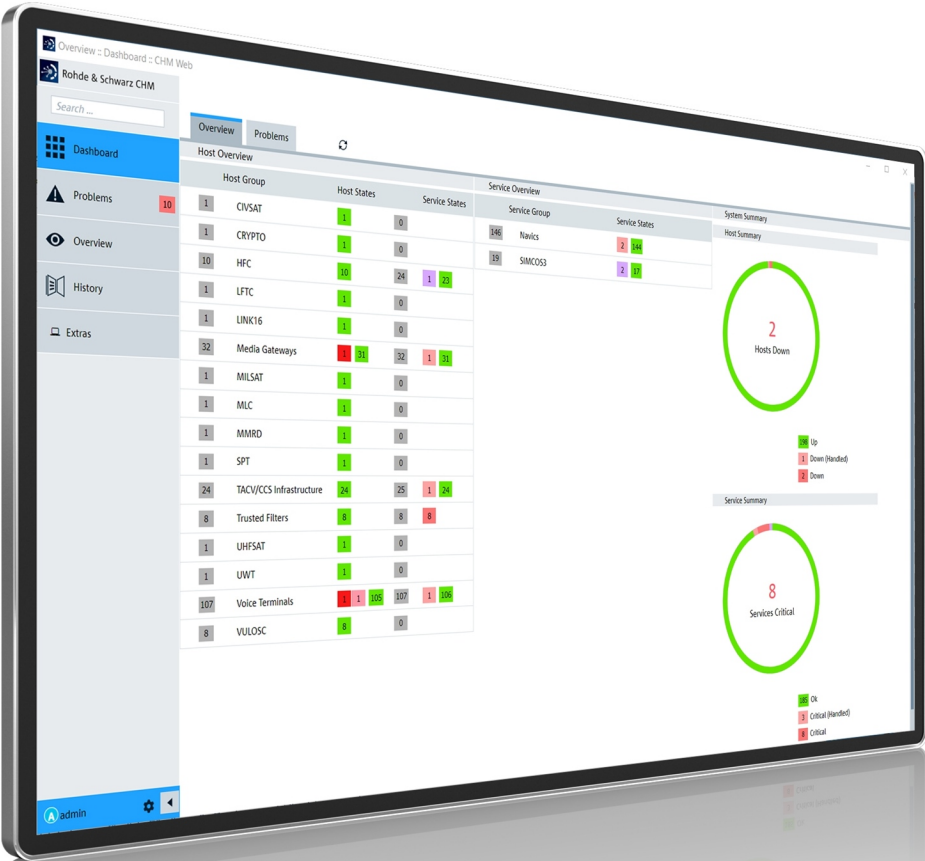


# R&S<sup>®</sup>CHM

## System Status Monitoring

### User Manual



1179352102  
Version 08



This document describes operation of the web GUI of the R&S®CHM system status monitoring software (3067.6545.02).

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1179.3521.02 | Version 08 | R&S®CHM

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# 1 Welcome to R&S CHM

The R&S CHM software monitors status information from various system components that are connected to the network. The web-based user interface visualizes system state parameters, and lets you monitor and troubleshoot connected and configured Rohde & Schwarz instruments, devices with simple network management protocol (SNMP) interface, and other hosts.

## Target audience

This manual familiarizes you with the functions and operation of the R&S CHM web GUI. The contents are therefore intended for operators and administrators working with the web GUI.

- **Operators:** Monitor configured hosts and services on the web GUI with restricted permissions.
- **Administrators:** Monitor configured hosts and services on the web GUI with extended permissions. Administrators can, e.g. add comments or schedule downtimes.

For information on implementation and configuration of R&S CHM, see the "R&S CHM System Status Monitoring Configuration" configuration manual.

## 1.1 Key features

R&S CHM system status monitoring provides the following high-level features:

- Run on a security-enhanced Linux distribution (SELinux)
- Run on a hardened operating system according to DISA STIGs. For information, see <https://public.cyber.mil/stigs/>.
- Run unattended for a long period of time
- Continuously monitor the status of hosts and services, e.g. used disk space
- Allow configuration of device-specific monitoring services
- Reduce downtime of system components
- Troubleshooting of problems
- Encrypted communication between R&S CHM and monitored hosts
- Secure password handling

## 1.2 Documentation overview

This section provides an overview of the R&S CHM user documentation. Unless specified otherwise, you find the documents at:

[www.rohde-schwarz.com/product/chm](http://www.rohde-schwarz.com/product/chm)

### 1.2.1 Manuals

The manuals are provided in two formats. The [PDF](#) format is contained in the software delivery. An [HTML5](#)-based help format is available on the R&S CHM web [GUI](#).

The latest versions of the manuals are available for download or for immediate display on the internet at:

[www.rohde-schwarz.com/manual/chm](http://www.rohde-schwarz.com/manual/chm)

- **"R&S CHM System Status Monitoring" user manual:**  
Introduces the R&S CHM and describes how to start working with the web GUI that lets you monitor the "health status" of the system in detail.
- **"R&S CHM System Status Monitoring Configuration" configuration manual:**  
Provides a description of all configuration options and describes how you implement and set up R&S CHM on all system components.

