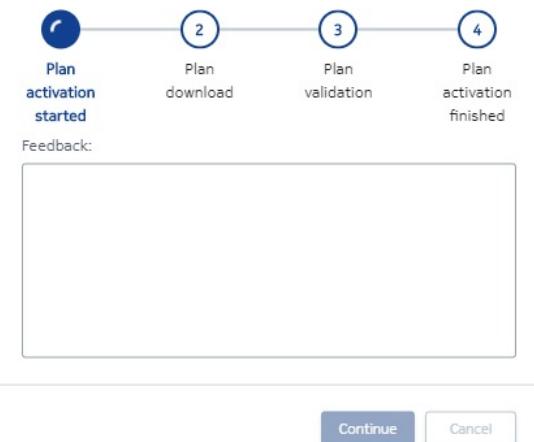
The activation process starts and a notification pops up in the bottom right corner.

 **Activate Plan**
Activate plan operation started

The progress window appears. The activation process consists of four phases:

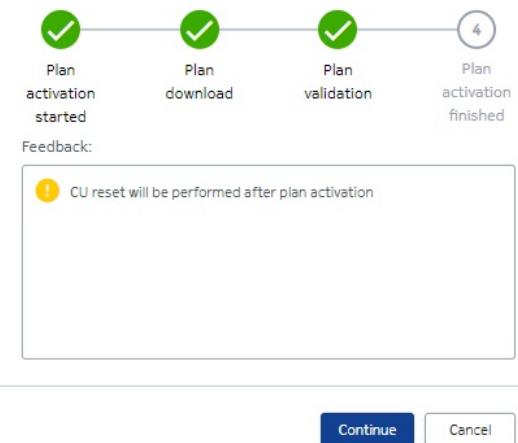
1. Plan activation started
2. Plan download
3. Plan validation
4. Plan activation finished

Activate Plan Status



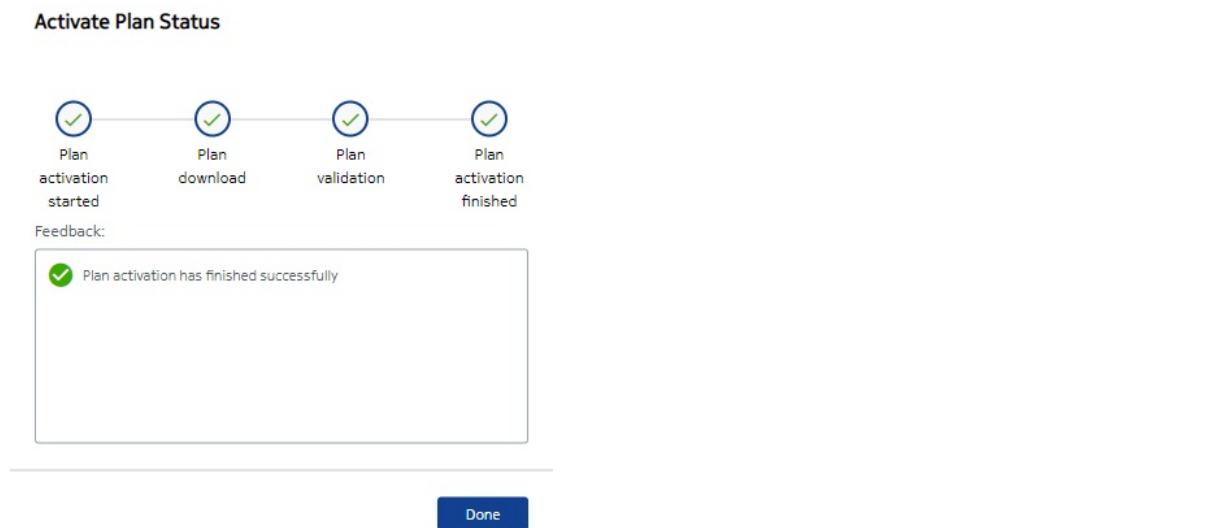
After plan validation phase, the caution window pops up.

Activate Plan Status



5 Click **Continue**.

Result



Once the activation process is completed, a notification pops up in the bottom right corner.



The configuration plan is activated and visible under the `Active configuration` view. CU reset is triggered.

7.9.3 Activating delta configuration plan

Instructions how to activate a plan from `Delta configurations`.

Before you start

Make sure that CU WebEM is opened and connection to CU is established.



Note:

To activate a plan, validate it first. For instructions on how to validate a configuration plan, see [Validating configuration plan](#).

Procedure

1 Go to `Navigation Panel` > `Configuration` > `Parameter Editor`.

Tip:

You can choose the  icon from the Main Panel.
For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 Select a plan for activation.

From the drop-down list, choose the delta configuration plan you want to activate.

3 [Option] Force the activation.

The CU reset or cells lock can interrupt the activation process. Tick the:

- `Force activation despite reset` option to continue the activation in case of CU reset.
- `Force activation despite cells lock` option to continue the activation in case of any cell lock.

4 In the top menu, click  Activate Plan.**Step result**

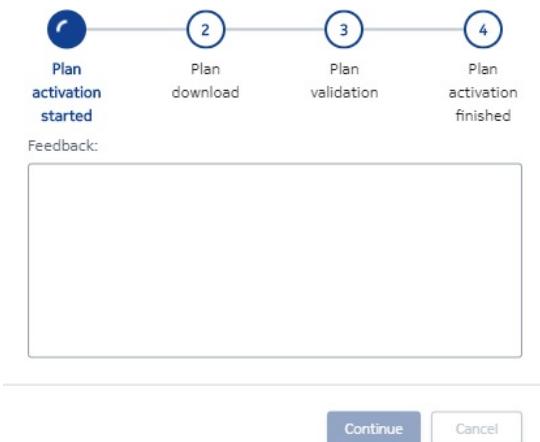
The activation process starts and a notification pops up in the bottom right corner.



The progress window appears. The activation process consists of four phases:

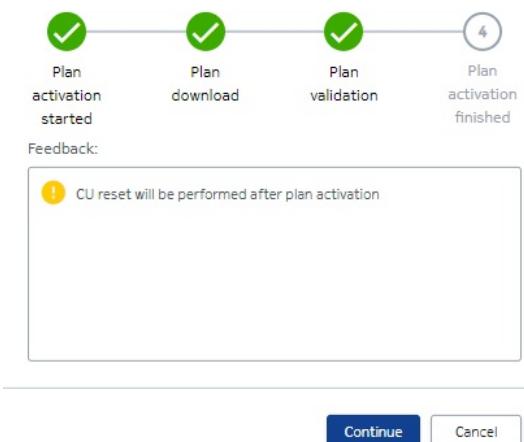
1. Plan activation started
2. Plan download
3. Plan validation
4. Plan activation finished

Activate Plan Status



After plan validation phase, the caution window pops up.

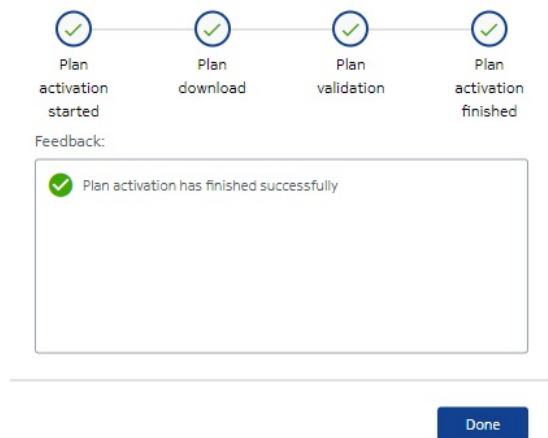
Activate Plan Status



5 Click **Continue**.

Result

Activate Plan Status



Done

Once the activation process is completed, a notification pops up in the bottom right corner.



The configuration plan is activated and visible under the `Active configuration` view. CU reset is triggered.

7.10 Comparing objects

Instructions how to compare parameters of two selected objects within the same configuration plan.

Before you start

Note:

You can compare objects that have the same object class.

Note:

Only simple parameters are available for comparison.

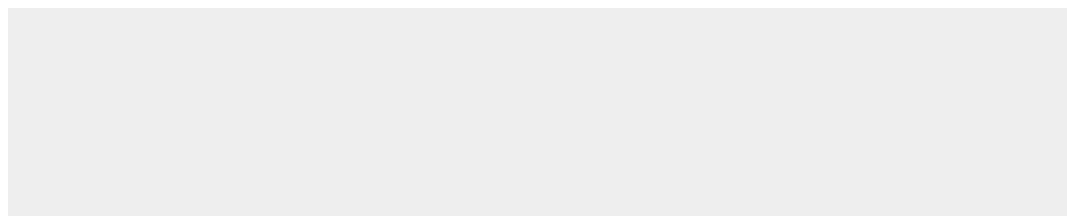
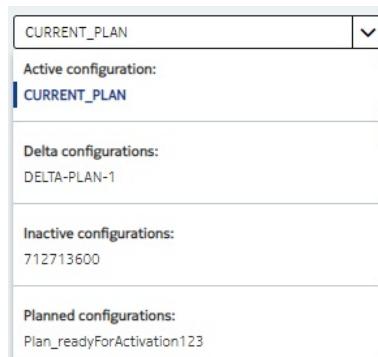
Procedure

1 Go to the Navigation Panel > Configuration > Compare object.

2 Select the first object for comparison.

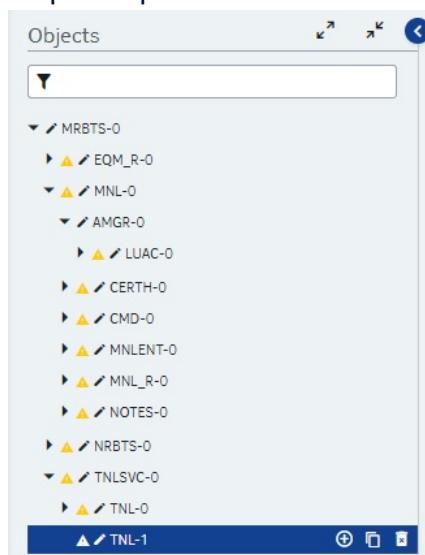
2.1 From the drop-down list, choose the configuration plan.

Figure 120: Selecting configuration plan



2.2 From the managed object tree, select the first object for the comparison.

Step example



3 Select the second object for the comparison.

Note:

For objects that have the same object class, the `Select object` window is available in the table.

Click `Select object` window in the table. From the drop-down list, select the second object.

Step example

The screenshot shows a table with two columns. The left column lists various objects under 'Objects'. The right column displays parameters for 'MRBTS-0/TNLSVC-0/TNL-1'. A dropdown menu titled '<Select object>' is open at the bottom right of the table, showing 'MRBTS-0/TNLSVC-0/TNL-0' as the selected item.

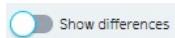
Objects	Parameter name	Abbreviation	MRBTS-0/TNLSVC-0/TNL-1	<Select object>
MRBTS-0	Template Usage	templateUsage	FALSE	MRBTS-0/TNLSVC-0/TNL-0
EDM_E-0	Temporary activation flags #1	tmpActFeat1	<Select Value>	
MNL-0	Temporary activation flags #2	tmpActFeat2	<Select Value>	
AMGR-0	Temporary parameter #1	tmpParam1		
LUMC-0	Temporary parameter #2	tmpParam2		
CERTH-0	Temporary parameter #3	tmpParam3		
CMD-0	Temporary parameter #4	tmpParam4		
MLNENT-0	Temporary parameter #5	tmpParam5		
MNL_B-0	Temporary parameter #6	tmpParam6		
NOTES-0	Temporary parameter #7	tmpParam7		
NRBTS-0	Temporary parameter #8	tmpParam8		
TNLSVC-0	Temporary parameter #9	tmpParam9		
TNL-0	Temporary parameter #10	tmpParam10		

Step result

The parameters of both selected objects are displayed. You can compare their values in the table.

Presence of antenna port1	presenceAntennaPort1	false	=	false
Report amount	reportAmount	r8	=	r8
Report interval	reportInterval	ms240	=	ms240
Wideband RSRQ measurement	widebandRsrqMeas	false	=	false

The `Show differences` option becomes available.



4 [Optional] Click `Show differences`.

With the `Show differences` functionality, you can filter the parameters to display only those with nonequal values.

Step result

Parameter name	Abbreviation	MRBTS-0/NRBTS-0/NRSYSINFO_PROFILE-0/NRIRFIM-0	<>	>>	MRBTS-0/NRBTS-0/NRSYSINFO_PROFILE-0/NRIRFIM-1	<>
Template Usage	templateUsage	FALSE	<>	=	<Select Value>	<>
Temporary activation flags #1	tmpActFeat1	Bit 3	<>	=	<Select Value>	<>
Temporary activation flags #2	tmpActFeat2	Bit 2	<>	=	<Select Value>	<>

Result

In the table, you can compare parameter values of chosen objects. The table shows the parameters in an alphabetical order. It provides you such information as:

- Parameter name
- Abbreviation
- Path to the first object
- Path to the second object
- First object parameter value
- Second object parameter value

For detailed information regarding a chosen object, click the  icon on the right-hand side.

For nonequal parameter values, you can:

-  - overwrite parameter value of object on the left side with the parameter value of object on the right side.
-  - overwrite parameter value of object on the right side with the parameter value of object on the left side.
-  - overwrite all parameter values of object on the left side with parameter values of object on the right side.
-  - overwrite all parameter values of object on the right side with parameter values of object on the left side.
-  - filter to display for comparison either all object parameters, or only parameters with different value between chosen objects.

