



Nokia WiFi Beacon

Beacon 3.1 Product Guide

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About this document

Purpose

This documentation set provides information about safety, features and functionality, ordering, hardware installation and maintenance, and software installation procedures for the current release.

Intended audience

This documentation set is intended for planners, administrators, operators, and maintenance personnel involved in installing, upgrading, or maintaining the WiFi Beacon.

The reader must be familiar with general telecommunications principles.

Safety information

For your safety, this document contains safety statements. Safety statements are given at points where risks of damage to personnel, equipment, and operation may exist. Failure to follow the directions in a safety statement may result in serious consequences.

Safety Information Examples



DANGER

Hazard

Danger indicates that the described activity or situation may result in serious personal injury or death; for example, high voltage or electric shock hazards.



WARNING

Equipment Damage

Warning indicates that the described activity or situation may, or will, cause equipment damage or serious performance problems.



CAUTION

Service Disruption

Caution indicates that the described activity or situation may, or will, cause service interruption.

Note: A note provides information that is, or may be, of special interest.

Acronyms and initialisms

The expansions and optional descriptions of most acronyms and initialisms appear in the glossary

Nokia quality processes

Nokia WiFi Beacon's manufacturing, testing, and inspecting practices are in compliance with TL 9000 requirements. These requirements are documented in the Fixed Networks Quality Manual 3FQ-30146-6000-QRZZA.

The quality practices adequately ensure that technical requirements and customer end-point requirements are met. The customer or its representatives may be allowed to perform on-site quality surveillance audits, as agreed upon during contract negotiations.

Documents

Documents are available using ALED or OLCS.

To download a ZIP file package of the customer documentation

- 1 _____
Navigate to <http://customer.nokia.com/s/> and enter your user name and password. If you are a new user and require access to this service, please contact your Nokia sales representative.
- 2 _____
Select **Products**.
- 3 _____
Type your product name in the **Find and select a product** field and click the search icon.
Select a product.
- 4 _____
Click **Downloads: ALED** to go to the Electronic Delivery: Downloads page.
- 5 _____
Select **Documentation** from the list.
- 6 _____
Select a release from the list.
- 7 _____
Follow the on-screen directions to download the file.

END OF STEPS _____

To access individual documents

Individual PDFs of customer documents are also accessible through the Nokia Support Portal website.

1 _____

 Navigate to <http://customer.nokia.com/s/> and enter your user name and password. If you are a new user and require access to this service, please contact your Nokia sales representative.

2 _____

 Select **Products**.

3 _____

 Type your product name in the **Find and select a product** field and click the search icon.
 Select a product.

4 _____

 Click **Documentation: Doc Center** to go to the product page in the Doc Center.

5 _____

 Select a release from the **Release** list and click **SEARCH**.

6 _____

 Click on the PDF icon to open or save the file.

END OF STEPS _____

Procedures with options or substeps

When there are options in a procedure, they are identified by letters. When there are required substeps in a procedure, they are identified by roman numerals.

Example of options in a procedure

At **Step 1**, you can choose option a or b. At **Step 2**, you must do what the step indicates.

1 _____

 This step offers two options. You must choose one of the following:

 a. This is one option.

 b. This is another option.

2 _____

 You must perform this step.

END OF STEPS _____

Example of required substeps in a procedure

At **Step 1**, you must perform a series of substeps within a step. At **Step 2**, you must do what the step indicates.

1 _____

This step has a series of substeps that you must perform to complete the step. You must perform the following substeps:

- a. This is the first substep.
- b. This is the second substep.
- c. This is the third substep.

2 _____

You must perform this step.

END OF STEPS _____

Multiple PDF document search

You can use Adobe Reader Release 6.0 and later to search multiple PDF files for a common term. Adobe Reader displays the results in a single display panel. The results are grouped by PDF file, and you can expand the entry for each file.

Note: The PDF files in which you search must be in the same folder.

To search multiple PDF files for a common term

1 _____

Open Adobe Acrobat Reader.

2 _____

Select **Edit→Search** from the Acrobat Reader main menu. The Search PDF panel displays.

3 _____

Enter the search criteria.

4 _____

Select **All PDF Documents In...**

5 _____

Select the folder in which to search using the list.

6 _____

Click **Search**.

Acrobat Reader displays the search results. You can expand the entries for each document by clicking on the + symbol.

END OF STEPS _____

Technical support

For details, refer to the [Nokia Support portal](https://customer.nokia.com/support/s/) (<https://customer.nokia.com/support/s/>).

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1 What's new

1.1 Overview

1.1.1 Purpose

This chapter provides the details of features and other documentation changes updated in the product guide in each release.

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1.2 What's new in BBD Release 24.04b

[Table 1-1, "What's new in BBD Release 24.04b" \(p. 19\)](#) lists the new features and enhancements added to the Beacon 3.1 product guide in Issue 7.

Table 1-1 What's new in BBD Release 24.04b

Feature/enhancement	Description	See
Documentation changes		
Part numbers and identification.	Updated part numbers identification.	Table 5-1, "Beacon 3.1 identification" (p. 39)
Power supply ordering information	Updated power supply ordering information.	Table 5-2, "Beacon 3.1 power supply ordering information" (p. 40)

1.3 What's new in BBD Release 24.04

[Table 1-2, "What's new in BBD Release 24.04" \(p. 20\)](#) lists the new features and enhancements added to the Beacon 3.1 product guide in Issue 6.

Table 1-2 What's new in BBD Release 24.04

Feature/enhancement	Description	See
Documentation changes		
Part numbers and identification.	Updated part numbers identification.	Table 5-1, "Beacon 3.1 identification" (p. 39)
Power supply ordering information	Updated power supply ordering information.	Table 5-2, "Beacon 3.1 power supply ordering information" (p. 40)
Optimizing WiFi Network	Added a new section on optimizing WiFi network.	7.21 "Optimizing WiFi Network" (p. 106)
Combined software configuration package	Added a new section for configuring Beacon by a combined customized software package.	Chapter 8, "Configure Beacon using a combined customized software package"

1.4 What's new in BBD Release 24.03

[Table 1-3, "What's new in BBD Release 24.03" \(p. 20\)](#) lists the new features and enhancements added to the Beacon 3.1 product guide in Issue 5.

Table 1-3 What's new in BBD Release 24.03

Feature/enhancement	Description	See
Documentation changes		
Part numbers and identification.	Updated part numbers identification.	Table 5-1, "Beacon 3.1 identification" (p. 39)
Power supply ordering information	Updated power supply ordering information	Table 5-2, "Beacon 3.1 power supply ordering information" (p. 40)
WiFi Encryption Mode	Updated the parameter details of Encryption Mode.	7.18 "Configuring WiFi Network" (p. 95)
Channel bandwidth behavior	Added Channel Selection parameter.	Table 7-16, "Wireless 2.4 GHz parameters" (p. 107) Table 7-17, "Wireless 5 GHz parameters" (p. 109)
WebGUI improvements	Updated WAN Statistics.	7.7 "Viewing WAN Statistics" (p. 75)
Speed test	Updated Speed Test configuration.	7.49 "Viewing Speed Test" (p. 149)

1.5 What's new in BBD Release 24.02

[Table 1-4, "What's new in BBD Release 24.02" \(p. 21\)](#) lists the new features and enhancements added to the Beacon 3.1 product guide in Issue 4.

Table 1-4 What's new in BBD Release 24.02

Feature/enhancement	Description	See
Documentation changes		
Configuring Wireless 5 GHz	Added 'Mode' parameter in the Wireless 5 GHz parameters	Table 7-17, "Wireless 5 GHz parameters" (p. 109)
Configuring Access Control	Added a note in the Access control parameters.	Table 7-25, "Access control parameters" (p. 130)
Backup and restore file encryption	Updated the procedure for restoring a backup from the configuration file.	7.43 "Restoring the Configuration" (p. 139)

1.6 What's new in BBD Release 24.01a

[Table 1-5, "What's new in BBD Release 24.01a" \(p. 21\)](#) lists the new features and enhancements added to the Beacon 3.1 product guide in Issue 3.

Table 1-5 What's new in BBD Release 24.01a

Feature/enhancement	Description	See
Documentation changes		
Part numbers and identification	Updated part numbers identification	Table 5-1, "Beacon 3.1 identification" (p. 39)
Power supply ordering information	Updated power supply ordering information	Table 5-2, "Beacon 3.1 power supply ordering information" (p. 40)

1.7 What's new in BBD Release 24.01

[Table 1-6, "What's new in BBD Release 24.01" \(p. 21\)](#) lists the new features and enhancements added to the Beacon 3.1 product guide in Issue 2.

Table 1-6 What's new in BBD Release 24.01

Feature/enhancement	Description	See
Documentation changes		
WebGUI security improvements	Updated the web-based GUI login page.	7.2 "Logging in to the web-based GUI" (p. 62)
Security warning	Added a note on security warning	7.18 "Configuring WiFi Network" (p. 95) 7.8 "Configuring TR-069" (p. 78) 7.9 "Configuring TR-369" (p. 79) 7.28 "Configuring the Firewall" (p. 115) 7.33 "Configuring Access Control" (p. 128)

2 ANSI CPE safety guidelines

This chapter provides information about the mandatory regulations that govern the installation and operation of devices in the North American or ANSI market.

2.1 Safety instructions

This section describes the safety instructions that are provided in the CPE customer documentation and on the equipment.

2.1.1 Safety instruction boxes in customer documentation

The safety instruction boxes are provided in the CPE customer documentation. Observe the instructions to meet safety requirements.

The following is an example of the Danger box.

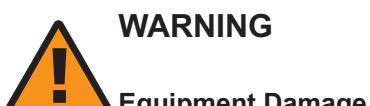


Possibility of personal injury.

The Danger box indicates that the described activity or situation may pose a threat to personal safety. It calls attention to a situation or procedure which, if not correctly performed or adhered to, may result in death or serious physical harm.

Do not proceed beyond a Danger box until the indicated conditions are fully understood and met.

The following is an example of the Warning box.



Possibility of equipment damage.

Possibility of data loss.

The Warning box indicates that the described activity or situation may, or will, cause equipment damage, loss of data, or serious performance problems. It identifies a possible equipment-damaging situation or provides essential information to avoid the degradation of system operations or data.

Do not proceed beyond a warning until the indicated conditions are fully understood and met.

The following is an example of the Caution box.



CAUTION

Service Disruption

Possibility of service interruption.

Service interruption.

The Caution box indicates that the described activity or situation may, or will, cause service interruption.

Do not proceed beyond a caution until the indicated conditions are fully understood and met.

The following is an example of the Note box.

Note: Information of special interest.

The Note box provides information that assists the personnel working with devices. It does not provide safety-related instructions.

2.1.2 Safety-related labels

The customer premises equipment is labeled with specific safety compliance information and instructions that are related to a variant of the CPE. Observe the instructions on the safety labels.

The following table provides examples of the text in the various CPE safety labels.

Table 2-1 Safety labels

Label text	Description
ETL compliance	Communication service equipment US listed.
ESD warning	Caution: This assembly contains electrostatic sensitive device.
FCC standards compliance	Tested to comply with FCC standards for home or office use.

[Figure 2-1, "Sample safety label" \(p. 25\)](#) shows a sample safety label located on the bottom of the Beacon 3.1.

Figure 2-1 Sample safety label



2.2 Safety standards compliance

This section describes the CPE compliance with North American safety standards.



WARNING

Equipment Damage

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2.2.1 EMC, EMI, and ESD standards compliance

The customer premises equipment complies with the following requirements:

- Federal Communications Commission (FCC) CFR 47, Part 15, Subpart B, Class A requirements for equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.

2.2.2 Energy-related products standby and off modes compliance

Hereby, Nokia declares that the Beacon 3.1 devices are in compliance with the essential requirements and other relevant provisions of Directive 2009/125/EC together with Commission Regulation (EC) No 1275/2008 and Commission Regulation (EC) No 801/2013.

The Beacon 3.1 devices qualify as high network availability (HiNA) equipment. Since the main purpose of Beacon 3.1 devices is to provide network functionality with HiNA 7 days/24 hours, the modes Off/Standby, Power Management, and Networked Standby are inappropriate.

For information about the type and number of network ports, see [5.5 “Beacon 3.1 interfaces and interface capacity” \(p. 45\)](#) in [Chapter 5, “Beacon 3.1 unit data sheet”](#).

For information about power consumption, see [5.7 “Beacon 3.1 detailed specifications” \(p. 47\)](#) in [Chapter 5, “Beacon 3.1 unit data sheet”](#).

2.2.3 FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

2.2.4 FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 21 cms from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.



Note: For product availability in the USA and Canada, only channels 1 to 11 can be operated. Selection of other channels is not possible.

This device is restricted for indoor use.

CAUTION



Service Disruption

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2.2.5 Resistibility requirements compliance

The customer premises equipment complies with the requirements of ITU Recommendation K.21 for resistibility of telecommunication equipment installed in customer premises to overvoltage and overcurrents.

2.3 Electrical safety guidelines

This section provides the electrical safety guidelines for the customer premises equipment.

Beacon 3.1 devices are compliant with the following standards:

- IEC-62368-1
- UL-62368-1



Note: The devices comply with the U.S. National Electrical Code. However, local electrical authorities have jurisdiction when there are differences between the local and U.S. standards.

2.3.1 Power supplies

The use of any non-Nokia approved power supplies or power adapters is not supported or endorsed by Nokia. Such use will void any warranty or support contract with Nokia. Such use greatly increases the danger of damage to equipment or property.

2.3.2 Cabling

The following are the guidelines regarding cables used for the customer premises equipment:

- Use only cables approved by the relevant national electrical code.

3 ETSI CPE safety guidelines

This chapter provides information about the mandatory regulations that govern the installation and operation of devices.

3.1 Safety instructions

This section describes the safety instructions that are provided in the CPE customer documentation and on the equipment.

3.1.1 Safety instruction boxes

The safety instruction boxes are provided in the CPE customer documentation. Observe the instructions to meet safety requirements.

The following is an example of the Danger box.

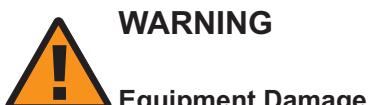


Possibility of personal injury.

The Danger box indicates that the described activity or situation may pose a threat to personal safety. It calls attention to a situation or procedure which, if not correctly performed or adhered to, may result in death or serious physical harm.

Do not proceed beyond a Danger box until the indicated conditions are fully understood and met.

The following is an example of the Warning box.



Possibility of equipment damage.

Possibility of data loss.

The Warning box indicates that the described activity or situation may, or will, cause equipment damage, loss of data, or serious performance problems. It identifies a possible equipment-damaging situation or provides essential information to avoid the degradation of system operations or data.

Do not proceed beyond a warning until the indicated conditions are fully understood and met.

The following is an example of the Caution box.



CAUTION

Service Disruption

Possibility of service interruption.

Service interruption.

The Caution box indicates that the described activity or situation may, or will, cause service interruption.

Do not proceed beyond a caution until the indicated conditions are fully understood and met.

The following is an example of the Note box.



Note: Information of special interest.

The Note box provides information that assists the personnel working with devices. It does not provide safety-related instructions.

3.1.2 Safety-related labels

The customer premises equipment is labeled with the specific safety instructions and compliance information that is related to a variant of the CPE. Observe the instructions on the safety labels.

The following table provides sample safety labels on the customer premises equipment.

Table 3-1 Safety labels

Label text	Description
CE marking	Indicates compliance to the European Council Directives including EN 60950-1 and EN 62368-1 safety
ESD warning	Caution: This assembly contains an electrostatic sensitive device.

3.2 Safety standards compliance

This section describes the CPE compliance with the European safety standards.

3.2.1 EMC, EMI, and ESD compliance

The customer premises equipment complies with the following EMC, EMI, and ESD requirements:

- EN 300-386 V1.6.1: Electromagnetic Compatibility and Radio Spectrum Matters (ERM): Telecommunications Network Equipment; Electromagnetic Compatibility (EMC) requirements; Electrostatic Discharge (ESD) requirements
- EN 301489-1: Electromagnetic Compatibility and Radio Spectrum Matters (ERM): Telecommunications Network Equipment; Electromagnetic Compatibility (EMC) Standard for Radio Equipment and Services; part 1: Common Technical Requirements
- EN 301489-17: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Electromagnetic Compatibility (EMC) Standard for Radio Equipment; Part 17: Specific Conditions for Broadband Data Transmission Systems.
- Radio Equipment Directive (RED) 2014/53/EU (applicable from 13 June 2016)

- EN 55032 (2015): Electromagnetic compatibility of multimedia equipment - Emission Requirements
- EN 55024 (2010): Information Technology Equipment, Immunity Characteristics, limits and methods of measurement
- Electromagnetic Compatibility (EMC) directive 2014/30/EU
- European Council Directive 2004/108/EC
- Low Voltage (LVD) directive 2014/35/EC

3.2.2 Equipment safety standard compliance

The customer premises equipment is labeled with specific safety compliance information and instructions that are related to a variant of the CPE. Observe the instructions on the safety labels.

The following table provides examples of the text in the various CPE safety labels.

Table 3-2 Safety labels

Label text	Description
TUV compliance	Type 3R enclosure - Rainproof.
ESD warning	Caution: This assembly contains electrostatic sensitive device.
CDRH compliance	Complies with 21 CFR 1040.10 and 1040.11.
CE marking	There are various CE symbols for CE compliance.
UKCA marking	There is UKCA symbol for UKCA compliance.

[Figure 3-1, “Sample safety label” \(p. 32\)](#) shows a sample safety label located on the bottom of the Beacon 3.1.

Figure 3-1 Sample safety label



The customer premises equipment complies with the requirements of EN 60950-1 and EN 62368-1, Safety of Information Technology Equipment for use in a restricted location.

- ETS 300 019-2-1 Storage Class T1.1
- ETS 300 019-2-2 Transport Class T2.3
- ETS 300 019-2-3 Stationary Class T3.2

3.2.3 Environmental standard compliance

The customer premises equipment complies with the EN 300 019 European environmental standards.

3.2.4 CE RED RF Radiation Exposure Statement

This device complies with CE RED radiation exposure limits set forth for an uncontrolled environment. To comply with CE RED RF exposure compliance requirements, this grant is applicable only for mobile configurations. The antennas used for the transmitter must be installed to provide a separation distance of at least 21 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

3.2.5 Resistibility requirements compliance

The customer premises equipment complies with the requirements of ITU Recommendation K.21 for resistibility of telecommunication equipment installed in customer premises to over voltage and overcurrents.

3.2.6 Acoustic noise emission standard compliance

The customer premises equipment complies with EN 300 753 acoustic noise emission limit and test methods.

3.3 Electrical safety guidelines

This section provides the electrical safety guidelines for the customer premises equipment.



Note: The devices comply with the U.S. National Electrical Code. However, local electrical authorities have jurisdiction when there are differences between the local and U.S. standards.
The devices comply with BS EN 61140.

3.3.1 Power supplies

The use of any non-Nokia approved power supplies or power adapters is not supported or endorsed by Nokia. Such use will void any warranty or support contract with Nokia. Such use greatly increases the danger of damage to equipment or property.

3.3.2 Cabling

The following are the guidelines regarding cables used for the customer premises equipment:

- All cables must be approved by the relevant national electrical code.

4 ETSI environmental and CRoHS guidelines

This chapter provides information about the ETSI environmental China Restriction of Hazardous Substances (CRoHS) regulations that govern the installation and operation of devices. This chapter also includes environmental operation parameters of general interest.

4.1 Environmental labels

This section describes the environmental instructions that are provided with the customer documentation, equipment, and location where the equipment resides.

4.1.1 Overview

CRoHS is applicable to Electronic Information Products (EIP) manufactured or sold and imported in the territory of the mainland of the People's Republic of China. EIP refers to products and their accessories manufactured by using electronic information technology, including electronic communications products and such subcomponents as batteries and cables.

4.1.2 Environmental related labels

Environmental labels are located on appropriate equipment. The following are sample labels.

Products below Maximum Concentration Value (MCV) label

[Figure 4-1, "Products below MCV value label" \(p. 35\)](#) shows the label that indicates a product is below the maximum concentration value, as defined by standard SJ/T11363-2006 (Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products). Products with this label are recyclable. The label may be found in this documentation or on the product.

Figure 4-1 Products below MCV value label



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Products containing hazardous substances above Maximum Concentration Value (MCV) label

The following figure shows the label that indicates a product is above the maximum concentration value, as defined by standard SJ/T11363-2006 (Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products). The number contained inside the label indicates the Environment-Friendly User Period (EFUP) value. The label may be found in this documentation or on the product.

Figure 4-2 Products above MCV value label



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Together with major international telecommunications equipment companies, Nokia has determined it is appropriate to use an EFUP of 50 years for network infrastructure equipment and an EFUP of 20 years for handsets and accessories. These values are based on manufacturers' extensive practical experience of the design, manufacturing, maintenance, usage conditions, operating environments, and physical condition of infrastructure and handsets after years of service. The values reflect minimum values and refer to products operated according to the intended use conditions.

4.2 Other environmental requirements

Observe the following environmental requirements when handling the P-OLT or CPE

4.2.1 CPE environmental requirements

See the CPE technical specification documentation for more information about temperature ranges.

4.2.2 Storage

According to ETS 300-019-1-1 - Class 1.1, storage of CPE equipment must be in Class 1.1, weather-protected, temperature-controlled locations.

4.2.3 Transportation

According to EN 300-019-1-2 - Class 2.3, transportation of the equipment must be in packed, public transportation with no rain on packing allowed.

4.2.4 EU RoHS

European Union (EU) Directive 2011/65/EU, "Restriction of the use of certain Hazardous Substances" (RoHS), restricts the use of lead, mercury, cadmium, hexavalent chromium, and certain flame retardants in electrical and electronic equipment. Nokia products shipped to the EU comply with the EU RoHS Directive.

Nokia has implemented a material/substance content management process. The process is described in: Nokia process for ensuring RoHS Compliance (1AA002660031ASZZA). This ensures compliance with the European Union Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.

4.2.5 End-of-life collection and treatment

Electronic products bearing or referencing the symbol shown in [Figure 4-3, "Recycling/take back/disposal of product symbol" \(p. 37\)](#), when put on the market within the European Union (EU), shall be collected and treated at the end of their useful life, in compliance with applicable EU and local legislation. They shall not be disposed of as part of unsorted municipal waste. Due to materials that may be contained in the product, such as heavy metals or batteries, the environment and human health may be negatively impacted as a result of inappropriate disposal.

i **Note:** In the European Union, a solid bar under the symbol for a crossed-out wheeled bin indicates that the product was put on the market after 13 August 2005.

Figure 4-3 Recycling/take back/disposal of product symbol



About mark is used in compliance to European Union WEEE Directive (2012/19/EU).

There can be different requirements for collection and treatment in different member states of the European Union.

In compliance with legal requirements and contractual agreements, where applicable, Nokia will offer to provide for the collection and treatment of Nokia products bearing the logo shown in [Figure 4-3, “Recycling/take back/disposal of product symbol” \(p. 37\)](#) at the end of their useful life, or products displaced by Nokia equipment offers. For information regarding take-back of equipment by Nokia, or for more information regarding the requirements for recycling/disposal of product, contact your Nokia account manager or Nokia take back support at sustainability.global@nokia.com.