#### To obtain help on the web GUI

1. On the left navigation area of the R&S CHM web [GUI](#), select "Extras" > "User Manual".  
The help opens in the R&S CHM web GUI (English).
2. To show the manual in German, select the "DEU" tab on the top of the "User Manual" area.

### 1.2.2 Brochure

The brochure provides an overview of the software and deals with the specific characteristics.

See [www.rohde-schwarz.com/brochure-datasheet/chm](http://www.rohde-schwarz.com/brochure-datasheet/chm)

### 1.2.3 Release notes and open source acknowledgment (OSA)

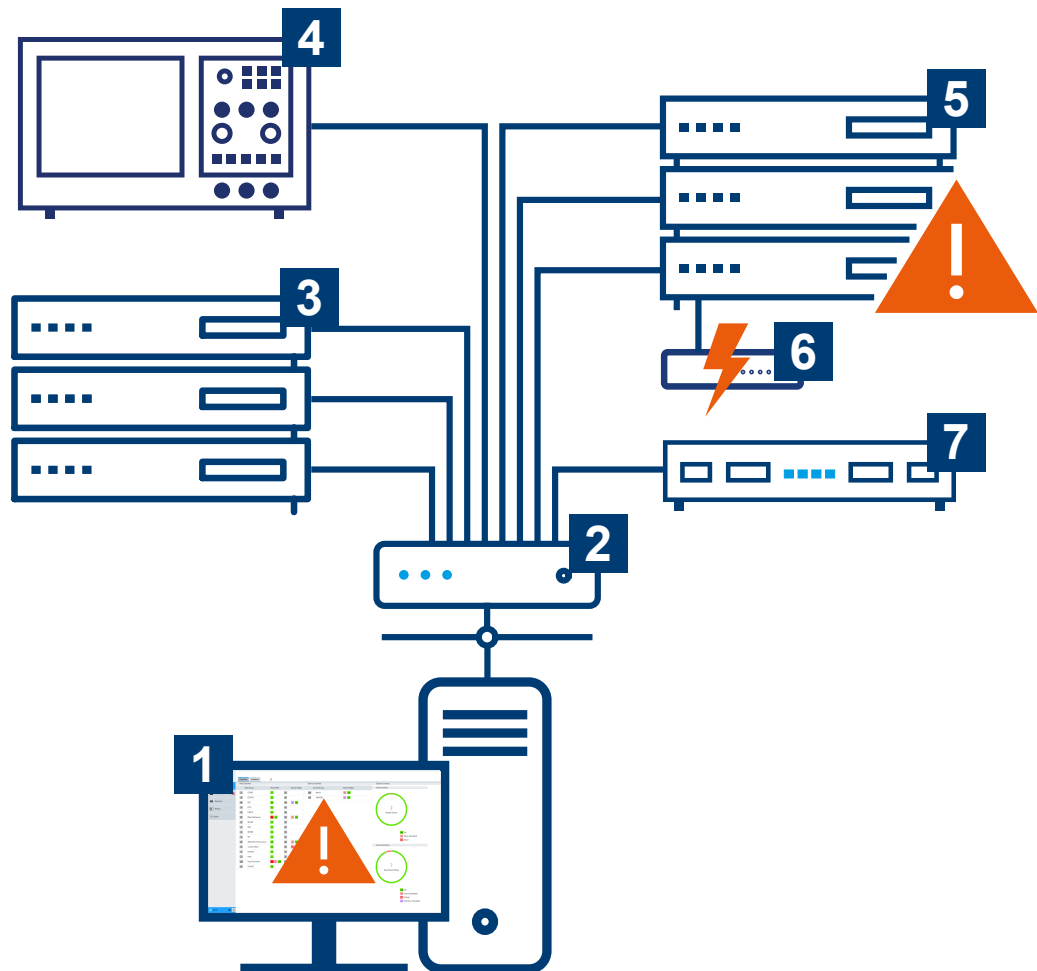
The release notes list new features, improvements and known limitations of the current software version, and contain a release history.

The open source acknowledgment document provides verbatim license texts of the used open source software.

Both documents are contained in the software delivery.

## 2 Introduction

The R&S CHM system status monitoring software provides an integrated, system-wide solution to collect status information continuously in a local area network (LAN). The software continuously performs checks for monitored hosts and services and evaluates the results. If R&S CHM detects an error condition, it creates an alert. The following figure provides an overview of a monitored system.



**Figure 2-1: R&S CHM - status monitoring overview**

- 1 = Computer with web-based user interface
- 2 = Network component (router, switch)
- 3 = Server hardware
- 4 = Rohde & Schwarz device
- 5 = Server hardware with error condition
- 6 = Uninterruptible power supply with error condition
- 7 = R&S CHM host that runs the status monitoring software

The R&S CHM software runs on a Linux server (7). You can access the web-based user interface on any standard computer in the network (1).