 **Note:**

By default, the `Show differences` functionality is switched off.

 **Note:**

The unmodifiable parameters, or parameters set by the system, are visible, but overwriting their values is not supported.

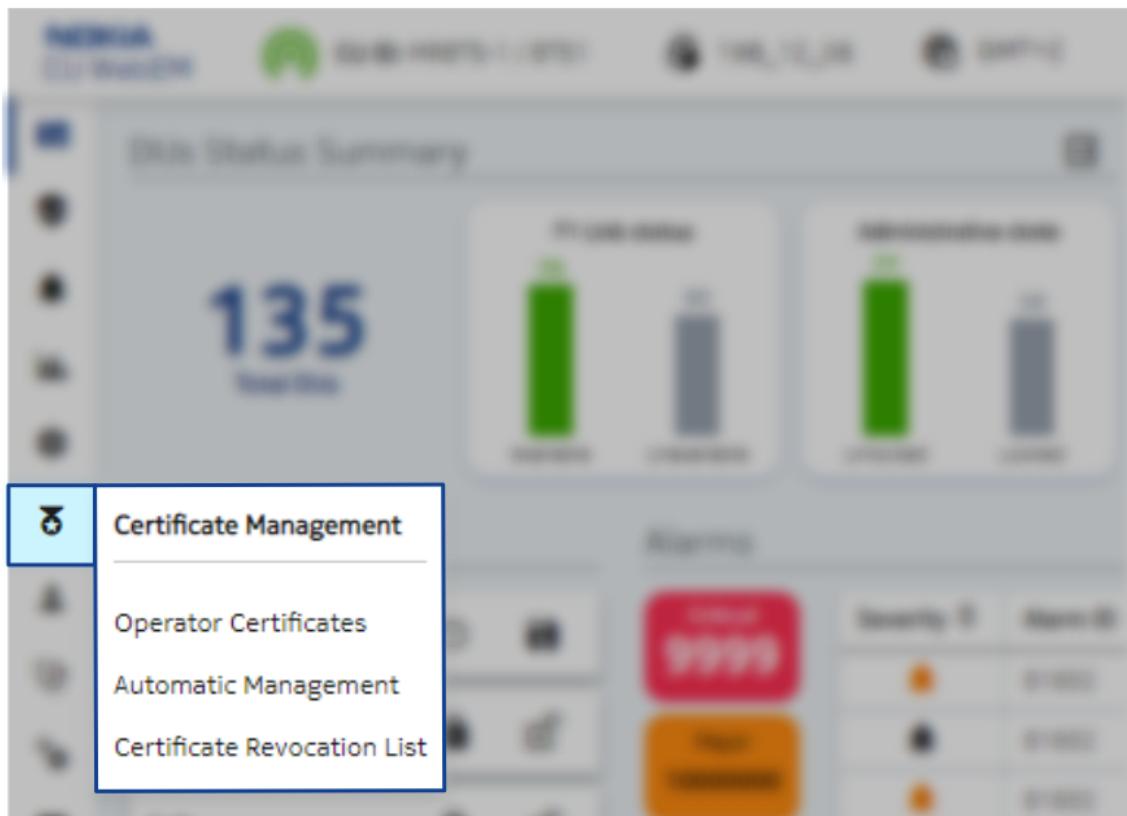
Parameters with incorrect values, such as missing mandatory value, value out of range, and others are marked with the  icon. These parameters can't be selected to overwrite second object parameter. While overwriting all parameters from left to right, or from right to left, parameter with incorrect values are skipped. For detailed errors description see [Errors tab](#).

8. Certificate Management view

The **Certificate Management** view provides information on security certificates installed on the gNB central unit (gNB-CU). It enables you to check the current Certificate Management Protocol (CMP) state, and allows basic CMP server settings.

Certificate Management overview

To navigate to the **Certificate Management** tab, from **Navigation Panel** click the  **Certificate Management** icon.



The **Certificate Management** view consists of the three tabs:

- **Operator Certificates**, where you can manage the security certificates.
- **Automatic Management**, where you can find information on the CMP.
- **Certificate Revocation List**, which displays all revoked certificates.

You can easily switch between tabs in the top menu.



8.1 Operator Certificates tab

The **Operator Certificates** tab provides detailed information on the certificates installed on the gNB central unit (gNB-CU). It allows you to manage certificates by deleting them, replacing with the default ones, installing new certificates, and requesting certificate signing.

To navigate to the **Operator Certificates** tab, go to **Navigation Panel** ▶ **Certificate Management** ▶ **Operator Certificates**.

Figure 121: Accessing the **Operator Certificates** tab

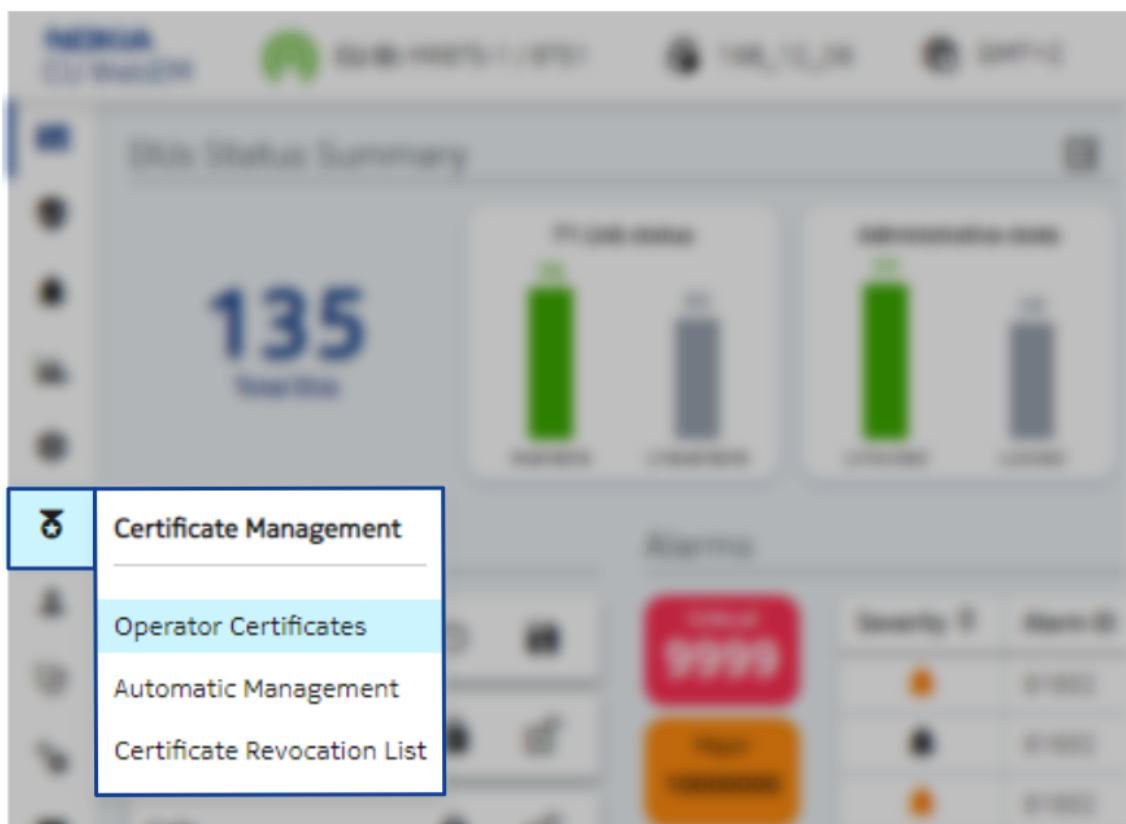


Figure 122: *Operator Certificates* tab main view

Status	Issued to	Issued by	Type	Valid from	Valid to	Serial number	Action
All	/CN=TA1	/CN=TA1	TA	2021-03-10 08:03:31 GMT+00:00	2026-03-09 08:03:31 GMT+00:00	0x7E5	
	/CN=CA1	/CN=TA1	CA	2021-03-10 08:05:51 GMT+00:00	2026-03-09 08:03:31 GMT+00:00	0x7E6	
	/CN=Nokia_CU_XXX	/CN=CA1	EE	2021-03-15 09:03:10 GMT+00:00	2026-03-09 08:03:31 GMT+00:00	0x16BD	
	/CN=Additional_CA2	/CN=Additional_CA2	TA	2021-03-15 09:38:02 GMT+00:00	2023-12-10 09:38:02 GMT+00:00	0x9A3CE2160F30FFDC	
	/CN=Additional_CA1	/CN=Additional_CA1	TA	2021-03-15 09:38:37 GMT+00:00	2023-12-10 09:38:37 GMT+00:00	0xA10FA5BBFEFEZ01	

The **Operator Certificates** tab consists of four sections:

- **Install Operator Certificates**, where you can install the new end entity or the additional CA.
- **Operator Certificates**, where you can find the list of installed certificates.
- **Details Panel**, where you can find detailed information regarding installed certificates.
- **Certificate Signing Request**, where you can generate the request, download the certificate file, and copy it to the clipboard.

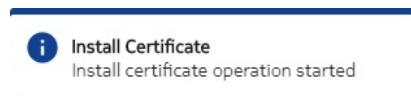
Install Operator Certificates

To install a new certificate:

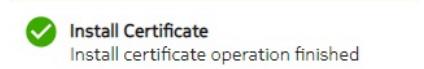
1. Choose the certificate type.
2. Click **Browse...** and navigate to the CSR file on your local PC.
3. Click **Install**.

Figure 123: Installing a certificate example

The installation of the chosen certificate has started. The notification appears in the bottom right corner.



The successful operation notification appears after a while in the bottom right corner.



The new certificate is installed and visible in the **Operator Certificates** section.

Operator Certificates

In the **Operator Certificates** section you can find the list of certificates installed on the gNB-CU. Click the icon to expand and collapse the certificates structure. The table provides you with the most important information on the certificates. You can find here:

- the certificate status
- the name of entity that the certificate issues to
- the name of the third body that issued the certificate
- the certificate type
- the information about the certificate validity period
- the certificate serial number

Figure 124: Operator Certificates section

Operator Certificates								
Status	Issued to	Issued by	Type	Valid from	Valid to	Serial number	Action	
	/CN=TAI	/CN=TAI	TA	2021-03-10 08:03:31 GMT+00:00	2026-03-09 08:03:31 GMT+00:00	0x7E5		
	/CN=CA1	/CN=TAI	CA	2021-03-10 08:05:51 GMT+00:00	2026-03-09 08:03:31 GMT+00:00	0x7E6		
	/CN=Nokia_CU_XXX	/CN=CA1	EE	2021-03-15 09:03:10 GMT+00:00	2026-03-09 08:03:31 GMT+00:00	0x16BD		
	/CN=Additional_CA2	/CN=Additional_CA2	TA	2021-03-15 09:28:02 GMT+00:00	2023-12-10 09:38:02 GMT+00:00	0x9A3CE2160E30FFDC		
	/CN=Additional_CA1	/CN=Additional_CA1	TA	2021-03-15 09:36:37 GMT+00:00	2023-12-10 09:36:37 GMT+00:00	0xE1BFA5BBF0FE201		

In the **Status** column, the expired certificates are marked with the notification icon. You can filter expired certificates by selecting the status from the drop-down list.



The `Issued to` column informs you about the object that the certificate refers to.

The `Issued by` column informs you about the third body that has issued the certificate.

To filter certificates by `Issued to`, `Issued by`, or the `Serial number`, start typing in the respective filtering window .

In the `Action` column, you can find the icon for certificates that are possible to be removed. The BTS Trust Chain certificates cannot be removed.

`Restore Default Certificates` button removes all operator certificates and replaces them with the default ones.

Details panel

For detailed information regarding a chosen certificate, click the icon on the right-hand side.

The `Details` panel provides information, such as:

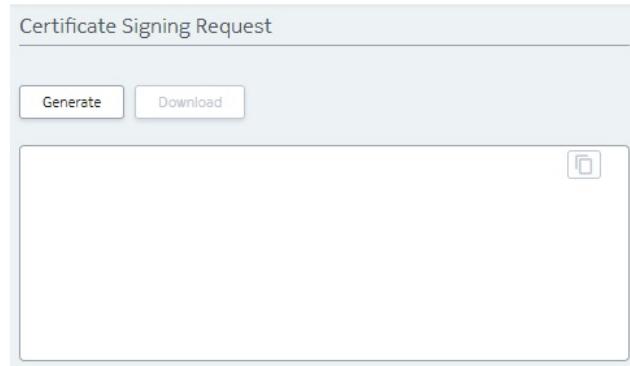
- Authority key identifier
- Configuration reference
- CRL distribution point URI
- Extended key usage
- Fingerprint
- Issued by
- Issued to
- Key usage
- Serial number
- Signature algorithm
- Subject alternative name
- Subject public key algorithm
- Valid from
- Valid to
- Version
- CA type
- Trust chain

To close the **Details** panel, click the  icon.

Certificate Signing Request

In the **Certificate Signing Request** section you can generate the request, download the certificate file, or copy it to the clipboard.

Figure 125: Certificate Signing Request section main view



To request certificate signing, click the **Generate** button.

Creating the new request has started. The notification appears in the bottom right corner.



The successful operation notification appears after a while in the bottom right corner.