5 Beacon 3.1 unit data sheet

5.1 Overview

5.1.1 Purpose

5.1.2 Contents

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5.2 Beacon 3.1 part numbers and identification

Table 5-1, “Beacon 3.1 identification” (p. 39) provides part numbers and identification information for the Beacon 3.1.

Table 5-1 Beacon 3.1 identification

Ordering kit part number	Provisioning number	Description	CLEI Code	CPR	ECI/ Bar code
3TN00511AA	3TN00512AA	Beacon 3.1, US variant, US Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	BVML910CRA	—	—
3TN00511AB	3TN00512AB	Beacon 3.1, US and Canada variant, US Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	BVMNU00DRA	—	—
3TN00511AE	3TN00512AE	Beacon 3.1, high WiFi power, US variant, US Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	BVMPL00DRA	—	—
3TN00511AF	3TN00512AF	Beacon 3.1, high WiFi power, US and Canada variant, US Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	BVMPM00DRA	—	—
3TN00511BA	3TN00512BA	Beacon 3.1, EU variant, EU Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	—	—	—

Table 5-1 Beacon 3.1 identification (continued)

Ordering kit part number	Provisioning number	Description	CLEI Code	CPR	ECI/Bar code
3TN00511BB	3TN00512BB	Beacon 3.1, EU Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	—	—	—
3TN00511BC	3TN00512BC	Beacon 3.1, Brazil variant, EU Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	—	—	—
3TN00511BD	3TN00512BD	Beacon 3.1, EU Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	—	—	—
3TN00511CA	3TN00512CA	Beacon 3.1, UK variant, UK Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	—	—	—
3TN00511DA	3TN00512DA	Beacon 3.1, AU variant, AU Plug, 1G WAN, 2x1G LAN, WiFi6 2+2	—	—	—

Table 5-2, “Beacon 3.1 power supply ordering information” (p. 40) provides the power supply information for the Beacon 3.1.

Table 5-2 Beacon 3.1 power supply ordering information

Beacon part numbers	Power model (Model No/Manufacture Part Number)	Power information	Customer category or country compliance tested for	Notes
Kit: 3TN00511AA EMA: 3TN00512AA	FUHUA: UES18LU-120150SPA / UE230418DGNA1RI RUIDE: RD1201500-C55-198MG / BW120150-UC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 2-pin US input plug	ANSI municipality US, UL certified	2-pin US input plug
Kit: 3TN00511AB EMA: 3TN00512AB	FUHUA: UES18LU-120150SPA / UE230418DGNA1RI RUIDE: RD1201500-C55-198MG / BW120150-UC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 2-pin US input plug	ANSI municipality US, UL certified	2-pin US input plug
Kit: 3TN00511AE EMA: 3TN00512AE	FUHUA: UES18LU-120150SPA / UE230418DGNA1RI RUIDE: RD1201500-C55-198MG / BW120150-UC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 2-pin US input plug	ANSI municipality US, UL certified	2-pin US input plug
Kit: 3TN00511AF EMA: 3TN00512AF	FUHUA: UES18LU-120150SPA / UE230418DGNA1RI RUIDE: RD1201500-C55-198MG / BW120150-UC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 2-pin US input plug	ANSI municipality US, UL certified	2-pin US input plug
Kit: 3TN00512BA EMA: 3TN00512BA	FUHUA: UES18LV-120150SPA / UE230418DGNA2RI RUIDE: RD1201500-C55-198OG / BW120150-EC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 2-pin EU input plug	Europe, EN/IEC certified	2-pin EU input plug

Table 5-2 Beacon 3.1 power supply ordering information (continued)

Beacon part numbers	Power model (Model No/Manufacture Part Number)	Power information	Customer category or country compliance tested for	Notes
Kit: 3TN00512BB EMA: 3TN00512BB	FUHUA: UES18LV-120150SPA / UE230418DGNA2RI RUIDE: RD1201500-C55-198OG/ BW120150-EC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 2-pin EU input plug	Europe, EN/IEC certified	2-pin EU input plug
Kit: 3TN00511BC EMA: 3TN00512BC	RUIDE: RD1201000-C55-35OGD /BC120100-EC6C-LL01 KELI: KL-WE120100-B/SW-WB160AW	12V 1.0A wall mounted AC/DC power adapter with 2-pin (EU-6kv). input plug.	Europe/CoC certified	2-pin input plug
Kit: 3TN00511BD EMA: 3TN00512BD	RUIDE: RD1201000-C55-35OGD /BC120100-EC6C-LL01 KELI: KL-WE120100-B/SW-WB160AW	12V 1.0A wall mounted AC/DC power adapter with 2-pin (EU-6kv). input plug.	Europe/CoC certified	2-pin input plug
Kit: 3TN00512CA EMA: 3TN00512CA	FUHUA: UES18LB-120150SPA / UE230418DGNA3RI RUIDE: RD1201500-C55-198YG / BW120150-YC6C-LL04	12V 1.5A wall mounted AC/DC power adapter with 3-pin UK input plug	UK, EN/IEC certified	3-pin UK input plug
Kit: 3TN00512DA EMA: 3TN00512DA	FUHUA: UES18LS-120150SPA / UE230418DGNA4RI RUIDE: RD1201500-C55-81AG / BK120150-FC6C-LL02	12V 1.5A wall mounted AC/DC power adapter with 2-pin AU input plug	AS/NZS certified	2-pin AU input plug

5.3 Beacon 3.1 general description

WiFi is abundantly deployed in home networks. Users crave a seamless experience at home including effortlessly connecting their wireless devices to the network. Traditional WiFi networks require unique SSIDs for each of the access points or tedious set-up of WiFi extenders, which complicate the user experience. The Nokia WiFi network simplifies the user experience by providing a seamless mesh network with easy device onboarding and automated network optimization.

The overall Nokia WiFi solution is composed of one Nokia WiFi gateway (or Nokia WiFi Beacon) as root AP, one or more Nokia WiFi beacons, the Corteca Console for the operator's customer care team, and a mobile application for the end-user's self care.

i **Note:** The Corteca Console can be accessed by the operator.

Beacon 3.1 devices can be deployed as either an Ethernet residential gateway or a WiFi beacon in the Nokia WiFi solution. The residential gateway is the central point of the mesh network providing access to the broadband network (Internet) while the beacon aids with extending WiFi coverage to every corner of the home, providing seamless roaming to wireless connected devices.

The Beacon 3.1 has built-in concurrent dual-band WiFi 802.11b/g/n/ax and 802.11n/ac/ax networking with triple-play capability. Beacon 3.1 devices can be configured using the Nokia WiFi mobile app, which can be downloaded to iOS and Android devices.

The image below shows the Beacon 3.1.

Figure 5-1 Beacon 3.1 WiFi gateway/beacon



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The Beacon 3.1 provides the following functions and benefits:

- Automatically decides on mesh root device or mesh extender device in a mesh network
- Dual-band concurrent IEEE 802.11b/g/n/ax 2x2 2.4 GHz and 802.11n/ac/ax 2x2 5 GHz
- One 1000/100/10Base-T WAN interface with RJ-45 connector and two 1000/100/10Base-T LAN interface with RJ-45 connector
- Beacon 3.1's Nokia WiFi mesh middleware can support up to five Beacon 3.1 extender nodes with a maximum mesh topology size of six nodes
- Embedded edge analytics optimize network performance in real-time

Benefits:

- PHY rate up to 574 Mb/s for 2.4 GHz and 2402 Mb/s for 5 GHz
- Self-healing, self-optimizing network
- Mesh topology and intelligent mesh routing
- Seamless roaming (IEEE 802.11k and 802.11v)
- Band steering
- Channel optimization
- High quality of service (QoS) video over WiFi
- Ease of setup and user intuitive information
- Provides capability to separate VLAN in the mesh network

- Supports ethernet fanout switch
- Supports WFA EasyMesh Controller
- Supports Nokia WiFi Mesh Agent
- Supports bridged WAN
- Ethernet ports on AP/Beacons inherit the configuration from the root devices

[Table 5-3, “Beacon 3.1 function detail” \(p. 42\)](#) lists additional function detail for the Beacon 3.1.

Table 5-3 Beacon 3.1 function detail

Function	Detail
Installation	Desk and wall mounted
WLAN interfaces	<ul style="list-style-type: none">• Supports 2x2 802.11b/g/n/ax 2.4 GHz wireless LAN (WLAN) interface• Supports 2x2 802.11n/ac/ax 5 GHz WLAN interface• Maximum effective isotropic radiated power (EIRP) on 2.4GHz up to 1.2W (HW variant dependent) and on 5GHz up to 1W. The actual output power levels can be tuned by software to guarantee compliancy to local regulations• WiFi Protected Access (WPA) support including Pre-Shared Key (WPA-PSK), WPA2 and WPA3 personal, and WPA2/WPA3 enterprise• Media access control (MAC) filters
Router mode	<ul style="list-style-type: none">• IPv4 and IPv6• Point-to-Point Protocol over Ethernet (PPPoE) and IP over Ethernet (IPoE)• Network Address Translation (NAT), demilitarized zone (DMZ) and firewall• Dynamic Host Configuration Protocol (DHCP) and domain name system (DNS) proxy• Internet Group Management Protocol (IGMP) v2/v3 proxy• LXC container and TR157 Software module management• Supports TR-069/TR-111 Supports USP/TR-369• Supports virtual private network (VPN) pass- through for Point-to-Point Tunneling Protocol (PPTP), Layer 2 Tunneling Protocol (L2TP) and IPSec• Port forwarding and DMZ/dynamic domain name system (DDNS)• Flexible video delivery options over Ethernet or wireless• Beacon 3.1's Nokia WiFi mesh middleware can support up to five Beacon 3.1 extender nodes with a maximum mesh topology size of six nodes
Beacon mode (Bridge mode)	<ul style="list-style-type: none">• Supports IPv4 and IPv6• Supports TR-069/TR-111 Supports USP/TR-369• Supports VPN pass-through for PPTP, L2TP and IPSec• IGMP v2/v3 snooping• Flexible video delivery options over Ethernet or wireless• Beacon 3.1's Nokia WiFi mesh middleware can support up to five Beacon 3.1 extender nodes with a maximum mesh topology size of six nodes

Table 5-3 Beacon 3.1 function detail (continued)

Function	Detail
LED	Single multi-color LED for simple and intuitive status indication
Regulatory compliance	<ul style="list-style-type: none">UL 62368-1FCC Part 15CEISEDRCM/RSM(R-NZ)

5.3.1 TR-069 object support for WiFi parameters

The Beacon 3.1 supports the status retrieval and configuration of the following WiFi parameters via TR-069:

- Channel
- SSID
- WPA Password
- Tx power (transmission rate in dBm)

These are the same TR-069 object parameters that are supported in the GUI.

5.3.2 Communication method to Nokia cloud management solution

The Beacon 3.1 communicates to the Nokia cloud management solution by TR-069 using an independent TR-069 session with the SaaS or through MQTT and https.

The supported mechanism is specific to a customer deployment and the detailed description is available in the Customer Release Notes (CRN) of each release.

5.3.3 TR-069 authentication using TLS and CA certificates

Beacon 3.1 devices support encrypted remote TR-069 management using TLS, as well as ACS authentication using SHA-256 pre-installed certificates.

If the ACS URL is set to the https://... format, by default, the connection will use TLS without authentication mode. The Beacon 3.1 can also authenticate the ACS using a pre-installed CA certificate.

5.3.4 TR-157 Software Module Managements

Beacon 3.1 can support Corteca container applications and framework. Life cycle of these software components are managed by ACS with the parameters defined in TR-157.

The TR-157 objects are:

- Manage each software component via SoftwareModules.DeploymentUnit.
- Set software component execution environment via SoftwareModules.ExecEnv.
- Run software component and get the execution status via SoftwareModules.ExecutionUnit.



Note: The available memory for third party applications needs a detailed study, considering the actual memory load of the current hardware, software, Beacon software evolution over long time and the projected use by a third party application of the software. Therefore, Nokia suggests to review this case by case. Please contact your Nokia support representative for more information.

5.4 Beacon 3.1 software and installation feature support

For information on installing or replacing the Beacon 3.1, see [Chapter 6, “Install or replace a Beacon 3.1”](#).

5.5 Beacon 3.1 interfaces and interface capacity

The table below describes the supported interfaces and interface capacity for Beacon 3.1 devices.

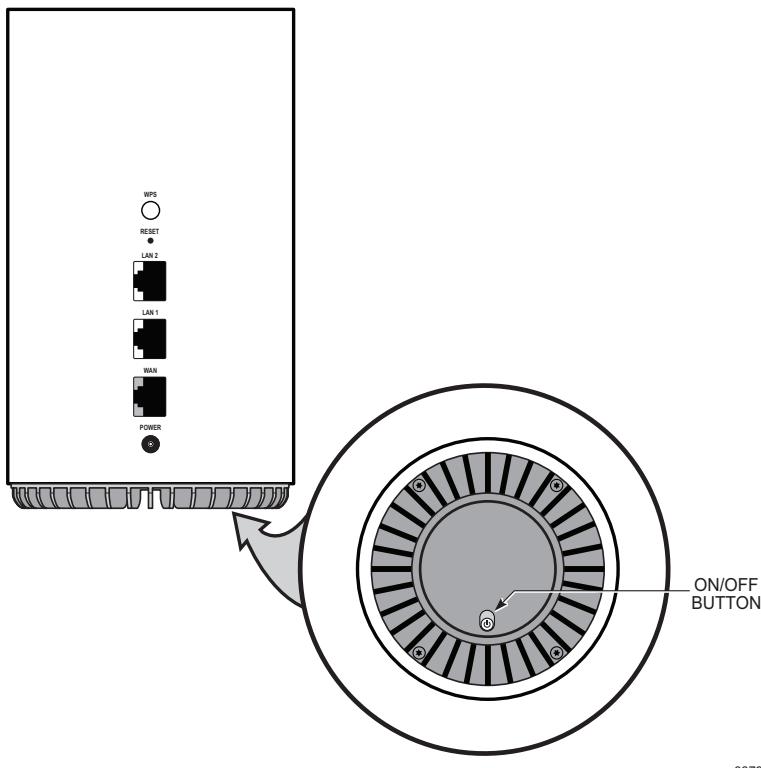
Table 5-4 Beacon 3.1 interface connection capacity

Device type and model	Maximum capacity								
	POTS	100/10 BASE-T	1000/100/10 BASE-T	RF video (CATV)	MoCA	VDSL2	E1/T1	Local craft	XGSPON SC/APC
Beacon 3.1	—	—	3	—	—	—	—	—	—

5.5.1 Beacon 3.1 connections and components

[Figure 5-2, “Beacon 3.1 physical connections” \(p. 46\)](#) shows the physical connections for Beacon 3.1.

Figure 5-2 Beacon 3.1 physical connections



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The following figure describes the physical connections for Beacon 3.1 devices.

Table 5-5 Beacon 3.1 physical connections

Connection	Description
WPS button	This button is used to start the WiFi Protected Setup (WPS) for new WiFi devices.
Reset button	Pressing the Reset button for less than 10 seconds reboots the Beacon. Pressing the Reset button for more than 10 seconds performs a normal factory reset. Double-tick of the Reset button triggers a Deep Factory reset.
LAN port	This connection is provided through Ethernet RJ-45 connectors. Two 1000/100/10 Base-T Ethernet interface is supported. The Ethernet ports can support both data and in-band video services.
WAN port	This connection is provided through an RJ-45 Gigabit Ethernet interface.
Power input	This connection is provided through the power connector. A power cable fitted with a barrel connector is used to make the connection.
On/Off button	This button powers the unit on or off. Green illumination is "ON". Red illumination is "OFF".

5.6 Beacon 3.1 LEDs

The front of the Beacon 3.1 functions as a multi-color LED indicator. The LED color and pulse rate acts as a signal to the home user, which indicates the state of the Beacon and the quality of its backhaul link.

[Table 5-6, “Beacon 3.1 LED indications” \(p. 46\)](#) provides LED descriptions for the Beacon 3.1.

Table 5-6 Beacon 3.1 LED indications

LED color	LED behavior	Router mode	Bridge mode	Configuration mode	LED behavior description
Off	Off	✓	✓	✓	Power off.
Blue-Green	Solid	✓			Uplink to Internet is good.
	Solid		✓		Backhaul connection is successful. The link quality to the root node is good.
Yellow	Solid		✓		Backhaul connection is successful. The link quality to the root node is poor.
	Slow pulsing			✓	Configuration mode, the unit is waiting to be configured.
Red	Solid	✓			No connection to the Internet.
	Solid		✓		Backhaul connection is unsuccessful.
	Fast pulsing	✓	✓	✓	Factory reset.
	Slow pulsing	✓			Connecting to the Internet.
White	Solid	✓	✓	✓	Booting up in progress.
	Slow pulsing			✓	Mesh backhaul establishing and switching work mode to Router or Bridge.
	Slow pulsing	✓	✓		WPS enabled.
	3 sec quick pulse	✓	✓		WPS successful or Mesh Backhaul established.

5.7 Beacon 3.1 detailed specifications

[Table 5-7, “Beacon 3.1 physical specifications” \(p. 47\)](#) lists the physical specifications for the Beacon 3.1.

Table 5-7 Beacon 3.1 physical specifications

Description	Specification
Length	3.9 in. (100 mm)
Width	3.9 in. (100 mm)
Height	6.6 in. (168 mm)
Weight	0.37 kg

[Table 5-8, “Beacon 3.1 dimension data specifications” \(p. 47\)](#) lists the dimension data specifications for Beacon 3.1.

Table 5-8 Beacon 3.1 dimension data specifications

Dimension	Specification
Packet size supported	1500
Number of IP addresses supported (or ranges)	In LAN network, the supported range is: • IPv4: support the IPv4 private network IP ranges • IPv6: any allocated Global Unicast Addresses (GUA)
Number of supported WiFi clients (per radio, per device, per mesh)	64 per radio, 128 per device, 128 per mesh
Number of supported beacons in a single mesh	6
Number of supported WAN interfaces	8
Number of supported VLANs	8
Number of LLIDs in the device	-
Number of priority queues, and overall buffer size	8 priority queues, Total buffer: 12K pages, 2KB
Number of multicast groups (DACL entries)	256

[Table 5-9, “Beacon 3.1 power consumption specifications” \(p. 48\)](#) lists the power consumption specifications for the Beacon 3.1.

Table 5-9 Beacon 3.1 power consumption specifications

Mnemonic	Maximum power (Not to exceed)	Condition	Minimum power	Condition
Beacon 3.1	14 W	3 1000/100/10 Base-T Ethernet, WiFi operational	5 W	Interfaces/services not provisioned

[Table 5-10, “Beacon 3.1 environmental specifications” \(p. 48\)](#) lists the environmental specifications for Beacon 3.1.

Table 5-10 Beacon 3.1 environmental specifications

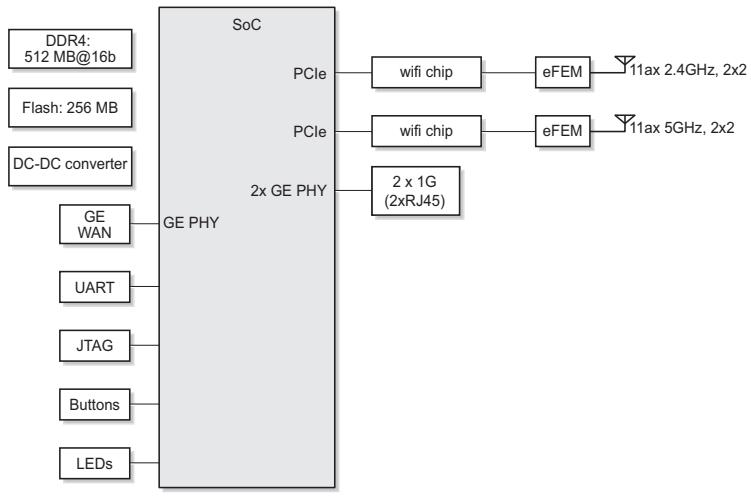
Mounting method	Temperature range and humidity	Altitude
On desk or shelf	Operating: -5°C to 45°C (23°F to 113°F) ambient temperature 5% to 95% relative humidity	Contact your Nokia technical support representative for more information.

5.8 Beacon 3.1 functional blocks

Beacon 3.1 devices are single-residence units that support Wireless (WiFi) service. WiFi service on these devices is compliant with the IEEE 802.11 standard. In addition to the WiFi service, these devices transmit Ethernet packets to two RJ-45 Ethernet ports.

[Figure 5-3, “Single-residence WiFi CPE with Gigabit Ethernet” \(p. 48\)](#) shows the functional blocks for the Beacon 3.1.

Figure 5-3 Single-residence WiFi CPE with Gigabit Ethernet



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5.9 Beacon 3.1 responsible party

[Table 5-11, “Responsible party contact information” \(p. 49\)](#) lists the party in the US responsible for this Beacon.

Table 5-11 Responsible party contact information

Legal Company name	Nokia Solutions and Networks OY	Nokia of America Corporation
Offices	Offices Nokia (https://www.nokia.com/contact-us/offices/#north-america)	
Support	Business Support Nokia (https://www.nokia.com/networks/business-support/)	
Other contacts	Contact us Nokia (https://www.nokia.com/contact-us/)	

5.10 Beacon 3.1 special considerations

This section describes the special considerations for Beacon 3.1 devices.

5.10.1 WiFi service

Beacon 3.1 devices feature WiFi service as well as data services. WiFi is a wireless networking technology that uses radio waves to provide wireless HSI and network connections. This device complies with the IEEE 802.11 standards, which the WiFi Alliance defines as the basis for WiFi technology.

WiFi standards and certifications

The WiFi service on Beacon 3.1 devices supports the following IEEE standards and Wi-Fi Alliance certifications:

- ETL-Safety: UL 62368-1
- CB-Safety: EN 62368-1, EN60950-1
- FCC:
 - EMC CFR 47: part 15B (2017)
 - RF:2.4G: part 15C(2020), 5G/DFS: part 15E(2020)
 - MPE: Section 1.1310 of FCC 47 CFR part1
- ISED certification
- CE-Safety: EN 60950-1/EN 62368-1, IEC 60950-1/IEC 62368-1, EN 60825-1, -2
 - EMC EN 300386(2016) OTC (without WiFi)/EN 55024(2010)/EN 301489-1/17 (2019/2020)(with WiFi)
 - RF: 2.4G: EN 300328(2019), 5G/DFS: EN 301893(2017)
 - MPE: Section 1.1310 of FCC 47 CFR part1
- RCM/RSM(R-NZ)
- WFA:
 - Wi-Fi CERTIFIED 6™
 - Wi-Fi CERTIFIED™ a, b, g, n, ac
 - WPA™, WPA2™ , WPA3™
 - Wi-Fi Agile Multiband™
 - WMM®, WMM®-Power Save
 - Wi-Fi Protected Setup™
- Certified for Easymesh R4

WiFi GUI features

Beacon 3.1 devices have HTML-based WiFi configuration GUIs.

In addition to the HTML-based GUI, the home user can download and use a mobile app for managing the Beacon. The Nokia WiFi app is available for iOS in the App Store, and for Android through Google Play.

5.10.2 Beacon 3.1 considerations and limitations

None.