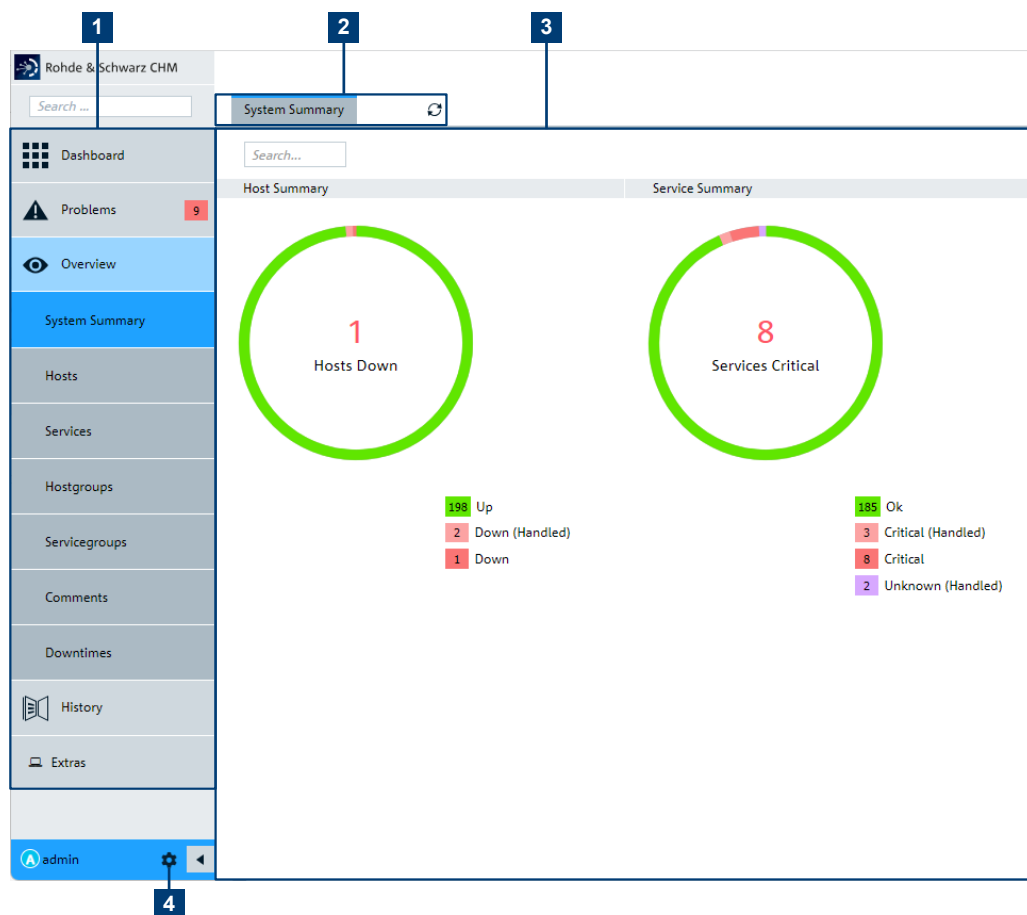
R&S CHM can fetch data from all connected and configured system components (1 to 7). Therefore, the operational state of the system is always under control. The downtime periods, due to maintenance operations or hardware failures, are reduced to a minimum.



### Life of monitoring data

All monitoring data is retained for 90 days. Older data is purged from the database.

To monitor status information, system operators and administrators use the browser-based graphical user interface, in the following named as "web GUI".



**Figure 2-2: Web GUI for status monitoring**

- 1 = Navigation and filter categories
- 2 = Additional filter categories
- 3 = Main area for status monitoring
- 4 = System-related pages and "Logout"

To configure the R&S CHM host from any computer in the LAN, system administrators can use an [SSH](#) client, such as PuTTY.



**How to continue?**

The next steps depend on your role as mentioned under "[Target audience](#)" on page 5.

- **Monitor system status information on the web GUI (operators and administrators)**  
Continue with [Chapter 3, "Starting the R&S CHM web GUI"](#), on page 10.  
Read the "R&S CHM System Status Monitoring" user manual.
- **Install and configure R&S CHM (system administrators, integrators)**  
Read the "R&S CHM System Status Monitoring Configuration" configuration manual.

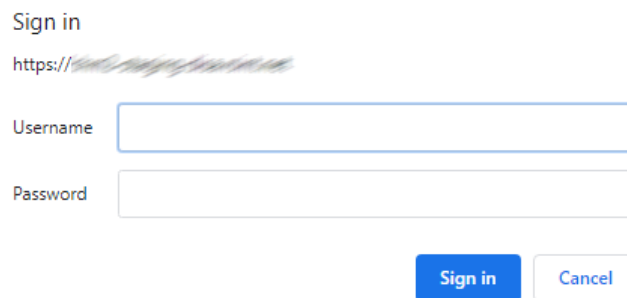
## 3 Starting the R&S CHM web GUI

You can access R&S CHM web GUI in these ways:

- By using a standard browser on any computer that is connected to the LAN. We recommend using a current version of Microsoft Edge or Google Chrome.
- By using the R&S CHM client application, see ["To start the web GUI using the R&S CHM client status icon"](#) on page 11.

