nocware® documentation

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ambiFOX

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1 nocware® core access

After receiving an order from ambiFOX stellaneo, end customers receive a "customer login", which by default has read-only access to the portal. ambiFOX stellaneo sets up the corresponding accesses after consultation and ensures the corresponding visibility, roles and rights.

In the event of loss of access, ambiFOX stellaneo must be informed immediately. Individual end customer accesses can also be managed by the provider / customer itself. This includes the creation and deletion of individual logins, as well as the temporary deactivation and resetting of a password.

New accesses and administration are carried out exclusively by ambiFOX stellaneo. Logins that are no longer required or employees who have left the company must be reported to ambiFOX stellaneo within 24 hours (login@nocware.com) so that access can be blocked.

Administration tasks ambiFOX stellaneo:

- New user creation
- Rights assignment
- Deactivation of existing accesses
- Support for login problems (password reset)

All access must be via 2FA authentication. The authenticator to be used can be freely selected from the solutions "Microsoft Authenticator", "Google Authenticator" and "FreeOTP+". A collection of links to qualified solutions is available on the nocware® core login page. When a new user is created, a default password is assigned, which the user must change after logging in.

In addition to the e-mail and default password, a user name is also generated which is used for the login. The naming convention is as follows:

- mail: maximilian.muster@customer.com -> username: m.muster

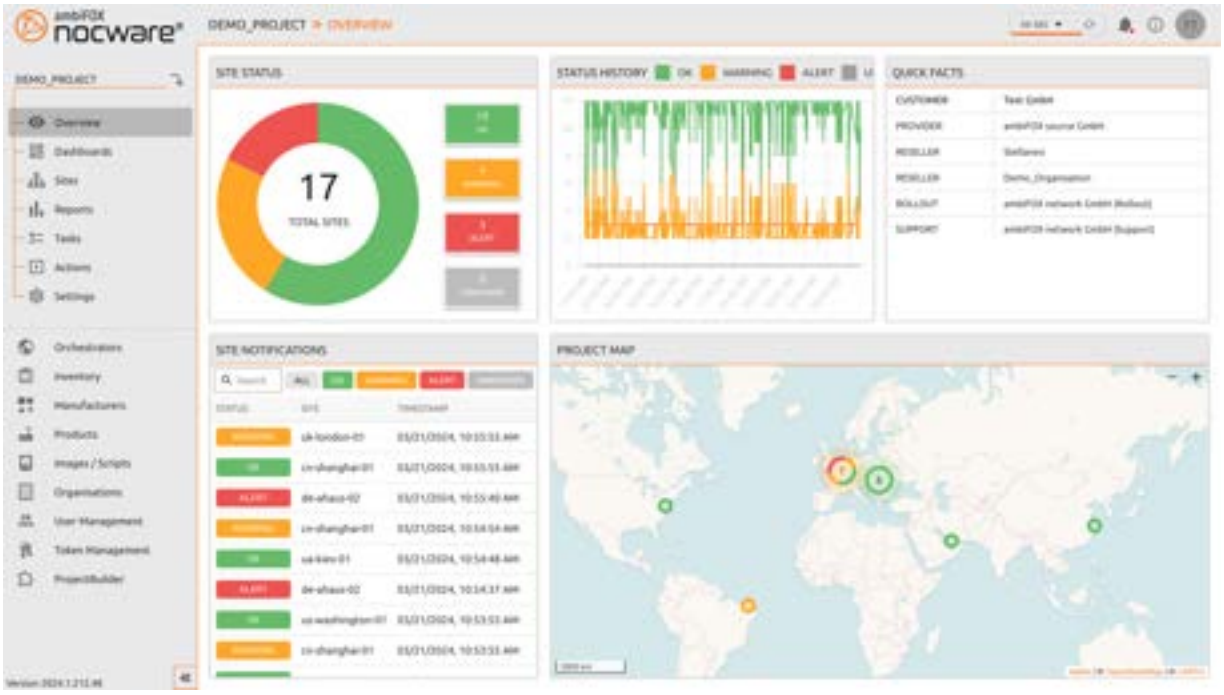
By clicking on "Forgot password", every user can have a new, generated password sent to their e-mail address on file.

MFA Login

2 nocware® core

2.1 Project overview

The nocware® project overview is the initial page after logging into the nocware® core portal. The page provides an overview of the corresponding customer network, which can be selected in nocware as a so-called "project" in the main menu.



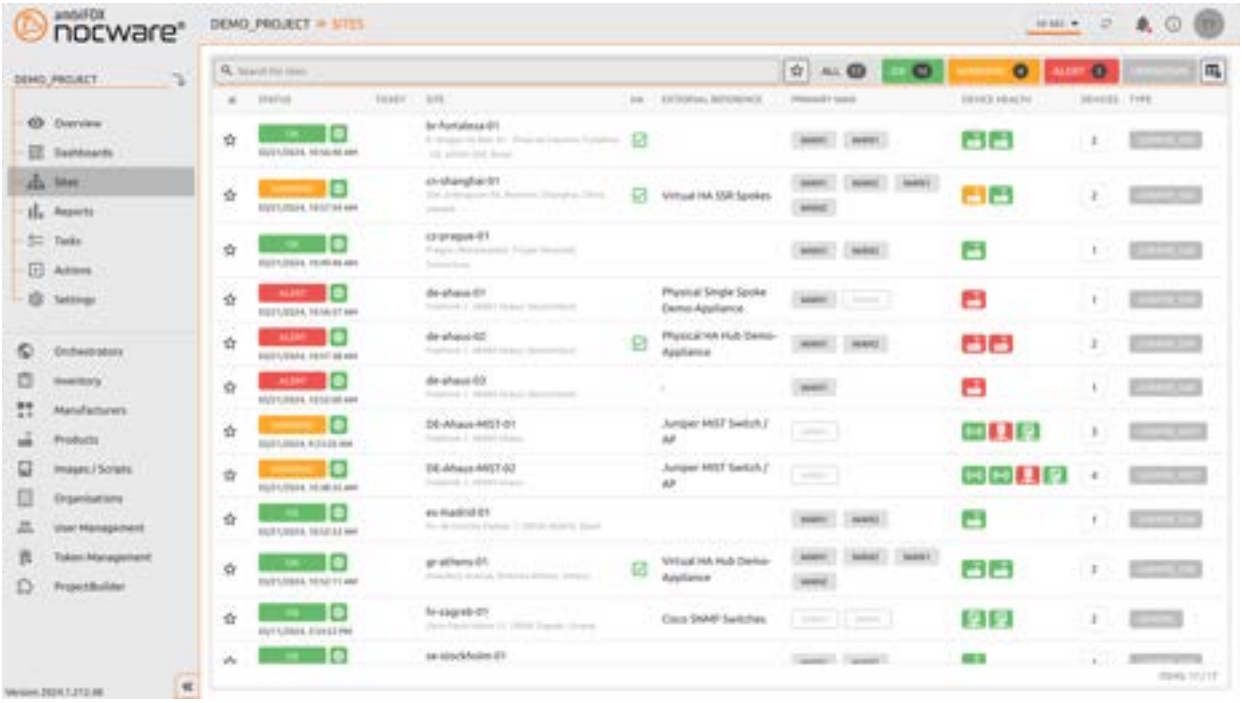
Sites in nocware® core are assigned an "OK", "Warning" or "Alert" status according to definable criteria.
The corresponding rule sets for status calculation must be agreed with the end customer in advance.
All the statuses of the sites in a project are displayed in the project overview. The content is divided into a project map, the last status changes and the total number of sites per status, as well as over the last 24 hours.