6 Install or replace a Beacon 3.1

6.1 Overview

6.1.1 Purpose

This chapter provides the steps to:

- Install a Beacon 3.1
- Replace a Beacon 3.1

6.1.2 Contents

6.1 Overview	51
6.2 Recommended tools	51
6.3 Safety information	51
6.4 Install a Beacon 3.1	52
6.5 Replace a Beacon 3.1	54
6.6 Wall mount a Beacon 3.1	56

6.2 Recommended tools

You need the following tools:

- Paper clip
- Screwdriver

6.3 Safety information

Read the following safety information before installing the unit.



Hazardous electrical voltages and currents can cause serious physical harm or death. Always use insulated tools and follow proper safety precautions when connecting or disconnecting power circuits.

Make sure all sources of power are turned off and have no live voltages present on feed lines or terminals. Use a voltmeter to measure for voltage before proceeding.

Always contact the local utility company before connecting the enclosure to the utilities.



CAUTION

Service Disruption

Keep indoor devices out of direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



Note: Observe the local and national laws and regulations that may be applicable to this installation.

Observe the following:

- The device should be installed in accordance with the applicable requirements of the NEC or CEC. Local authorities and practices take precedent when there is conflict between the local standard and the NEC or CEC.
- Indoor units must be installed with cables that are suitably rated and listed for indoor use.
- See the detailed specifications in the [Chapter 5, “Beacon 3.1 unit data sheet”](#) for the temperature ranges for these devices.

6.4 Install a Beacon 3.1

1

Place the unit on a flat surface, such as a desk or shelf.



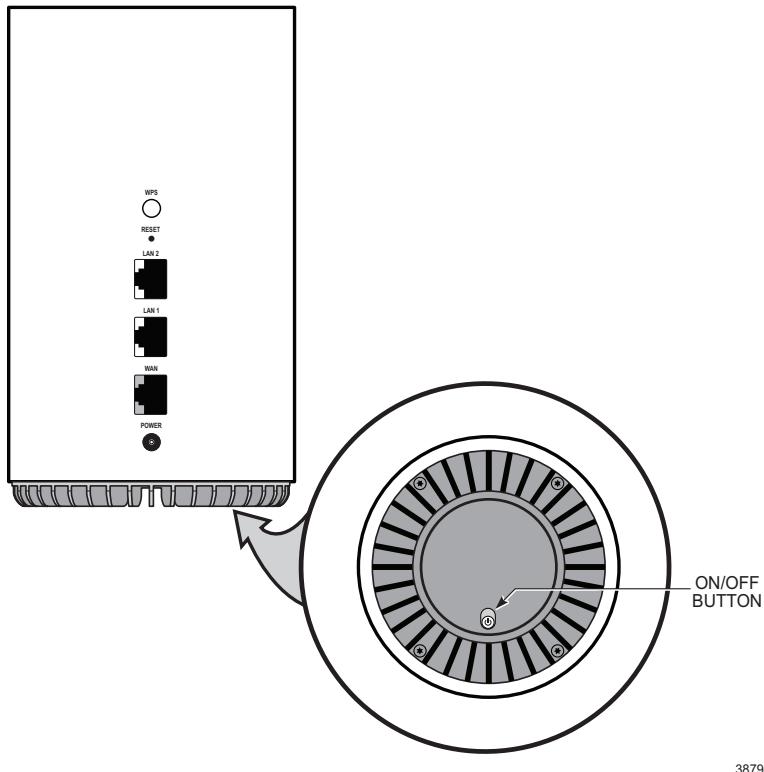
Note: The Beacon 3.1 cannot be stacked with another Beacon or with other equipment. The installation requirements are:

- Allow a minimum 100 mm clearance above the top cover.
- Allow a minimum 50 mm clearance from the side vents.
- Do not place any heat source directly above the top cover or below the bottom cover.

2

Review the connection locations, as shown in [Figure 6-1, “Beacon 3.1 connections” \(p. 53\)](#).

Figure 6-1 Beacon 3.1 connections



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3

Connect the Ethernet cable to the RJ-45 port; see [Figure 6-1, “Beacon 3.1 connections” \(p. 53\)](#) for the location of the RJ-45 port.

4

Connect the WAN cable to the RJ-45 WAN port; see [Figure 6-1, “Beacon 3.1 connections” \(p. 53\)](#) for the location of the RJ-45 WAN port.

5

Connect the power cable to the power connector.



Note: Observe the following:

Units must be powered by a Listed or CE approved and marked limited power source power supply with a minimum output rate of 12 V dc, 1.5 A. The polarity of the power adapter plug must match the Beacon.

6

Power up the unit by using the On/Off power switch.

7 _____

Verify the LED.

8 _____

Onboard the Beacon 3.1 using the Nokia WiFi App.

9 _____

If necessary, reset the Beacon 3.1.



Note: Resetting the device will return all settings to factory default values; any configuration customization will be lost.

- a. Locate the **Reset** button as shown in [Figure 6-1, “Beacon 3.1 connections” \(p. 53\)](#).
- b. Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the device.

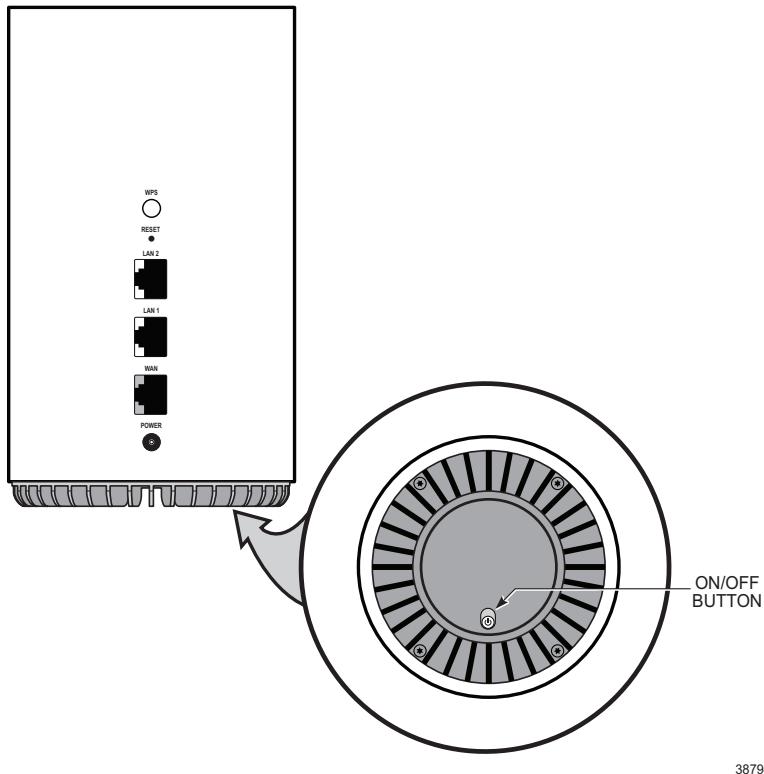
END OF STEPS _____

6.5 Replace a Beacon 3.1

1 _____

Power down the unit by using the on/off power switch. See [Figure 6-2, “Beacon 3.1 connections” \(p. 53\)](#) for the connections on the Beacon 3.1.

Figure 6-2 Beacon 3.1 connections



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2

Disconnect the WAN, Ethernet, and power cables from the Beacon 3.1; see [Figure 6-2, “Beacon 3.1 connections” \(p. 55\)](#) for the connector locations on the Beacon 3.1.

3

Replace the Beacon 3.1 with the new device. The device can be placed on any flat surface, such as a desk or shelf.

4

Connect the Ethernet cable directly to the RJ-45 port; see [Figure 6-2, “Beacon 3.1 connections” \(p. 55\)](#) for the location of the RJ-45 port.

5

Connect the WAN cable directly to the RJ-45 port; see [Figure 6-2, “Beacon 3.1 connections” \(p. 55\)](#) for the location of the RJ-45 WAN port.

6

Connect the power cable to the power connector.



Note: Observe the following:

- Units must be powered by a Listed or CE approved and marked limited power source with a minimum output rate of 12 V dc, 1.5 A. The polarity of the power adapter plug must match the Beacon.

7

Power up the unit by using the On/Off power button.

8

Verify the LED.

9

Onboard the Beacon 3.1 using the Nokia WiFi App.

10

If necessary, reset the Beacon 3.1.



Note: Resetting the device will return all settings to factory default values; any configuration customization will be lost.

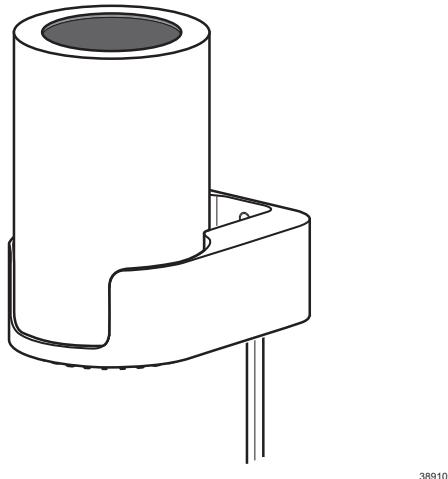
- a. Locate the **Reset** button on a Beacon 3.1 as shown in [Figure 6-2, "Beacon 3.1 connections" \(p. 55\)](#).
- b. Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the device.

END OF STEPS

6.6 Wall mount a Beacon 3.1

This section provides the steps to mount a Beacon 3.1 on a wall using a wall mount bracket. The Beacon 3.1 is shipped without the wall mount bracket. The wall mount bracket (3TN01249AA) must be ordered separately.

Figure 6-3 Beacon 3.1 in wall mounting bracket



6.6.1 Recommended tools

See section 6.2 “Recommended tools” (p. 51) for the recommended tools.

6.6.2 Procedure

Use this procedure to mount the Beacon 3.1 on a wall.

1

Mount the Beacon on a wall using the wall mount bracket (3TN01249AA).



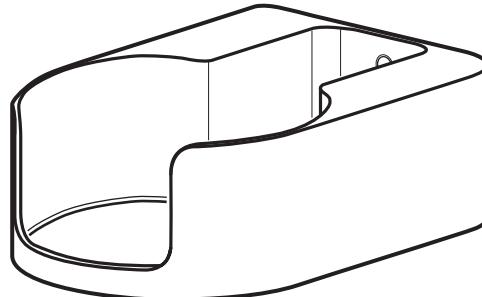
Note:

- The wall mount bracket must be installed on the wall first before sliding the Beacon 3.1 into the wall mounting bracket.
- The device cannot be wall mounted at a height greater than 2 meters from the floor.

a. Mount the wall mounting bracket on a wall, as shown in [Figure 6-4, “Beacon 3.1 wall mount bracket” \(p. 58\)](#).

Determine the location of the two anchor holes for the wall mount bracket. The bracket can be used as a template for marking and drilling the holes.

Figure 6-4 Beacon 3.1 wall mount bracket



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It is recommended to use a level to ensure that the Beacon unit is installed horizontally.

- b. Drill two holes and secure the wall mounting bracket with the two mounting screws provided in the kit. Mount the bracket flush to the wall so that it does not warp or twist.
- c. Install the Beacon into the wall mount bracket by lifting the unit above the bracket and sliding it downward onto the bottom ledge of the bracket. The wall mount bracket has 4 rubber pads that will keep the Beacon unit in place.
- d. Connect the power cord and other cables to the Beacon.

END OF STEPS

7 Configure a Beacon 3.1

7.1 Overview

7.1.1 Purpose

This chapter describes the WebGUI configuration procedures.

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GUI overview

This section provides an overview of the Beacon 3.1 WebGUI.

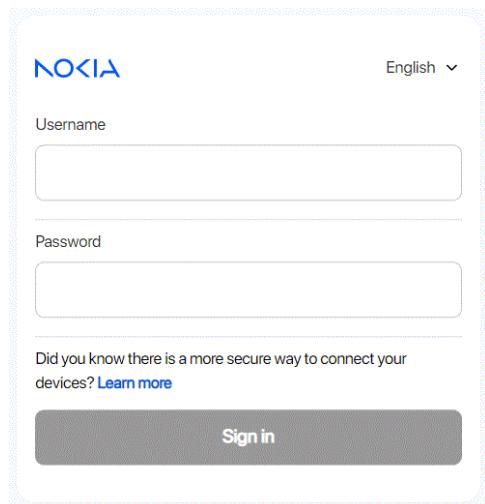
7.2 Logging in to the web-based GUI

1

Open a web browser and enter the IP address of the Beacon in the address bar.

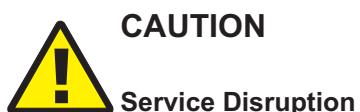
The *Login* page displays.

Figure 7-1 Login page



The default gateway IP address must be same as the one printed on the device label. You can connect to this IP address using your web browser after connecting your PC to one of Ethernet ports of the Beacon or via WiFi connection. The static IP address of your PC must be in the same default gateway subnet as the Beacon. You can also access the login page via "https://www.webgui.nokiawifi.com/" and "http://www.webgui.nokiawifi.com/".

2



*If you forget the current username and password, press the **Reset** button for 10 seconds to reset the values to the default username and password provided at startup.*

*Pressing the **Reset** button for less than 10 seconds reboots the device.*

Enter your username and password in the *Login* page, as shown in [Figure 7-1, "Login page" \(p. 62\)](#).

The superadmin account is meant for the operator and the password is unique per device unless specified differently in customer specific pre configuration. Contact your Nokia representative to obtain the superadmin password for device.

The default end-user account name and the default password for this account are printed on the device label.

The superadmin user has access to all WebGUI features while the end-user account has only limited access to WebGUI features. This access for the end-user can be adapted with a WebGUI configuration file. Contact your Nokia representative to know the factory default settings of which WebGUI access is available to your end user or how to get a WebGUI configuration file.

3

Click **Sign in**. The Overview page displays.



Note: To help protect the security of your Internet connection, the application displays a pop-up reminder to change both the WiFi password and the Beacon password.

To increase password security, use a minimum of 10 characters, consisting of a mix of numbers and upper and lower case letters.

END OF STEPS

7.3 Beacon 3.1 WebGUI Menu

The following table lists the main menu and sub-menu options in the Beacon 3.1 WebGUI:

Table 7-1 Beacon 3.1 WebGUI Menu

Main Menu	Sub-menu	Procedure Reference
Overview	-	7.4 "Viewing overview information" (p. 64)
WAN	WAN services	7.6 "Configuring WAN Services" (p. 67)
WAN	WAN statistics	7.7 "Viewing WAN Statistics" (p. 75)
WAN	TR-069	7.8 "Configuring TR-069" (p. 78)
WAN	TR-369	7.9 "Configuring TR-369" (p. 79)
WAN	IP routing	7.10 "Configuring Static routing" (p. 80)
WAN	Qos config	7.11 "Configuring QoS" (p. 82)
LAN	DHCP IPv4	7.13 "Configuring DHCP IPv4" (p. 85)
LAN	DHCP IPv6	7.14 "Configuring DHCP IPv6" (p. 87)
LAN	DNS	7.15 "Configuring DNS" (p. 89)
LAN	LAN statistics	7.16 "Viewing LAN Statistics" (p. 92)
WiFi	WiFi networks	7.18 "Configuring WiFi Network" (p. 95)
WiFi	Guest network	7.19 "Configuring Guest Network" (p. 100)

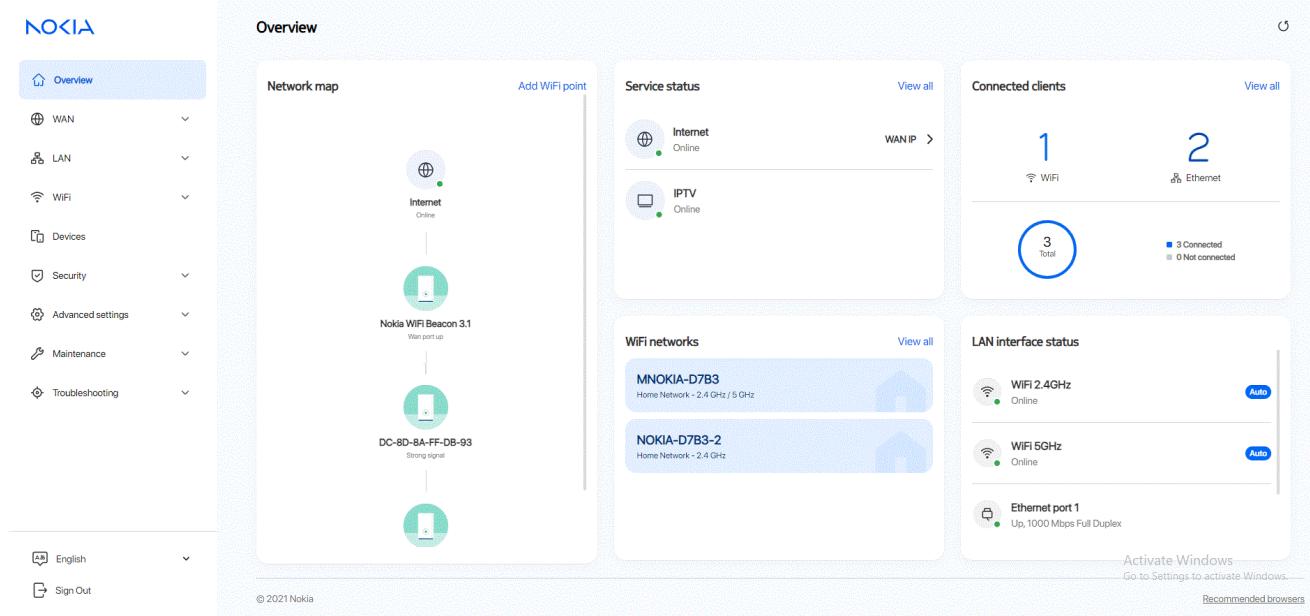
Table 7-1 Beacon 3.1 WebGUI Menu (continued)

Main Menu	Sub-menu	Procedure Reference
WiFi	Network map	7.20 "Viewing Network Map, Adding WiFi Points, Renaming WiFi Points and Removing WiFi Points" (p. 101)
WiFi	Advanced settings	7.22 "Configuring Wireless 2.4 GHz" (p. 106) 7.23 "Configuring Wireless 5 GHz" (p. 108)
WiFi	WiFi statistics	7.24 "Viewing WiFi Statistics" (p. 110)
Devices	-	7.26 "Viewing Device Information" (p. 112)
Security	Firewall	7.28 "Configuring the Firewall" (p. 115)
Security	MAC filter	7.29 "Configuring the MAC Filter" (p. 116)
Security	IP filter	7.30 "Configuring the IP Filter" (p. 118)
Security	Family profiles	7.31 "Configuring Family Profiles" (p. 120)
Security	DMZ and ALG	7.32 "Configuring DMZ and ALG" (p. 126)
Security	Access control	7.33 "Configuring Access Control" (p. 128)
Advanced settings	Port forwarding	7.35 "Configuring Port Forwarding" (p. 131)
Advanced settings	Port triggering	7.36 "Configuring Port Triggering" (p. 132)
Advanced settings	DDNS	7.37 "Configuring DDNS" (p. 133)
Advanced settings	NTP	7.38 "Configuring NTP" (p. 135)
Advanced settings	UPNP and DLNA	7.39 "Configuring UPNP and DLNA" (p. 136)
Maintenance	Change password	7.41 "Configuring the Password" (p. 137)
Maintenance	Backup and restore	7.42 "Backing Up the Configuration" (p. 139) 7.43 "Restoring the Configuration" (p. 139)
Maintenance	Firmware upgrade	7.44 "Upgrading Firmware" (p. 141)
Maintenance	Diagnostics	7.45 "Diagnosing WAN Connections" (p. 142)
Maintenance	Log	7.46 "Viewing Log Files" (p. 145)
Troubleshooting	-	7.48 "Troubleshooting counters" (p. 147)
Troubleshooting	Speed test	7.49 "Viewing Speed Test" (p. 149)

7.4 Viewing overview information

1

Click **Overview** from the left pane. The Overview page displays the following cards.



END OF STEPS

7.4.1 Network Map

Displays information about the status of the mesh network and connection to the internet. The status of the internet connection is defined by the presence of an IP address on the internet service. *Up* is indicated with green and *Down* is indicated with red.

Root device

Displays the mnemonic of the device. The colored indicator as well as the status under the name reflects the physical status of the WAN connection (WAN port). *Up* is Green, *Down* is Red.

Extender device

Displays the mnemonic of the device. The colored indicator as well as the status under the name reflects the physical status of the backhaul connection (Strong Signal = Green, Poor Signal = Amber, Not connected = red).

7.4.2 Radio Access

Displays the 2.4 GHz or 5 GHz signal connection status when a device is connected to a Nokia WiFi Beacon 3.1. Click the button to view the connection details.

7.4.3 Service Status

Displays the active status of the triple-play services.

Internet service

The internet service represents the presence of a WAN IP address for the routed network that has the internet attached to it. The card shows the WAN IP address (IPv4 and/or IPv6).

IPTV service

Shows the status of the IPTV service. If the IPTV flag is enabled on a routed service, the online or offline state is indicated by the presence of a WAN IP address for that routed service. If the IPTV is attached to a bridged service, the online or offline state is defined by the WAN uplink status.

7.4.4 WiFi Networks

Displays a network card per activated single or dual band WiFi network containing the bands supported, the name of the network and the type of network (bridge or routed).

7.4.5 Connected Clients

Displays the total number of online and offline clients connected to this device (single device or mesh system).

7.4.6 LAN Interface Status

Displays information about all the LAN ports of the device.

WiFi 2.4GHz

Shows the status of the 2.4GHz (Up/Down) network and the current band setting. This can either be auto which indicates Radio Resource Management is enabled or in the range 1-13 when manually configured.

WiFi 5GHz

Shows the status of the 5GHz network (Up/Down) and the current band setting. This can either be auto, which indicates Radio Resource Management is enabled or in the range of 36-161 when manually configured.

Ethernet Port

Shows the status of the Ethernet ports (Up/Down), the sync rate (10Mbps, 100Mbps, 1Gbps) and the duplex mode (Half duplex, Full duplex).

WAN Configuration

7.5 Overview

This section describes the WAN configuration procedures that can be performed from the following sub-menu options under the **WAN** menu:

Sub-menu	Procedure
WAN services	7.6 "Configuring WAN Services" (p. 67)
WAN statistics	7.7 "Viewing WAN Statistics" (p. 75)
TR-069	7.8 "Configuring TR-069" (p. 78)
TR-369	7.9 "Configuring TR-369" (p. 79)
IP routing	7.10 "Configuring Static routing" (p. 80)
Qos config	7.11 "Configuring QoS" (p. 82)

7.6 Configuring WAN Services

1

Click **WAN**→**WAN services** in the left pane. The *WAN services* page displays the existing WAN connections in the Overview table. You can click on a connection to modify the connection configuration.

Figure 7-2 Overview table in WAN services page



The screenshot shows the 'WAN services' page with the following interface elements:

- Header: 'WAN / WAN services' with a refresh icon and an 'Add +' button.
- Section: 'Overview'.
- Table: A grid showing the following data for a single connection:

Service Name	Connection mode	Enable/Disable status	Service	IP address
1_TR069_INTERNET_OTHER_R_VID_0	Route	Enable	TR-069, Internet, IPTV	192.85.1.20

2

Click **Add +** to create a WAN connection. The *Create New Connection* page displays.