### To start the web GUI in a standard browser

1. Open the browser.
2. In the address bar, type the IP address of the R&S CHM host, e.g. `10.100.120.12`. The browser displays a registration page.
3. Enter your credentials. This step depends on the configured user authentication method.
  - With a configured [LDAP](#) or single sign-on authentication method, you can either log in with your network credentials or log in automatically. Ask your system administrator for details.



Sign in

https://

Username

Password

*Figure 3-1: Web GUI - LDAP log on page*

- With configured **local web GUI users**, use one of the preconfigured local users.

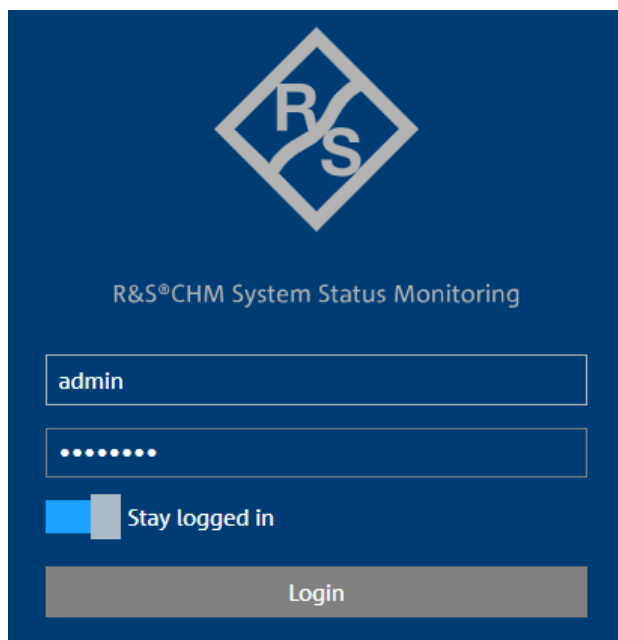


Figure 3-2: Web GUI - local user log on page

- **Operator:** *operator*, password *chmoperator*
- **Administrator:** *admin*, password *chmadmin*


**Note:** If "Stay logged in" is enabled, you stay logged-in until you manually log off.



The browser opens the web GUI with the "Dashboard" page. The web GUI provides numerous filters that you can use to monitor the system efficiently.



The web GUI only shows the hosts and services that your system administrator has configured for monitoring.

#### To start the web GUI using the R&S CHM client status icon








If the R&S CHM client application (short: [client](#)) is installed on a host, the Windows notification area shows a client status icon  with a colored decorator that indicates the aggregated system status.

1. If necessary, select Windows notification area >  "Show hidden icons".
2. Right-click  > "Open".  
A browser window opens.
3. On the log on page, enter your credentials.

This step depends on the configured user authentication method. See the previous procedure "[To start the web GUI in a standard browser](#)" on page 10.


The web GUI opens.

**Table 3-1: Meaning of the colors on the status icon (aggregated system status)**

Color	Meaning
 (blue)	Default status of the client.
 (green)	"OK"
 (orange)	"WARNING"
 (red)	"CRITICAL"
 (purple)	"UNKNOWN"
 (gray)	Some kind of error occurred and the client is not connected to the R&S CHM host. If so, right-click  > Authentication Test. Report the returned problem to your system administrator for troubleshooting purposes.

**To end a web GUI session**

To prevent other people from unauthorized access to the web GUI, end a session using "Logout".

1. On the left menu, point on the cogwheel  next to the "<user\_name>".  
The "System" menu opens.
2. Select "Logout".  
The web GUI session ends. The client disconnects from the R&S CHM host.

## 4 Obtaining a status overview

The "Dashboard" is the default view after starting the web GUI. Since your system administrator can configure the contents of the view in the system configuration, the view either shows the default configuration or a custom configuration.

The **default configuration** of the "Dashboard" view provides a first overview of the current status of all configured **hosts** and **services**. A host is a configured **SNMP** device or an agent, i.e. a Windows or Linux host. A service is a monitored element of a host.

On the default "Dashboard", you can access these two views:

- The "Overview" view provides a status overview and a status summary on all configured hosts and services. It thus provides a quick overview of the overall system status.
- The "Problems" view lists unhandled host and service problems and recent events.

The different views help you focus only on relevant status information, e.g. critical problems.