The request is successfully generated and visible in the window.

```
-----BEGIN CERTIFICATE REQUEST-----
MIICyCCAbICAQAwgYQxCzAJBgNVBAYTAjPMQ4wDAYDVQQIDAVUaW1pczESMBA
G
A1UEBwwJVGltaXnvYXJhMQ4wDAYDVQQKDAVOT0tJQTELMAkGA1UECwwCTU4x
DzAN
BjNVBAMMBjUPWEFOQTEjMCEGCSqGSIb3DQEJARYUcm94YW5hXzEyM0BnbWFp
bC5j
b2owggEiMA0GCSqGSIb3DQEBAQUA4IBDwAwggEKAoIBAQDlVMGiee69UfOIXy
GK
1QvNqbz2FyAY3KZQPf6tG7qjmDiRKu2eTGNRiwBYBWEZ8S9nX8/BljXWgqK1UbG
```

To copy to the clipboard, click the  icon.

8.2 Automatic Management tab

The CU WebEM enables you to check the current Certificate Management Protocol (CMP) state, and allows basic CMP server settings.

To navigate to the **Automatic Management** tab, go to **Navigation Panel** ▶ **Certificate Management** ▶ **Automatic Management**.

Figure 126: Automatic Management tab main view

CMP Server Settings		Validation Rules	
Reference number:	<input type="text"/>	Reference number rules	0 / 2
Pre-shared key:	<input type="text"/>	<input checked="" type="radio"/> Maximum 30 characters <input checked="" type="radio"/> Each character should be alphanumeric or one of the following: !#, \$%, &, ', (,), *, +, -, ., =, ?, @, [], ~, / <input checked="" type="radio"/> Maximum 128 characters <input checked="" type="radio"/> Each character should be alphanumeric or one of the following: !#, \$%, &, ', (,), *, +, -, ., =, ?, @, [], ~, /	0 / 2
Manual Triggering		CMP state: Initialized <input type="button" value="CMP Key Update"/> <input type="button" value="Initialize Certificates"/>	

The **Automatic Management** tab consists of three sections:

- **CMP Server Settings**, where you can configure the sensitive CMP parameters.
- **Manual Triggering**, where you can check the current state of CMP.
- **Validation Rules**, where you can find rules regarding the reference number and the pre-shared key.

Note:

When an entity certificate is changed, the browser may fail to validate the TLS certificate. In that case, CU WebEM cannot set up a new HTTPS connection, which may result in connection termination and CU WebEM becoming inoperative. Refresh the web page and manually accept the new certificate to solve this issue.

CMP Server Settings

The CMP parameters are the reference number and the pre-shared key.

You can insert the values manually in the respective window or upload a file. To upload a file, click the **Browse...** button and navigate to the file on your local storage.



Note:

You can still manually edit the uploaded file.

CMP Server Settings

Reference number:	<input type="text" value="1234"/> Browse...
Pre-shared key:	<input type="text" value="1234"/> Browse...
Save	

You can validate the inserted values in the **Validation Rules** section.

To save the configuration, click the **Save** button. The status notification appears at the bottom right corner.



Update CMP Settings

Update CMP settings operation started



Update CMP Settings

Update CMP settings operation finished

After the successful operation, the icon appears in the **CMP Server Settings** section.

CMP Server Settings

Reference number:	<input type="text"/> Browse...
Pre-shared key:	<input type="text"/> Browse...
Save	Successful

Note:

After you've changed the mandatory CMP parameters, you need to trigger the CMP initialization procedure. To trigger the operator certificate initialization procedure, click the `Initialize Certificates` button.

Manual Triggering

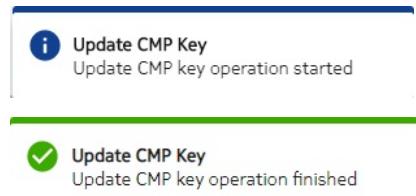
The `Manual Triggering` section provides information of the current state of the certificate management protocol.



It also allows you to update the CMP key and initialize the certificates.

After you trigger the certificate initialization or the CMP key update request in one session, a waiting period starts in all CU WebEM sessions, if there is not already such ongoing waiting period. Within this period you can perform any operation, but some of them, such as the CMP-related operations and a plan activation, will be delayed until the CMP server responds or the 2-minute timeout ends.

To manually trigger the key update request, click the `CMP Key Update` button. The operation status notifications appear in the bottom right corner.



After the successful operation, the icon appears next to the `CMP Key Update` button.

To manually set the initial certificates, click the `Initialize Certificates` button. The operation status notifications appear in the bottom right corner.



After the successful operation, the icon appears next to the `Initialize Certificates` button.

i Note:

After you've changed the mandatory Certificate management Protocol (CMP) parameters, you need to trigger CMP initialization procedure. To trigger the operator certificate initialization procedure, click the `Initialize Certificates` button.

Validation Rules

The section provides restrictions regarding the reference number and the pre-shared key.

Validation Rules

Reference number rules	0 / 2
<ul style="list-style-type: none"> <input checked="" type="radio"/> Maximum 30 characters <input checked="" type="radio"/> Each character should be alphanumeric or one of the following: !, #, %, &, ',', (,), *, +, -, ., =, ?, @, [,], ~, / 	
Pre-shared key rules	0 / 2
<ul style="list-style-type: none"> <input checked="" type="radio"/> Maximum 128 characters <input checked="" type="radio"/> Each character should be alphanumeric or one of the following: !, #, %, &, ',', (,), *, +, -, ., =, ?, @, [,], ~, / 	

i Note:

The validation results become available automatically once you provide the values in the `CMP Server Settings` section.

Validation Rules

Reference number rules	2 / 2
<ul style="list-style-type: none"> <input checked="" type="radio"/> Maximum 30 characters <input checked="" type="radio"/> Each character should be alphanumeric or one of the following: !, #, %, &, ',', (,), *, +, -, ., =, ?, @, [,], ~, / 	
Pre-shared key rules	1 / 2
<ul style="list-style-type: none"> <input checked="" type="radio"/> Maximum 128 characters <input checked="" type="radio"/> Each character should be alphanumeric or one of the following: !, #, %, &, ',', (,), *, +, -, ., =, ?, @, [,], ~, / 	

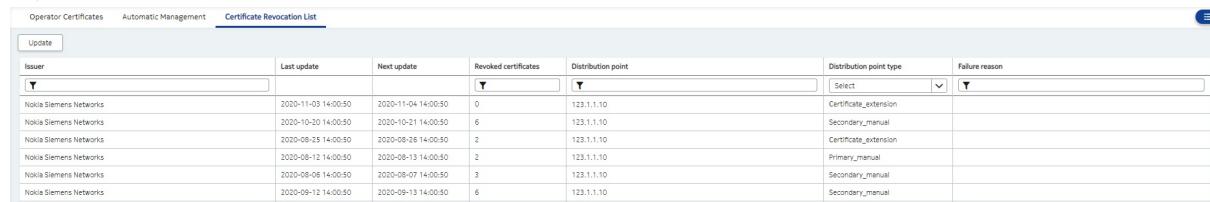
The correct data is marked with the  icon and the ratio of the fulfilled requirements to total requirements is visible on the right-hand side.

8.3 Certificate Revocation List tab

In the **Certificate Revocation List** tab, you can find detailed information regarding all revoked certificates available on the Certificate Management protocol (CMP) server.

To navigate to the **Operator Certificates** tab, go to **Navigation Panel** ► **Certificate Management** ► **Certificate Revocation List**.

Figure 127: Certificate Revocation List tab main view



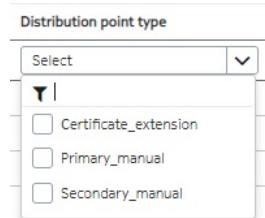
The screenshot shows a table with the following columns: Issuer, Last update, Next update, Revoked certificates, Distribution point, Distribution point type, and Failure reason. The table contains six rows of data, each representing a revoked certificate entry from Nokia Siemens Networks.

Issuer	Last update	Next update	Revoked certificates	Distribution point	Distribution point type	Failure reason
Nokia Siemens Networks	2020-11-03 14:00:50	2020-11-04 14:00:50	0	123.1.1.10	Certificate_extension	
Nokia Siemens Networks	2020-10-20 14:00:50	2020-10-21 14:00:50	6	123.1.1.10	Secondary_manual	
Nokia Siemens Networks	2020-08-28 14:00:50	2020-08-28 14:00:50	2	123.1.1.10	Certificate_extension	
Nokia Siemens Networks	2020-08-12 14:00:50	2020-08-13 14:00:50	2	123.1.1.10	Primary_manual	
Nokia Siemens Networks	2020-08-06 14:00:50	2020-08-07 14:00:50	3	123.1.1.10	Secondary_manual	
Nokia Siemens Networks	2020-09-12 14:00:50	2020-09-13 14:00:50	6	123.1.1.10	Secondary_manual	

The **Certificate Revocation List** tab contains a detailed table with the revoked certificates available on the CMP server. The table provides information, such as:

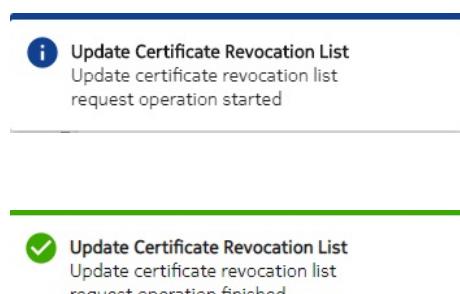
- Issuer
- Date of the last update
- Date of the next update
- Number of the revoked certificates
- Distribution point
- Distribution point type
- Reason of a failure

The  icon indicates that filtering is supported for the column. To search for a value, start typing in the filtering window. You can also sort the revoked certificates by the distribution point type. Click on the drop-down list to choose the distribution point type. For easy access to the needed distribution point type, start typing its name in the filtering window.



To see detailed information of a certificate, select the certificate from the list and click the  icon in the upper right corner. The **Details** panel provides additional information such as: the certificate status, the configuration reference, or the distribution point URI. You can close the panel by clicking the  icon.

To update the certificate revocation list (CRL), click the **Update** button above the table. The operation status notifications appear in the bottom right corner.



After the CRL update operation starts successfully, the icon appears next to the **Update** button.

After the operation is finished, that is, CRLs are downloaded and installed successfully, new CRLs appear in the table.

Click the button to open the **Details** panel for a CRL. The CRL download and installation is successful when the **Status** value is **OK**. If the **Status** value is **Failed**, check the **Update failure reason** field.

*Figure 128: An example of a **Details** panel for a CRL*

Details	
Issuer:	CN = Nokia Siemens Networks, O = Nokia, C = Germany
Next update:	2021-05-14 14:00:50 GMT+00:00
Last update:	2020-05-13 14:00:50 GMT+00:00
Revoked certificates:	9
Configuration reference:	CRL-8
Distribution point type:	Certificate_extension
Distribution point URI:	123.1.1.10
Update failure reason:	-
Status:	OK

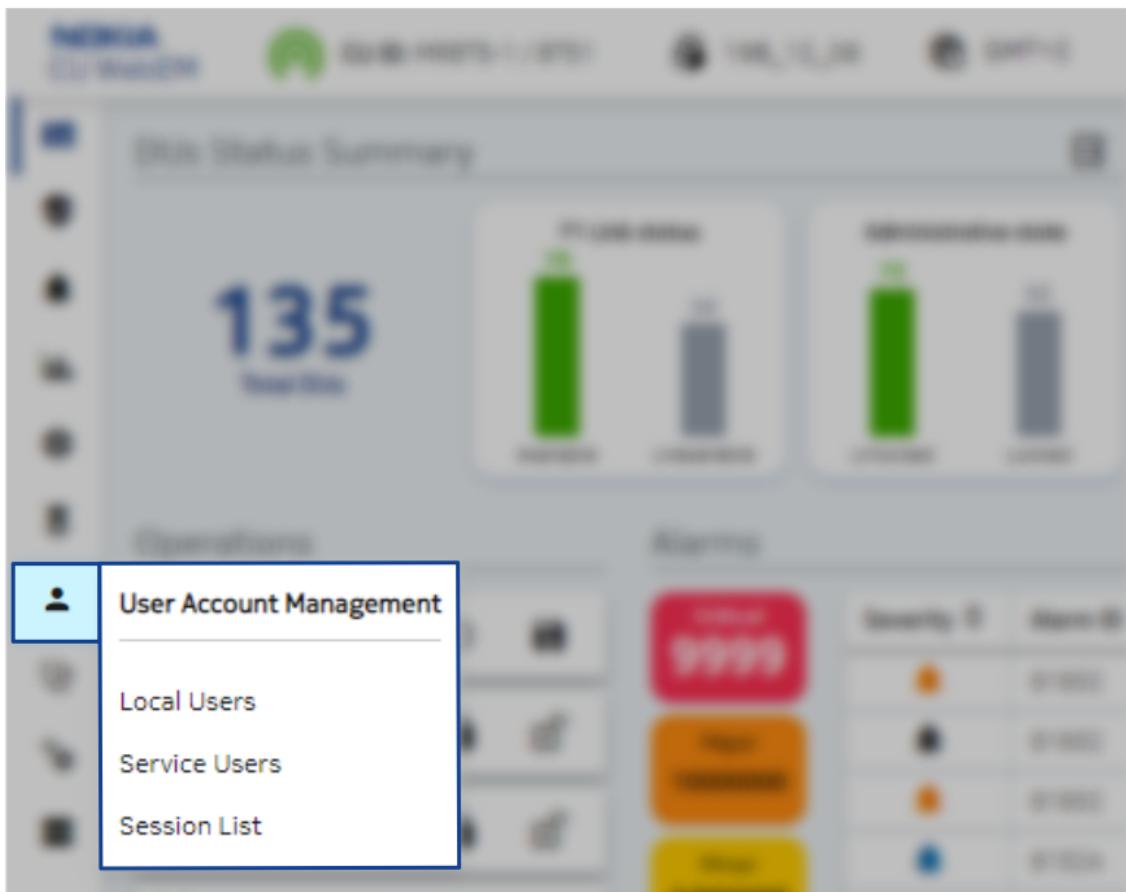
Note:

The CRL download can fail due to configuration validation. If such a failure occurs, check the currently existing CRL addresses.