Figure 7-3 Create New Connection page

WAN / WAN services / **1_INTERNET_R_VID_1001**

WAN connection list **1_INTERNET_R_VID_1001**

Enabled

Connection type **IPoE**

Connection mode **Route Mode**

IP mode **IPv4**

NAT

TR-069

Internet

IPTV

Enable VLAN

VLAN ID **1001**

VLAN PRI **0**

WAN IP mode **DHCP**

Manual DNS

Pri DNS **192.168.1.1**

Sec DNS **192.168.1.2**

DHCP option 50 persistant

Enable DHCP option 60

Enable DHCP option 61

Enable DHCP option 77

Figure 7-4 Create New Connection page - PPPoE Configuration

← WAN / WAN services / **2_INTERNET_R_VID_3000**

WAN connection list **2_INTERNET_R_VID_3000**

Enabled

Connection type **PPPoE**

Connection mode **Route Mode**

IP mode **IPv4&IPv6**

NAT

TR-069

Internet

IPTV

Enable VLAN

VLAN ID **3000**

VLAN PRI **0**

WAN IP mode **PPPoE**

Connection trigger **AlwaysOn**

Username **atc**

Password *********

Keep alive time **50** (5-60 seconds)

Keep alive retry **3** (1-10 times)

Echo value **150**

Figure 7-5 VLAN mode - VLAN Binding

← WAN / WAN services / **2_INTERNET_B_VID_1002**

WAN connection list

Enabled

Connection mode: Bridge Mode

IPTV:

VLAN mode: VLAN binding

VLAN ID: 1002

VLAN PRI: 2

LAN port binding

LAN 1	<input type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
LAN 2	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
LAN 3	<input type="checkbox"/>
PVID	<input checked="" type="checkbox"/>

SSID port binding

SSID 1	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
SSID 2	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
SSID 3	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
SSID 4	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
SSID 5	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
SSID 6	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>
SSID 7	<input checked="" type="checkbox"/>
PVID	<input checked="" type="checkbox"/>

Figure 7-6 Bridge mode - Transparent

The screenshot shows the WAN configuration interface for a connection named '3_INTERNET_OTHER_B_VID_1'. The connection is enabled and set to Bridge Mode. The VLAN mode is set to Transparent. The LAN port binding for LAN1 is disabled. The SSID port binding section shows that SSID 2 is enabled, while SSID 1, 3, 4, 5, 6, 7, and 8 are disabled. The interface includes standard save and delete buttons.

WAN / WAN services / 3_INTERNET_OTHER_B_VID_1

WAN connection list

3_INTERNET_OTHER_B_VID_1

Enabled

Connection mode

Bridge Mode

IPTV

VLAN mode

Transparent

LAN port binding

SSID port binding

SSID 1

SSID 2

SSID 3

SSID 4

SSID 5

SSID 6

SSID 7

SSID 8

Save

Delete

Figure 7-7 Bridge mode - Tunnel

WAN / WAN services / 4_INTERNET_B_VID_1002

WAN connection list: 4_INTERNET_B_VID_1002

Enabled:

Connection mode: Bridge Mode

IPTV:

VLAN mode: Tunnel

VLAN ID: 1002

VLAN PRI: 0

LAN port binding: LAN1

SSID port binding:

- SSID 1:
- SSID 2:
- SSID 3:
- SSID 4:
- SSID 5:
- SSID 6:

3

Configure the following parameters:

Table 7-2 WAN services parameters

Field	Description
WAN connection list	Select a WAN connection from the list.
Enabled	Select the toggle button to enable the WAN connection.
Connection type	Select a connection type from the list: <ul style="list-style-type: none"> • IPoE • PPPoE

Table 7-2 WAN services parameters (continued)

Field	Description
Connection mode	Select the connection mode of the WAN connection from the list: <ul style="list-style-type: none">• Route Mode• Bridge Mode
IP mode	This field is applicable only if the connection mode is Route Mode . Select an IP mode from the list: <ul style="list-style-type: none">• IPv4• IPv4 & IPv6• IPv6 When the IP mode IPv4 & IPv6 or IPv6 is selected, you need to configure Address method , Enabled prefix delegation and Prefix type .
NAT	Select the toggle button to enable NAT. This option is applicable only if the connection mode is Route Mode .
TR-069	Select the toggle button to enable TR-069. This option is applicable only if the connection mode is Route Mode .
Internet	Select the toggle button to enable Internet. This option is applicable only if the connection mode is Route Mode .
IPTV	Select the toggle button to enable IPTV.
Enable VLAN	Select the toggle button to enable VLAN. This option is applicable only if the connection mode is Route Mode .
VLAN mode	Select a VLAN mode from the list: <ul style="list-style-type: none">• VLAN binding• Tunnel• Transparent This option is applicable only if the connection mode is Bridge Mode .
VLAN ID	Enter the VLAN ID. Allowed values: 2 to 4094 In the bridge mode, this option is applicable only if the VLAN mode is VLAN binding and Tunnel .
VLAN PRI	Enter the VLAN PRI. VLAN priority allows to assign a priority to outbound packets containing the specified VLAN ID. Allowed values: 0 to 7 In the bridge mode, this option is applicable only if the VLAN mode is VLAN binding or Tunnel .
LAN port binding	Select the toggle button next to the LAN to enable it. Select the toggle button next to the PVID to enable it. This option is applicable in all VLAN modes.
SSID port binding	Select the toggle button next to the SSID to enable it. Select the toggle button next to the PVID to enable it. This option is applicable in all VLAN modes.

Table 7-2 WAN services parameters (continued)

Field	Description
WAN IP mode	Select an IP mode from the list: <ul style="list-style-type: none"> • DHCP • PPPoE This option is visible only if you select PPPoE as the connection type. • Static
Manual DNS	If the selected IP mode is IPv4 and the WAN IP mode is DHCP , enter the Domain Name Server (DNS) to be configured manually. You can also enter the Domain Name Server (DNS) to be configured manually if the selected IP mode is IPv4 and the connection type is PPPoE .
IPv4 Address	If the selected IP mode is IPv4 or IPv4&IPv6 and the WAN IP mode is Static , enter the static IPv4 address.
Netmask	If the selected IP mode is IPv4 or IPv4&IPv6 and the WAN IP mode is Static , enter the netmask.
Gateway	If the selected IP mode is IPv4 or IPv4&IPv6 and the WAN IP mode is Static , enter the gateway IP address.
Pri DNS	If the selected IP mode is IPv4 or IPv4&IPv6 and the WAN IP mode is Static , enter the primary Domain Name Server (DNS). Also, if the selected IP mode is IPv4 and the Connection type is PPPoE , enter the primary Domain Name Server (DNS).
Sec DNS	If the selected IP mode is IPv4 or IPv4&IPv6 and the WAN IP mode is Static , enter the secondary Domain Name Server (DNS). Also, if the selected IP mode is IPv4 and the Connection type is PPPoE , enter the secondary Domain Name Server (DNS).
Ter DNS	If the selected IP mode is IPv4 or IPv4&IPv6 and the WAN IP mode is Static , enter the tertiary Domain Name Server (DNS).
Connection trigger	Select the connection trigger type from the list. The default option is Always On . This option is applicable only if the WAN IP mode is PPPoE .
Username	Enter the username to log in to the configuration server. This option is applicable only if the WAN IP mode is PPPoE .
Password	Enter the password to log in to the configuration server. Allowed values are limited to numbers, letters and special characters ! # + , - . / : = @ _ . This option is applicable only if the WAN IP mode is PPPoE .
Keep alive time	The PPPoE connection type triggers one heartbeat each, at the configured time interval to keep the session online. Allowed values: 5 to 60 seconds This option is applicable only if the WAN IP mode is PPPoE .
Keep alive retry	Configure the number of retries to check the Keep Alive status of the PPPoE session after time-out. Allowed values: 1 to 10. This option is applicable only if the WAN IP mode is PPPoE .

Table 7-2 WAN services parameters (continued)

Field	Description
Echo value	Indicates the number of times the device sends messages to the server to check if the IP address is available or not. This option is applicable only if the WAN IP mode is PPPoE .
Address method	If the selected IP mode is IPv6 or IPv4&IPv6 , select the address method from the list: <ul style="list-style-type: none"> • AutoConfigured • DHCPv6 • DHCPv6_PD • DHCPv6_NA • Static
Enable prefix delegation	If the selected address method is AutoConfigured , select the toggle button to enable inclusion of the Identity Association (IA) for Prefix Delegation option in Solicit messages.
Prefix type	Displays mechanism through which the prefix was assigned or most recently updated.
IP Address (v6)	If the selected address method is Static , enter the IPv6 address.
Gateway (v6)	If the selected address method is Static , enter the gateway IPv6 address.
IPv6 address prefix	If the selected address method is Static , enter the IPv6 address prefix.
Pri DNS (v6)	If the selected address method is Static , enter the primary DNS IP address.
Sec DNS (v6)	If the selected address method is Static , enter the secondary DNS IP address.
DHCP option 50 persistent	Select the toggle button to enable DHCP Option 50 persistent.
Enable DHCP option 60	Select the toggle button to enable DHCP Option 60 (vendor class identifier).
Enable DHCP option 61	Select the toggle button to enable DHCP Option 61 (client identifier).
Enable DHCP option 77	Select the toggle button to enable DHCP Option 77 (user class information).
Enable DHCP option 90	Select the toggle button to enable DHCP Option 90 (authentication information).

4

Click **Save**. The connection is listed in the Overview table of the *WAN services* page.

END OF STEPS

7.7 Viewing WAN Statistics

1

Click **WAN→WAN statistics** in the left pane. The *WAN Statistics* page displays the following information for WAN ports.

Figure 7-8 WAN Statistics page

WAN / WAN statistics				
Overview				
Service Name	Connection mode	Enable/Disable status	Service	IP address
1_TR069_INTERNET_OTHER_R_VID_0	Route	Enable	TR-069, Internet, IPTV	192.85.1.20

2

Click on the service name to display the WAN statistics details page.

Figure 7-9 WAN Statistics page info

← WAN / WAN statistics / 1_TR069_INTERNET_OTHER_R_VID_0	
WAN port status	
Ethernet link status	Up
Sync speed	1000
Duplex mode	Full Duplex
Service	
WAN connection list	1 TR069 INTERNET OTHER_R_VID_0
Enabled	
Service details	
Access type	access_dsl1
Connection mode	Dynamic DHCP
VLAN	0
WAN link status	Linking
MAC address	00:0B:87:04:27
WAN link status(v6)	Linking
Service statistics	
Counters	1_TR069_INTERNET_OTHER_R_VID_0
Bytes sent	61612
Bytes received	0
Packets sent	182
Packets received	0
Unicast packets sent	0
Unicast packets received	0
Broadcast packets sent	168

Table 7-3 WAN statistics parameters

Field	Description
WAN port status	
Ethernet link status	Displays the Ethernet link status whether it is Up or Down.
Sync speed	Displays the current synchronization speed of the WAN port, typically measured in Mbits per second (Mbps). It indicates the maximum data transfer rate that device can achieve between device WAN port to the next hop device in the network.

Table 7-3 WAN statistics parameters (continued)

Field	Description
Duplex mode	Displays whether the WAN port is operating in full-duplex or half-duplex mode. Full-duplex: Allows simultaneous data transmission in both directions. Half-duplex: Allows data transmission in only one direction at a time.
Service	
WAN connection list	Select a WAN connection from the list.
Enabled	Displays whether WAN connection is either enabled or disabled.
Service details	
Access type	Displays the access type.
Connection mode	Displays the connection mode of the WAN connection.
VLAN	Displays the VLAN mode based on WAN connection mode.
WAN link status	Displays the WAN status link whether it is Up or Down. This option is available when the IP mode is IPv4 & IPv6 or IPv6 .
DHCP Keep Alive	Displays whether the DHCP Keep Alive is enabled or Disabled.
PON link status	Displays whether the PON link status is Up or Down.
Primary DNS	Displays the primary DNS address.
Secondary DNS	Displays the secondary DNS address.
Ethernet link status	Displays the Ethernet status link whether it is Up or Down.
Pri DNS(v6)	Displays the primary DNS address. This option is available when the IP mode is IPv4 & IPv6 or IPv6 .
Service statistics	
Counters	Displays the counters details.
Bytes sent/received	Displays the bytes sent and received.
Packets sent/received	Displays the packets sent and received.
Errors sent/received	Displays the errors sent and received.
Unicast packets sent/received	Displays the unicast packets sent and received.
Discard packets sent/received	Displays the discard packets sent and received.
Broadcast packets sent/received	Displays the broadcast packets sent and received.
Unknown proto packets received	Displays the proto packets received.
Rx/Tx drops	Displays the Rx/Tx dropped packets.
Rx/Tx errors	Displays the Rx/Tx error packets.

END OF STEPS

7.8 Configuring TR-069

1

Click **WAN→TR-069** in the left pane. The *TR-069* page displays.

Figure 7-10 TR-069 page

WAN / TR-069

Enable

Periodic inform enable

Periodic inform interval(s) 3600

URL https://acs.nokia.net:7754

Username admin

Password

Connection request username itms

Connection request password

Save

2

Configure the following parameters:

Table 7-4 TR-069 parameters

Field	Description
Enable	Select the toggle button to enable CWMP function.
Periodic inform enable	Select the toggle button to enable periodic inform updates.
Periodic inform interval(s)	Enter the time between periodic inform updates, in seconds.
URL	Enter the URL of the auto-configuration server. Note: When you enter a HTTP URL, a security warning is displayed that a HTTPS URL is recommended. Click OK to continue.

Table 7-4 TR-069 parameters (continued)

Field	Description
Username	Enter the Username used to authenticate the CPE when making a connection to the ACS.
Password	Enter the Password used to authenticate the CPE when making a connection to the ACS.
Connect request username	Enter the Username used to authenticate an ACS making a Connection Request to the CPE.
Connect request password	Enter the Password used to authenticate an ACS making a Connection Request to the CPE.

3

Click **Save**.

END OF STEPS

7.9 Configuring TR-369

i Note: The TR-369 configuration option is available only if the TR-181 data model is active.

1

Click **WAN→TR-369** in the left pane. The *TR-369* page displays.

Figure 7-11 TR-369 page

WAN / TR-369

Enable TR369 / USP

Controller endpoint ID: self:hdmept:controller2

MTP protocol: MQTT

Transport: TCP/IP

Broker address: 135.249.60.21

Broker Port: 1883

Username: ALCLEB413FFA

Password: *****

Save

2

Configure the following parameters:

Table 7-5 TR-369 parameters

Field	Description
Enable TR369/USP	Select the toggle button to enable TR-369/USP and click Save .
Controller endpoint ID	Enter the controller endpoint ID.
MTP Protocol	Select the MTP protocol from the list (currently only MQTT is supported).
Transport	Select the transport option from the list: <ul style="list-style-type: none">• TCP/IP• TLS Note: If you attempt to change the configuration from TLS to TCP/IP, a security warning is displayed that this option poses security risks. Click OK to continue.
Broker address	Enter the broker IP address.
Broker port	Enter the broker port number.
Username	Enter the username to authenticate with MQTT broker.
Password	Enter the password to authenticate with MQTT broker.

3

Click **Save**.

END OF STEPS

7.10 Configuring Static routing

1

Click **WAN**→**Static routing** in the left pane. The *IP routing* page displays.

Figure 7-12 IP routing page

WAN / **IP routing**

Enable IP routing

Destination IP address

Destination netmask

Gateway 0.0.0.0

IPv4 interface Select option

Forwarding policy Select option

Add

2

Configure the following parameters:

Table 7-6 IP routing parameters

Field	Description
Enable IP routing	Select the toggle button to enable IP routing.
Destination IP address	Enter the destination IP address.
Destination netmask	Enter the destination netmask.
Gateway	Enter the gateway IP address.
IPv4 interface	Select an IPv4 interface from the list.
Forwarding policy	Select a forwarding policy from the list.

3

Click **Add**. The IP route is added to the *IP routing table*.

END OF STEPS

7.11 Configuring QoS

1

Click **WAN→QoS config** in the left pane. The *QoS config* page displays.

Figure 7-13 QoS config page (L2 Criteria)

The screenshot shows the 'WAN / QoS config' page with the 'L2 Criteria' tab selected. The interface is divided into two main sections: 'Classification criteria' and 'Classification row'.

Classification criteria:

- Type:** L2 Criteria
- Source Mac:** Ex. AA:BB:CC:DD:EE:FF
- Enable source MAC mask:**
- Source MAC mask:** (empty input field)
- Exclude:**
- Interface:** Select option (dropdown menu)

Classification row:

- DSCH remark:** (empty input field)
- Range 0-63:** (empty input field)
- 802.1p Remark:** (empty input field)
- Range 0-7:** (empty input field)
- Forwarding policy:** (empty input field)
- Range 1-7:** (empty input field)

Figure 7-14 QoS config page (L3 Criteria)

The screenshot shows a configuration interface for QoS. At the top, there is a header 'WAN / QoS config' and a 'Type' dropdown set to 'L3 Criteria'. Below this, there is a section titled 'Classification criteria' with the following fields:

- Protocol: None
- Application: Customer Setting
- Source IP: (empty)
- Source IP Mask: (empty)
- Dest IP: (empty)
- Dest IP mask: (empty)
- Source Port: (empty)
- Source Port Max: (empty)
- Destination Port: (empty)
- Dest Port Max: (empty)
- 802.1p: (empty)
- Interface: Select option

2

Configure the following parameters:

Table 7-7 QoS config parameters

Field	Description
Type	Select a QoS service layer type from the list: <ul style="list-style-type: none"> • L2 Criteria • L3 Criteria
Classification criteria (L2)	
Source MAC	Enter the source MAC address.
Enable source MAC mask	Select the toggle button to enable the source MAC mask. This button is disabled by default.
Source MAC mask	Enter the source MAC mask address. The syntax is for example: FF:FF:FF:00:00:00 which must be a continuous bit mask pattern on this device. This field is visible only if the Enable source MAC mask button is enabled.
Interface	Select an interface from the list.
Classification criteria (L3)	

Table 7-7 QoS config parameters (continued)

Field	Description
Protocol	Select a protocol from the list.
Application	Select an application from the list or select Custom Settings and enter an application name.
Source IP	Enter the source IP address.
Source IP mask	Enter the source IP address netmask.
Destination IP	Enter the destination IP address.
Destination IP mask	Enter the destination IP address netmask.
Source port	Enter the source port number.
Source port max	Enter the values for the source port max (highest port number)
Destination port	Enter the destination port number.
Destination port max	Enter the values for the destination port max (highest port number)
802.1p	Indicates whether 802.1p is enabled.
Interface	Select an interface from the list.
Classification row	
DSCP remark	Enter the value for the DSCP remark (applicable only for L3 criteria). Allowed values: 0 to 63
802.1p Remark	Enter the value for the 802.1p remark. Allowed values: 0 to 7
Forwarding policy	Enter the number for the forwarding policy. Allowed values: 1 to 7

3

Click **Add** to add a QoS policy.

END OF STEPS

LAN Configuration

7.12 Overview

This section describes the LAN configuration procedures that can be performed from the following sub-menu options under the **LAN** menu:

Sub-menu	Procedure
DHCP IPv4	7.13 "Configuring DHCP IPv4" (p. 85)
DHCP IPv6	7.14 "Configuring DHCP IPv6" (p. 87)
DNS	7.15 "Configuring DNS" (p. 89)
LAN statistics	7.16 "Viewing LAN Statistics" (p. 92)

7.13 Configuring DHCP IPv4

1

Click **LAN→DHCP IPv4** in the left pane. The *DHCP IPv4* page displays.

Figure 7-15 DHCP IPv4 page

LAN / DHCP IPv4

IPv4 address: 192.168.18.1

Subnet mask: 255.255.255.0

DHCP enable:

DHCP start IP address: 192.168.18.2

DHCP end IP address: 192.168.18.253

DHCP lease time: 1440
(5~129600 mins, or 0 means 1 day)mins.

Primary DNS: [empty]

Secondary DNS: [empty]

Save

Static IPv4 address reservations

MAC address: [empty]

IPv4 address: [empty]

Add

2

Configure the following LAN parameters:

Table 7-8 DHCP IPv4 parameters

Field	Description
IPv4 address	Enter the IPv4 address of the Beacon.
Subnet mask	Enter the subnet mask of the Beacon.

Table 7-8 DHCP IPv4 parameters (continued)

Field	Description
DHCP enable	Select the toggle button to enable DHCP. If this toggle button is not enabled, the DHCP functionality cannot be used. you need not configure DHCP start IP address, DHCP end IP address and DHCP lease time if this toggle button is not enabled.
DHCP start IP address	Enter the starting range of the DHCP IP address.
DHCP end IP address	Enter the ending range of the DHCP IP address.
DHCP lease time	Enter the DHCP lease time (in minutes). Allowed values: 5 to 129600 minutes or 0 for 1 day
Primary DNS	Enter the primary DNS IP address.
Secondary DNS	Enter the secondary DNS IP address.

3

Click **Save**.

4

Configure the Static DHCP parameters.

Table 7-9 Static DHCP parameters

Field	Description
MAC address	Enter the hexadecimal MAC address to associate with the LAN.
IPv4 address	Enter the IPv4 address to associate with the bound MAC address.

5

Click **Add**. Repeat steps 4 and 5 for all MAC addresses to be bound.

END OF STEPS

7.14 Configuring DHCP IPv6

1

Click **LAN→DHCP IPv6** in the left pane. The *DHCP IPv6* page displays.

LAN / DHCP IPv6

Save

LAN prefix configuration

Prefix Config: Use WAN provided prefix

Interface: 1_TR069_INTERNET_OTHER_R_VID_300

Received IPv6 prefix: 2003:10:10:98::/64

IPv6 address method

Address method: Stateless Address Autoconfig (SLAAC)

Receive additional options via DHCPv6: Stateful DHCPv6, Stateless Address Autoconfig (SLAAC)

Advanced router advertisement configuration

Maximum interval for periodic RA messages: 600 secs

Minimum interval for periodic RA messages: 200 secs

2

Configure the following parameters:

Table 7-10 DHCP IPv6 parameters

Field	Description
LAN prefix configuration	
Prefix Config	Select a prefix configuration option from the list: <ul style="list-style-type: none"> Use WAN provided prefix (prefix is obtained from the WAN) Static (enables you to enter the prefix)
Interface	This field displays if you select the Use WAN provided prefix option from the Prefix Config list. Select a WAN connection interface from the list.
Received IPv6 prefix	This field displays the received IPv6 prefix. This field is displayed only when Prefix Config is set to Use WAN provided prefix .
Static IPv6 prefix	This field displays the static IPv6 prefix. This field is displayed only when Prefix Config is set to Static .
IPv6 address method	

Table 7-10 DHCP IPv6 parameters (continued)

Field	Description
Address method	Select a address method option from the list: • Stateless Address Autoconfig (SLAAC) • Stateful DHCPv6
Enable stateless and stateful DHCPv6 simultaneously	Select the toggle button to enable stateless or stateful DHCPv6 simultaneously. This parameter is visible only if the Address method is Stateful DHCPv6 .
DHCP Start IP Address	Enter the starting range of the DHCP IP address. This parameter is visible only if the address method is Stateful DHCPv6 .
DHCP End IP Address	Enter the ending range of the DHCP IP address. This parameter is visible only if the address method is Stateful DHCPv6 .
Received additional options via DHCPv6	Select the toggle button to enable additional options via DHCPv6. This field is displayed only when Address method is set to Stateless Address Autoconfig (SLAAC) .
Advanced router advertisement configuration	
Maximum interval for periodic RA messages	Enter the maximum interval (in seconds) for periodic Router Advertisement messages. Allowed values: 4 to 1800 seconds
Minimum interval for periodic RA messages	Enter the minimum interval (in seconds) for periodic Router Advertisement messages. Allowed values: 4 to 1800 seconds

3

Click **Save**.