2.2 Site overview

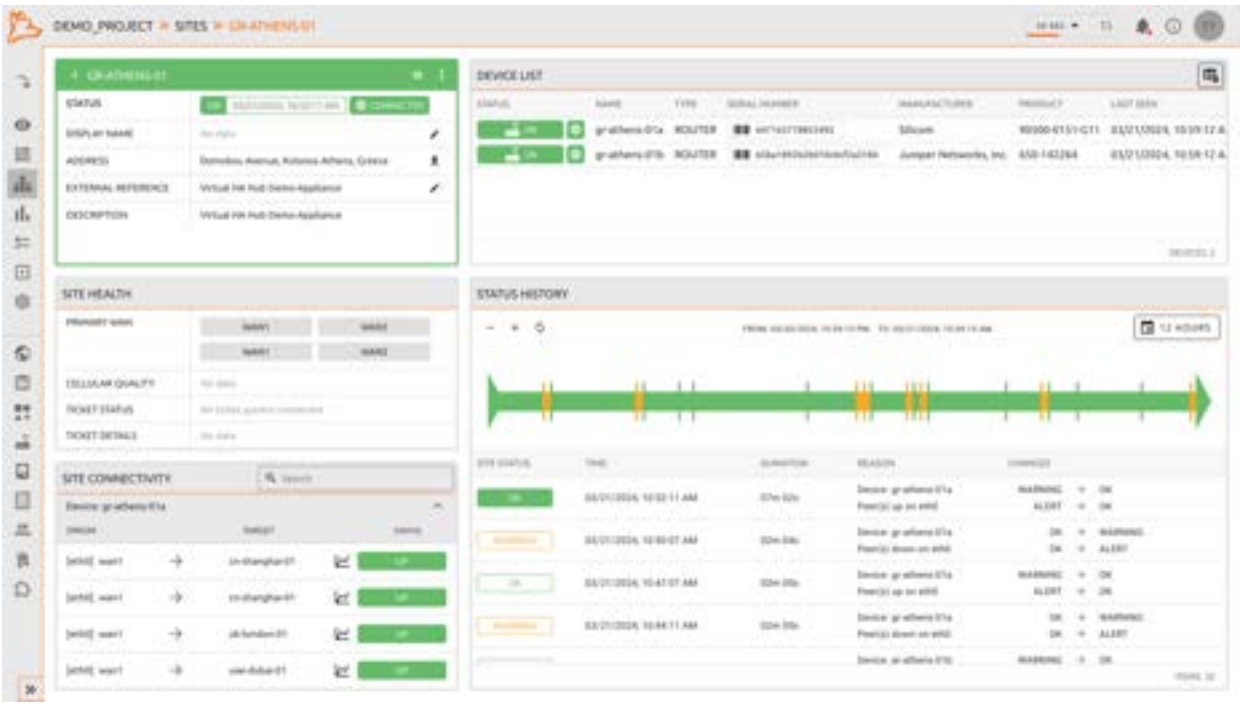
The tabular nocware® site overview lists all imported sites of a project including status indication. The contents can be searched by site name, address and external reference. The entries can be filtered by status. Certain sites can be added as favorites and are always displayed at the top of the table. Columns can be shown or hidden; this setting is saved individually for each user account.

In addition to the basic information, a ticket status, the WAN connection, the product type and device status can be displayed for each site.

The view is continuously updated by default (the update setting can be adjusted in the top right-hand corner of the menu bar)



2.3 Site detail page



Click on a site in the tabular overview to open the site details page. The page is divided into various sections or widgets:

Basic information

The basic information can be found in the "main widget" at the top left. This area is also colored in the respective status color of the site. The following information is provided here:

- Calculated site status
- Time of the last status change
- Connection status
- Technical site name
- Site display name (display name)
- Address (street, house number, country) and geo-site on the map
- External reference (if available), e.g. customer number
- Short description / free text field for the site

Site health

The "Site health" widget is located below the basic information. The following information is provided here:

- Active WAN (see section Interface tagging)
- LTE quality
- Ticket status
- Ticket details

Site Connectivity

The peer connections of the site to other sites are listed here. The details include:

- Source: Device Interface / Network Interface
- Destination host name and IP address
- The respective peer status

Device list

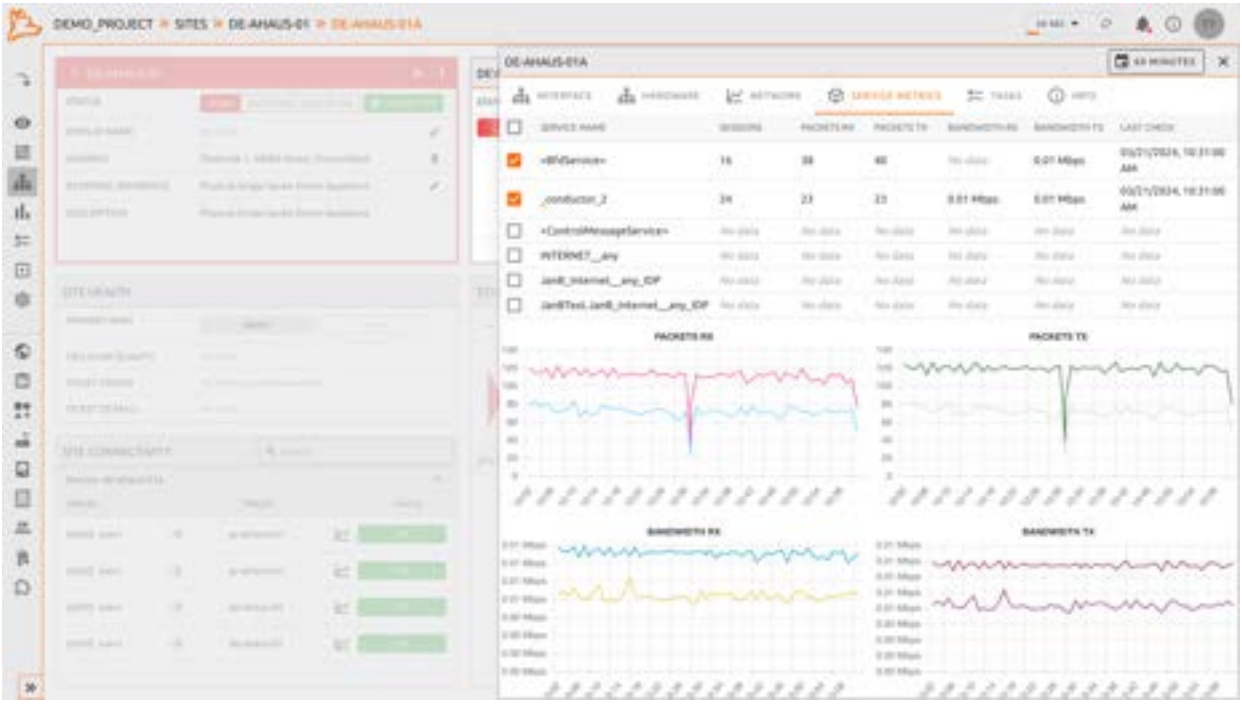
The device list includes all information on existing devices at the site. The following basic information is displayed in the table at first glance:

- Calculated device status (see Status rule sets)
- Connectivity status
- Device name
- Device type (router, switch, access point, SNMP, ...)
- Manufacturer
- Device model
- Serial number
- SIM card serial number / ICCID (optional)
- External reference (optional)

Certain user roles have a deeplink to the hardware in the inventory area to view the assigned hardware and further information about it.

Device details (metrics, diagrams, further information)

Clicking on the respective device opens another content area in which metrics and further information on the respective device are available.



The content displayed here is dynamic and depends on the respective device and its characteristics. For example, for an SD-WAN router with an LTE connection, the content area contains all cellular metrics, but for a switch only network metrics and basic information.

Metrics / diagrams can be individually limited using a time filter up to the maximum metrics retention time set in the project. The standard retrieval interval for metrics is 60 seconds.