9. User Account Management view

You can manage the CU WebEM logging credentials for users in the **User Account Management** view.

To navigate to the **User Account Management** tab, click the **User Account Management** icon in the **Navigation Panel**.



User Account Management overview

The **User Account Management** view consists of three tabs:

- **Local Users**, where you can manage the CU WebEM logging credentials of local users.
- **Service Users**, where you can change the CU WebEM password for service users.
- **Session List**, where you can find detailed information of the last 10 users logged in CU WebEM.

You can easily switch between tabs in the top menu.



9.1 Local Users tab

The **Local Users** tab allows you to change the CU WebEM login credentials for local users.

To navigate to the **Local Users** tab, go to **Navigation Panel** ▶ **Use Account Management** ▶ **Local Users**.

Figure 129: Accessing the **Local Users** tab

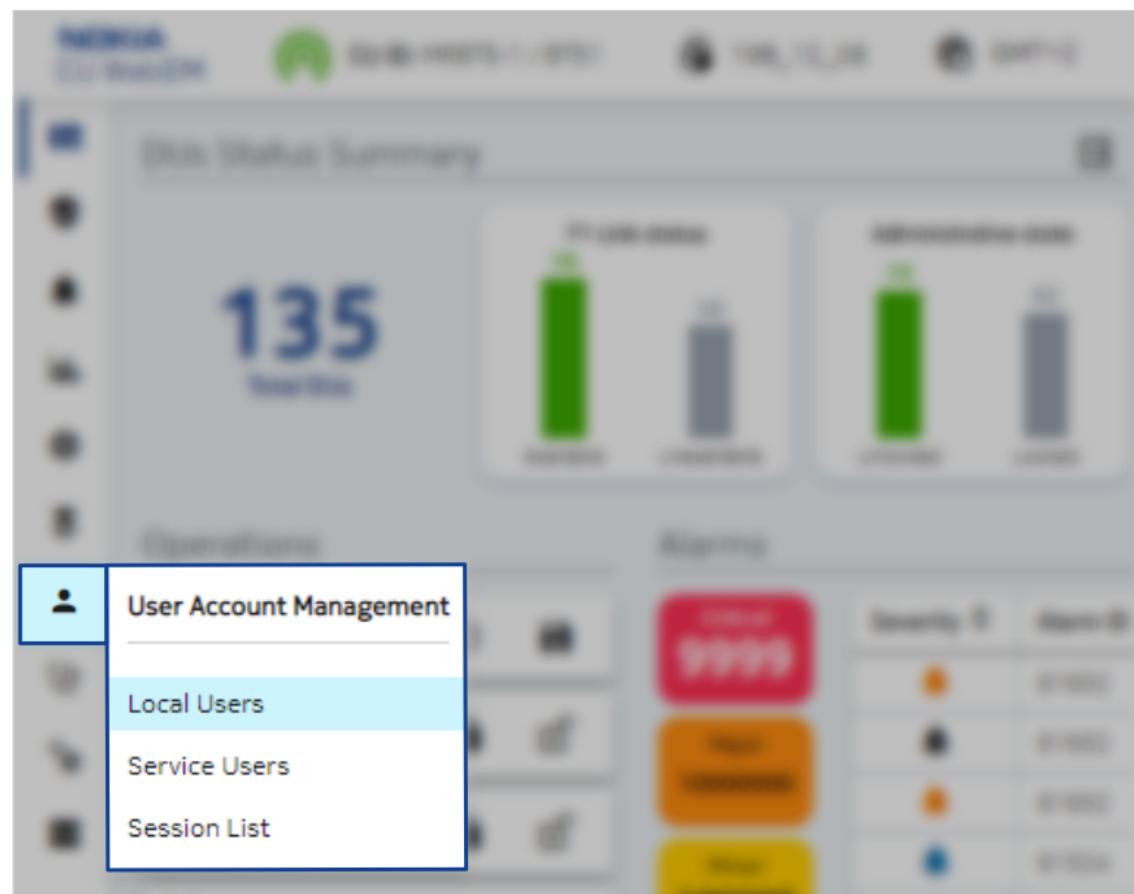


Figure 130: Local Users tab main view

Select to change:

Password

Username: 1

Current password:

New password:

Confirm password:

Save

Password validation rules 0 / 8

- The password should have 8-128 characters
- There must be at least 1 upper case letter (A-Z)
- There must be at least 1 lower case letter (a-z)
- There must be at least 2 numbers (0-9)
- There must be at least 1 special character (e.g. @#\$)
- There should not be two consecutive identical characters
- <>":{}|^` are NOT allowed
- The password can not be the same as username or email

In the **Local Users** tab, you can change the username and the password for CU WebEM.

From the drop-down list, select the item you want to change.

Note:

After selecting the item you want to change, the validation rules appear on the right-hand side.

To change the password, you need to insert the current password. Type the new password in the **New password** and the **Confirm password** windows.

Note:

While typing the new password, the **Password validation rules** section becomes active. The fulfilled rules are marked automatically with the icon.

Password validation rules 6 / 8

- The password should have 8-128 characters
- There must be at least 1 upper case letter (A-Z)
- There must be at least 1 lower case letter (a-z)
- There must be at least 2 numbers (0-9)
- There must be at least 1 special character (e.g. @#\$)
- There should not be two consecutive identical characters
- <>":{}|^` are NOT allowed
- The password can not be the same as username or email

When the new password meets all the **Password validation rules**, and the provided current password is correct, the **Save** button becomes available.

Click the **Save** button. The password is successfully changed and the notification appears in the bottom right corner.

Example: Changing the password for Local Users

The screenshot shows the 'Local Users' tab selected in the navigation bar. Below it, there's a dropdown menu set to 'Password'. The 'Select to change:' section contains fields for 'Username' (Cudo), 'Current password' (four dots), 'New password' (seven dots), and 'Confirm password' (seven dots). To the right, a 'Password validation rules' section lists eight items, each preceded by a green checkmark. A progress indicator at the top right shows '8 / 8'.

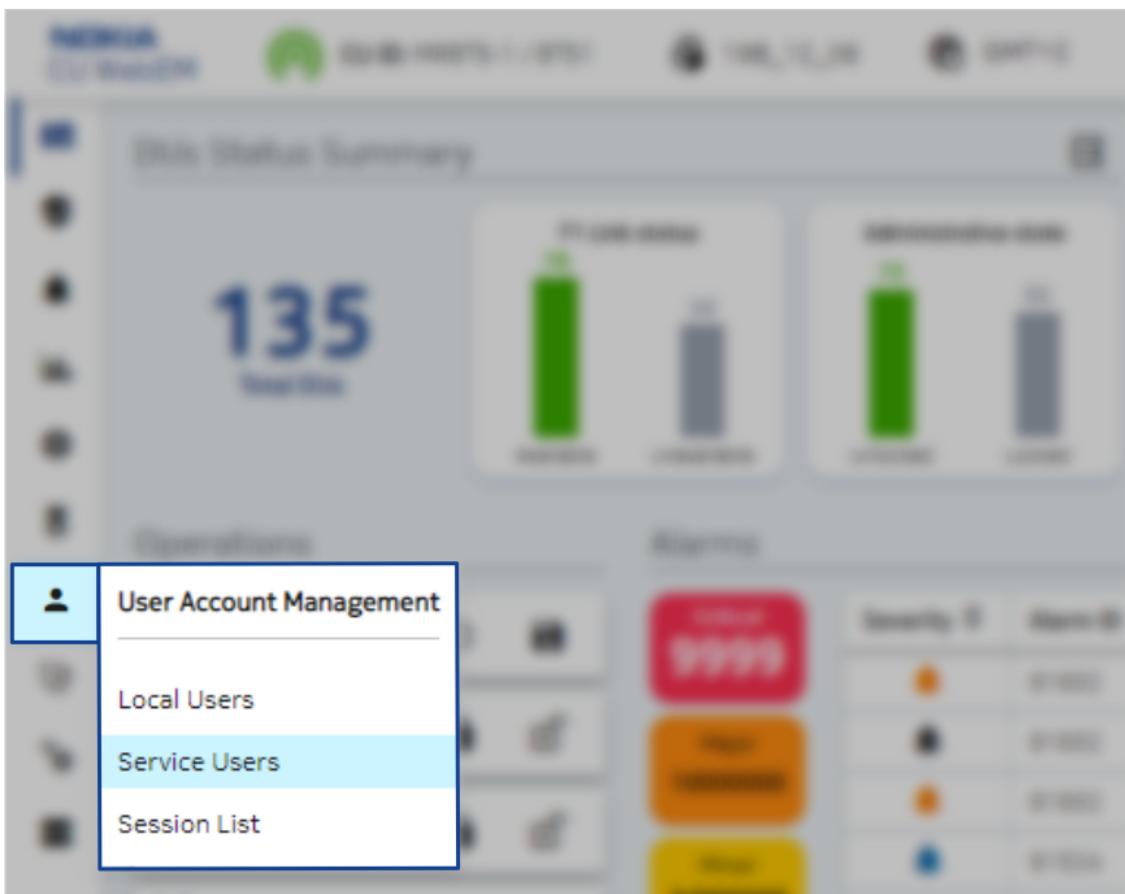
Validation Rule
The password should have 8-128 characters
There must be at least 1 upper case letter (A-Z)
There must be at least 1 lower case letter (a-z)
There must be at least 2 numbers (0-9)
There must be at least 1 special character (e.g. @#\$)
There should not be two consecutive identical characters
<>":{} ^` are NOT allowed
The password can not be the same as username or email

Local Account update operation finished
Successfully changed

9.2 Service Users tab

The **Service Users** tab allows you to change the CU WebEM password for global service users.

To navigate to the **Service Users** tab, go to **Navigation Panel** ▶ **Use Account Management** ▶ **Service Users**.

Figure 131: Accessing the **Service Users** tabFigure 132: **Service Users** tab main view

This screenshot shows the 'Service Users' tab main view. At the top, there is a navigation bar with three tabs: 'Local Users', 'Service Users' (which is active and highlighted in blue), and 'Session List'. Below the tabs, there are four input fields: 'Username' (empty), 'Current password' (empty), 'New password' (empty), and 'Confirm password' (empty). To the right of these fields is a 'Password validation rules' section with a count of '0 / 8'. A list of rules is provided:

- The password should have 8-128 characters
- There must be at least 1 upper case letter (A-Z)
- There must be at least 1 lower case letter (a-z)
- There must be at least 2 numbers (0-9)
- There must be at least 1 special character (e.g. @#\$)
- There should not be two consecutive identical characters
- <>":{}|^~ are NOT allowed
- The password can not be the same as username or email

At the bottom left is a 'Save' button.

In the **Service Users** tab, you can change the password to CU WebEM for global service users.

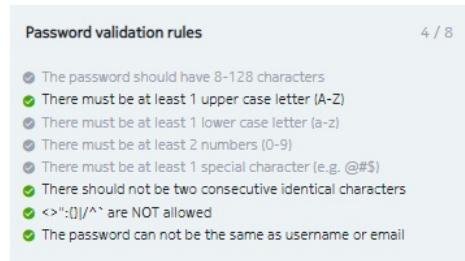
Insert the username, for whom you want to change the password.

To change the password, you need to insert the current password. Type the new password

in the **New password** and the **Confirm password** windows.

Note:

While typing the new password, the **Password validation rules** section becomes active. The fulfilled rules are marked automatically with the icon.



When the new password meets all the **Password validation rules**, and provided username and the current password are correct, the **Save** button becomes available.

Click the **Save** button. The password is successfully changed and the notification appears in the bottom right corner.

Example: Changing the password for Service Users

The screenshot shows a user interface for changing a service user's password. The top navigation bar includes "Local Users", "Service Users" (which is the active tab), and "Session List". Below the tabs are four input fields: "Username" (with placeholder "Username"), "Current password" (with placeholder "****"), "New password" (with placeholder "*****"), and "Confirm password" (with placeholder "*****"). To the right of these fields is a "Password validation rules" section titled "8 / 8". This section lists the same 12 rules as the previous screenshot, with the first 8 marked as fulfilled by green checkmarks.

Service Account update operation finished
Successfully changed

9.3 Session List tab

The **Session List** provides you detailed information on the recent CU WebEM users.

To navigate to the **Session List** tab, go to **Navigation Panel** ▶ **Use Account Management** ▶ **Session List**.