END OF STEPS

7.15 Configuring DNS

7.15.1 IPv4 DNS configuration

1

Click **LAN**→**DNS**→**IPv4** in the left pane. The *DNS* page displays.

Figure 7-16 DNS page (IPv4)

The screenshot shows the 'LAN / DNS' configuration page for IPv4. At the top, there is a 'DNS Proxy' toggle switch which is turned on. Below it is a 'Save' button. The next section is for 'Static DNS entries' and contains fields for 'Domain Name' and 'IPv4 address'. There is an 'Add' button to create new entries. The table below lists a single entry: 'dsldevice.lan' with 'IPv4 address' '192.168.1.254'. There is a 'Delete' button next to this entry.

Domain Name	IPv4 address	Delete
dsldevice.lan	192.168.1.254	Delete

2

Configure the following parameters:

- Select the **DNS proxy** toggle button to enable the DNS proxy and click **Save**.
- Configure the following:
 - Enter the domain name in the Domain Name field.
 - Enter the domain IP address in the IPv4 Address field.
 - Click **Add**.
- Configure the following:
 - Enter the origin domain name in the Origin Domain field.
 - Enter the new domain name in the New Domain field.
 - Click **Add** to associate an origin domain with a new domain.

The **DNS** table displays the configured domain names and the associated IPv4 address. Click **Delete** to delete the table entries.

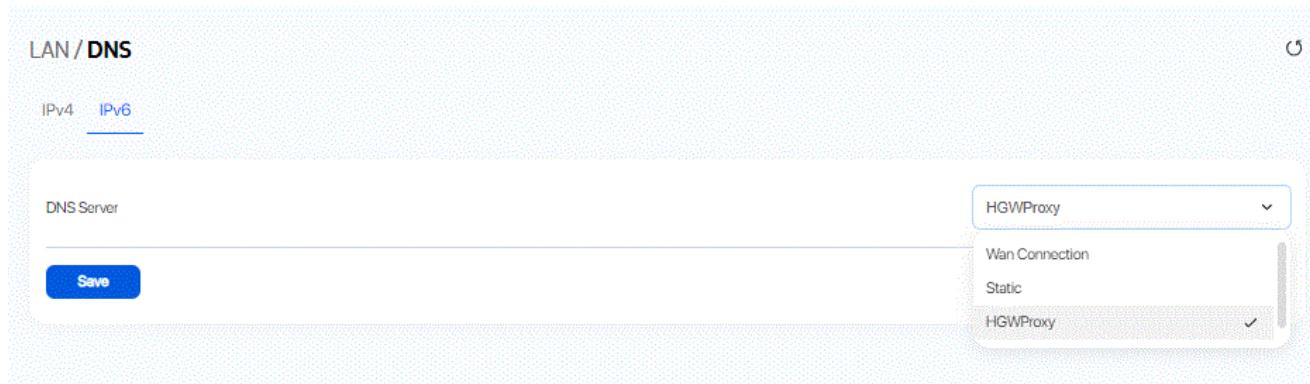
END OF STEPS

7.15.2 IPv6 DNS configuration

1

Click **LAN**→**DNS**→**IPv6** in the left pane. The **DNS** page displays.

Figure 7-17 DNS page (IPv6)



2

Configure the following parameters

Table 7-11 DNS parameters

Field	Description
DNS Server	Select DNS server option from the list: <ul style="list-style-type: none">• Wan Connection (Server address is obtained from the WAN.)• Static (enables you to enter the address.)• HGWProxy (The Home Gateway acts as DNS Proxy).
Preferred DNS	Enter the preferred IPv6 address. This parameter is visible only if the DNS Server is Static .
Alternate DNS	Enter the Alternate IPv6 address. This parameter is visible only if the DNS Server is Static .
Interface	This field is displayed if you select the Wan Connection option from the DNS Server list.

3 _____

Click **Save**.

END OF STEPS _____

7.16 Viewing LAN Statistics

1 _____

Click **LAN→LAN statistics** in the left pane. The *LAN statistics* page displays the following information.

Figure 7-18 LAN statistics page

LAN / LAN statistics	
SSID name	PLAY internet_E891
LAN wireless info	
Wireless status	On
Wireless channel	1
Wireless encryption status	WPA2-PSK
Wireless Rx packets	18677
Wireless Tx packets	20046
Wireless Rx bytes	1131318
Wireless Tx bytes	11595833
Power transmission(mW)	100
LAN ethernet info	
Ethernet status	Up
Ethernet IP address	192.168.18.1
Ethernet subnet mask	255.255.255.0
Ethernet MAC address	e0:1f:2b:00:e8:91
Ethernet Rx packets	12957910
Ethernet Tx packets	11176771
Ethernet Rx bytes	5777375369
Ethernet Tx bytes	2268410363
Info	
Status	Up
Duplex mode	Full Duplex
Max bit rate	1000
Bytes Sent	453698667
Bytes received	1155034048
Packets sent	2235479
Packets received	2591726
Errors sent	0
Unicast packets sent	2104914
Unicast packets received	2278732
Discard packets sent	0
Discard packets received	0
Multicast packets sent	130276
Multicast packets received	312207
Broadcast packets sent	289
Broadcast packets received	787
Unknown proto packets received	0
CRC errors received	0

Table 7-12 LAN statistics parameters

Field	Description
SSID name	Select an SSID from the list.
LAN Wireless info	Displays the wireless status, wireless channel, encryption status, received and transmitted bytes and packets and power transmission in mW.
LAN Ethernet info	Displays the Ethernet status IP address, subnet mask, MAC address, received and transmitted bytes and packets.
Info	Displays the information of each such as status, duplex mode, maximum bit rate, packets received and sent, CRC errors, and so on.

END OF STEPS

WiFi Configuration

7.17 Overview

This section describes the WiFi configuration procedures that can be performed from the following sub-menu options under the **WiFi** menu:

Sub-menu	Procedure
WiFi networks	7.18 "Configuring WiFi Network" (p. 95)
Guest network	7.19 "Configuring Guest Network" (p. 100)
Network map	7.20 "Viewing Network Map, Adding WiFi Points, Renaming WiFi Points and Removing WiFi Points" (p. 101)
Advanced settings	7.22 "Configuring Wireless 2.4 GHz" (p. 106) 7.23 "Configuring Wireless 5 GHz" (p. 108)
WiFi statistics	7.24 "Viewing WiFi Statistics" (p. 110)

7.18 Configuring WiFi Network

1

Click **WiFi**→**WiFi network** in the left pane. The *WiFi network* page displays the existing WiFi networks. You can click **Detail** on a network to view the network details.

Figure 7-19 WiFi network page

The screenshot shows the WiFi network configuration page for a device named NOKIA-62B0. The page includes the following settings:

- SSID name: NOKIA-62B0
- Enable WiFi network: Enabled (blue switch)
- Band type: 2.4 GHz / 5 GHz
- SSID index: 1,5
- Broadcast the WiFi network: Enabled (blue switch)
- Guest mode: Disabled
- Port Mode: Route
- Total max users: 64
- Encryption mode: WPA2-Personal
- Password: (redacted)
- Enable WPS: Enabled (blue switch)
- WPS mode: PBC
- WPS connect: (button)
- Save: (button)

2

Click **Add WiFi network +** to create a WiFi network. The *Add WiFi network* page displays.

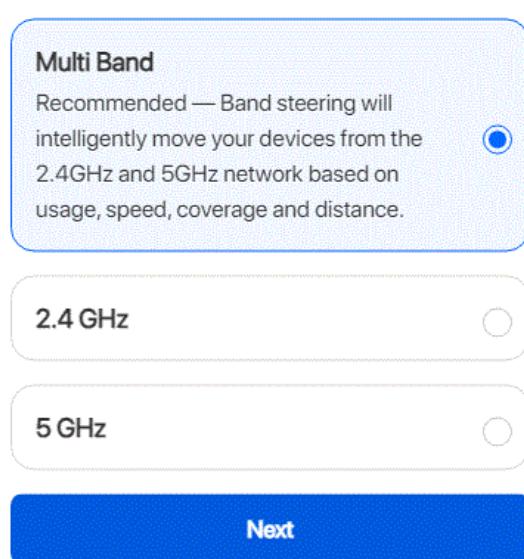


Note: The **Add WiFi point** option is displayed only when the mesh feature is enabled.

Figure 7-20 Add WiFi network page

Add WiFi network

Please select a preferred network type from the options below.



3

Configure the following parameters:

Table 7-13 Add WiFi network parameters

Field	Description
Multiband	Select this option to configure a multiband wireless network. This option is recommended your devices on 2.4 GHz , 5 GHz or 6 GHz bands based on usage, speed, coverage and distance.
2.4 GHz	Select this option to configure a 2.4 GHz wireless network.
5 GHz	Select this option to configure a 5 GHz wireless network.

4

Click **Next**.

5

Enter the name of your network in the Name field and click **Save**.

6

Enter the password for the network in the Password field and click **Save**.

The WiFi network is created and is displayed as a card in the **Enabled** tab of the *WiFi networks* page.



Note: You can click the ellipsis icon on the card of your WiFi network and select **Edit** to edit and save the network name and password.

7

Click **Detail** to view and edit the SSID configuration for your network.

Figure 7-21 WiFi network - example of SSID Configuration page

The screenshot shows the 'SSID configuration' page for a WiFi network named 'NOKIA-62B0'. The configuration options include:

- SSID name: NOKIA-62B0
- Enable WiFi network: Enabled (blue toggle switch)
- Band type: 2.4 GHz / 5 GHz
- SSID index: 1,5
- Broadcast the WiFi network: Enabled (blue toggle switch)
- Guest mode: Disabled
- Port Mode: Route
- Total max users: 64
- Encryption mode: WPA2-Personal
- Password: [REDACTED] (show/hide eye icon)
- Enable WPS: Enabled (blue toggle switch)
- WPS mode: PBC

At the bottom of the page are two buttons: 'WPS connect' and 'Save'.

8

Configure the following parameters:

Field	Description
SSID name	Displays the SSID name.
Enable SSID	Select the toggle button to enable SSID.
Band type	Displays the band type.
SSID index	Displays the SSID index.
Broadcast the WiFi network	Select the toggle button to enable broadcasting of the WiFi network.
Guest Mode	Indicates whether guest mode is enabled or disabled. When a particular SSID is enabled with Guest Mode, LAN devices connected to the SSID can only connect to the Internet. Such devices cannot see or communicate with other LAN devices.
Isolation	Select the toggle button to enable isolation.
Total MAX users	Enter the maximum number of users.
Encryption Mode	Select an encryption mode from the list: <ul style="list-style-type: none">• None• WPA2-Personal• WPA3-Personal• WPA3-Personal-Transition• WPA3-Enterprise
WiFi Key	Enter the WiFi key.
Enable WPS	Select the toggle button to enable WPS. Note: When you select Enable, a security warning is displayed. Click OK to continue.
WPS Mode	Select the required WPS mode from the list: <ul style="list-style-type: none">• PBC• STA PIN• AP PIN

Notes:

1. The EasyMesh standard does not support synchronizing WPA3-only mode to the other nodes that participate in the mesh. For this reason, the WPA3 (only) mode should not be used on devices that participate in an EasyMesh mesh. Instead, WPA2/WPA3 mode should be used, as is also mentioned in the EasyMesh standard.

9

Click **Save**.

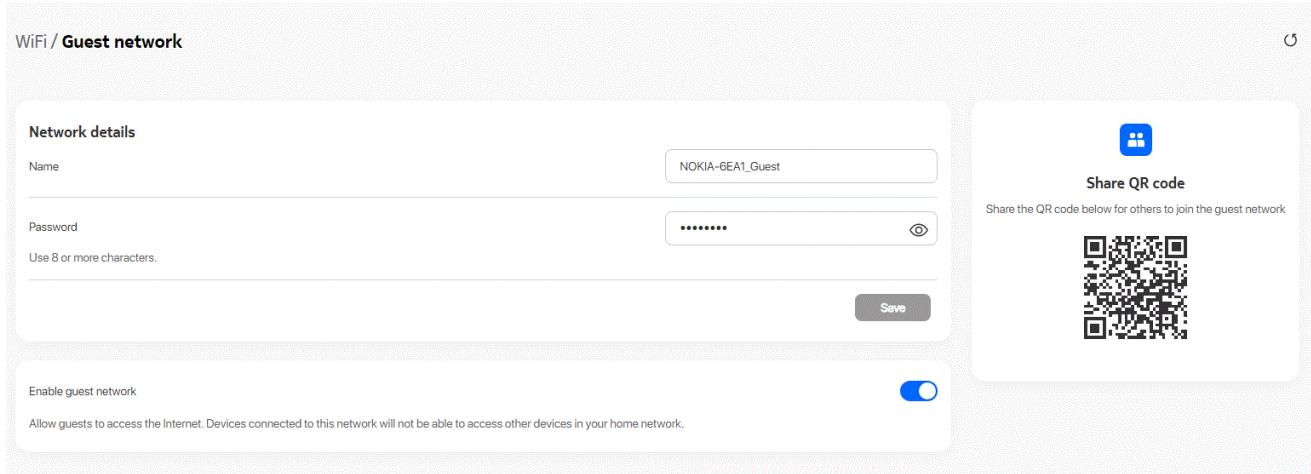
END OF STEPS

7.19 Configuring Guest Network

1

Click **WiFi→Guest network** in the left pane. The *Guest network* page displays the network details.

Figure 7-22 Guest network page



2

Configure the following parameters:

Table 7-14 Guest network parameters

Field	Description
Name	Enter the name for guest network.
Password	Enter a password for guest network. Click Save .
Enable guest network	Select this toggle button to enable guest WiFi. Enabling the Guest SSID creates a multiband network (2.4GHz and 5GHz). Atleast one 2.4GHz and one 5GHz SSID index must be available to enable Guest network. After enabling the Guest Network a new WiFi card can be seen in WiFi networks page and Overview page with Guest SSID details.

3

Share the QR code for others to join the guest network.

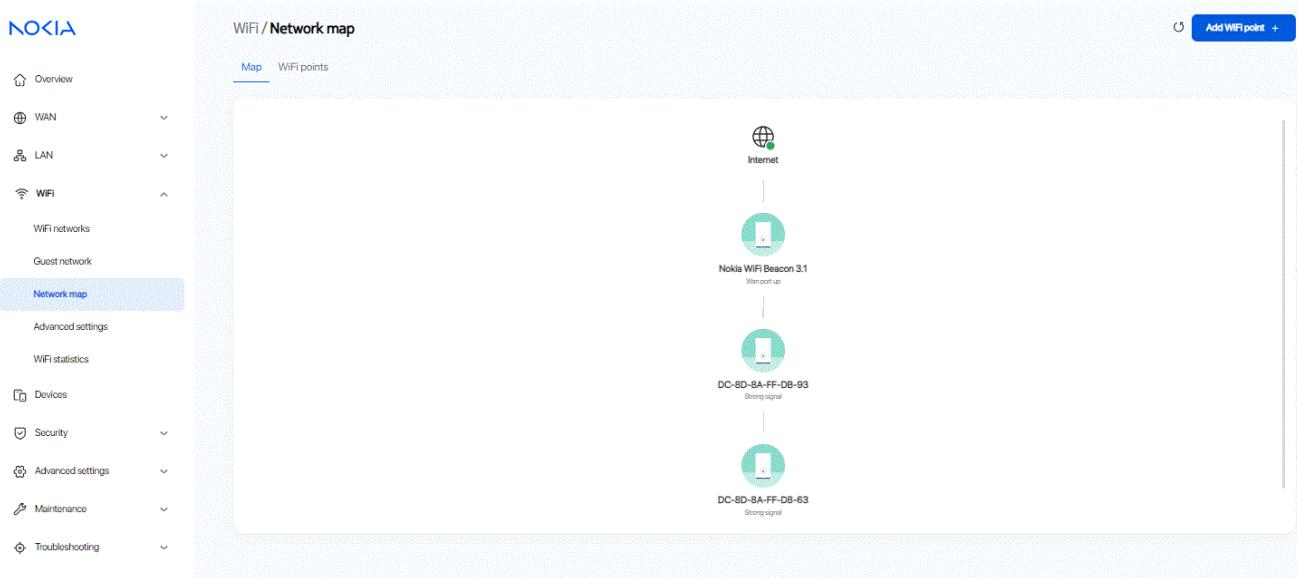
END OF STEPS

7.20 Viewing Network Map, Adding WiFi Points, Renaming WiFi Points and Removing WiFi Points

1

Click **WiFi**→**Network map** in the left pane. The *Network map* page displays the WiFi points added to the network.

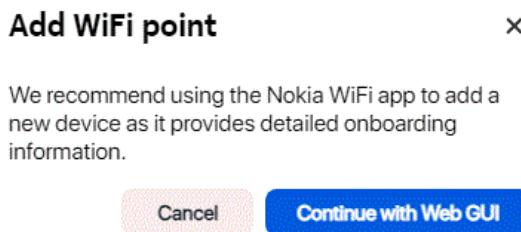
Figure 7-23 Network map page



2

Perform the following steps to add a WiFi point:

- Click **Add WiFi point** at the top right corner of the *Device Info* page. A message displays that it is recommended to use the Nokia WiFi mobile app to add a WiFi point.
- To add a WiFi point using the WebGUI, click **Continue with WebGUI**.



- c. In the *Add WiFi point* page, enter the serial number and click **Add**.

Add WiFi point

Serial number

ALCLB278FA44

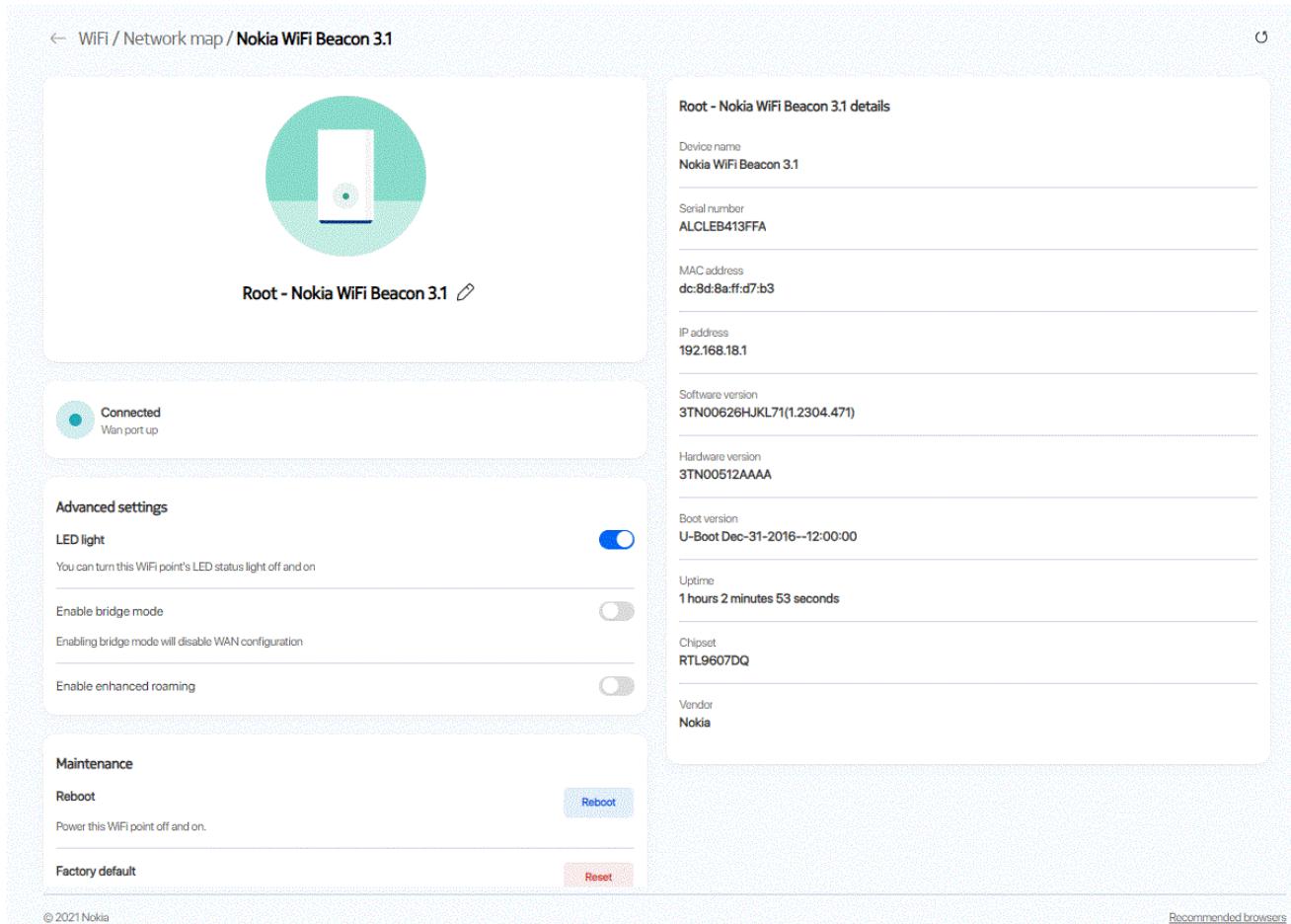
Add

The WiFi point is displayed in the *Detected* or *Not detected* list of the *Onboarding Status* panel in the *Device Info* page.

3

Click on a WiFi point to view the device details. The <Device> page displays the details of the selected device in the network, including connection status.

Figure 7-24 <Device> page



4

The WiFi point name can be edited by clicking the edit icon edit.

Perform the following steps to change the name of your WiFi point:

- To edit the name of the WiFi point, click the Edit icon edit. The **Change the name of your WiFi point** page displays.
- On the page **Change the name of your WiFi point**, click the drop-down menu to select a name for the WiFi point, or enter a **Custom name** to create your own customized name.
- Click **Save**.

Figure 7-25 Change the name of your WiFi point page

Change the name of your WiFi point ×

Pick a name or create your own.

Custom

Custom name

B3_1_Root

Maximum length is 17 characters.

Save

Table 7-15 <Device> parameters

Field	Description
Device name	Name on the device
Serial number	Serial number of the device
MAC address	MAC address of the device
IP address	IP address of the device
Software version	Software version of the device (displays only for a root device)
Hardware version	Hardware version of the device (displays only for a root device)
Boot version	Boot version of the device (displays only for a root device)
Uptime	Amount of time the device has run since last reset in hours, minutes, and seconds (displays only for a root device)
Chipset	Chipset of the device (displays only for a root device)
Vendor	Name of the vendor (displays only for a root device)
Onboarding status	Onboarding status of the device in the WiFi network (displays only for an extender device)
Backhaul status	Backhaul status of the device (displays only for an extender device)
Location nickname	Name of the location of the device (displays only for an extender device)

5

Click **LED Light** to enable the LED light on the device.

