cockpit
IT Service Manager

Infrastructure - Network management

FAQ document

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Introduction

I.   Objectives

To provide operators with an overview of the networks and their use, to detect poorly dimensioned networks, plan for future infrastructure developments, etc.

II.   Definitions

Netmask: The subnet is a logical subdivision of a larger network. The netmask is a mask indicating the size (in number of IP addresses) of this subnet.

The netmask can be given:

- As an IPv4 address (example: 255.255.255.0)
- In Classless Inter-Domain Routing (CIDR) notation; in this case the network address is followed by a "/" and a number from 1 to 32 (example:192.168.1.0/24)

Configuration

Menu: Infrastructure > Equipment > Networks

Objective: To create or edit networks in order to track their usage

Principles:

- The networks are views that retrieve information from equipment
- The lists of IP addresses are retrieved from the equipment according to the filters configured in the networks (VLAN, private / public addresses, etc.)
- The networks only deal with IPv4 addresses. IPv6 may arise with private networks while their use is common with IPv4. The issues of IPv6 are different and the data shown by this menu would be useless with IPv6.

Setting:

From the menu to create or edit a network.

Fields	Information
Structure	Selection of a structure: Only the IP addresses of the equipment in the structure are retrieved in the networks. Example: If there are identical networks (192.168.1.0/24) in 2 different structures, if the networks are not partitioned duplicate IP addresses will appear. "No Structure" selection: The IP addresses of the equipment of all the structures are retrieved in the networks. Example: Some devices are pooled in the network and belong to different structures, so it is necessary to select the option "No Structure" for all the addresses used by the equipment to be taken into account.
Name (mandatory)	1 to 50 characters
Network policy	Private network: The network retrieves the IP addresses entered in the "IP address" fields of the equipment. Public network: The network retrieves the IP addresses entered in the "Public IP" fields of the equipment.
Address	Network address, example: 192.168.1.0 Enter the network address or IP address of the network in the form "IP Address / Netmask" and click "Automatic Calculation" to complete all the address fields. Example: enter "192.168.1.12/24" then click on "Automatic Calculation": Address: 192.168.1.0 Netmask: 255.255.255.0 First IP: 192.168.1.1 Last IP: 192.168.1.254 Number of IPs: 254 Alternatively, an exact range of IP addresses within a network can be selected. Example: enter "192.168.1.100/28" then click on "Automatic Calculation": Address: 192.168.1.96 Netmask: 255.255.255.240 First IP: 192.168.1.97 Last IP: 192.168.1.110 Number of IP's: 14

Netmask	Subnet mask, example: 255.255.255.0
	The principle is the same as for the "Address" field, enter the "Address" field and indicate a subnet mask in the "Netmask" field then click on "Automatic Calculation", example with data: Address: 192.168.1.100 / Netmask: 255.255.255.224 Result: Address: 192.168.1.96 Netmask: 255.255.255.224 First IP: 192.168.1.97 Last IP: 192.168.1.126 Number of IPs: 30
First / Last IP	First and last IP address of the network, example: 192.168.1.1 / 192.168.1.254
	These 2 fields are filled automatically when the "Automatic Calculation" button is clicked.
	They can also be entered manually, in this case enter 2 IP addresses (respecting the logic of First IP < Last IP), the fields "Address" and "Netmask" do not need to be filled. When saving the network, Cockpit IT Service Manager calculates the number of IPs in the network.
Number of IPs	Not editable, indicates the number of IP addresses available in the network: When saving the network, the difference between "First IP" and "Last IP" is calculated and the number of IPs is given. When the "Automatic Calculation" button is clicked, the number of IPs is calculated taking into account the specified address and subnet mask.
VLAN	There are three possibilities: Show a VLAN: Only the IP addresses assigned to the specified VLAN will be taken into account
	Ignore: The IP addresses associated with a VLAN will not be taken into account
	No selection: All the IP addresses of the network will be taken into account whether they are associated with a VLAN or not

Note: To enter the "IP address", "Public IP" and "VLAN" fields, edit the equipment from the "Infrastructure> Equipment> Management" menu and go to the "Hardware" tab.
The "IP address" fields of the network cards are automatically populated by the hardware inventories.

Example: We want to create a network containing the private IP addresses of our network

1. Go to equipment management, edit equipment belonging to the network
2. In the equipment sheet, retrieve the private IP address of a network card (example: 192.168.42.42) and its mask (example: 255.255.255.0)
3. Go into networking, create a network
4. Select private mode and do not enter the VLAN field
5. Fill in the IP Address and Netmask fields with the information from the equipment and click on "Automatic Calculation", then save.
6. The network is created, click "View" to see the IP addresses and their usage

Usage

I. Menu management

<u>Menu:</u> Infrastructure > Equipment > Networks

<u>Objective:</u> To search for networks and list the IP addresses used by the equipment

<u>Operation:</u>

- The "Search Term" field searches for terms in the fields:
  - Name
  - Description
  - Address: The search is done on the network address, not on all IP addresses of the network.

  Example: The search "172.31.1" will find the network "172.31.1.0", but the search for the IP "172.31.1.12" belonging to the network "172.31.1.0" will fail.

  Do not use the IP / Mask notation for searching, the search "172.31.1.0/24" will not find the network "172.31.1.0" even if it is the right netmask.

- The menu lists the IP addresses of the network according to the selection (all, used, unused, duplicate)

- The rows in the list are color-coded:
  - Black: The IP address is not used
  - Green: The IP address is used by a device
  - Red: The IP address is used more than once (duplicate)

    Note: Having 2 devices with the same IP address in the same network is not normal.

- For the used IP addresses, click on "Display" to access the equipment sheet

- The list of network IP addresses can be exported in Excel format

II. Equipment search

<u>Menu:</u> Infrastructure > Equipment > Management

<u>Objective:</u> Search for equipment based on IP address

<u>Operation:</u>

- Use the "Search term" field in the menu
- Searching for a simple IP address: the search "192.168.1.37" will retrieve all the devices with this address
- Combined search of an address and a mask: the search "192.168.1.37/24" will retrieve all the devices with an address belonging to the network "192.168.1.0" with the mask "255.255.255.0"

FAQ

I.   Why is the created network still empty?

The network is a view, creating a network does not launch a search of the network contents. The equipment must be populated (manually or via automatic inventory).

II.   What happens when a network is deleted?

A network is a view grouping equipment according to their IPs and VLANs, thus deleting a network has no impact on the data entered in the equipment.

III.   How is equipment removed from a network?

As a network is a view, equipment cannot be removed from a network. It is the configuration of the equipment that must be revised so that it no longer appears in the network.

IV.   Is data conformity guaranteed?

When the IP address fields are entered manually there is no validation, so it is possible to enter data that does not conform to the standards.
Cockpit IT Service Manager guarantees conformity of data to standards when the "Automatic Calculation" function is used.

V.   Is it necessary to respect the rfc1918 standard?

The rfc1918 standard specifies 3 reserved "private" address ranges (10.0.0.0/8 - 172.16.0.0/12 - 192.168.0.0/16). Compliance with these specifications is recommended but Cockpit IT Service Manager does not enforce it, so it is possible to set up a network without taking them into account.

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