Figure 133: Accessing the **Session List** tab

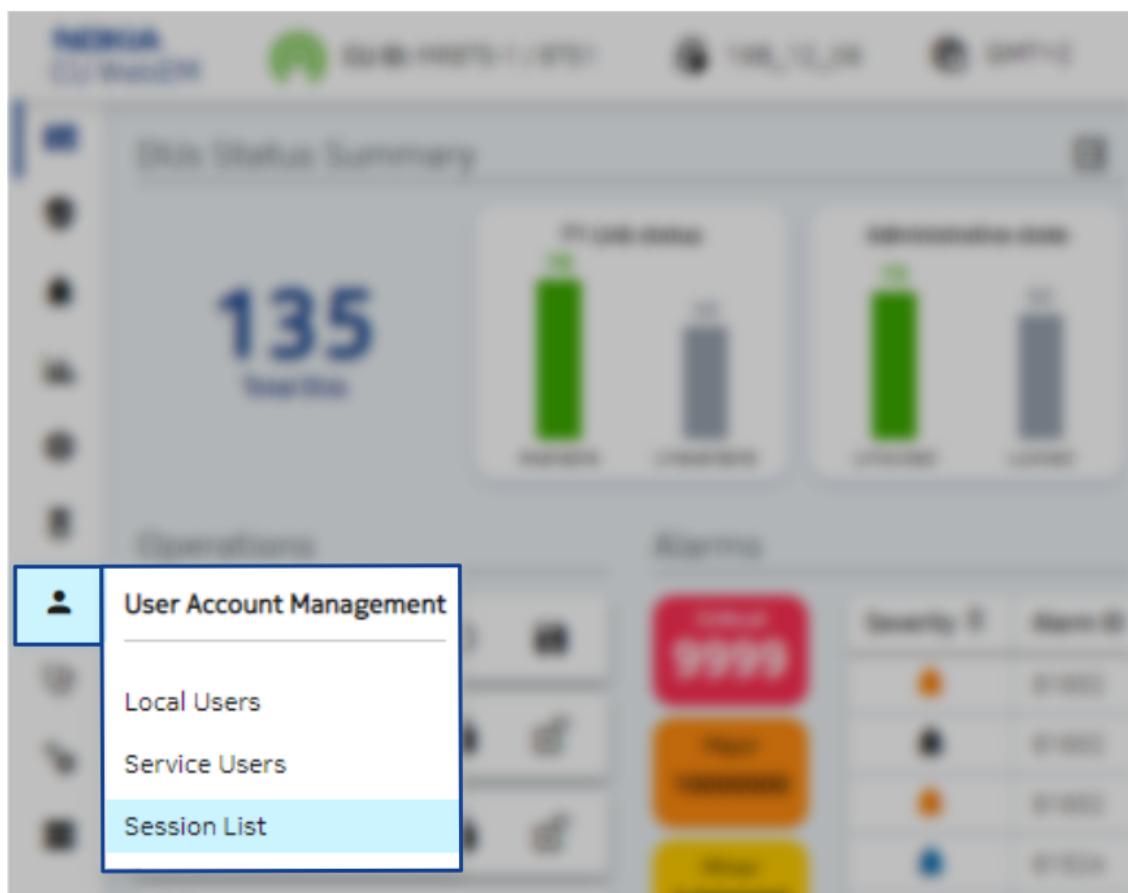


Figure 134: **Session List** tab main view

Session List				
ID	User	IP address	Creation time	Expiration time
1	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
2	Read-only user	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
3	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
4	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
5	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
6	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
7	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
8	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
9	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32
10	Nemuadmin	3ffe:1900:4545:3:200:f8ff:fe21:67cf	2020-08-26 10:43:32	2020-08-26 10:43:32

The **Session List** tab contains detailed data regarding active CU WebEM users. The table displays information, such as:

- Username
- IP address
- Time of the account creation
- Time of the account expiration

 **Note:**

The **Session List** tab shows information on the currently existing CU WebEM sessions.

In case of a vCU reset, CU WebEM sessions existing before the reset will remain until their JWT token expires or they are terminated by the operator. Thus, the session list may temporarily exceed the maximum allowed number of CU WebEM sessions, that is, 10 sessions.

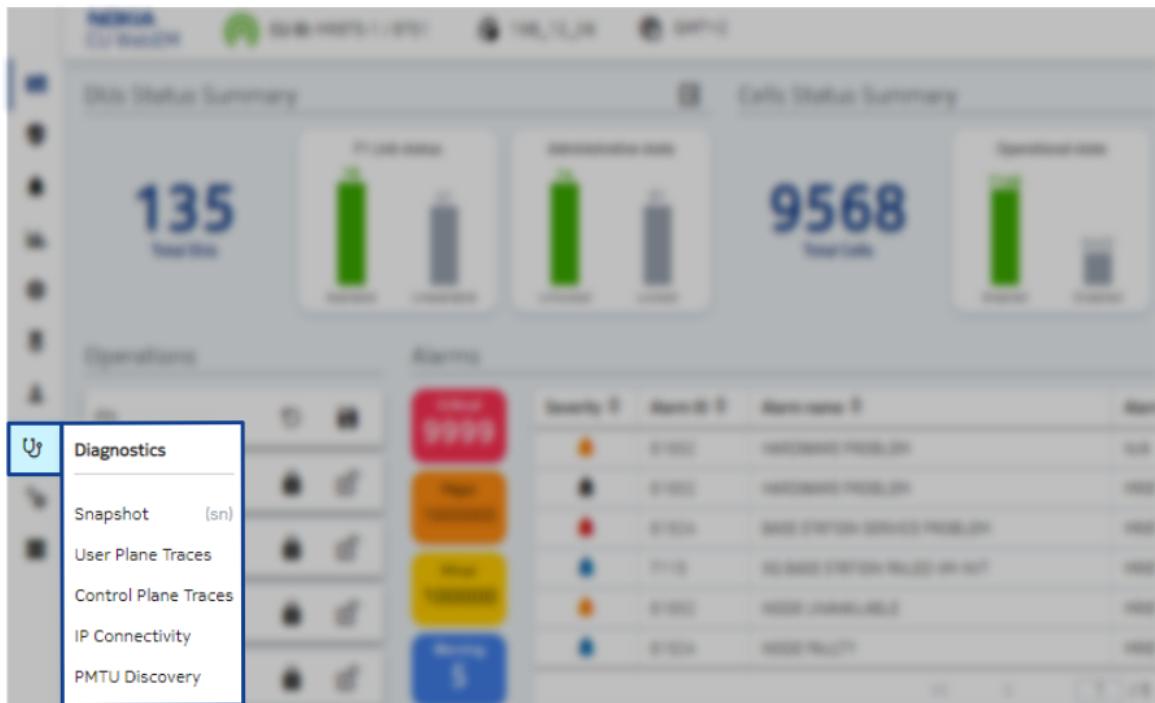
10. Diagnostics view

The CU WebEM provides a set of functionalities for gNB-CU diagnostics and troubleshooting support.

The **Diagnostics** view enables you to:

- collect technical log files in the **Snapshot** tab.
- manage tracing functionalities in **User Plane Traces** tab and **Control Plane Traces** tab.
- carry out IP connectivity test in the **IP Connectivity** tab.
- measure the maximum transmission unit (MTU) value in the **PMTU Discovery** tab.

Figure 135: *Diagnostics* options



10.1 Snapshot tab

The **Snapshot tab allows you to save technical logs from a gNB-CU for troubleshooting purposes.**

Technical log files are used to record events or other important technical information identified during execution of a process or device activity. You can use collected log files for gNB-CU diagnostic purposes.

To navigate to the **Snapshot** tab, go to **Navigation**

Panel > **Diagnostics** > **Snapshot**.

Tip:

For easy access to the **Snapshot** tab, press the **S** key, and then **N**.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

Figure 136: Accessing the **Snapshot** tab

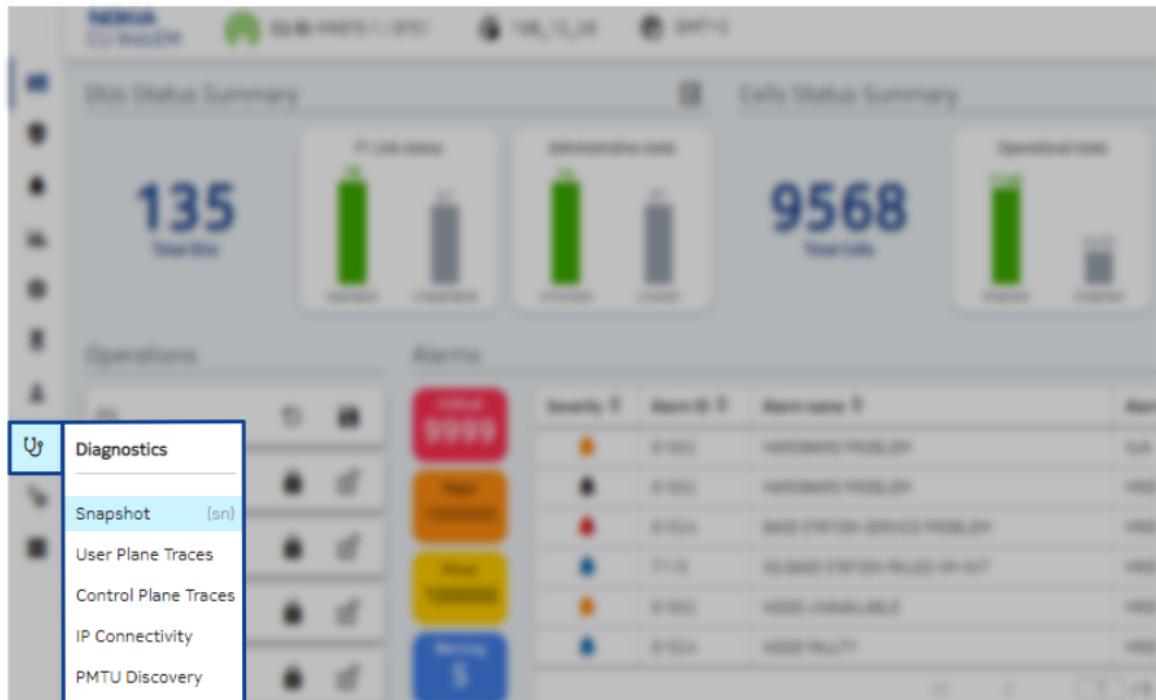
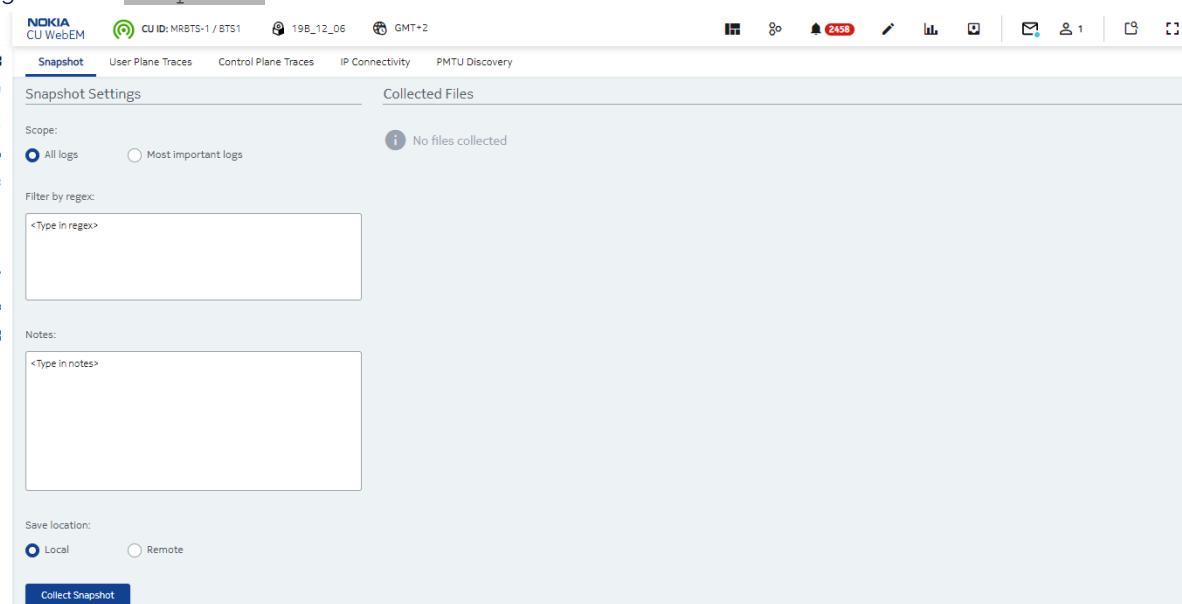


Figure 137: **Snapshot** tab main view

The **Snapshot** tab consist of two sections:

- **Snapshot Settings**, where you can choose options for log files collection.
- **Collected Files**, where you can find the list of collected files.

The **Snapshot settings** panel enables you to:

- set the **Scope** of collected logs files.
- filter log files using the **Filter by regex** field. Use the regular expression (regex) format for a filter expression.
- add your own notes to snapshot metadata files in the **Notes** field.
- set the **Save location** for collected log files.

Once you execute a snapshot operation, the **Collected Files** panel displays names and sizes of saved log files.

For instructions on how to collect a snapshot, see [Collecting gNB-CU log files](#).

10.1.1 Collecting gNB-CU log files

You can save technical log files from a gNB-CU by using a snapshot functionality.

Procedure

- 1 Go to **Navigation Panel** > **Diagnostics** > **Snapshot**.

Tip:

For easy access to the `Snapshot` tab, press the `S` key, and then `N`.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

2 In the `Scope` section, select the scope of the log files.

You can collect either all logs or the most important logs. The most important logs contain essential information for gNB management.

3 [Optional] In the `Filter by regex` field, type a phrase in a regular expression (regex) format for logs filtering.**Note:**

CU WebEM does not support regex validation. In case of a wrongly inputted regex expression, filtering is omitted and all log files are collected.

Step example

A screenshot of a user interface element labeled 'Filter by regex'. Below the label is a text input field containing the text '123'.

Step result

The log files containing the phrase `123` are collected.