6

Perform any of the following, as applicable:

- **Reboot the device:**

1. Click **Reboot**. A message displays asking if you want reboot the device.
2. Click **OK** to reboot the Beacon. The device reboots and displays the login page.

- **Reset the device to factory default settings:**

1. Click **Factory default**. A message displays asking if you want to reset the system configuration to the factory default settings.
2. Click **OK** to reset the Beacon to the factory default settings.

- **Reset the device to deep factory default settings:**

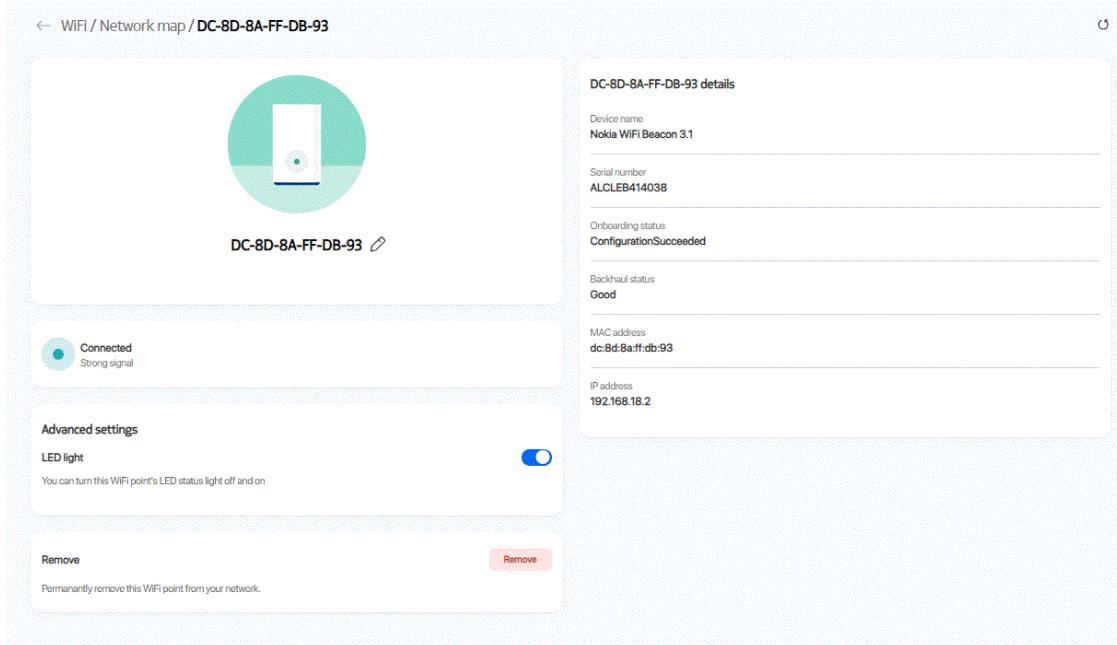
1. Click **Deep factory reset**. A message displays asking if you want to reset the system configuration to the factory default settings.
2. Click **OK** to reset the ONT so that all the downloaded configuration files such as Web customization, delta-config, voice XML, certification file and so on will be removed.

END OF STEPS

7.20.1 Remove WiFi points

To remove WiFi points, perform the following:

1. Click any extender device and the following *Network map* page is displayed.



The device name can be renamed by clicking the edit icon .

2. Ensure to power off the extender and wait for a few minutes to get the extender in offline status and click **Remove** to permanently remove the WiFi point from your network.

When the extender is in powered on state, a message is displayed to power off the extender and then remove it permanently.

The WiFi point is removed from your network. If you want to use the WiFi point on a different network, factory reset it first.

7.21 Optimizing WiFi Network

In the **WiFi→Advanced settings**, the **Optimize** button can be clicked by the user to initiate an immediate network assessment. If a more suitable channel is available, the system initiates a channel switch.

With Channel Selection set to **Auto**, to minimize frequent disconnections of client devices, the radio resource management (RRM) algorithms are designed to change the wireless channel only when internal thresholds are reached or because of regulatory reasons.

In some cases, the system could possibly run on a more suitable channel, but it does not change the channel to avoid interrupting ongoing client traffic.

Note that this action may cause a brief downtime of the wireless network during the channel transition.

7.22 Configuring Wireless 2.4 GHz

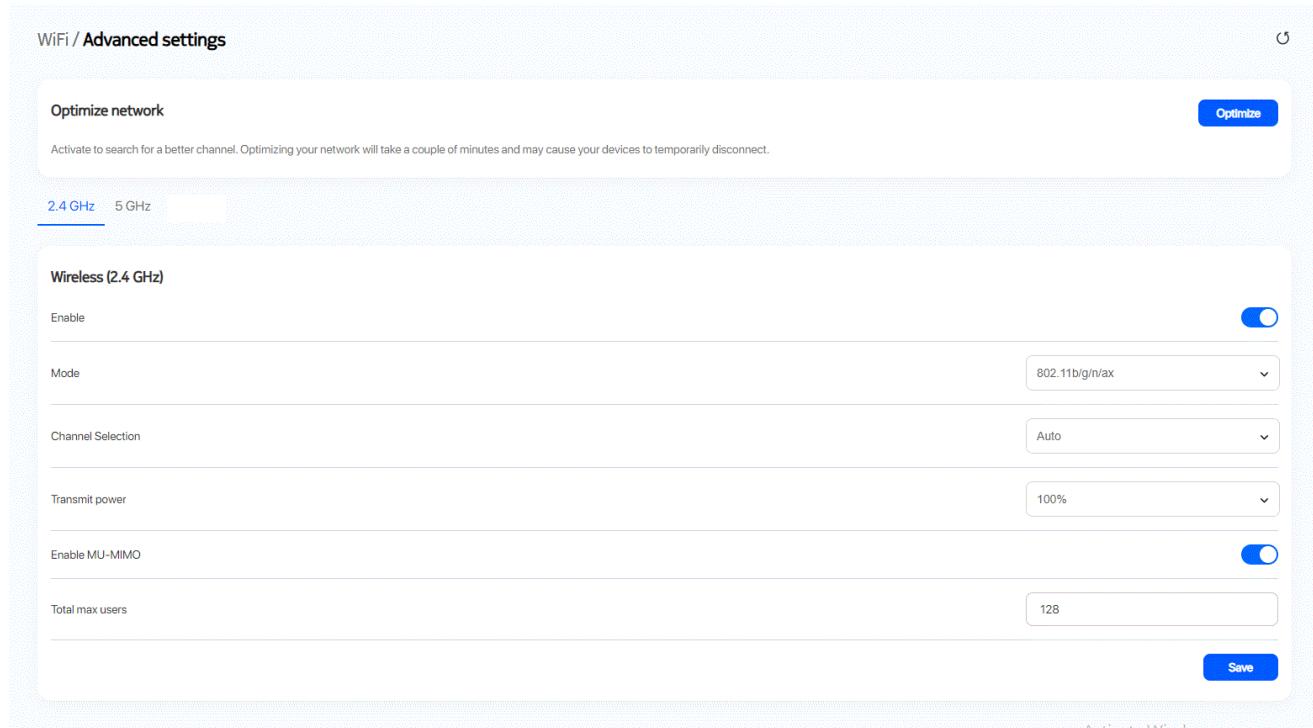
1

Click **WiFi→Advanced settings** in the left pane. The *Advanced settings* page displays.

2

Select the **2.4 GHz** tab to configure the wireless 2.4 GHz parameters.

Figure 7-26 Advanced settings - 2.4 GHz tab



3 Configure the following parameters:

Table 7-16 Wireless 2.4 GHz parameters

Field	Description
Enable	Select the toggle button to enable Wireless (2.4 GHz).
Mode	Select a wireless mode from the list: <ul style="list-style-type: none">• 802.11b/g/n/ax• 802.11b/g/n• 802.11b• 802.11g• 802.11n• 802.11b/g• 802.11g/n• 802.11n/ax

Table 7-16 Wireless 2.4 GHz parameters (continued)

Field	Description
Channel Selection	Select a channel from the list: <ul style="list-style-type: none">• Auto• Manual Note: When changing from automatic to manual channel management, depending on the channel, channel bandwidth, and region, it can take several minutes for the changes to take into effect and for the wireless network to be functional again. Also, after a reboot, this same delay is observed. It is recommended to set this value to "Auto".
Channel bandwidth	Select the bandwidth range from the list: <ul style="list-style-type: none">• 20 MHz• 40 MHz <p>This parameter is visible only if the Channel Selection is Manual.</p>
Channel	Select a channel from the list or select Auto to auto-assign the channel. This parameter is visible only if the Channel Selection is Manual .
Transmit power	Select a percentage for the transmitting power from the list: <ul style="list-style-type: none">• 25%• 50%• 75%• 100%
Enable MU-MIMO	Select the toggle button to enable or disable MU-MIMO.
Total max users	Enter the maximum number of users. This parameter is visible only if the Channel Selection is Manual .

4

Click **Save**.

END OF STEPS

For optimizing WiFi network, see [7.21 “Optimizing WiFi Network” \(p. 106\)](#).

7.23 Configuring Wireless 5 GHz

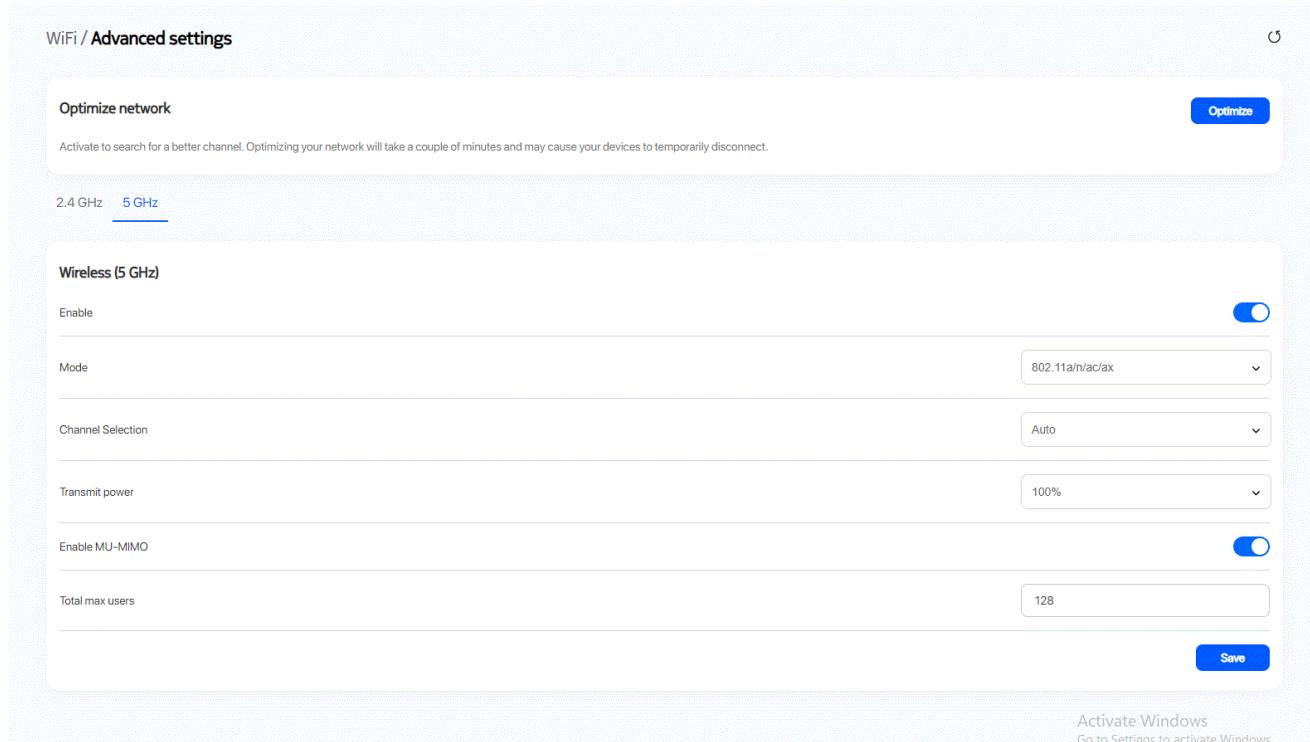
1

Click **WiFi→Advanced settings** in the left pane. The *Advanced settings* page displays.

2

Select the **5 GHz** tab to configure the wireless 5 GHz parameters.

Figure 7-27 Advanced settings - 5 GHz tab



3

Configure the following parameters:

Table 7-17 Wireless 5 GHz parameters

Field	Description
Enable	Select this toggle button to enable WiFi.
Channel Selection	Select a channel from the list: <ul style="list-style-type: none">• Auto• Manual Note: When changing from automatic to manual channel management, depending on the channel, channel bandwidth, and region, it can take several minutes for the changes to take into effect and for the wireless network to be functional again. Also, after a reboot, this same delay is observed. It is recommended to set this value to "Auto".

Table 7-17 Wireless 5 GHz parameters (continued)

Field	Description
Channel bandwidth	Select the bandwidth range from the list: <ul style="list-style-type: none">• 20 MHz• 40 MHz• 80 MHz• 160 MHz This parameter is visible only if the Channel Selection is Manual .
Channel	Select a channel from the list or select Auto to auto-assign the channel. This parameter is visible only if the Channel Selection is Manual .
Transmit power	Select a percentage for the transmitting power from the list: <ul style="list-style-type: none">• 25%• 50%• 75%• 100%
Enable MU-MIMO	Select the toggle button to enable MU-MIMO. This can be enabled when multiple users are trying to access the wireless network. When this parameter is enabled, multiple users can access router functions without the congestion.

4

Click **Save**.

END OF STEPS

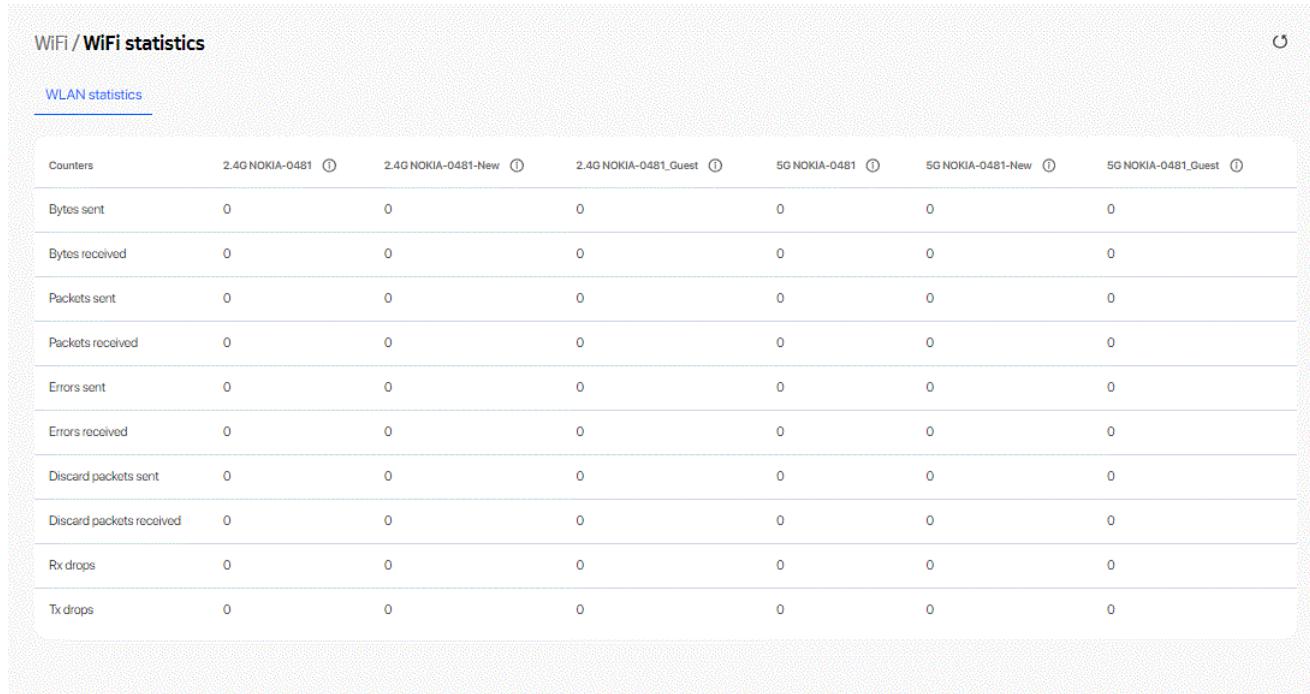
For optimizing the WiFi network, see [7.21 “Optimizing WiFi Network” \(p. 106\)](#).

7.24 Viewing WiFi Statistics

1

Click **WiFi**→**WiFi statistics** in the left pane. The *WiFi statistics* page displays.

Figure 7-28 WiFi statistics page



The screenshot shows a table titled 'WLAN statistics' with data for seven WiFi interfaces: 2.4G NOKIA-0481, 2.4G NOKIA-0481-New, 2.4G NOKIA-0481_Guest, 5G NOKIA-0481, 5G NOKIA-0481-New, 5G NOKIA-0481_Guest, and a blank row. The table includes columns for 'Counters' and various metrics: Bytes sent, Bytes received, Packets sent, Packets received, Errors sent, Errors received, Discard packets sent, Discard packets received, Rx drops, and Tx drops. All values are 0 for all interfaces.

Counters	2.4G NOKIA-0481	2.4G NOKIA-0481-New	2.4G NOKIA-0481_Guest	5G NOKIA-0481	5G NOKIA-0481-New	5G NOKIA-0481_Guest
Bytes sent	0	0	0	0	0	0
Bytes received	0	0	0	0	0	0
Packets sent	0	0	0	0	0	0
Packets received	0	0	0	0	0	0
Errors sent	0	0	0	0	0	0
Errors received	0	0	0	0	0	0
Discard packets sent	0	0	0	0	0	0
Discard packets received	0	0	0	0	0	0
Rx drops	0	0	0	0	0	0
Tx drops	0	0	0	0	0	0

2

Select the **WLAN statistics** tab to display WLAN statistics.

Table 7-18 WLAN statistics parameters

Field	Description
Bytes sent	Displays the bytes sent.
Bytes received	Displays the bytes received.
Packets sent	Displays the packets sent.
Packets received	Displays the packets received.
Errors sent	Displays the errors sent.
Errors received	Displays the errors received.
Discard packets sent	Displays the discard packets sent.
Discard packets received	Displays the broadcast packets received.
Rx drops	Displays the Rx dropped packets.
Tx drops	Displays the Tx dropped packets.

END OF STEPS

Devices

7.25 Overview

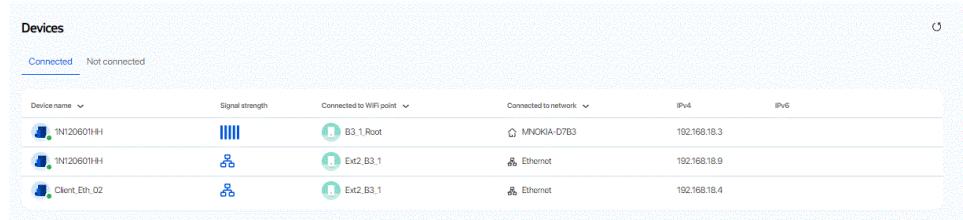
This section describes how to view device information from the **Device** menu.

7.26 Viewing Device Information

1

Click **Devices** in the left pane. The *Devices* page displays the devices.

Figure 7-29 *Devices* page



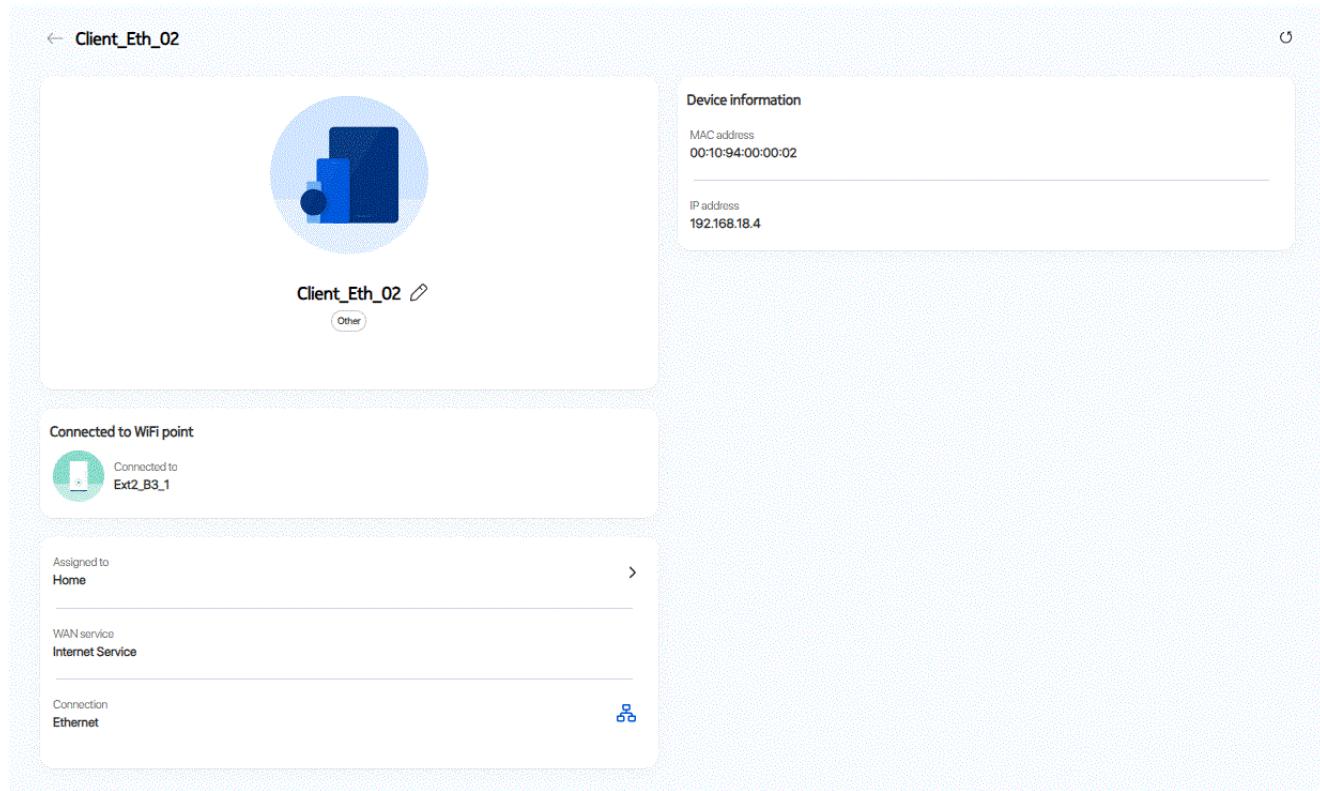
The screenshot shows a table titled 'Devices' with the following data:

Device name	Signal strength	Connected to WiFi point	Connected to network	IPv4	IPv6
1N120601HH		B3.1.Root	MNOKIA-D7B3	192.168.18.3	
1N120601HH	○○○	Ext2.B3.1	Ethernet	192.168.18.9	
Client_Eth_02	○○○	Ext2.B3.1	Ethernet	192.168.18.4	

2

The *Devices* page lists the devices. Click on a Device to view the respective device Info page. The *Device Info* page displays the details of the selected device in a network.