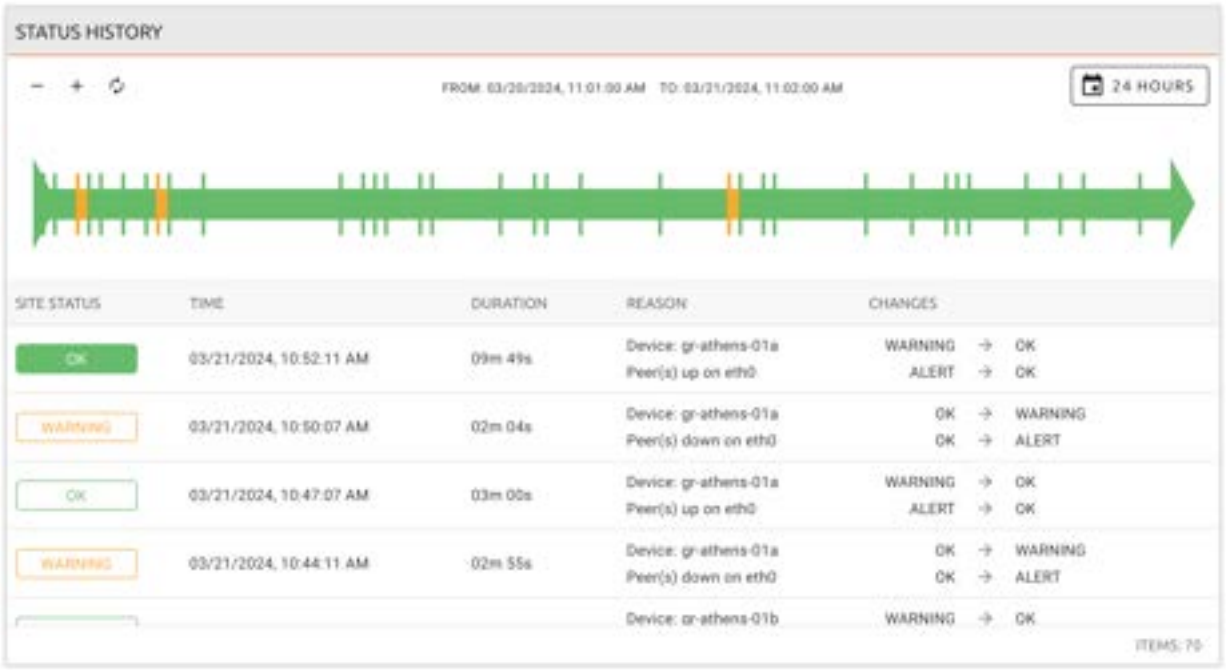
The following content is output by device type:

SD-WAN Router / Type: Juniper SSR

- Device Interface Properties:
  - Name (non-expert user: display name)
  - Tags
  - Activated: (Yes/No)
  - Administrational Up (Yes/No) (Is the interface switched on in the configuration)
  - Operational Up (Yes/No) (Is the Ethernet cable plugged in)
- Network interface properties
  - Name (non-expert user: display name)
  - Associated device interface
  - Network Interface Tags
  - VLAN
  - DHCP (Yes/No)
  - Static IP address
  - Gateway IP address
  - Extended information:
    - Provider name
    - External reference
    - Bandwidth UP
    - Bandwidth DOWN

        - Check IP primary
        - Check IP secondary
    - Hardware information
  - CPU utilization in percent, per core (diagram)
  - CPU temperature in °C, per core (diagram)
  - RAM (capacity, used) (diagram)
- Network metrics (diagrams):
  - Device interface bandwidths (sent / received)
  - Network interface bandwidths (sent / received)
  - MOS scoring of a peer (peer quality)
  - Packetloss in % per peer
- Service metrics (SSR, in tabular form and as a diagram)
  - Service name
  - Session Count
  - Packets sent
  - Packets received
  - Bandwidth sent
  - Bandwidth received
- LTE metrics (diagrams, if available)
  - LTE signal strength in db
  - LTE SNR in db
  - LTE RSRP in db
  - LTE RSRQ in db
- Tasks / Log
  - The last technical tasks performed on the device are listed here. Here it is also possible to initiate a connection test to the device.
- Info
  - General information about the device:
    - Additional information (free text field, site in the building if applicable, etc.)
    - External reference
    - Hardware information (manufacturer, product, serial number)
    - For Juniper SSR:
      - SSR version
      - Monitoring Agent Version

Status history at the site



The status history at the site illustrates the status history of the entire site both in tabular form and graphically using a timeline. The entries listed here relate exclusively to the defined

to the defined factors relevant to the status calculation of the site. For example, if there is an interface at the site that has been tagged with No-Status (see Interface tagging), status changes to this interface are not displayed in the graphic or in the table.

Status history information includes answers to the questions:

- What was the status of the site at what time and for what duration?
- Which trigger was responsible for the status change?

Status calculation in nocware®

Sites, devices and interfaces are assigned an individual status in nocware®.

nocware® is able to apply individual status rule sets for each customer or project. If no rule set has been agreed, the standard rule set applies, which can always differ from the technical status of a particular orchestrator and only represents the view from nocware®.

Possible statuses are:

- Entire site:
  - Green (OK), Yellow (Warning), or Red (Alarm)
- Individual device:
  - Green (OK), Yellow (Warning), or Red (Alarm)
- Peer of an SD-WAN router:
  - Green(Peer UP), Red (Peer down)

Standard rule set

The standard rule set used in nocware for status calculation is as follows:
(Important: Interfaces tagged with "No-Status" are always excluded from the status calculation)

Overall site calculation:

- If one router at an HA site is green (OK) and at least one other router is set to Warning or Alert, the site is set to "Warning"
- If both HA routers are OK, the site is OK
- If at least one HA router is set to Warning, the site is set to Warning
- If both HA routers are set to Alert, the site is set to Alert.
- If there is only one node of the Router type at a site, the site status corresponds to the Router status (device status)
- If there are several device types at the site, the site is set to Warning if the router is OK and at least one other device is "not OK".

Device calculation

- If at least one peer on a router is down, the device is set to Warning
- If at least 100% of the peers are down, the device is Alert
- If all peers are down, BZW the host is down ("the box cannot be reached"), the device is set to Alert

Individual status rule sets

Status calculations can be defined individually and flexibly for each project. This allows nocware® to take certain customer-specific constellations into account. For example, it is possible to define that a site receives the status "Warning" if a certain device type or a certain interface receives an alarm status.

Interface tagging and display names

Device and network interfaces can be provided with tags and display names project-wide in nocware®.

The following tags can be used in the interface properties in the project settings:

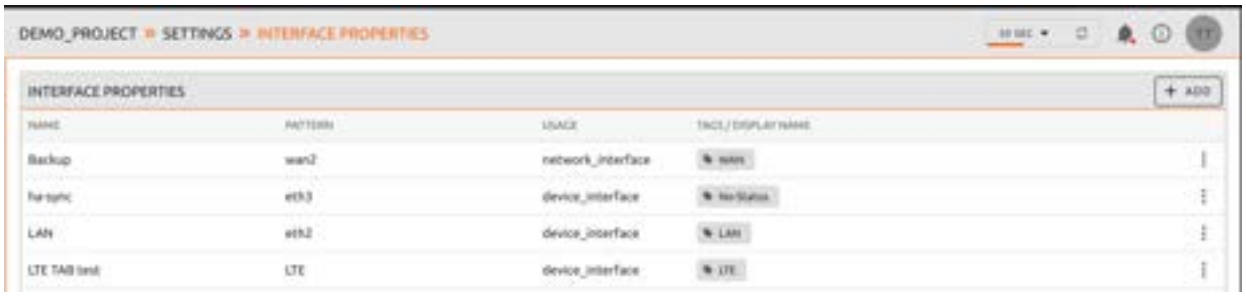
- "Expert" - defines an interface as exclusively relevant for technicians. The interface is therefore only displayed in the Expert view in the front end
- "LAN" - defines an interface as a LAN interface (informative only)
- "LTE" - defines an interface as an LTE interface. As soon as an interface on a device has been tagged with LTE, cellular diagrams are displayed in the device details
- "Management" - defines an interface as a management interface (informative only)
- "No-Status" - defines an interface as not relevant for the status calculations of the device and the site. All statuses of this interface are ignored for the ignored for the status calculation
- "Wifi" - defines an interface as Wifi (informative only)

So-called "display names" can also be defined for interface names. In the simple view, these replace the technical interface name with a desired "descriptive" name.

The mapping of tags and interface names must be defined with a pattern in the settings.