4 [Optional] In the `Notes` field, type additional information.**Step result**

The added information is included in snapshot metadata files.

5 In the `Save location` section, select the place to save collected log files.

Choose `Local` for your PC location or `Remote` for remote server.

i Note:

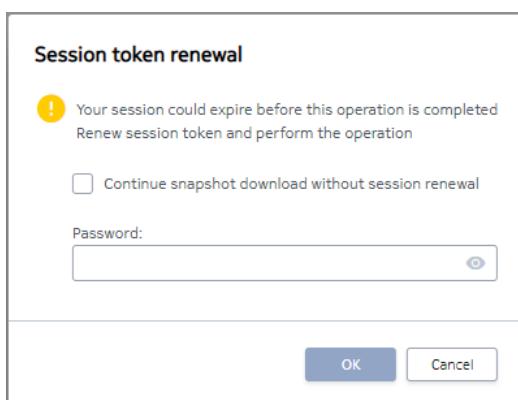
Remember to define the remote server beforehand in the `Parameter Editor`.

To do this, find the `MNL` → `MNLENT` → `TRBLCADM` object and change the `diagSnapDestination` parameter to `netact`, `lss`, or `externalHTTPSServer`.

You also need to define the remote server IP address and port in `lssConfig-lssIPAddress` and `lssConfig-lssPortNo` parameters, respectively.

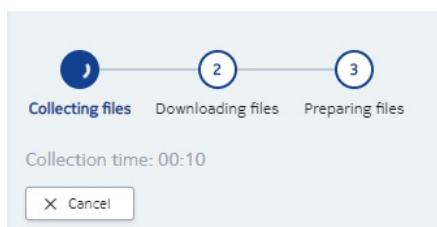
6 Click `Collect snapshot` to start collecting log files.

In case the `Local` save location is marked, the `Session token renewal` window appears. Type your password or mark `Continue snapshot download without session renewal`, and click `OK`.



Result

Log files collection starts. The timer indicates the time of logs collection. While saving locally, a progress bar is also visible.

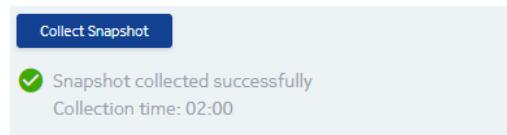


Names and sizes of log files appear in the `Collected Files` section.

Figure 138: Collected Files section

File name	File size (kB)
snapshot-unit-file-41.zip	5012
snapshot-unit-file-42.zip	3840
snapshot-unit-file-43.zip	6223
snapshot-unit-file-44.zip	8441
snapshot-unit-file-45.zip	4123
snapshot-unit-file-46.zip	18
snapshot-unit-file-47.zip	623
snapshot-unit-file-48.zip	6521
snapshot-unit-file-49.zip	2496
snapshot-unit-file-50.zip	3737

The successful operation notification appears after a while in the left bottom corner. Log files are saved in the selected location.

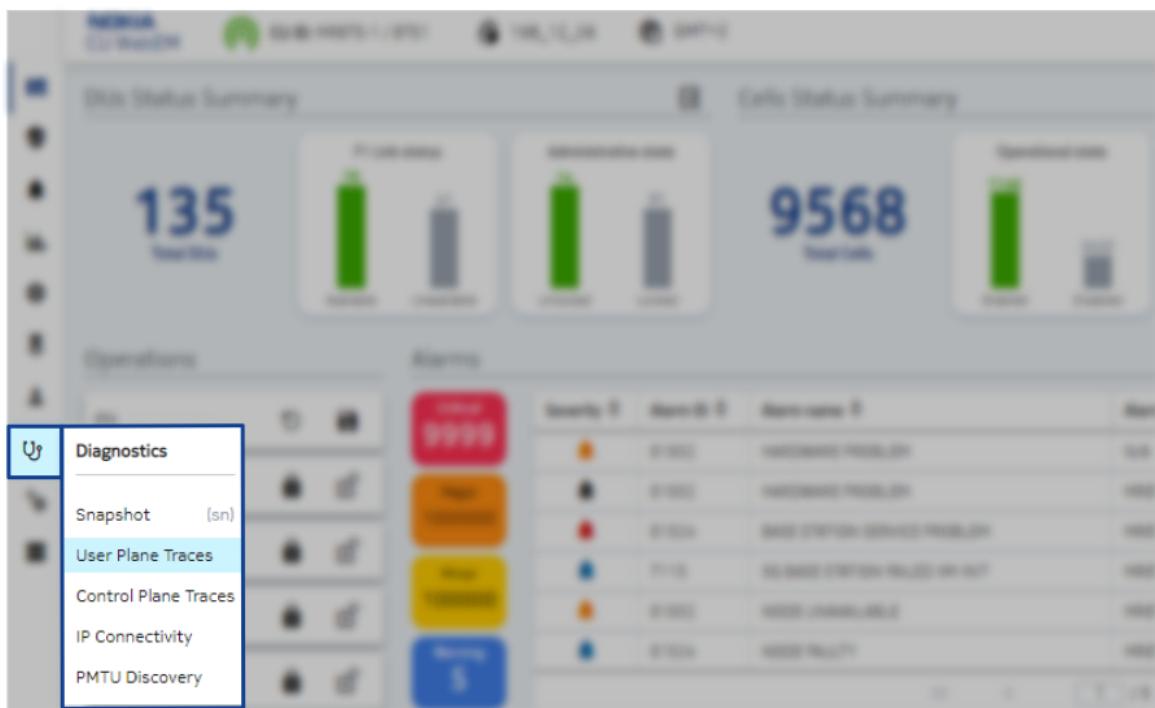


10.2 User Plane Traces tab

The **User Plane Traces** tab allows you to manage user plane trace streaming for diagnostics purposes.

Tracing functionality enables sending tracing log files to the destination server you choose.

To navigate to the **User Plane Traces** tab, go to **Navigation Panel** ▶ **Diagnostics** ▶ **User Plane Traces**.

Figure 139: Accessing the *User Plane Traces* tabFigure 140: *User Plane Traces* tab

This screenshot shows the 'User Plane Traces' tab. At the top, there are tabs for Snapshot, User Plane Traces (which is selected and highlighted in blue), Control Plane Traces, IP Connectivity, and PMTU Discovery. The 'Destination Server Configuration' section contains fields for Destination IP address (123.12.23.45) and Port (3333). The 'User Plane Traces Configuration' section includes a 'Target component' dropdown set to '5G-L2-HI' and a 'Trace type' dropdown with options 'Component' (selected) and 'Sherpa'. The 'User Plane Traces' section displays a table with one row: 'No traces to display'.

The *User Plane Traces* tab consists of three sections:

- *Destination Server Configuration*
- *User Plane Traces Configuration*
- *User Plane Traces*

Destination Server Configuration section

Use this section to set the destination server IP address, port number and differentiated

services code point (DSCP) configuration.

i Note:

If the values are empty or wrong a warning notification displays.

Destination IP address:

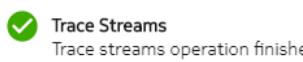
⚠
 No provided value

i Note:

You can't change the configuration of a destination server when any trace is ongoing.

User Plane Traces Configuration section

Use this section to set the target component and to select trace type. You can choose Component or Sherpa trace type. Click the Start User Plane Trace to start tracing. The successful operation notification appears after a while in the bottom right corner.



i Note:

For one target component you can have only one Component and one Sherpa type trace ongoing at the same time.

User Plane Traces section

This section contains ongoing streams of user plane tracing with information about target component, trace type, and status.

Figure 141: User Plane Traces section

User Plane Traces			
Target	Trace type	Status	Action
5G-L2-HI	Sherpa	✓ Ongoing	<input checked="" type="checkbox"/> <input type="button"/>
5G-L2-HI	Component	✓ Ongoing	<input checked="" type="checkbox"/> <input type="button"/>

To stop trace, click the button. To remove trace from User Plane Traces section,

click the  button.

10.3 Control Plane Traces tab

The **Control Plane Traces** tab allows you to set the control plane tracing route configuration.

To navigate to the **Control Plane Traces** tab, go to **Navigation Panel** > **Diagnostics** > **Control Plane Traces**.

Figure 142: Accessing the **Control Plane Traces** tab

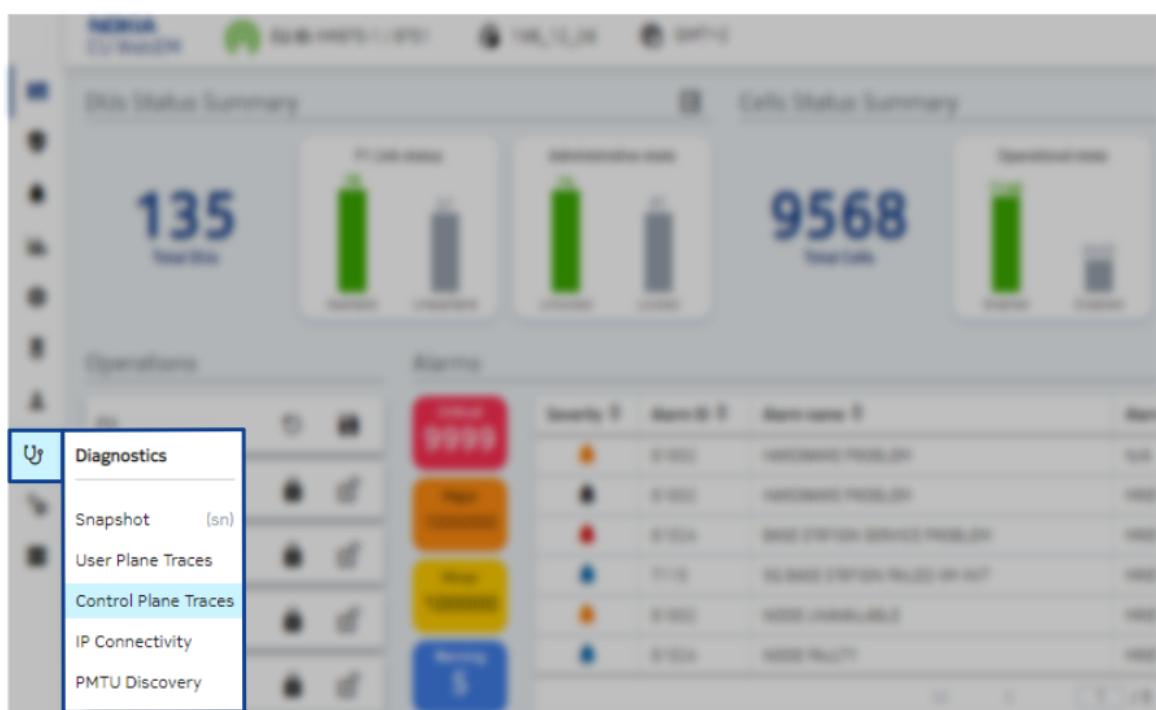
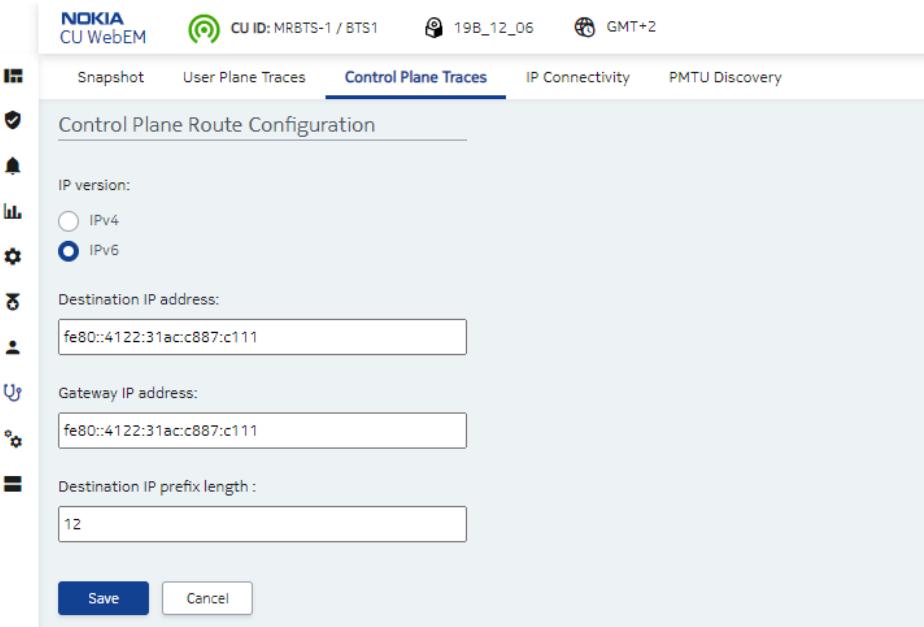


Figure 143: Control Plane Traces tab



Use the **Control Plane Route Configuration** section to set:

- IP version
- Destination IP address
- Gateway IP address
- Destination IP prefix length

Note:

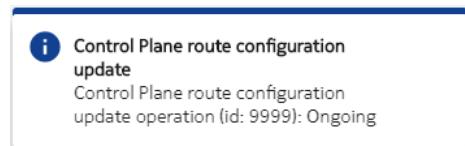
If the values are empty or wrong, a warning notification displays.

Destination IP address:
IPv6 address
IP address is required

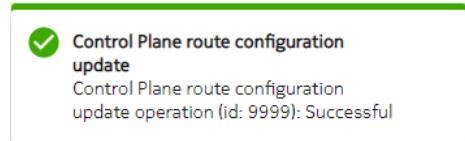
Gateway IP address:
1
IP address is not valid or it doesn't correspond to chosen IP version

Destination IP prefix length:
129
IP prefix length value is out of range [1...128]

To update settings, click the **Save** button. The status notification appears at the bottom right corner.