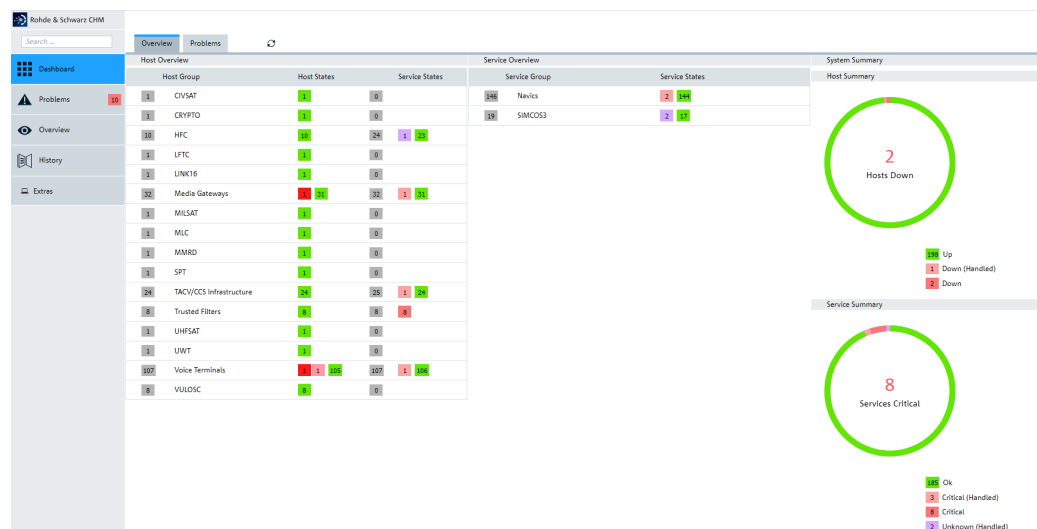
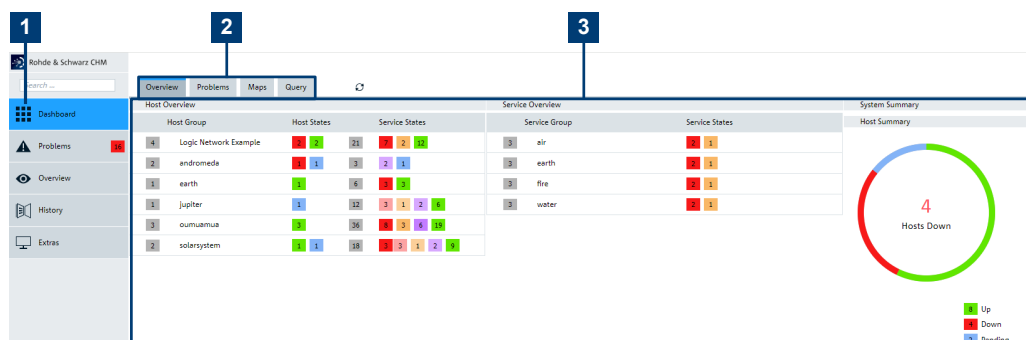


Figure 4-1: Dashboard > Overview view

A **custom configuration** can show additional or other views and widgets. E.g., in the following example, the "Dashboard" lets you access the two default views plus a "Maps" view and a "Query" view.



**Figure 4-2: System-specific dashboard configuration**

- 1 = "Dashboard" menu  
 2 = Multiple configured views  
 3 = Multiple configured widgets

## 4.1 Status indications

On the web GUI, the status of services and hosts is indicated by colors and problem severity.

**Table 4-1: Severity of detected service problems**

Status indication	Meaning
■ "OK" (green)	The service is up and running; R&S CHM does not detect a problem.
■ "UNKNOWN" (purple)	One of the following applies: <ul style="list-style-type: none"> <li>The check result is not evaluable or parsable.</li> <li>The R&amp;S CHM host does not receive a check result, which is confirmed by the host's watchdog timer.</li> </ul> Check for connection or configuration problems.
■ "WARNING" (orange)	The service is running, but exceeds the configured threshold. Check for problem details and report them to your system administrator.
■ "CRITICAL" (red)	The service exceeds the critical threshold and thus has severe problems. Immediately check for problem details and report them to your system administrator.

**Table 4-2: Severity of detected host problems**

Status indication	Meaning
■ "UP" (green)	The host is up and running; R&S CHM does not detect a problem.
■ "DOWN" (dark red)	The host is down. Immediately check for problem details and report them to your system administrator.

Table 4-3: Other status indications

Status indication	Meaning
■ "PENDING" (blue)	The check has not yet been executed and is waiting in the queue.
<status> "(Handled)" (light status color)	<p>A status in combination with "(Handled)" means one of the following:</p> <ul style="list-style-type: none"> <li>• The service is acknowledged.</li> <li>• The service is in a downtime.</li> <li>• The related host is in status "DOWN".</li> </ul> <p><b>Example</b></p> <p>Host Summary: 6 Hosts Down (red), 6 Up (green)</p> <p>Service Summary: 5 Services Critical (red), 5 Critical (Handled) (orange), 5 Unknown (Handled) (purple)</p> <p>Legend for Host Summary:  <span style="color: green;">■</span> Up  <span style="color: red;">■</span> Down (Handled)  <span style="color: red;">■</span> Down</p> <p>Legend for Service Summary:  <span style="color: green;">■</span> Ok  <span style="color: orange;">■</span> Critical (Handled)  <span style="color: red;">■</span> Critical  <span style="color: purple;">■</span> Unknown (Handled)</p>

## 4.2 Active service checks

Active service checks always return a reliable status information on the R&S CHM web GUI since the R&S CHM host requests the device checks. If the R&S CHM host does not receive an answer, the status is "UNKNOWN".