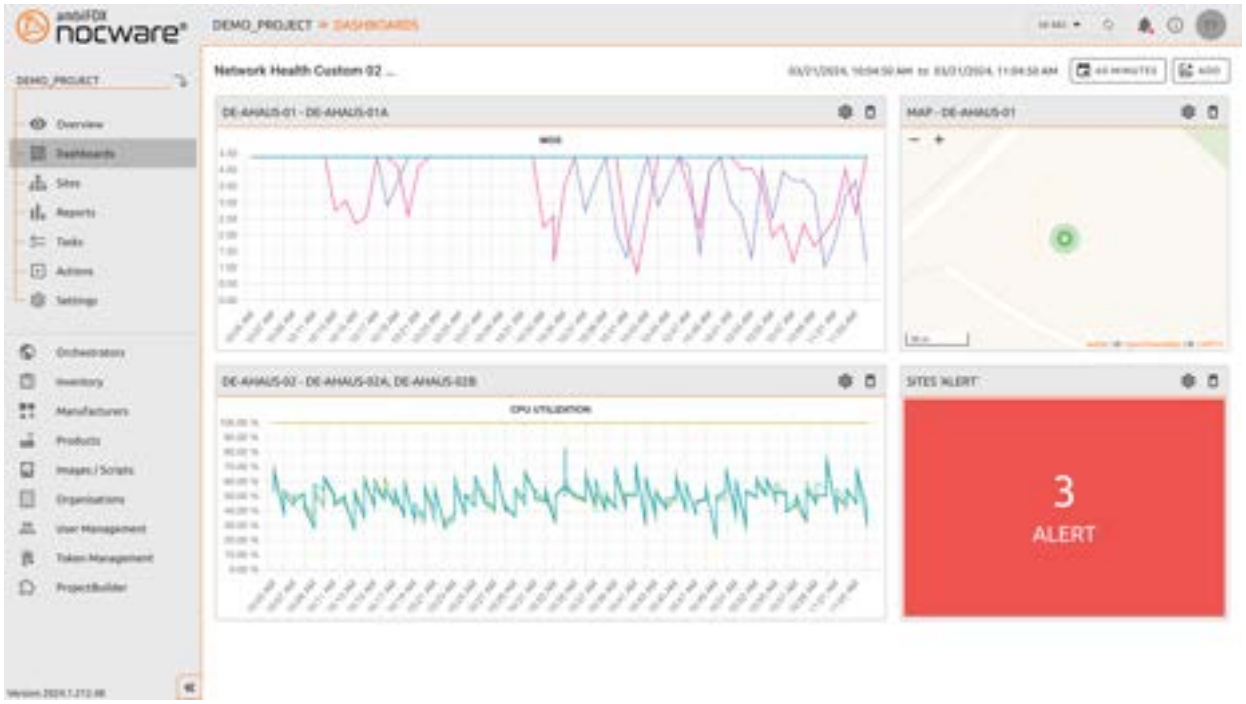
Example:

Pattern: "eth1" - display name "Customer checkout" -> The technical interface "eth1" is displayed in the simple view with "Customer checkout"



2.4 User dashboards

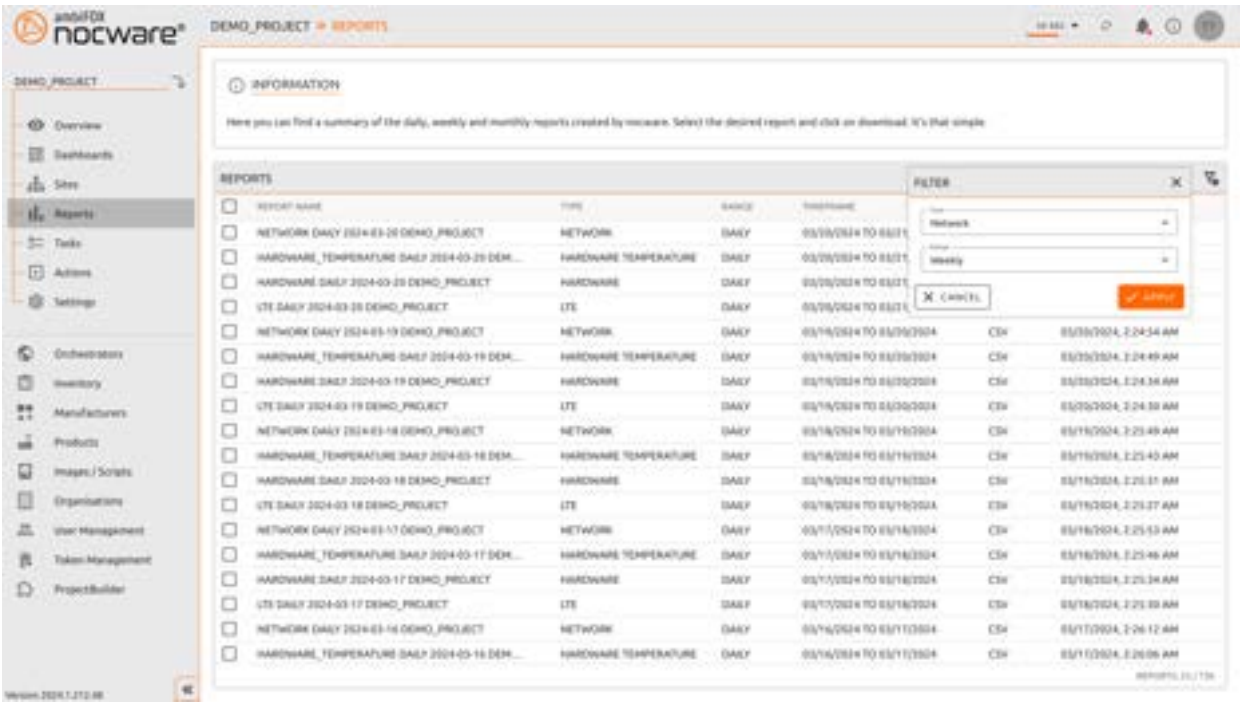
Individual users can create several personal dashboards for each project.



Dashboards can be named individually and defined as favorites. For each dashboard, desired project or site information can be divided into widgets, positioned and resized as desired. An existing dashboard can be copied and used as a template for a further variation of the dashboard.

2.5 Reports

Standard reports are offered on a daily, weekly and monthly basis:



CSV for SSR report:

- Top 20 talkers per router (data and sessions)
- per interface
  - Bandwidth usage
  - Maximum bandwidth, average
  - MOS per interface high/low/through
- Per mobile interface
  - Additional mobile signal strength
- Per device
  - CPU utilization
  - Memory utilization
  - Temperature
  - Bandwidth utilization of the router

SNMP report:

- per interface
  - Bandwidth utilization
  - Maximum bandwidth, average
  - Bits sent and received
  - Packet errors
- Per device
  - CPU utilization
  - Memory utilization
  - Temperature

Interface report

- Bandwidths
  - Utilization
  - Maximum
  - Minimum
  - Average
- MOS (Mean Opinion Score)
  - Maximum
  - Minimum
  - **Average**

Mobile communications report (LTE or 5G)

- Bandwidths
  - Usage
  - Maximum
  - Minimum
  - Average
- MOS (Mean Opinion Score)
  - Maximum
  - Minimum
  - Average
- Strength of the mobile signal
  - Maximum
  - Minimum
  - Average

Device report

- CPU utilization
  - Maximum
  - Minimum
  - Average
- Memory utilization
  - Maximum
  - Minimum
  - Average
- Temperature
  - Maximum
  - Minimum