Figure 7-30 Device information page - L3 devices

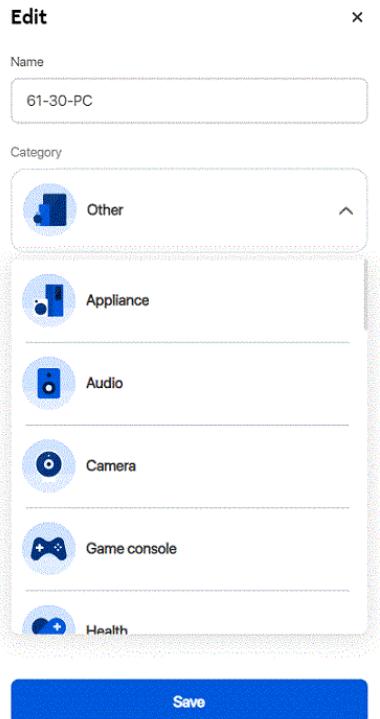


The device name can be renamed by clicking the edit icon .

Perform the following steps to rename the client device:

- To rename the client device, click the Edit icon . The **Edit** page displays.
- On the **Edit** page, enter the name to create your own customized name or select a category listed in the drop-down menu.
- Click **Save**.

Figure 7-31 Device Rename page



END OF STEPS

Security Configuration

7.27 Overview

This section describes the security configuration procedures that can be performed from the following sub-menu options under the **Security** menu:

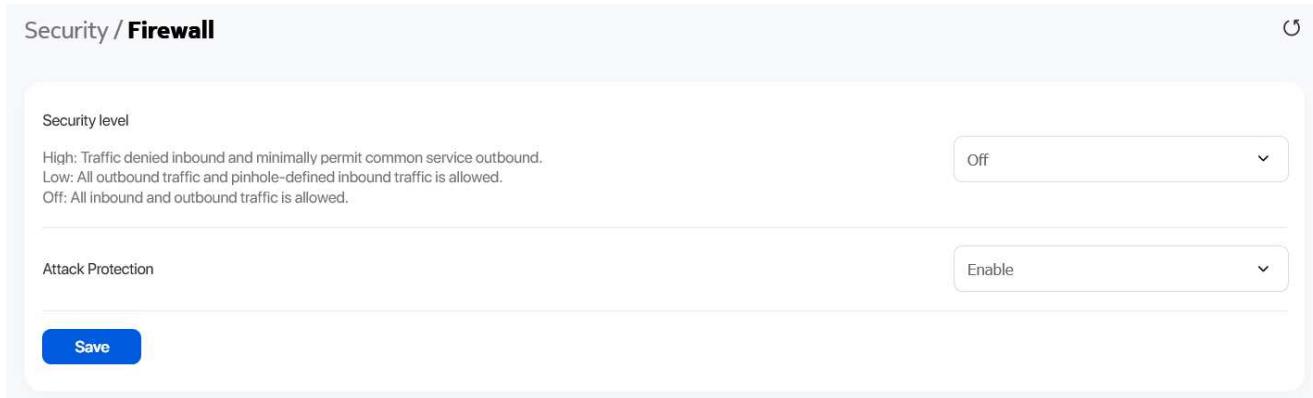
Sub-menu	Procedure
Firewall	7.28 "Configuring the Firewall" (p. 115)
MAC filter	7.29 "Configuring the MAC Filter" (p. 116)
IP filter	7.30 "Configuring the IP Filter" (p. 118)
Family profiles	7.31 "Configuring Family Profiles" (p. 120)
DMZ and ALG	7.32 "Configuring DMZ and ALG" (p. 126)
Access control	7.33 "Configuring Access Control" (p. 128)

7.28 Configuring the Firewall

1

Click **Security**→**Firewall** in the left pane. The *Firewall* page displays.

Figure 7-32 *Firewall* page



2

Configure the following parameters.

Table 7-19 Firewall parameters

Field	Description
Security level	Select the security level from the list: <ul style="list-style-type: none">• High: Pre-routing and application services are not supported. UDP Port 8000 can be used to access the services. For example, FTP can use 8021 and Telnet can use 8023. Regular UDP cannot be used. RG access is permitted via the LAN side but not via the WAN side.• Low: All outbound traffic and pinhole-defined inbound traffic is allowed. Pre-routing is supported: port forwarding, DMZ, host application, and host drop. Also supported are application services: DDNS, DHCP, DNS, H248, IGMP, NTP client, SSH, Telnet, TFTP, TR-069, and VoIP. The following types of ICMP messages are permitted: echo request and reply, destination unreachable, and TTL exceeded. Other types of ICMP messages are blocked. DNS proxy is supported from LAN to WAN but not from WAN to LAN.• Off: All inbound and outbound traffic is allowed. No firewall security is in effect.
Attack Protection	Select Enable or Disable from the list to enable or disable protection against DoS or DDoS attacks. Default value: Enable . Note: If you select Disable , a security warning is displayed that this option poses security risks. Click OK to continue.

3

Click **Save**.

END OF STEPS

7.29 Configuring the MAC Filter

1

Click **Security**→**MAC filter** in the left pane. The *MAC filter* page displays.

Figure 7-33 MAC filter page

The screenshot shows the 'MAC filter' page with two main sections: 'Ethernet interface' and 'Wi-Fi SSID'.

Ethernet interface:

- MAC filter mode: Allowed (dropdown menu)
- LAN port: LAN 1 (toggle switch, enabled)
- MAC address: Custom Settings (dropdown menu), eg: 00:54:2D:00:00:00 (text input field)

Save button

Wi-Fi SSID:

- MAC filter mode: Allowed (dropdown menu)
- SSID select: SSID 1 (dropdown menu)
- Enabled: (toggle switch, enabled)
- MAC address: Custom Settings (dropdown menu), eg: 00:54:2D:00:00:00 (text input field)

Save button

2

Configure the following parameters:

Table 7-20 MAC filter - Ethernet Interface parameters

Field	Description
Ethernet Interface	
MAC filter mode	Select the MAC filter mode from the list: <ul style="list-style-type: none">BlockedAllowed
LAN port	Select the toggle button to enable any of the LAN ports.
MAC address	Select a MAC address from the list or enter the MAC address in the text field.

3

Click **Save**.

4

Configure the following parameters:

Table 7-21 MAC filter - WiFi SSID parameters

Field	Description
WiFi SSID	
MAC filter mode	Select the MAC filter mode from the list: • Blocked • Allowed
SSID select	Select the SSID from the list.
Enabled	Select the toggle button to enable the MAC filter.
MAC address	Select a MAC address from the list or enter the MAC address in the text field.

5

Click **Save**.

END OF STEPS

7.30 Configuring the IP Filter

1

Click **Security**→**IP filter** in the left pane.

2

Click **Add Filter** to add a IPv4 or IPv6 filter. The *Add IP filter* page displays.

Figure 7-34 IP filter page

Enable IP filter

Mode: Drop for upstream

Internal client: Custom Settings

Local IP address:

Local subnet mask:

Remote IP address:

Remote subnet mask:

Protocol: ALL

Save

3

Configure the following parameters:

Table 7-22 IP filter parameters

Field	Description
Add IPv4 filter or Add IPv6 filter parameters	
Enable IP filter	Select the toggle button to enable an IP filter.
Mode	Select an IP filter mode from the list: <ul style="list-style-type: none">• Drop for upstream• Drop for downstream
Source	Select an internal client from the list: <ul style="list-style-type: none">• Custom Settings: uses the IP address input below• IP: uses the connecting devices' IP to the Beacon
Add IPv4 filter parameters	

Table 7-22 IP filter parameters (continued)

Field	Description
Local IP address	Enter the local IP address.
Local subnet mask	Enter the local subnet mask.
Remote IP address	Enter the remote IP address.
Remote subnet mask	Enter the remote subnet mask.
Protocol	Select an application protocol or select ALL from the list.
Add IPv6 filter parameters	
Source IP address	Enter the source IP address.
Source Prefix	Enter the source prefix.
Destination IP address	Enter the destination IP address.
Destination prefix	Enter the destination prefix.
Protocol	Select an application protocol or select ALL from the list.

4

Click **Save**.

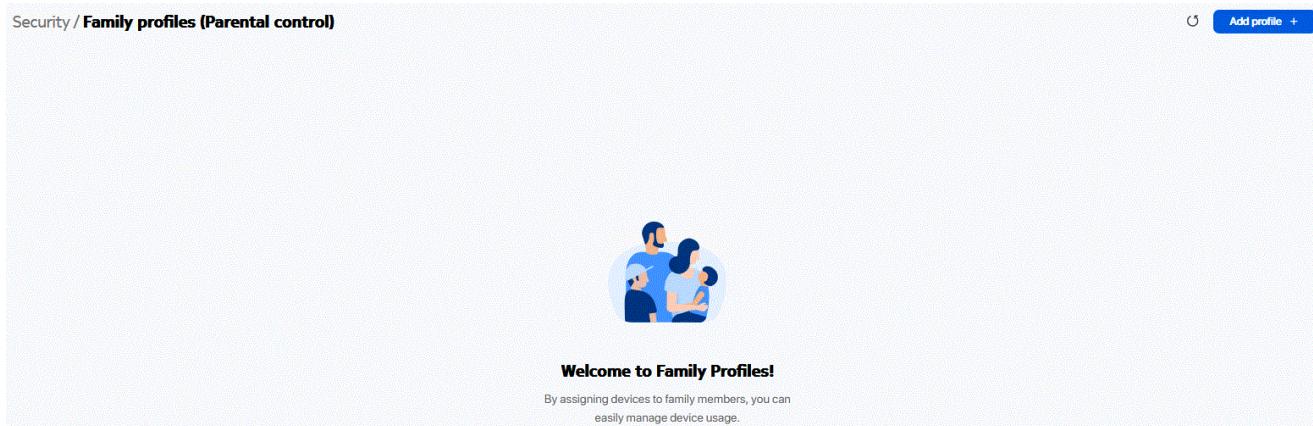
END OF STEPS

7.31 Configuring Family Profiles

1

Click **Security**→**Family profiles (Parental control)** from the left pane. The *Family profiles (Parental control)* page displays.

Figure 7-35 Family profiles (Parental control) page



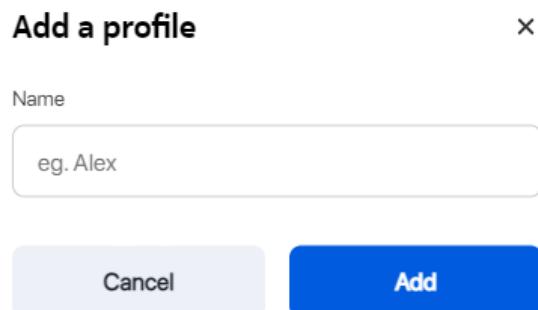
2 _____

Click **Add profile +** to add a profile with parental controls.

3 _____

In the *Add a profile* page, enter a name for the profile and click **Add**.

Figure 7-36 Add a profile page

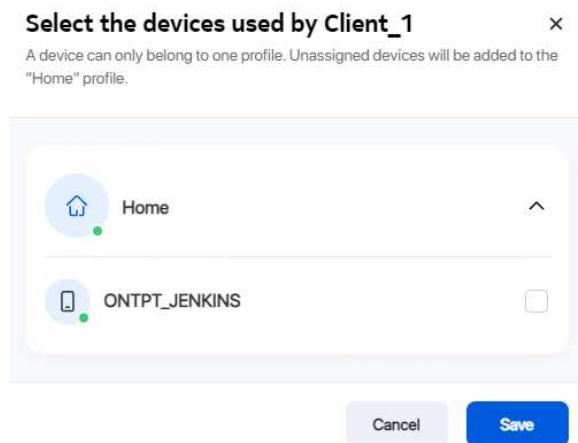


4 _____

In the *Select the devices used by <profile>* page, select the check box next to the device name and click **Save** to assign the device to the profile.

i **Note:** A device can be assigned to only one profile. Unassigned devices are added to the *Home* profile.

Figure 7-37 Assign devices to family profile



The new profile name is listed in the table in the *Family profiles (Parental control)* page.

Figure 7-38 Family profiles table

Profile name	Device	Schedules	Bedtime	Blocked websites	Visit attempts (blocked sites)	
 Home Enabled	0	0	0	0	0	
 Client_1 Enabled	1	2	3	4	0	Delete
 Client_2 Enabled	1	1	2	1	0	Delete
 profile_3 Enabled	0	0	0	1	0	Delete

5

Click a profile to configure parental control for the profile. A page displays the profile parameters.

Figure 7-39 Family profile configuration page

Security / Family profiles (Parental control)

 Client_1
Enabled

Assigned Devices
1 Device (edit)

Internet Access (edit)
Enabled for this profile (switch)

Schedules (edit)
None

Bedtime (edit)
None

Website blocking (edit)
None

6

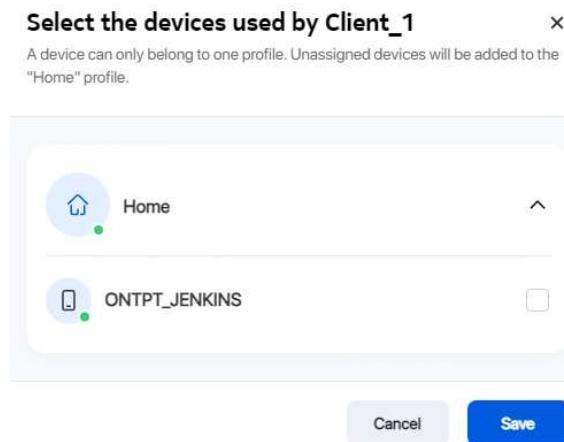
Select the **Internet Access** toggle button to enable internet access.

Assign more devices

7

Assign more devices to the profile, if required:

- a. In the profile page, click the edit icon  next to **Assigned Devices** to assign devices to the profile. The *Select the devices used by <profile>* page displays.



- b. Select the check box next to the device to assign to the profile.
- c. Click **Save**.

Configure and enable schedules

8

Configure schedules for the profile:

- a. In the profile page, click the edit icon  next to **Schedules** to create one or more schedules for the profile to set specific days and time slots when the Internet should be turned off.
- b. Click **Create Schedule**.
- c. In the *Add a schedule* page, configure the following:

Add a schedule

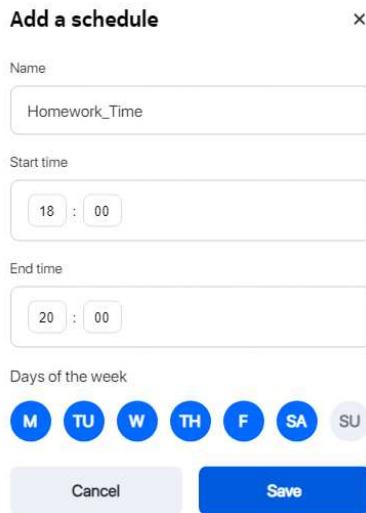
Name: Homework_Time

Start time: 18 : 00

End time: 20 : 00

Days of the week: M, TU, W, TH, F, SA (SU is grayed out)

Cancel **Save**



1. Enter the name of the schedule in the Name field.
2. Select the start time, end time, and select the days of the week on which the schedule will be in effect.
3. Click **Save**. The schedule is created and listed in the Schedules page.

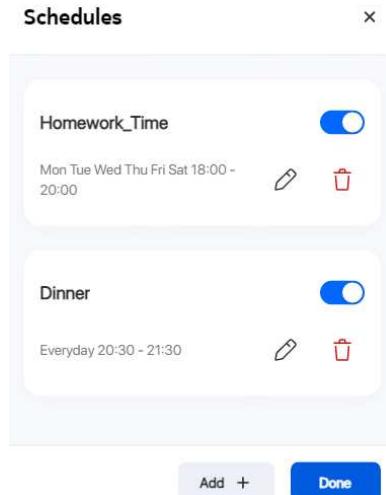
9

In the *Schedules* page, select the toggle button to enable the schedule and click **Done**. To add more schedules, you can click **Add +**.

Schedules

Homework_Time	<input checked="" type="checkbox"/>		
Mon Tue Wed Thu Fri Sat 18:00 - 20:00			
Dinner	<input checked="" type="checkbox"/>		
Everyday 20:30 - 21:30			

Add + **Done**

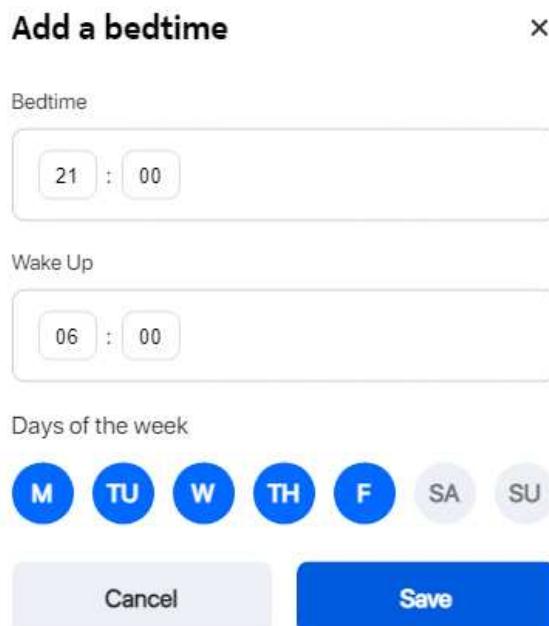


Configure and enable bedtime

10

Configure bedtime for the profile:

- a. In the profile page, click the edit icon  next to **Bedtime** to configure bedtime for the profile to automatically pause internet access at this time.
Only one bedtime can be assigned per day.
- b. Click **Create Bedtime**.
- c. In the *Add a bedtime* page, configure the following:



1. Select the Bedtime, Wake Up time, and select the days of the week on which the bedtime will be in effect.
2. Click **Save**. The bedtime is created and listed in the *Bedtime* page.
- d. In the *Bedtime* page, select the toggle button to enable the bedtime and click **Done**.

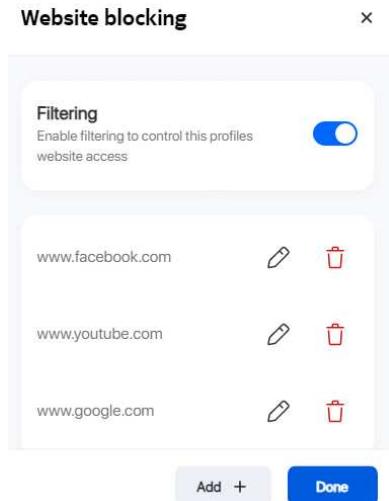
Configure website blocking

11

Configure website blocking for the profile:

- a. In the profile page, click the edit icon  next to **Website blocking** to control websites and services that devices assigned to the profile can access.

- b. Click **Continue**.
- c. In the *Website blocking* page, perform the following:



1. Select the toggle button next to **Filtering** to enable filtering to control the profile's website access.
2. Click **Add +** to add a website URL to be blocked.
3. Enter the URL in the Website URL field and click **Save**.
4. Click **Add +** to add more website URLs to be blocked or click **Done**.

END OF STEPS

7.32 Configuring DMZ and ALG

1

Click **Security**→**DMZ and ALG** in the left pane. The *DMZ and ALG* page displays.

Figure 7-40 DMZ and ALG page

Security / **DMZ and ALG**

ALG Configuration

FTP

TFTP

SIP

H323

RTSP

L2TP

IPSEC

PPTP

DMZ Configuration

WAN connection list: 1_TR069_INTERNET_OTHER_R_VID_0

Enable DMZ:

DMZ IP address: Custom Settings
0.0.0.0

Save

Save

2

Configure the following parameters:

Table 7-23 ALG Configuration parameters

Field	Description
ALG Configuration	Select the toggle button next to the protocol name to enable the protocols to be supported by ALG: <ul style="list-style-type: none">FTPTFTPSIPH323RTSPL2TPPPTPIPSEC

3

Click **Save**.

4

Configure the following parameters:

Table 7-24 DMZ Configuration parameters

Field	Description
WAN connection list	Select a WAN connection from the list.
Enable DMZ	Select the toggle button to enable DMZ on the WAN connection.
DMZ IP address	Select Custom Settings and enter the DMZ IP address or select the IP address of a connected device from the list.

5

Click **Save**.

END OF STEPS

7.33 Configuring Access Control

This procedure describes how to configure the access control level (ACL).



Note: ACL takes precedence over the firewall policy.

The trusted network will be shared for all WAN connections; it is not applied individually to a WAN connection.

1

Click **Security**→**Access control** in the left pane. The *Access control* page displays.

Figure 7-41 Access control page

Security / **Access control**

WAN connection list: 1_TR069_INTERNET_OTHER_R_VID_0

Enable trusted network:

WAN

ICMP	Allow	ICMP	Allow
Telnet	Deny	Telnet	Deny
SSH	Deny	SSH	Allow
HTTP	Deny	HTTP	Allow
TR-069	Allow	TR-069	Deny
HTTPS	Deny	HTTPS	Allow
SFTP	Deny	SFTP	Deny

LAN

ICMP	Allow	ICMP	Allow
Telnet	Deny	Telnet	Deny
SSH	Allow	SSH	Allow
HTTP	Allow	HTTP	Allow
TR-069	Deny	TR-069	Deny
HTTPS	Allow	HTTPS	Allow
SFTP	Deny	SFTP	Deny

Trusted network

Source IP start:

Source IP end:

Add +

2

Configure the following parameters:

Table 7-25 Access control parameters

Field	Description
WAN connection list	Select a WAN connection from the list.
Enable trusted network	Select the toggle button to enable a trusted network.
WAN	<p>The following protocols are supported: ICMP, Telnet, SSH, HTTP, TR-069, HTTPS, SFTP.</p> <p>Select an access control level for each protocol: Allow, Deny, or Trusted Network Only</p> <p>LAN side: Allow or Deny</p> <p>Note: If you allow SSH/Telnet/HTTP/HTTPS on WAN, a security warning is displayed. Click OK to continue.</p>
LAN	<p>The following protocols are supported: ICMP, Telnet, SSH, HTTP, TR-069, HTTPS, SFTP.</p> <p>Select an access control level for each protocol: Allow or Deny</p> <p>Notes:</p> <ul style="list-style-type: none"> • If you allow Telnet or HTTP on LAN, a security warning is displayed. Click OK to continue. • If you Deny HTTP and HTTPS on LAN at same time, the following warning message is displayed, 'Disabling both HTTP and HTTPS on LAN may lock you out from accessing the web GUI and mobile application. Atleast one of them should be enabled.' Click OK to continue.

3

Click **Save** to save the ACL configuration.

4

If the **Enable trusted network** option is enabled, add one or more subnet trusted networks. You can add up to 32 trusted networks.

Table 7-26 Trusted Network parameters

Field	Description
Source IP start	Enter a start IP address range for the new subnet trusted network.
Source IP end	Enter an end IP address range for the new subnet trusted network.

5

Click **Add +**.