The successful operation notification appears after a while in the bottom right corner.



10.4 IP Connectivity tab

The `IP Connectivity` tab allows you to carry out IP connectivity tests between gNB and other hosts.

IP connectivity test is based on sending ping message between source and destination hosts.

To navigate to the `IP Connectivity` tab, go to `Navigation Panel` > `Diagnostics` > `IP Connectivity`.

Figure 144: Accessing the `IP Connectivity` tab

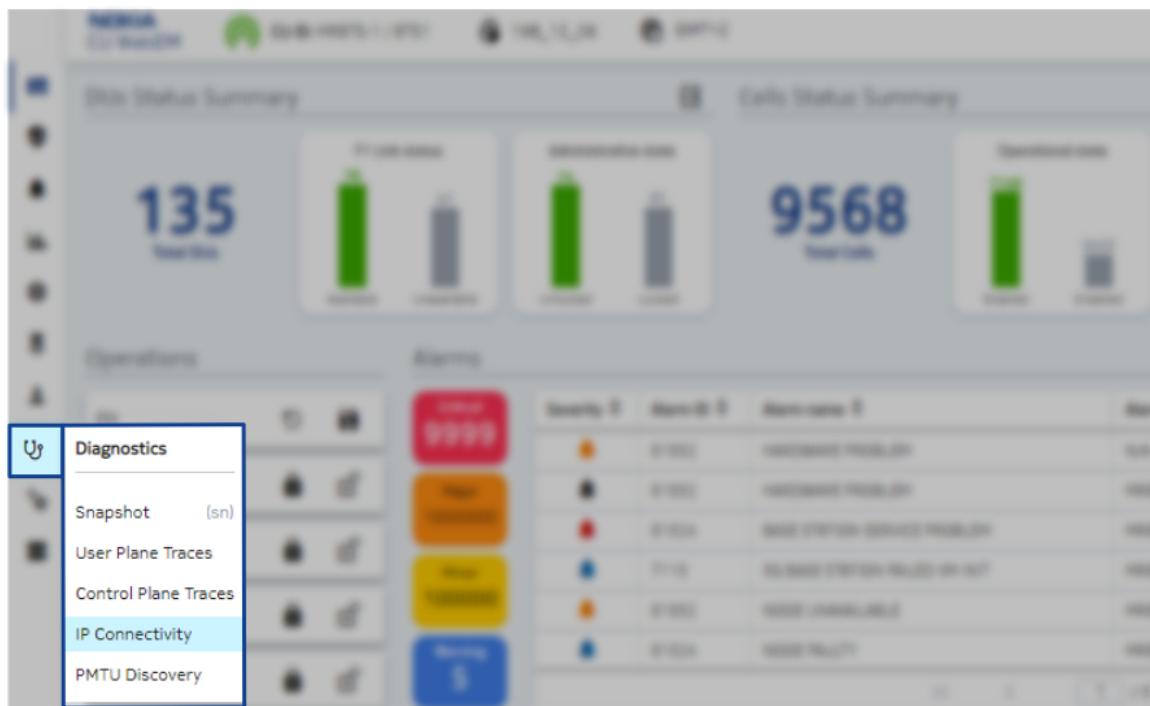
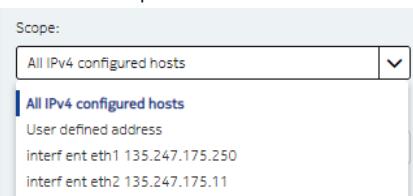


Figure 145: IP Connectivity tab

Host	Address	Test result
interf addr eth1 135.247.174.250	135.247.175.250	✓ Successful
interf addr eth1 135.247.174.250	135.247.175.11	✓ Successful

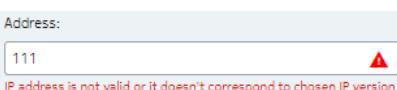
To start an IP connectivity test:

1. Select the IP version.
2. Define the **Scope** of the test, that is the destination for the ping message. You can select from the options available in the drop-down list.

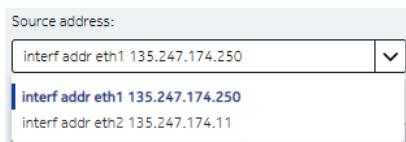


3. For the **User defined address** type the IP address in the **Address** field.

If the user defined IP address is not valid, a warning notification displays.



4. Define the **Source address**. You can select from the options available in the drop-down list.



5. Set the **Payload size**.
6. Set the differentiated services code point (**DSCP**) value.

Note:

If the values are empty or wrong, a warning notification displays.

Payload size: [0...1978] bytes	DSCP: 65
Payload size is required	Value out of range [0...63]

7. Click **Start**.

The test results appear at the bottom of the **IP connectivity** tab.

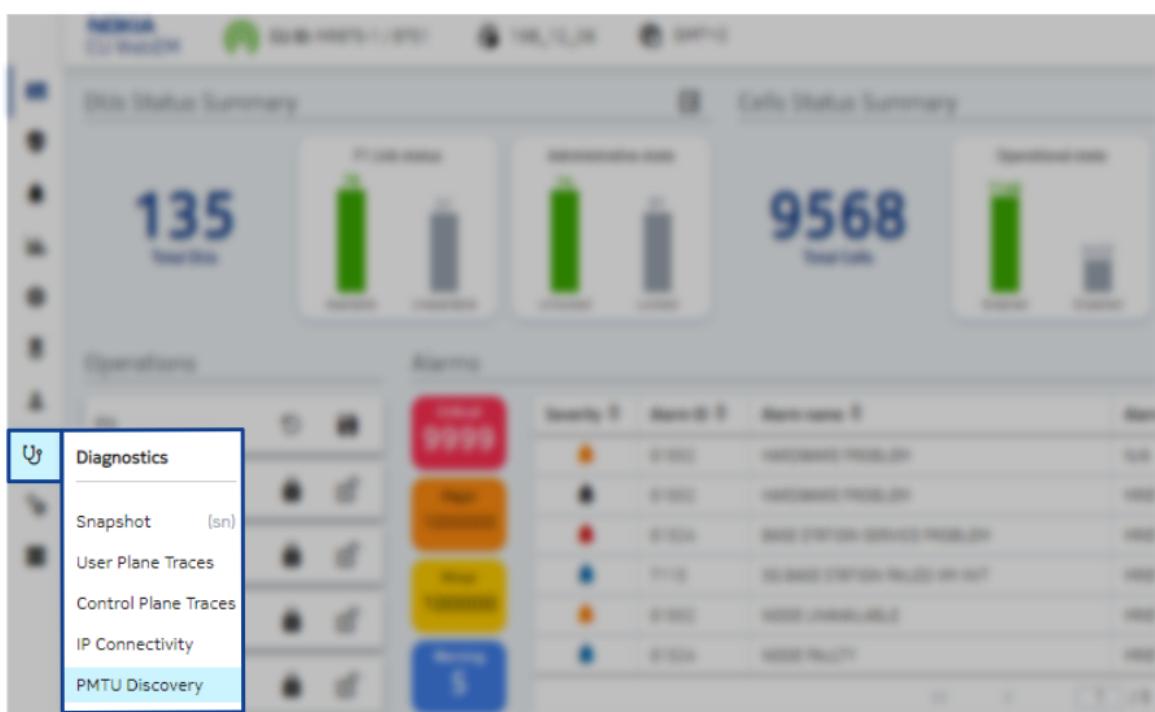
Figure 146: Exemple results of IP connectivity test

Host	Address	Test result
interf addr eth1 135.247.174.250	135.247.175.250	✓ Successful
interf addr eth1 135.247.174.250	135.247.175.11	✓ Successful

10.5 PMTU Discovery tab

The **PMTU Discovery** tab allows you to check the maximum transmission unit (MTU) value.

To navigate to the **PMTU Discovery** tab, go to **Navigation Panel** ▶ **Diagnostics** ▶ **PMTU Discovery**.

Figure 147: Accessing the *PMTU Discovery* tabFigure 148: *PMTU Discovery* tab

This screenshot shows the 'PMTU Discovery' configuration page. At the top, it displays the NOKIA CU WebEM logo, CU ID: MRBTS-1 / BTS1, time 19B_12_06, and GMT+2. Below this is a navigation bar with tabs: Snapshot, User Plane Traces, Control Plane Traces, IP Connectivity, and PMTU Discovery (which is highlighted). The main area contains several input fields and a status table:

- IP version:** A radio button group where IPv4 is selected (marked with a blue circle).
- Source IP address:** A dropdown menu showing "interf addr eth1 135.247.174.250".
- Destination IP address:** An empty input field.
- DSCP:** An input field containing the value "10".
- Status:** A table with three rows: "Status" (No data), "Path maximum transmission unit" (empty), and "Local maximum transmission unit" (empty).
- Information:** A note: "Table will be populated after PMTU discovery is launched".
- Start:** A blue "Start" button at the bottom.

To check the MTU value:

1. Select the IP version.
2. Define the **Source IP address**.
3. Define the **Destination IP address**.

4. Set the differentiated services code point (**DSCP**).

i Note:

If the values are empty or wrong, a warning notification displays.

Destination IP address:

interf addr eth1 135.247.174.250



IP address is not valid or it doesn't correspond to chosen IP version

DSCP:

[0...63]



DSCP value is required

5. Click the **Start** button.

The MTU values appear at the bottom of **IP connectivity** tab.

Status	No data
Path maximum transmission unit	
Local maximum transmission unit	

i Table will be populated after PMTU discovery is launched

11. Settings view

The **Settings** view allows you to customize CU WebEM layout. It enables you to save and upload layout settings, set the default view, and manage the keyboard shortcut keys functionality.

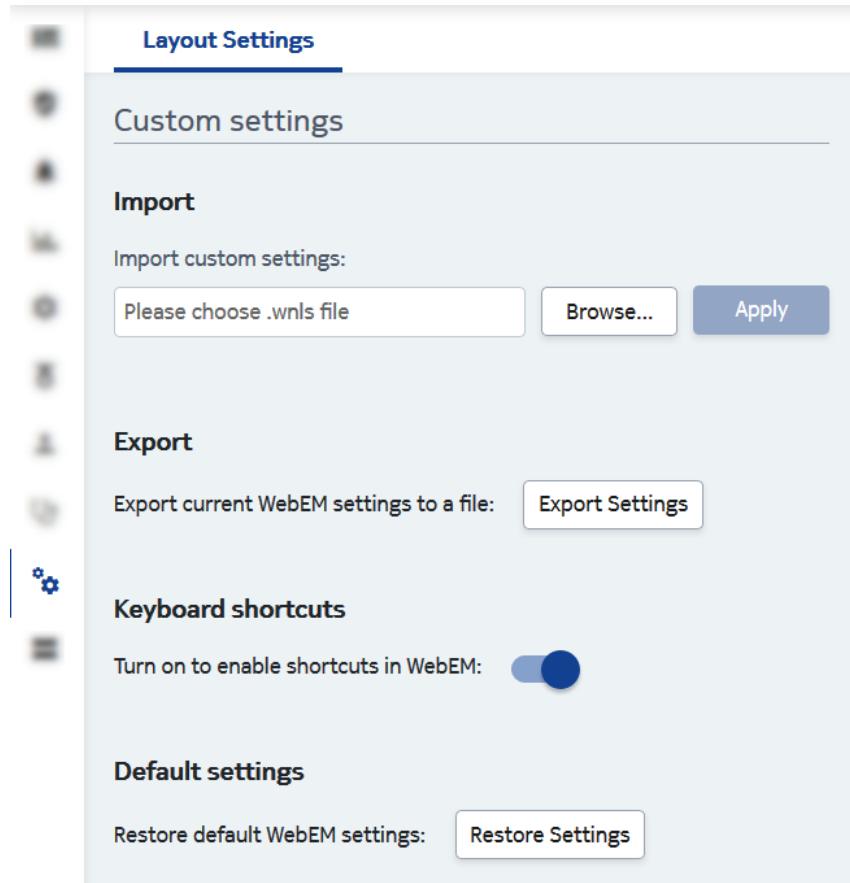
Layout Settings

To manage CU WebEM layout setting data, go to [Navigation](#)

[Panel](#) ▶ [Settings](#) ▶ [Layout Settings](#). This functionality allows you to:

- [save a current CU WebEM customization settings to a file](#).
- [loading saved CU WebEM customization settings from a file](#).
- [restore default CU WebEM customization settings](#).
- [turn on or turn off keyboard shortcuts functionality](#).

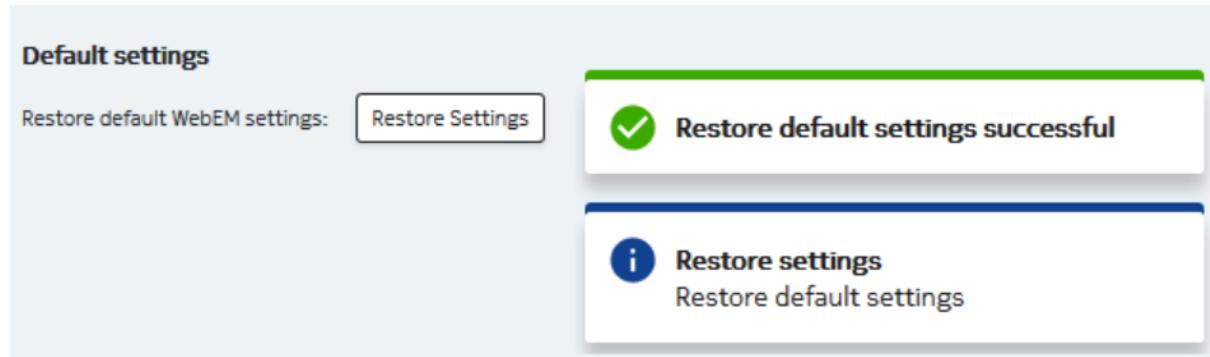
Figure 149: *Layout Settings* tab main view



Restoring default CU WebEM customization settings

You can restore default CU WebEM view settings from previously customized view by clicking the **Restore Settings** button in the **Default settings** section. This action triggers immediately and a toast notification about successful status displays automatically.