3 nocware® ProjectBuilder manuel

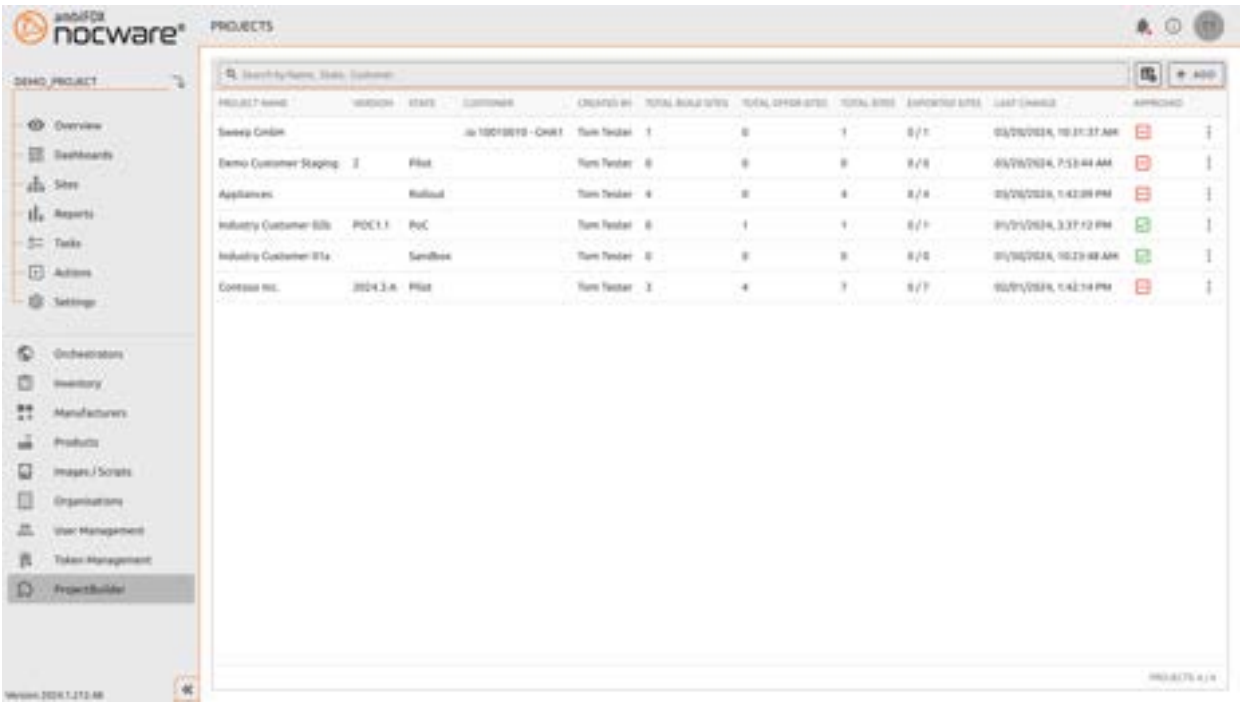
With the nocware® Project Builder, ambiFOX provides a tool for recording project data. Projects are divided into different phases. In the plan phase, for example, customized views can be selected for a budget offer or an extended offer. In each view, only fields relevant to the respective project phase are displayed and checked according to the relevant criteria. In the later course of a project, all network data required for a basic configuration must be entered for each site in the build phase.

The Project Builder offers a number of import and export functions. As the Project Builder is a sub-module of nocware®, all the basic functions of nocware® such as the rights and role system, multi-tenant capability, branding, multi-language and more are seamlessly integrated into the Project Builder.

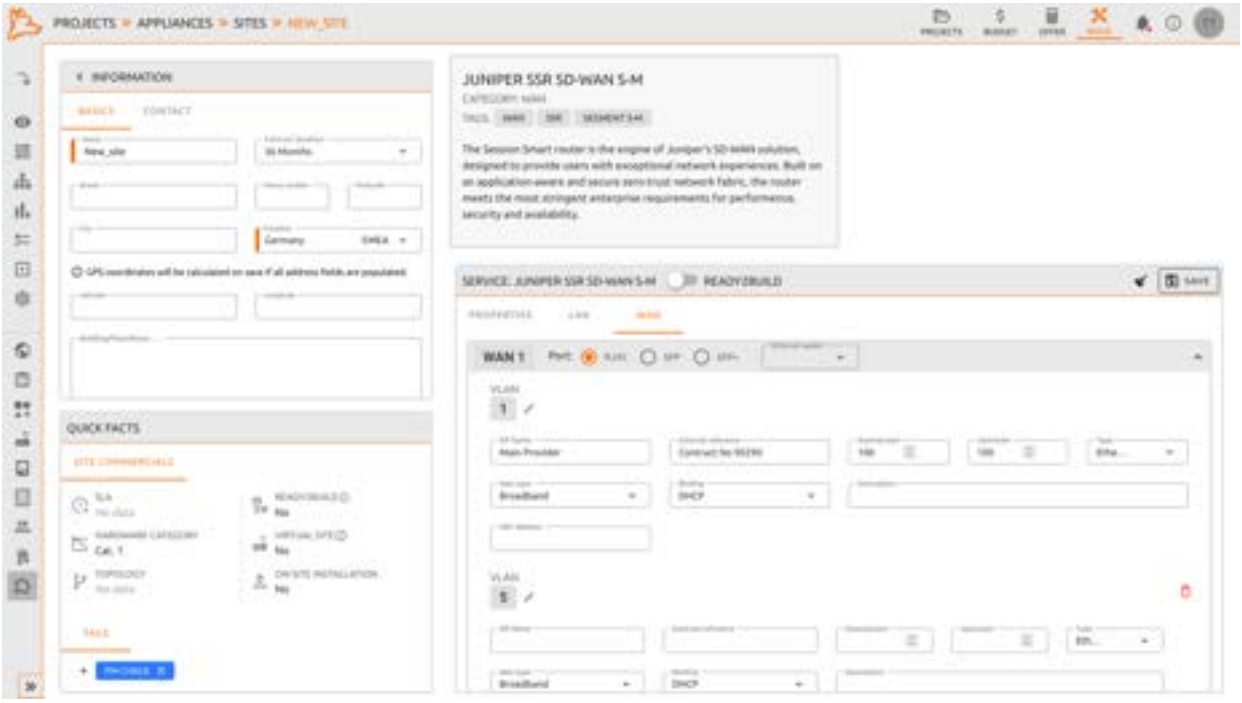
If the minimum information for a site is specified in the Project Builder, the site can be integrated into nocware® and an SSR basic configuration can be created from the specified data. The Project Builder serves as a common database for all those involved in the process, especially in the plan phase and in the rollout, as they have to work together in project mode. The site status is also displayed in the Project Builder. Thanks to the option of project duplication and versioning, additional sites can be easily added in this context at a later stage based on existing customer projects.

In this way, sites can be seamlessly integrated into nocware® and offer a high level of scalability thanks to the digital platform-consistent process.

Link: https://my.nocware.com/project-builder



ProjectBuilder: Overview of projects



ProjectBuilder: Create a new site

3.1 Rights

Role	Read	Write	Import- & export function
Customer (A, B)	Site data, relevant schedule information	Site data, phase release	addresses, network plan
Sales	all (excl. Technical view)	Projects, Budget & Offer	BOM
Technician / Project Manager	all	all	all

Rights are inherited hierarchically: Sales can also do everything that Customer can do...

The Customer role can be extended by variants as required. Sites can be grouped and made available in the view (Customer North, Customer South).

3.2 Import- & export functions

Import: To simplify the input of large amounts of data, an import is implemented in the Project Builder. This takes place on the basis of a CSV file. Each project phase has its own catalog of content requirements. The import template can be downloaded in the "Offer" view and then filled in.
All participants can enrich the data. The end customer contributes site data (addresses, network plans, etc.) independently. This ensures that all parties benefit from the scalability of the solution.

Export: A (CSV) export from the Project Builder is equivalent to a Bill of Materials (BOM). The formatting of the file is designed so that it can be imported into Lotex. The data to be exported is subjected to a plausibility check, but this offers no guarantee of completeness and accuracy. If the integrated check detects irregularities, a message is displayed which must be acknowledged. This does not restrict the function of a download.