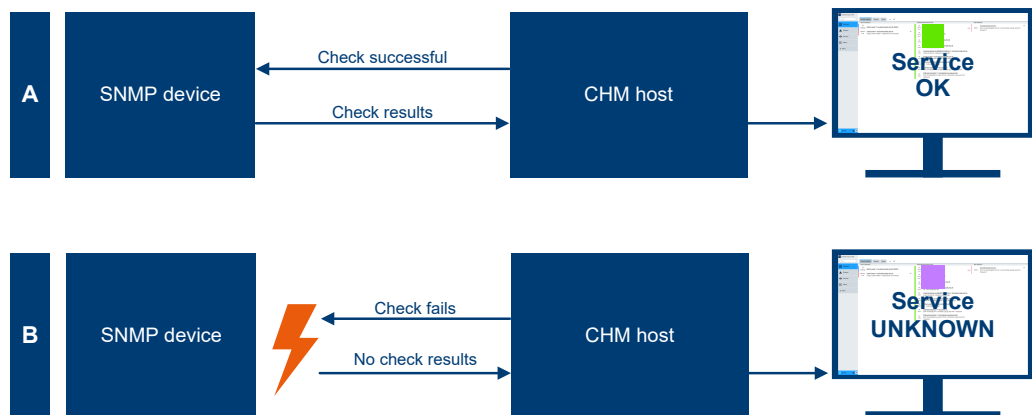


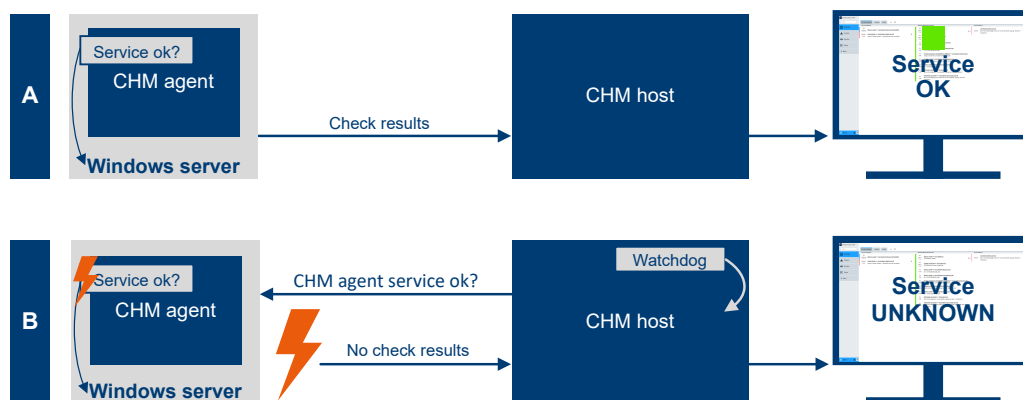
Figure 4-3: Active checks and related status indications

A = Check successful; status is "OK", "WARNING" or "CRITICAL".

B = Check fails; status "UNKNOWN".

## 4.3 Agent service checks

Agent service checks are performed on an R&S CHM agent and sent to the R&S CHM host.



**Figure 4-4: Agent service checks and related status indications**

A = Check is successful; status is "OK", "WARNING" or "CRITICAL".

B = Check result is overdue for a longer time; status is "UNKNOWN"

The following description is related to [Figure 4-4](#).

#### Situation A

Agent service checks return a reliable status as long as the check results that are sent by the R&S CHM agent are received by the R&S CHM host in time.