Figure 150: Restoring default CU WebEM customization settings

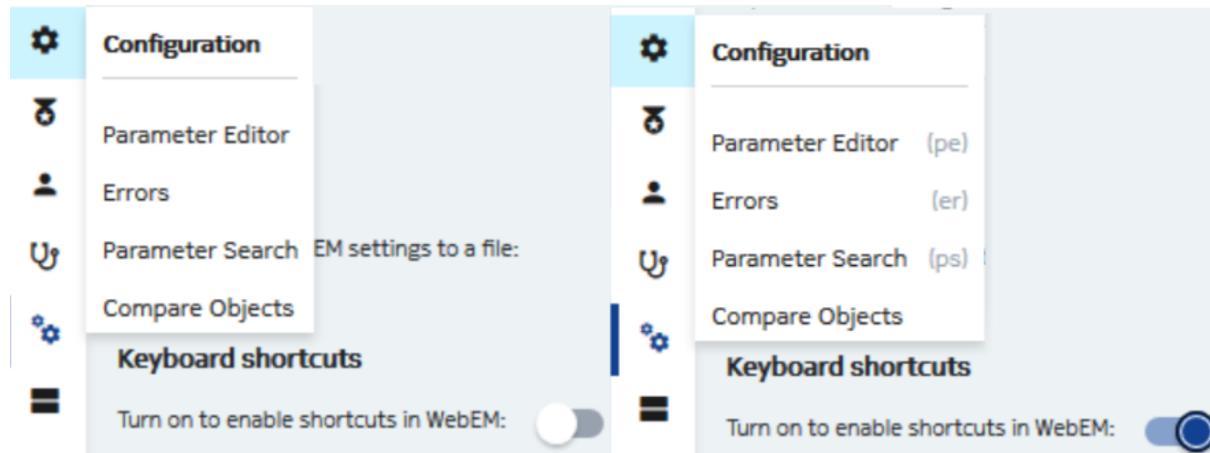


Turning on or turning off keyboard shortcuts functionality

To enable keyboard shortcuts, toggle the button in **Layout Settings** ▶ **Keyboard shortcuts** section to the right side.

To disable keyboard shortcuts, toggle the button in **Layout Settings** ▶ **Keyboard shortcuts** section to the left side.

Figure 151: Keyboard shortcuts section toggle button



11.1 Exporting customization settings file

You can save current CU WebEM view customization settings to a file and load it anytime

to display preferred layout settings.

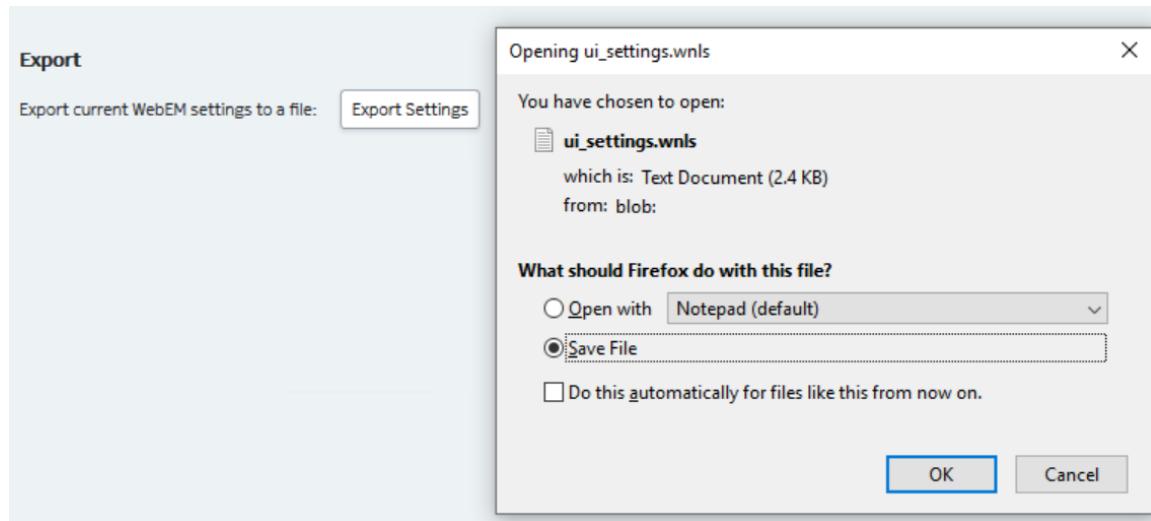
Before you start

Customize selected CU WebEM views to display information in a preferred layout.

Procedure

1 Go to Navigation Panel > Settings > Layout Settings.

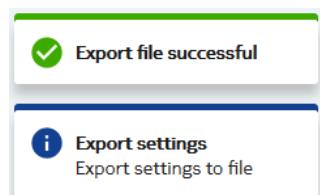
2 In the Export section, click Export Settings.



3 Choose the target location to save the file.

Step result

The toast notifications with `Export settings` and `Export file successful` statuses are displayed in the bottom right corner. CU WebEM customization settings file is saved on the workstation.



Result

The saved CU WebEM customization view file contains customization settings related to:

- `Dashboard` widget positioning
- `Counters` selected and displayed on a chart widget
- `Cells Status` widget customization settings
- `Cells Mapping` widget customization settings
- `DUs Status` widget customization settings
- `X2 Links Status` widget customization settings

11.2 Importing customization settings file

You can load a file with previously exported CU WebEM view customization settings to display preferred layout settings.

Before you start

The CU WebEM view customization settings file has been imported and saved on the workstation. For instructions, see [Exporting customization settings file](#).

Procedure

1 Go to `Navigation Panel` > `Settings` > `Layout Settings`.

2 In the `Import` section, click `Browse...`.



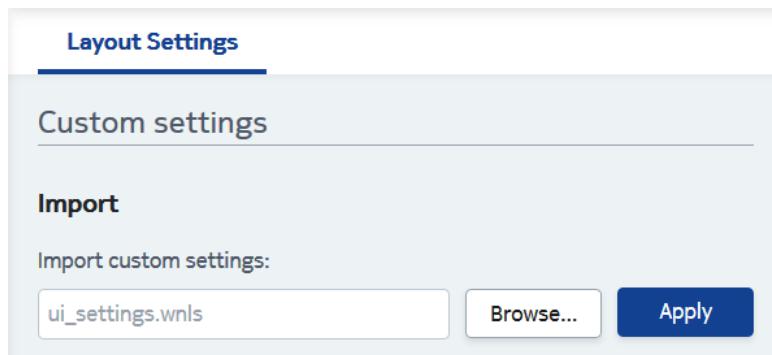
Tip:

To load the desired CU WebEM customization file easily, you can drag-and-drop the previously saved file to `Layout Settings Working Panel`.

3 Select the desired CU WebEM customization settings file from the workstation.

Step result

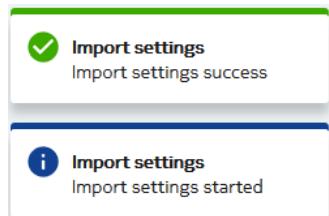
The selected filename is displayed in the text box and the `Apply` button is activated.



4 Click **Apply** to upload the file.

Step result

The toast notifications with `Import settings started` and `Import settings success` statuses are displayed in the bottom right corner. The customization settings file is uploaded to CU WebEM and the customized view is displayed.



12. Split view

CU WebEM introduces the `Split view` for easier and more convenient usage of the application.

To navigate to the `Split view`, go to `Navigation Panel` ➤ `Split View`.



Tip:

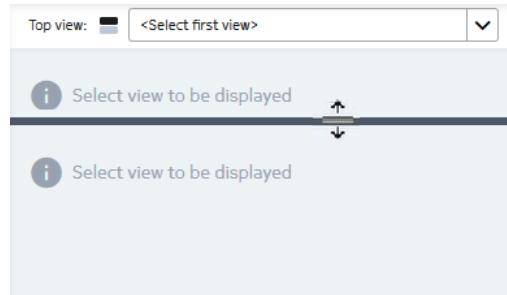
For easy access to the `Split View`, press the `S` key, and then `W`.

For shortcuts description, see [CU WebEM keyboard shortcuts](#).

The `Split View` functionality allows you to divide the screen into two separate horizontal working areas and display selected views at the same time. To choose two different views in CU WebEM, see [Selecting the Split View](#). Each of the displayed views contains its own `Working Panel`. Some views can also include their own `Navigation Panel` or `Details Panel`.

The `Split view` enables changing the vertical size of the views by dragging the line between upper and lower views.

Figure 152: Customizing the `Split View`



When content of the views in the `Spit View` exceeds the vertical view size, you can display the whole content view by using the scrollbar.

Click the `Switch Views` button to exchange the positions of the selected views.

12.1 Selecting the Split View

You can display two `Working Panels` with different views to facilitate data analysis and gNB-CU management.

Procedure

- 1 Go to **Navigation Panel** > **Split View**.



Tip:

For easy access to the **Split View**, press the **S** key, and then **W**.

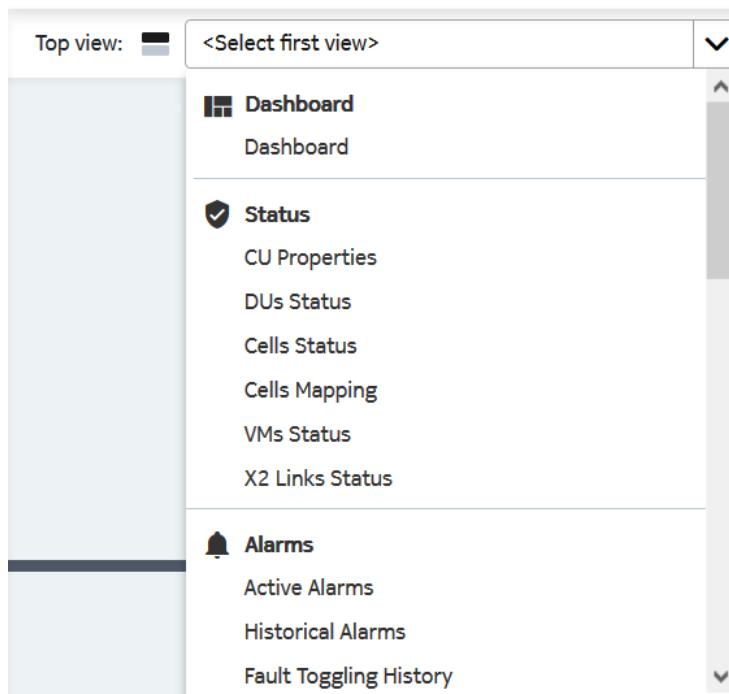
- 2 Select the first view from the **Top view** drop-down list.



Note:

It is possible to select only one of the **Configuration** views in the **Split view**. If you choose **Parameter Editor**, **Errors**, **Parameter Search**, or **Compare Objects** in the **Top view**, you cannot select another view from this group in the **Bottom view**.

Step example

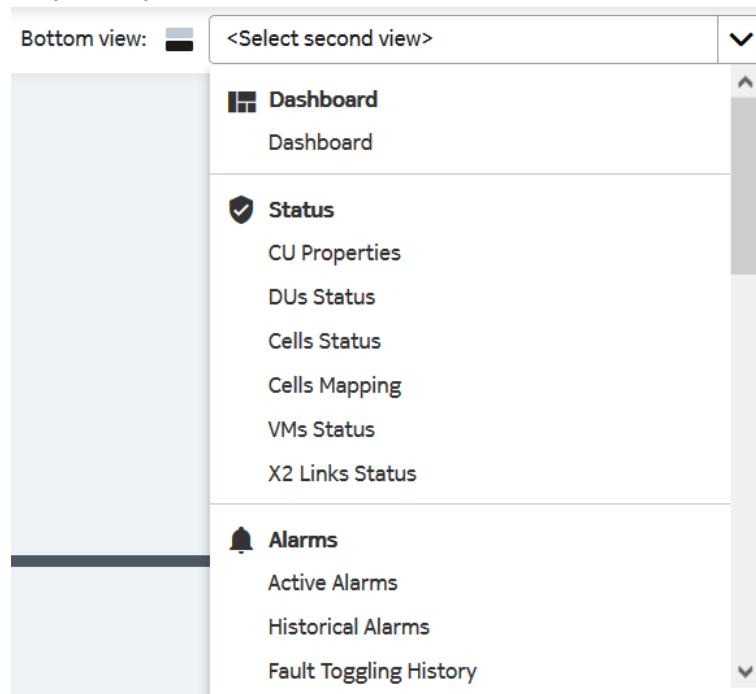


Step result

The selected view is displayed in the upper **Working Panel** view.

- 3 Select the second view from the **Bottom view** drop-down list.

Step example



Step result

The selected view is displayed in the lower Working Panel view.