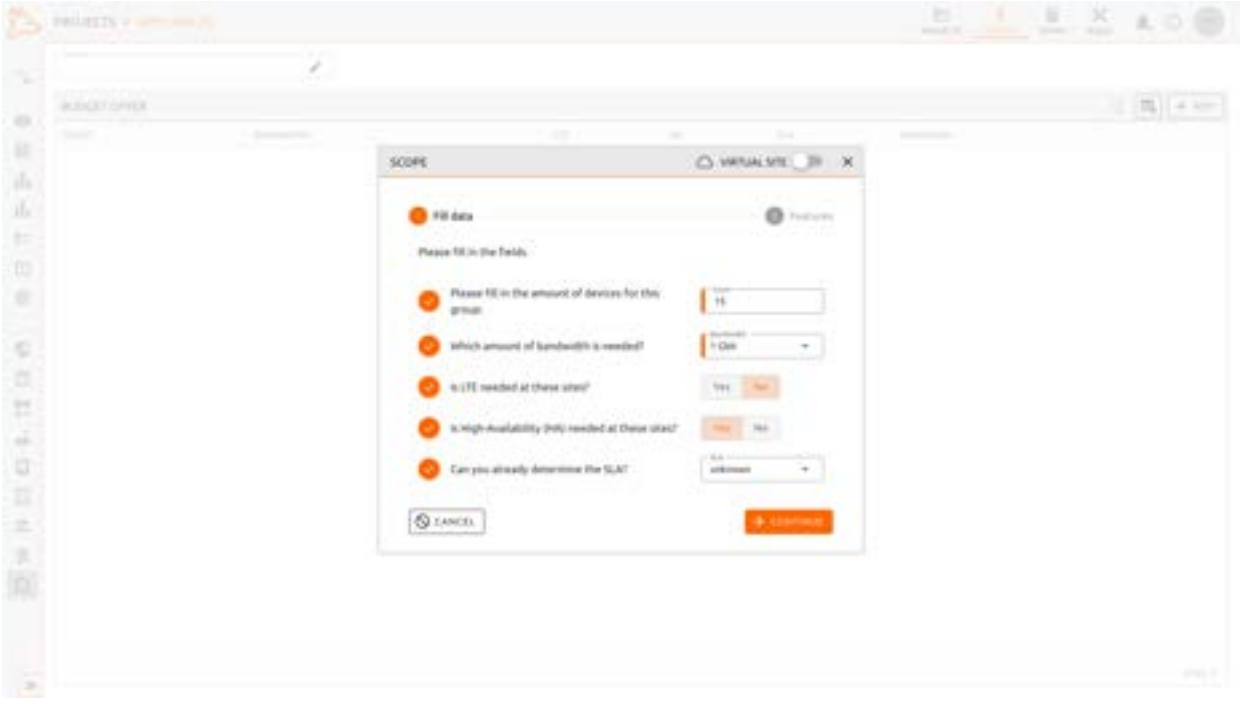
3.3 Views

Different views are available in the nocware® Extension Project Builder. The purpose of this is to ensure that only technically experienced and interested parties can view a certain level of detail. It is usually sufficient for all other participants to be able to view basic information and master data. In addition, certain levels of detail are not relevant in project phases up to Build.

3.3.1 Budget-view

A budgetary offer represents a rough commercial direction for implementation. Only the monthly costs of the project are calculated here, taking into account only rudimentary information on sites.

The sites can be compiled using a simple shopping cart system.



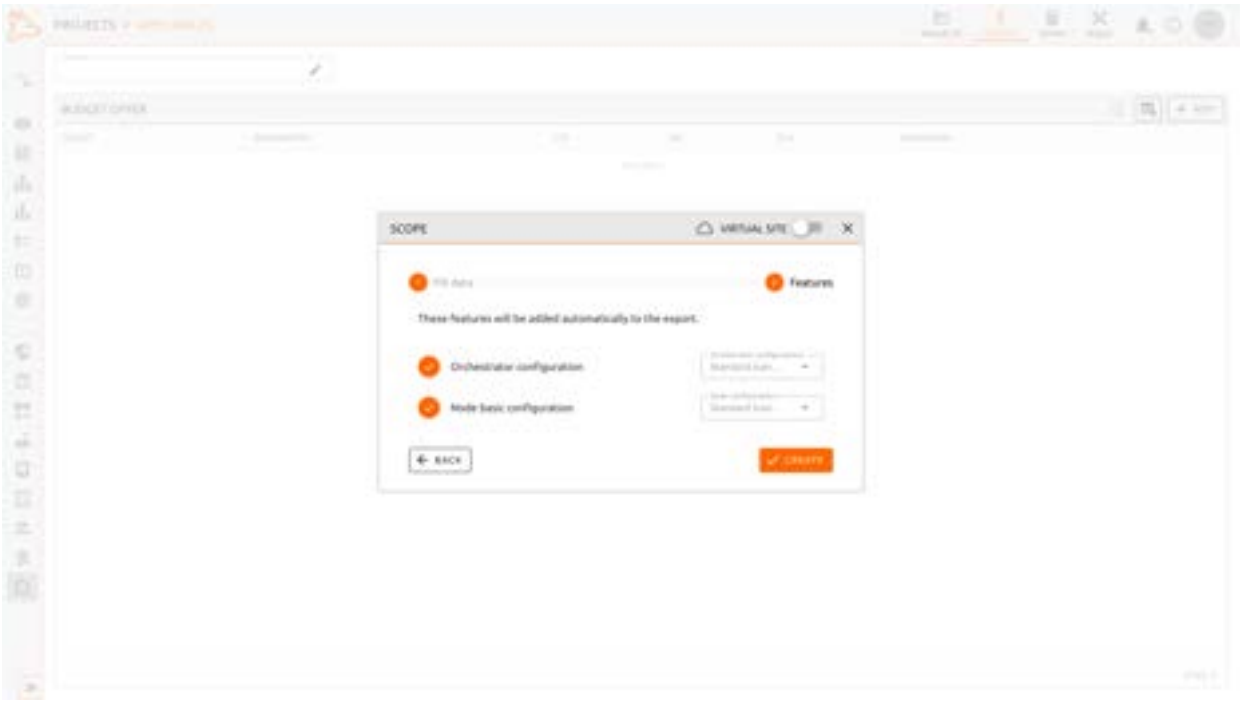
The following information can be provided for each site type (/position):

- Number | Number between 1 - 9999
- Total bandwidth (sum of upload & download) | Selection from dropdown
- LTE | yes or no
- HA | yes or no
- SLA | Selection from dropdown
- Virtual site (cloud license) | yes or no

Not taken into account:

- all one-off costs
- the SLA availability
- Rackmount capability
- Number of LAN interfaces

At the end, monthly default costs are added to the node positions in order to obtain a budget offer that is as meaningful as possible with minimum effort.



Based on the information provided, a hardware category is calculated according to a submitted matrix. The corresponding material numbers are automatically generated depending on the bandwidth and equipment requirements.

The use of "Budget" is optional - but also offers an export for Lotex for calculation purposes.

The export consists of three main parts:

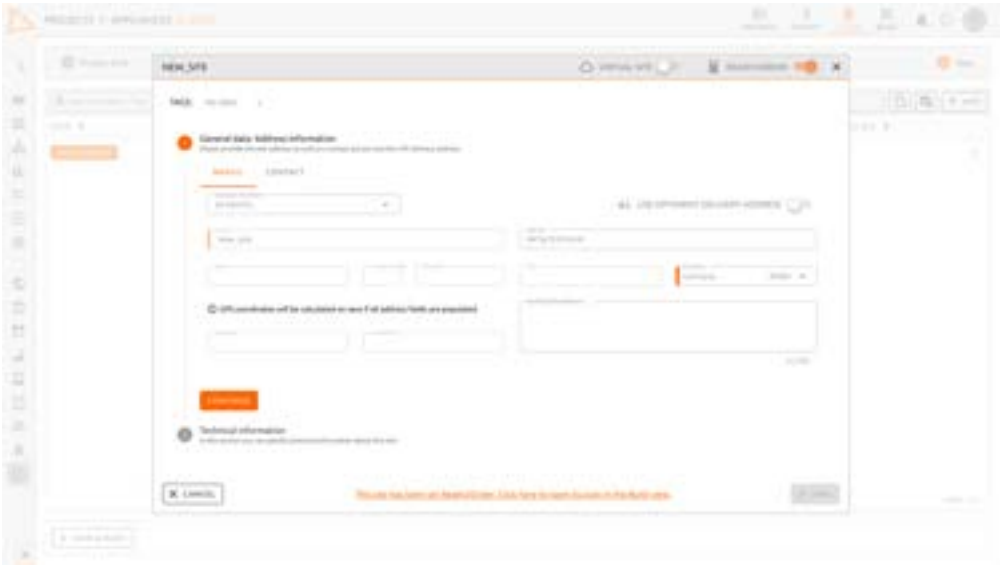
Attributes:

- material_number
- count
- monthly rental

Material number, count, monthly rental
SD_NCS_HWM_CAT1_00001, 1, 1
SD_NCS_LIC_25MBIT, 1, 1

3.3.2 Offer-view

Art The creation of a quotation in the Project Builder is based on the optional information from Budget.