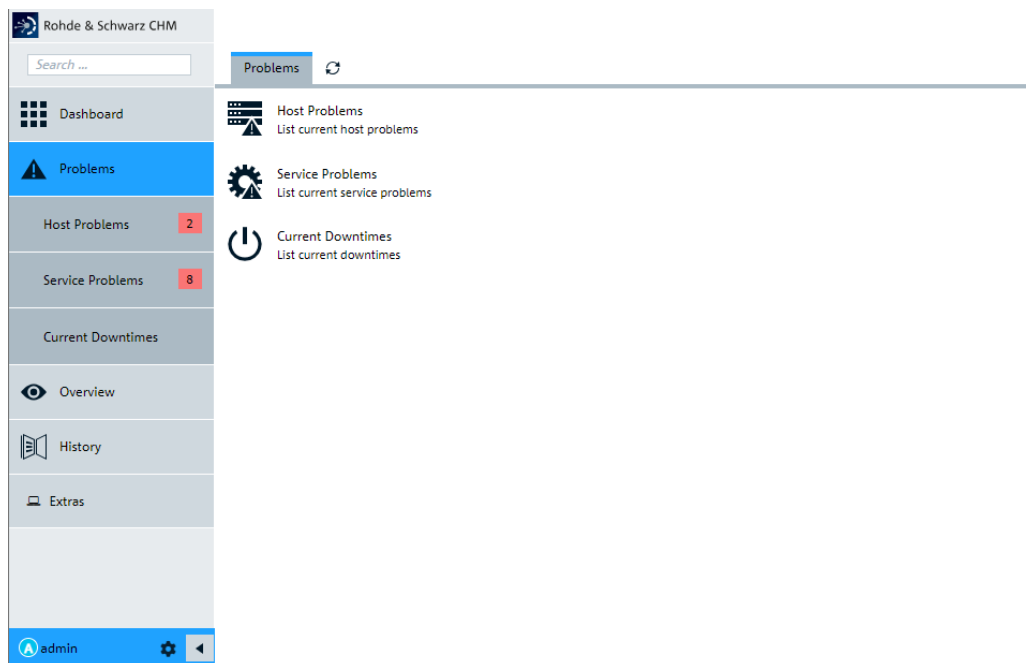
#### Situation B

After the preconfigured check interval of 10 min, the R&S CHM host detects that there is a persistent problem with the agent service check. R&S CHM indicates the status on the web GUI as "UNKNOWN".



## 5 Focusing on problems

To list only the system components whose status indicate a problem, select "Problems".



**Figure 5-1: Problems view**

For example, select the "Service Problems" to visualize all service problems in a list.

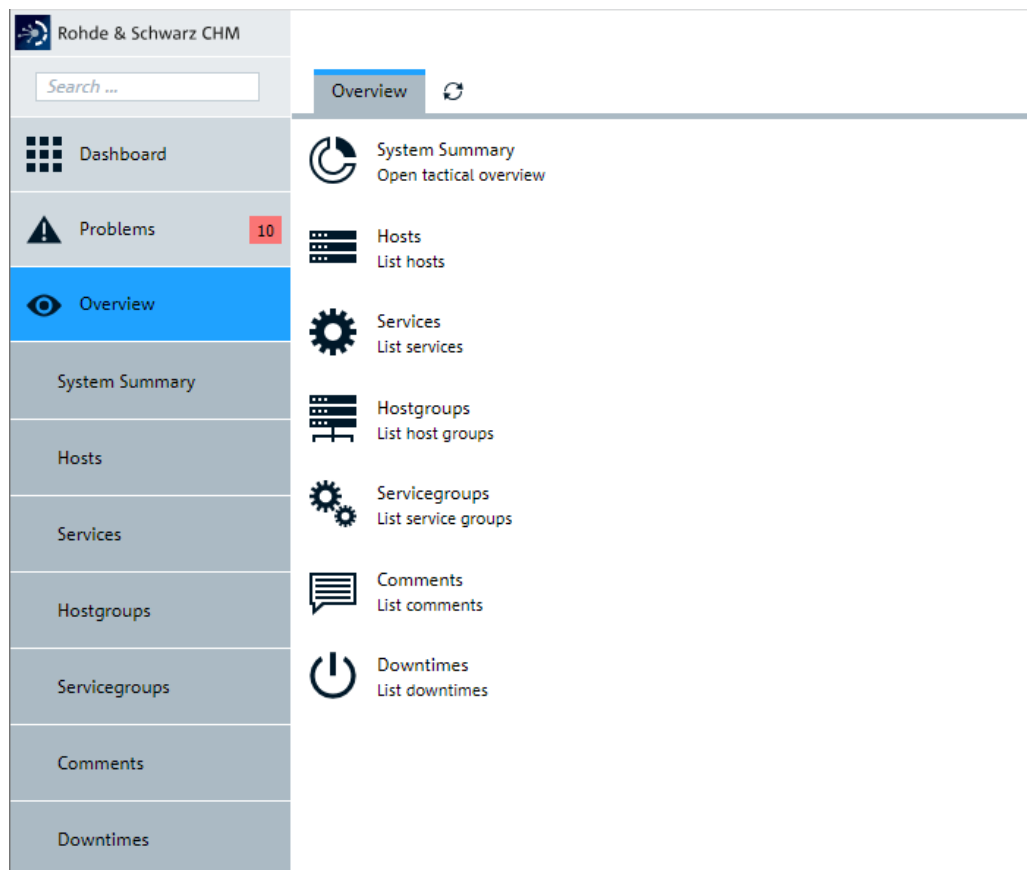
The screenshot displays the 'Service Problems' dashboard in the Rohde & Schwarz CHM interface. The left sidebar contains navigation links: Dashboard, Problems, Host Problems (2), Service Problems (8), Current Downtimes, Overview, History, and Extras. The main content area shows a list of critical service problems. Each entry includes a severity level (CRITICAL), a timestamp (e.g., 'since Sep 13'), a filter name (e.g., 'Trusted Filter on TACV-TFV-SEC-NHB-4'), and a detailed description (e.g., 'Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning'). The bottom status bar indicates '0 row(s) selected' and a summary of 198 services with counts for different severity levels: 8 Critical, 3 Major, 2 Minor, and 185 Info.