END OF STEPS

Advanced Settings

7.34 Overview

This section describes the advanced settings that can be performed from the following sub-menu options under the **Advanced settings** menu:

Sub-menu	Procedure
Port forwarding	7.35 "Configuring Port Forwarding" (p. 131)
Port triggering	7.36 "Configuring Port Triggering" (p. 132)
DDNS	7.37 "Configuring DDNS" (p. 133)
NTP	7.38 "Configuring NTP" (p. 135)
UPNP and DLNA	7.39 "Configuring UPNP and DLNA" (p. 136)

7.35 Configuring Port Forwarding

1

Click **Advanced settings**→**Port forwarding** in the left pane. The *Port forwarding* page displays.

Figure 7-42 Port forwarding page

Advanced settings / Port forwarding

Save

WAN port

LAN port

Internal client

Protocol

WAN connection list

2

Configure the following parameters:

Table 7-27 Port forwarding parameters

Field	Description
WAN port	Enter the WAN port range.
LAN port	Enter the LAN port range.
Internal client	Select a connected device from the list and enter the associated IP address. The default is Custom Settings .
Protocol	Select the port forwarding protocol from the list: • TCP • UDP • TCP/UDP
WAN connection list	Select a WAN connection from the list. Only active devices are displayed in the list.

3

Click **Save**.

END OF STEPS

7.36 Configuring Port Triggering

1

Click **Advanced settings**→**Port triggering** in the left pane. The *Port triggering* page displays.

Figure 7-43 Port triggering page

Advanced settings / Port triggering

Open port

Triggering port

Expiration time
Range: 1-9999999 secs

Open protocol

Trigger protocol

WAN connection list

Save

2

Configure the following parameters:

Table 7-28 Port triggering parameters

Field	Description
Open port	Enter the open port range.
Triggering port	Enter the triggering port range.
Expire time	Enter the expiration time in seconds. Allowed range: 1 to 999999 seconds
Open protocol	Select the open port protocol from the list: <ul style="list-style-type: none">• TCP• UDP• TCP/UDP
Trigger protocol	Select the triggering port protocol from the list: <ul style="list-style-type: none">• TCP• UDP• TCP/UDP
WAN connection list	Select a WAN connection from the list. Only active devices are displayed in the list.

3

Click **Save**.

END OF STEPS

7.37 Configuring DDNS

1

Click **Advanced settings**→**DDNS** in the left pane. The *DDNS* page displays.

Figure 7-44 DDNS page

Advanced settings / **DDNS**

WAN connection list: 1_TR069_INTERNET_OTHER_R_VID_0

Enable DDNS:

ISP: DynDNS.org

Domain Name:

Username:

Password:

Save

2

Configure the following parameters:

Table 7-29 DDNS parameters

Field	Description
WAN connection list	Select a WAN connection from the list.
Enable DDNS	Select the toggle button to enable DDNS on the WAN connection.
ISP	Select an ISP from the list.
Domain Name	Enter the domain name of the DDNS server.
Username	Enter the username.
Password	Enter the password.

3

Click **Save**.

END OF STEPS

7.38 Configuring NTP

1

Click **Advanced settings**→**NTP** in the left pane. The *NTP* page displays.

Figure 7-45 NTP page

Advanced settings / **NTP**

Enable NTP service

Current date & time **07/19/2022 12:33:04 PM**

Primary Time Server **time.nist.gov**

Secondary Time Server **Custom Settings**
ntp1.tummy.com

Third time server **None**

Interval time **0**

Time zone **(GMT-00:00) Greenwich Mean Time: Dublin**

Save

2

Configure the following parameters:

Table 7-30 NTP parameters

Field	Description
Enable NTP service	Select the toggle button to enable the NTP service.
Current date & time	Displays the current local date and time.
Primary Time Server Secondary Time Server Third Time Server	Select a time server from the list or select Custom Settings and enter the IP address of the time server. You can select None if you do not want to configure a secondary or tertiary time server.

Table 7-30 NTP parameters (continued)

Field	Description
Interval time	Enter the interval at which to get the time from the time server, in seconds. Allowed values: 0 to 259200 seconds
Time zone	Select the local time zone from the list.

3

Click **Save**.

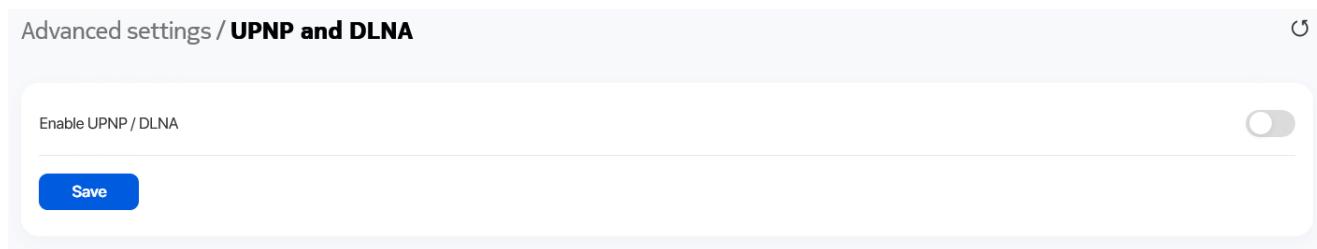
END OF STEPS

7.39 Configuring UPNP and DLNA

1

Click **Advanced settings**→**UPNP and DLNA** from the left pane. The *UPNP and DLNA* page displays.

Figure 7-46 UPNP and DLNA page



2

Select the **Enable UPNP/DLNA** toggle button to enable UPNP/DLNA. If this toggle button is not enabled, the UPNP and DLNA process will not start.

3

Click **Save**.

END OF STEPS

Maintenance

7.40 Overview

This section describes the maintenance procedures that can be performed from the following sub-menu options under the **Maintenance** menu:

Sub-menu	Procedure
Change password	7.41 "Configuring the Password" (p. 137)
Backup and restore	7.42 "Backing Up the Configuration" (p. 139) 7.43 "Restoring the Configuration" (p. 139)
Firmware upgrade	7.44 "Upgrading Firmware" (p. 141)
Diagnostics	7.45 "Diagnosing WAN Connections" (p. 142)
Log	7.46 "Viewing Log Files" (p. 145)

7.41 Configuring the Password

A password must adhere to the following password rules:

- The password may consist of uppercase letters, lowercase letters, digital numbers, and the following special characters ! # + , - / @ _ : =]
- The password length must be from 8 to 24 characters
- The first character must be a digital number or a letter
- The password must contain at least two types of characters: numbers, letters, or special characters
- The same character must not appear more than 8 times in a row

When the password meets the password rules, the application displays the message “Your password has been changed successfully”.

When the password does not meet the password rules, the application displays a message to indicate which password rule has not been followed, for example:

- The password is too short
- The password is too long
- The first character cannot be a special character
- There are not enough character classes

1

Click **Maintenance**→**Change password** in the left pane. The *Change password* page displays.

Figure 7-47 Change password page

Maintenance / **Change password**

Original password

New password

- Letters (upper or lower case)
- Numbers
- Special characters (!#+, -./:=@_)
- At least 8 characters in length

Repeat new password

Password hint

This is the hint for your password if you forgot it.

Save

2 Configure the following parameters:

Table 7-31 Change password parameters

Field	Description
Original password	Enter the current password.
New password	Enter the new password as per the password rules.
Repeat new password	Re-enter the new password (must match the password entered above).

3 Click **Save**.

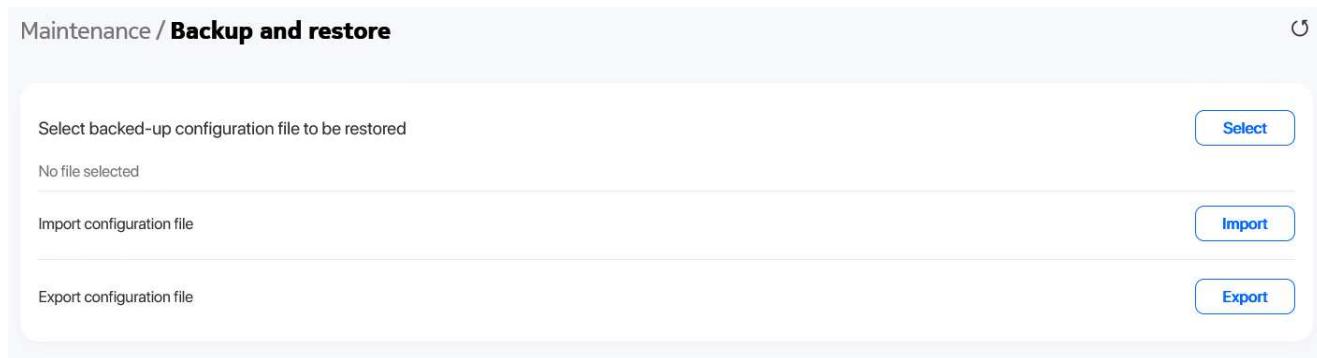
END OF STEPS

7.42 Backing Up the Configuration

1

Click **Maintenance**→**Backup and restore** in the left pane. The *Backup and restore* page displays.

Figure 7-48 *Backup and restore* page



2

Click **Export** to export the current Beacon configuration to your PC. The configuration filename is *config.cfg*.

END OF STEPS

7.43 Restoring the Configuration

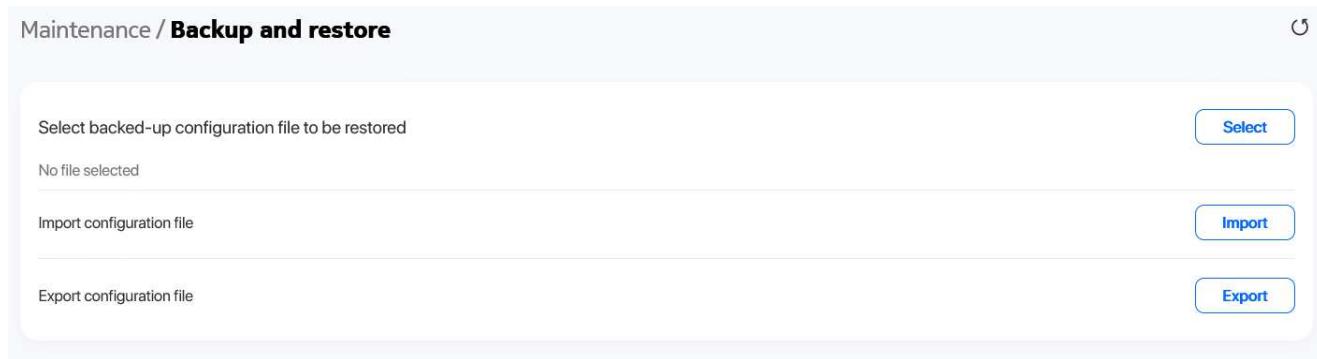


Note: Ensure that you have a previously backed-up configuration file.

1

Click **Maintenance**→**Backup and restore** in the left pane. The *Backup and restore* page displays.

Figure 7-49 Backup and restore page



2

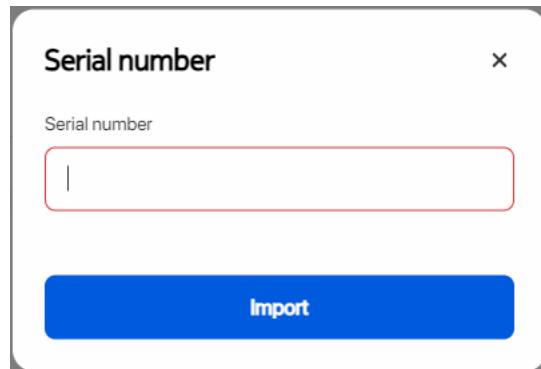
Click **Select** and select the previously backed-up configuration file.

3

Click **Import** to import the configuration file created in [7.42 “Backing Up the Configuration” \(p. 139\)](#) and restore the Beacon to the backed-up configuration.

a. If the configuration file is from the same Beacon variant with a different serial number, you will be prompted to enter the serial number of the original device.

Figure 7-50 Backup and restore: Serial number



b. If you enter an invalid serial number, the back up fails and an error message is displayed.
c. The backup cannot be restored for the configuration files from a different Beacon variant, OPID, or different release prior to Release 2402.

A confirmation message displays after successful restore and the Beacon reboots.

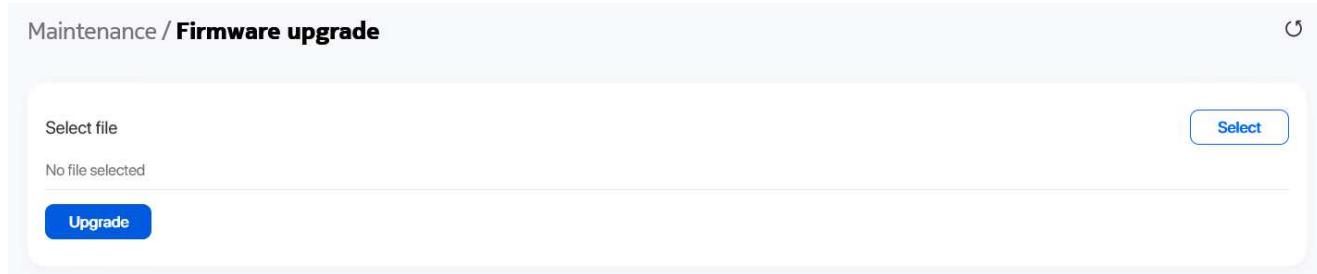
END OF STEPS

7.44 Upgrading Firmware

1

Click **Maintenance**→**Firmware upgrade** in the left pane. The *Firmware upgrade* page displays.

Figure 7-51 *Firmware upgrade* page



2

Click **Select** and select the file for firmware upgrade.

3

Click **Upgrade** to upgrade the firmware. The status displays in the *Upgrade status* panel. The device reboots after firmware upgrade and displays the login page.

Figure 7-52 Example of upgrade status messages

Upgrade status
Upgrade Done!
get_cert_type_from_buildinfo NCG
Image check pass, everything is OK
Saving config files...
Performing system upgrade...
Upgrade completed
4
mkdir: can't create directory '/configs/swdl': File exists
sh: using fallback suid method
sync: using fallback suid method
date: using fallback suid method
Upgrade ok, Rebooting...

END OF STEPS

7.45 Diagnosing WAN Connections

1

Click **Maintenance**→**Diagnostics** in the left pane. The *Diagnostics* page displays.

Figure 7-53 Diagnostics page

The screenshot shows the 'Diagnostics' page under the 'Maintenance' section. The page is titled 'WAN' and contains several configuration fields:

- Protocol:** A dropdown menu set to 'IPv4'.
- WAN connect list:** A dropdown menu set to 'LAN/WAN Interface'.
- IP or domain name:** An empty text input field.
- Ping:** A toggle switch that is turned on (blue).
- Traceroute:** A toggle switch that is turned off (grey).
- Ping try times:** A numeric input field set to '4', with a range of '1-1000'.
- Packet length:** A numeric input field set to '64', with a range of '64-1500'.
- Max number of trace hops:** A numeric input field set to '30', with a range of '1-255'.

At the bottom are two buttons: a blue 'Start test' button and a white 'Cancel' button.

2 Configure the following parameters.

Table 7-32 Diagnostics parameters

Field	Description
Protocol	Select a protocol from the list: <ul style="list-style-type: none">• IPv4• IPv6
WAN connect list	Select a WAN connection to diagnose from the list.
IP or domain name	Enter the IP address or domain name.
Ping	Select this toggle button to enable ping.

Table 7-32 Diagnostics parameters (continued)

Field	Description
Traceroute	Select this toggle button to enable traceroute.
Ping try times	Enter the number of ping attempts. This field is enabled only if you select the Ping toggle button. Allowed values: 1 to 1000 Default value: 4
Packet length	Enter a packet length. Allowed values: 64 to 1500 Default value: 64
Max number of trace hops	Enter the maximum number of trace hops. This field is enabled only if you select the Traceroute toggle button. Allowed values: 1 to 255 Default value: 30

3

Click **Start test** to start the test. Results are displayed at the bottom of the page.

Figure 7-54 Example of ping results

```
PING 192.168.18.10 (192.168.18.10): 64 data bytes
72 bytes from 192.168.18.10: seq=0 ttl=64 time=49.398 ms
72 bytes from 192.168.18.10: seq=1 ttl=64 time=75.414 ms
72 bytes from 192.168.18.10: seq=2 ttl=64 time=102.160 ms

72 bytes from 192.168.18.10: seq=3 ttl=64 time=123.691 ms

--- 192.168.18.10 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 49.398/87.665/123.691 ms
```

Figure 7-55 Example of traceroute results

```
traceroute to 192.168.18.10 (192.168.18.10), 30 hops max, 64 byte packets
1 192.168.18.10 62.241 ms 5.023 ms 3.396 ms
```

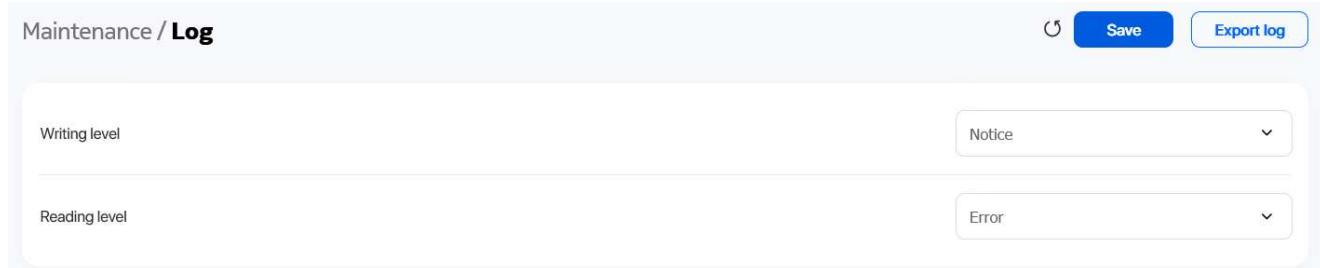
END OF STEPS

7.46 Viewing Log Files

1

Click **Maintenance**→**Log** in the left pane. The *Log* page displays.

Figure 7-56 Log page



2

Configure the following parameters:

Table 7-33 Log parameters

Field	Description
Writing level	Select a writing level from the list to determine the event types recorded in the log file: <ul style="list-style-type: none">• Emergency• Alert• Critical• Error• Warning• Notice• Informational• Debug
Reading level	Select a reading level from the list to determine the event types displayed in the log file: <ul style="list-style-type: none">• Emergency• Alert• Critical• Error• Warning• Notice• Informational• Debug

3 _____

Click **Save**. The log file is displayed at the bottom of the page.

4 _____

Click **Export log** to download the log file to your PC. The filename of the log is *onu_info.log*.

END OF STEPS _____

7.47 Viewing Container Management

1 _____

Click **Maintenance**→**Container management** in the left pane. The *Container management* page displays.

Figure 7-57 Container management page



2 _____

Configure the following parameters:

Table 7-34 Container management parameters

Field	Description
App name	Indicates the name of the application.
Version	Indicates the version of the application.
Status	Displays the status of the application: <ul style="list-style-type: none">• Active• Idle

END OF STEPS _____

Troubleshooting

7.48 Troubleshooting counters

The Troubleshooting counters feature enables service providers and end users to monitor the performance of their broadband connection for about 10 seconds from the time the test is triggered.

Tests are run to retrieve upstream and downstream throughput, latency, and DNS response time. The Troubleshooting counters page also displays upstream and downstream packet loss and Internet status.

1

Click **Troubleshooting**→**Troubleshooting counters** in the left pane. The *Troubleshooting counters* page displays.

Figure 7-58 Troubleshooting counters page

The screenshot shows the 'Troubleshooting / Troubleshooting counters' page. At the top, there are 'WAN connection list' and 'WAN status' sections. Below these are 'Troubleshoot counters' sections for 'US throughput snapshot', 'DS throughput snapshot', 'US packet loss', 'DS packet loss', 'Latency', and 'DNS response time'. Each section has a 'Take snapshot' button. The 'Latency' and 'DNS response time' sections also have 'Latency test' and 'DNS response test' buttons. At the bottom, there is a 'Port mirrors' section with 'Source Port' (WAN), 'Destination Port' (LAN1), 'Direction' (Downstream), and 'Status' (Enable). A 'Save' button is located at the bottom left of the page.

2

Configure the following parameters:

Table 7-35 Troubleshooting counters parameters

Field	Description
WAN Connection List	Select a WAN connection from the list.
WAN Status	Displays the WAN status: <ul style="list-style-type: none">UpDown
Troubleshoot counters	
US throughput	This test is used to determine the upstream throughput/speed. Click US speed test to specify the time for the upstream test.
DS throughput	This test is used to determine the downstream throughput/speed. Click DS speed test to specify the time for the downstream test.
US packet loss	Displays the number of upstream packages lost.
DS packet loss	Displays the number of downstream packages lost.
Latency	This test is used to determine the lowest round-trip time in milliseconds by pinging the target server multiple times. Click Latency test to specify the time for the test.
DNS response time	This test is used to determine the lowest round-trip time in milliseconds by sending a request to the target DNS server. Click DNS response test to specify the time for the test.
Port mirrors	
Source port	Select a source port for port mirroring from the list.
Destination port	Select a destination port for port mirroring from the list.
Direction	Select a direction from the list: <ul style="list-style-type: none">UpstreamDownstream
Status	Select a port mirroring status from the list: <ul style="list-style-type: none">Enable

3

Click **Save**.

END OF STEPS

7.49 Viewing Speed Test

1

Click **Troubleshooting**→**Speed test** in the left pane. The *Speed test* page displays.

Figure 7-59 Speed test page

Table 7-36 Speed test parameters

Field	Description
TR-143 server settings	
Upload test server URL	Enter the Upload test server URL.
Number of upload connections	Enter the Number of upload connections.
Download test server URL	Enter the Download test server URL.
Number of download connections	Enter the Number of download connections.
Host	Enter Host.
Test mode	Select a Test mode: <ul style="list-style-type: none"> Time based File based
Duration	Displays the time duration is sec. This parameter is visible only if the Test mode is Time Based .
Results	

Table 7-36 Speed test parameters (continued)

Field	Description
Upload speed	Displays the upload speed.
Download speed	Displays the download speed.
Latency	Displays the latency.

2

Click **Save** to save the TR-143 settings.

3

Click **Start test** to start the speed test.

END OF STEPS

8 Configure Beacon using a combined customized software package

8.1 Overview

8.1.1 Purpose

This procedure describes how to configure the Beacon using a combined customized software package.

8.1.2 Contents

8.1 Overview	151
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8.2 Configuring Beacon using a Combined Customized Software Package

The Beacon runs a firmware and when it is successfully upgraded, the operator can upgrade a customized combined firmware to update the special configuration files such as **pre-cfg**, **delta config** and **webGUI config** files.

i Note:

1. The **pre-cfg/**, **delta config/**, **webGUI config/** and the required firmware version files must be shared with Nokia and contact Nokia representatives.
2. Nokia will generate the combined customized firmware file and share with the operator.

1

The customer must upload the combined customized firmware file to the ACS or Nokia Corteca Home Controller.

2

Using the device management interface, upload and activate the combined customized firmware files to the device.

The combined customized firmware file can also be uploaded and activated through the webGUI or via the Nokia Corteca OTA service.

3

The Beacon automatically reboots to apply the configuration files. The Beacon becomes online and reports its new firmware.

4

The operators must check the committed file from the ACS or Nokia Corteca Home Controller to verify whether the corresponding file has been applied. If an error occurs, contact Nokia for support.

END OF STEPS