Global master data relating to the entire project is entered in the "Project data" and "Customers" tabs. For example, the relevant region, segment or duration can be specified. A globally set SLA also sets this value as the default value for each specific site. The global SLA can be overridden at the site itself.

For " Sites" and "Calculation" there are differences in content to the budget view: they are expressed in a higher level of detail. All customer data is edited in detail in the budget view. Sites can optionally be named.
Master data for this site is added here (address, contact person, etc.). Further details on the hardware are also added.

The following details must be entered for each site type (/item) for a complete BOM:

- Number | Number between 1 - 9999
- Total bandwidth (sum of upload & download) | Selection from dropdown
    - For multiple WANs:
        - WAN2 as backup for WAN1 -> larger sum of the WAN
        - Simultaneous WAN(i) -> sum of all WANs
- LTE | internal, external or noLTE antennas | connection cable, extension cable or none
- HA | single, node HA or router HA
- SLA | selection from dropdown
- Rackmount capability | yes or no
- On-site installation | yes or no
- The export is structured as follows:

Attributes:

- index_no
- site_id
- site_name
- site_street
- site_house_no
- site_postcode
- site_city site_country
- site_phone

- site_mail
- site_description
- wan_count
- bandwidth
- edge_device_mode
- rackmount
- lte_option
- sla
- on_site_installation
- nocware_snmp_monitoring

The Offer view contains an import function. Click on "Download import template" to download an import template in .csv format, which can be used and filled for the import.

The import includes the most important fields of a site. The "site_index" field defines the site in the table view. The import can contain the following fields.

Attributes:

- index_no
- site_id
- site_name
- site_street
- site_house_no
- site_postcode
- site_city site_country
- site_phone
- site_mail
- site_description
- wan_count
- bandwidth
- edge_device_mode
- rackmount
- lte_option
- sla
- on_site_installation
- nocware_snmp_monitoring

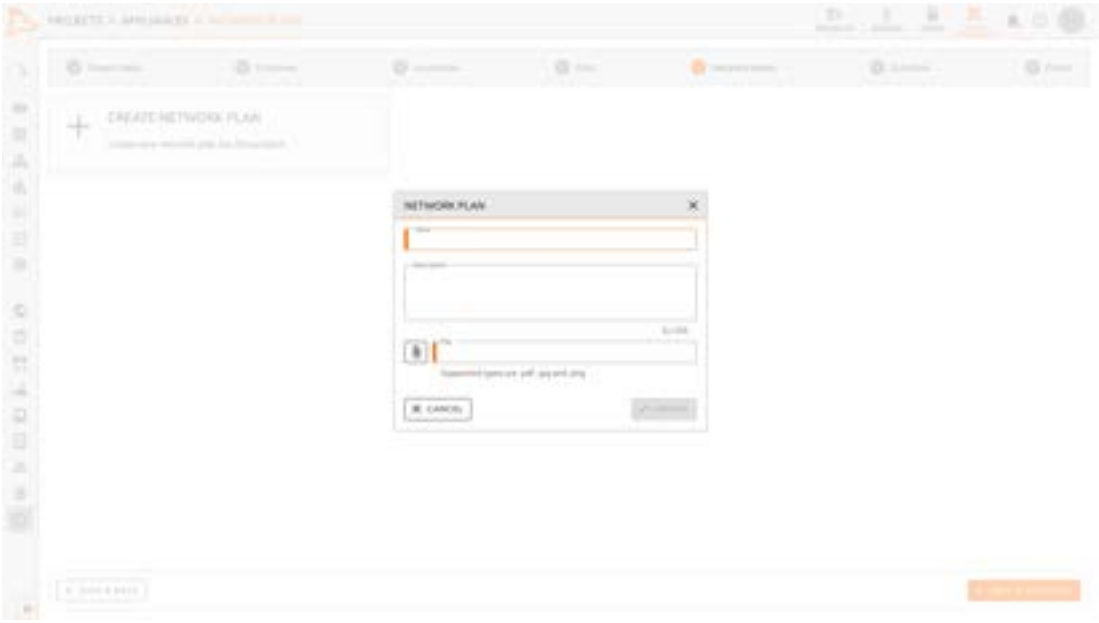
3.3.3 Build-view

Art In the build phase, a technical view is provided in the Project Builder, which receives all the information required to create a basic configuration and provide information for the project management team. In addition, the schedule area is activated in the build phase, where it is possible to enter dates, milestones, deadlines, etc.

All nodes and their technical information are displayed in the build view with collapsible and expandable information areas. Adjustments and additions (access data, VLAN, ...) can be made in this view.

Extract from the build phase: WAN information at the site

A network plan, which is created by the network engineers, is to be stored in the project as a visualized network topology. This means that all participants in the project have the same information and objectives at their disposal.

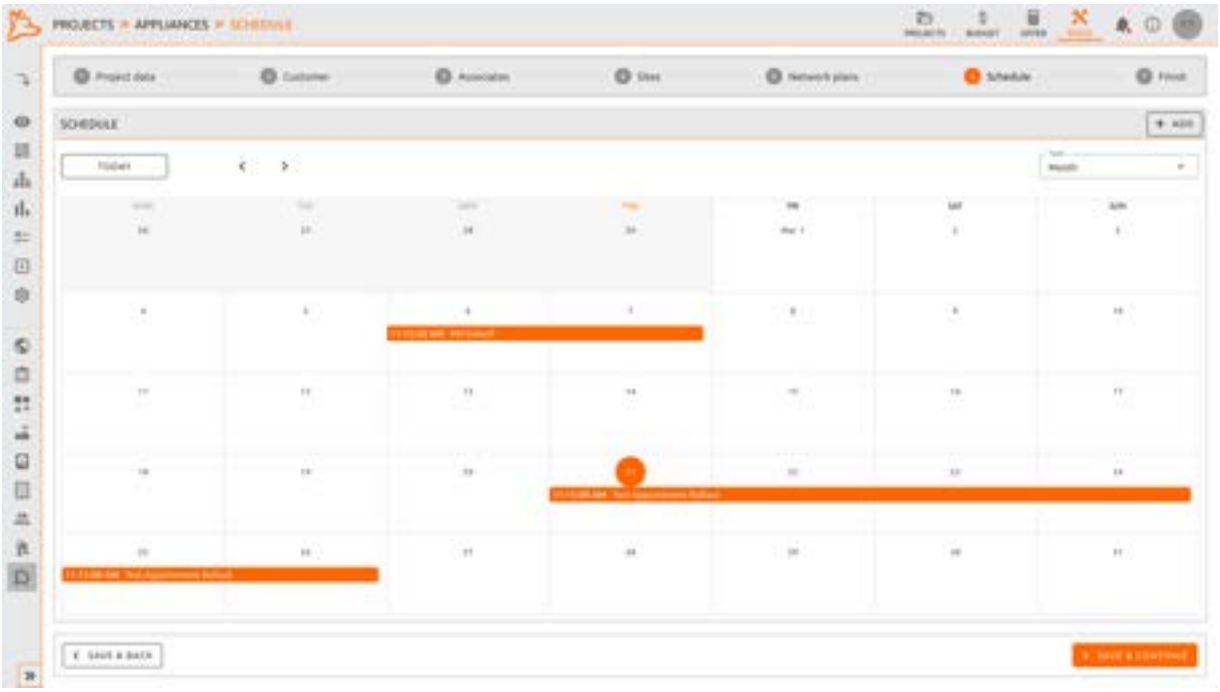


Extract from the build phase: Manage network plans

3.4 Worflow build phase in ProjectBuilder

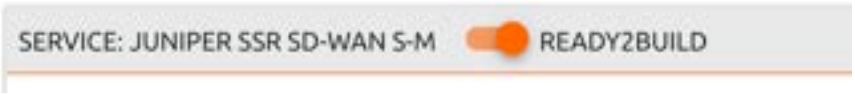
3.4.1 (Desired) dates / prioritization

Appointments can be entered in the Schedule section. The area is still in the beta phase and will be further improved in due course.



3.4.2 Release - Plan2Build views

A function is provided in the Project Builder to mark sites as "Ready2Build". With the corresponding user role (3.1 Rights), sites and groups can be highlighted in color. In addition, view filters can be set in the table view according to this status:

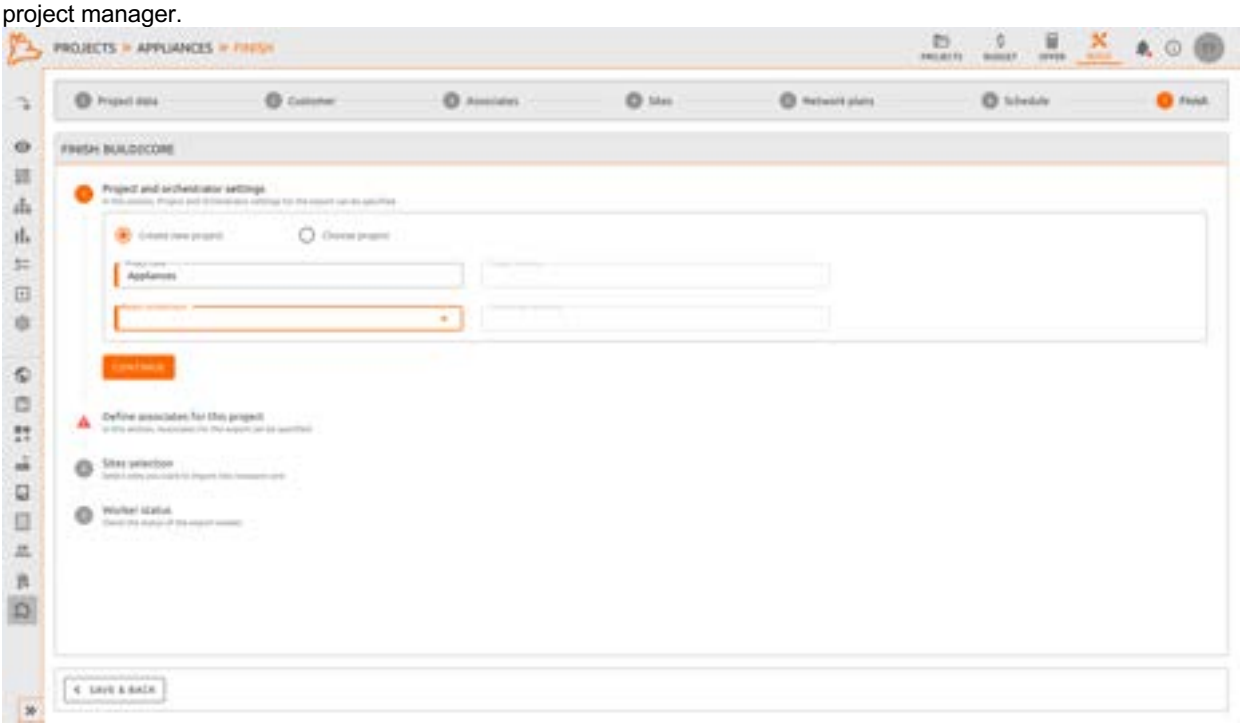


3.4.3 Basic configuration views

Once all the information required for a basic configuration for a specific site has been provided in the technical view within the build phase, the corresponding site is marked as "ready to import". In the nocware® portal, a project from the Project Builder can then be selected as the import source and all sites can be imported into the run phase via collective import or specific sites via checkbox. In this step, the information is transferred to a basic configuration/template for SSR and the node receives its unique name and a QR code (3.4.6 Zero-touch deployment).
From this moment on, the sites for the run phase are entered in nocware® and the corresponding site status is displayed both in nocware® and in the Project Builder.

3.4.4 Setup ambiFOX nocware®

Network technicians transfer the (ready-to-build) nodes to nocware® using an import procedure after approval by the project manager.



All changes to the node to be made from this point onwards are made in nocware® (Conductor).

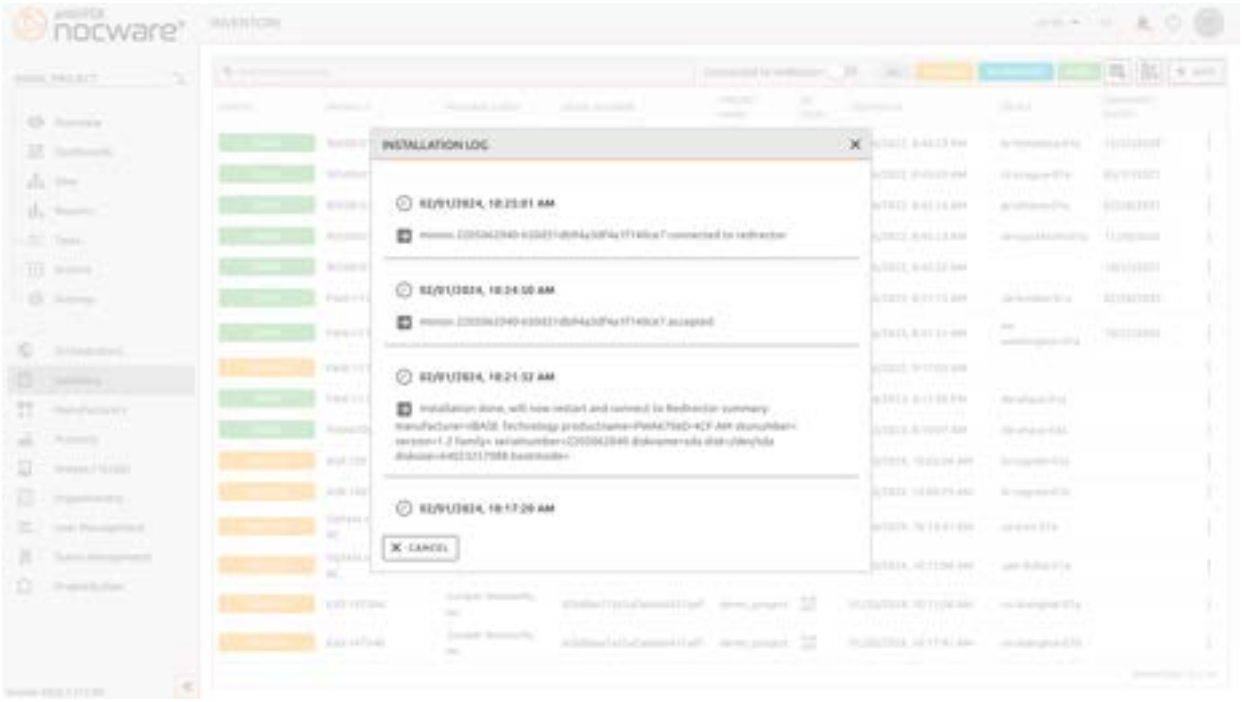
3.4.5 Zero-touch deployment

Anyone with a smartphone and access set up for the respective project will be able to use the deployment to read the status and commission SSR devices by nocware® using a QR code.

This access (for any field service) is set up by the PM and communicated to the necessary parties.

After scanning the QR code (attached to the end device), select the site where you are located and follow the wizard's instructions.

The target configurations are only transferred from the conductor during this final setup of the devices. This means that identical hardware can be transferred to the destinations regardless of serial numbers etc.. In addition, no sensitive data can be lost in this way.


nocware
INSTALLATION LOG
CANCEL