Severity	Timestamp	Filter Name	Description
CRITICAL	since Sep 13	Trusted Filter on TACV-TFV-SEC-NHB-4	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFV-SEC-RHB-1	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFM-SEC-NHB-4	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFM-SEC-RHB-1	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFV-SEC-NHB-3	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFM-SEC-RHB-2	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFV-SEC-RHB-2	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Sep 13	Trusted Filter on TACV-TFM-SEC-NHB-3	Critical - Filter Status. Power Supply 1: AC off. Power Supply 2: AC off. Error status: warning
CRITICAL	since Aug 21	Check status of Navics VT with equipment ID EQID-VT-108 on OPS_PWO (DOWN)	Alert - EQID-VT-108. 3 active alarms.
CRITICAL	since Aug 21	Check status of Navics Gateway with name ZYNQ_RGW3 on MediaGateway03 (DOWN)	Alert - ZYNQ_RGW3. 2 active alarms.

Figure 5-2: Problems view - Service Problems dashboard

## 6 Focusing on specific components

To access the current state of specific system components quickly, select "Overview". This view provides specific, predefined categories that you can use to display only relevant resources or groups of resources.



**Figure 6-1: Overview view**

For example, select the "Hostgroups" to check the state of configured groups of host from a specific location.

	Host Group	Host States	Service States
1	CIVSAT	1	0
1	CRYPTO	1	0
10	HFC	10	24 1 23
1	LFTC	1	0
1	LINK16	1	0
32	Media Gateways	1 31	32 1 31
1	MILSAT	1	0
1	MLC	1	0
1	MMRD	1	0
1	SPT	1	0

Figure 6-2: Host groups and their states

## 6.1 Finding specific hosts

You can search for a specific host to check its status and the status of monitored services quickly.

The screenshot displays the R&S CHM web interface for the host 'navics'. At the top left, a search bar (1) contains the text 'navics'. The sidebar on the left shows navigation options: Dashboard, Problems (2 Host Problems, 8 Service Problems), Current Downtimes, Overview, History, and Extras. The main content area features two large green circular gauges: 'Hosts Down' with the number 2, and 'Services Critical' with the number 0. Below these gauges are status indicators: 150 Up, 1 Down (Handled), and 2 Down for hosts; and 148 Ok and 2 Critical (Handled) for services. A table below lists the details for hosts and services. The 'Services: navics' section shows a critical alert for 'Check status of Navics VT with equipment ID EQID-VT-108 on OPS\_PWO (DOWN)' on Aug 21, which is highlighted with a red bar and a checkmark (3).

**Figure 6-3: Search box and search result**

- 1 = Searched host
- 2 = Critical service button
- 3 = Service details

1. Enter the host name in the search box, e.g. *navics* (1).  
The search result is shown in the "Search" view.
2. Select the critical service (2).  
R&S CHM shows all details on the critical service for problem identification (3).

## 6.2 Using the graphical system view (maps)

A graphical system view, which is named as "maps" in R&S CHM, is available in the menu on the web GUI if the view is configured and enabled in the system configuration.

The configured elements let you visually track the system's status on customizable maps, providing a more intuitive and comprehensive understanding of the system's

operation. You can find all configured graphical system views on the web GUI under "Maps" (1, 2). R&S CHM can visualize the status of hosts, services, host groups and service groups.



The example figures explain the general behavior but do not reflect true systems or subsystems.

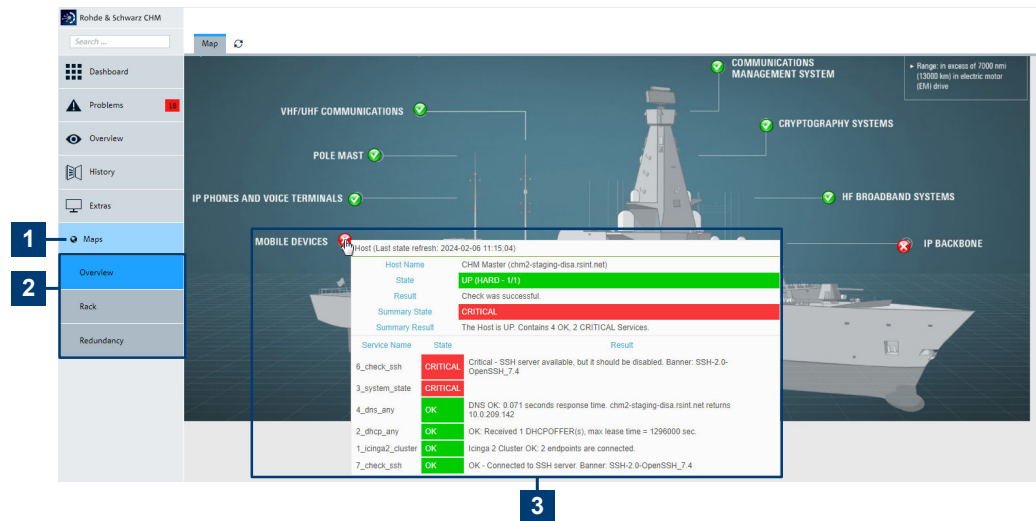


Figure 6-4: Graphic system views (maps)

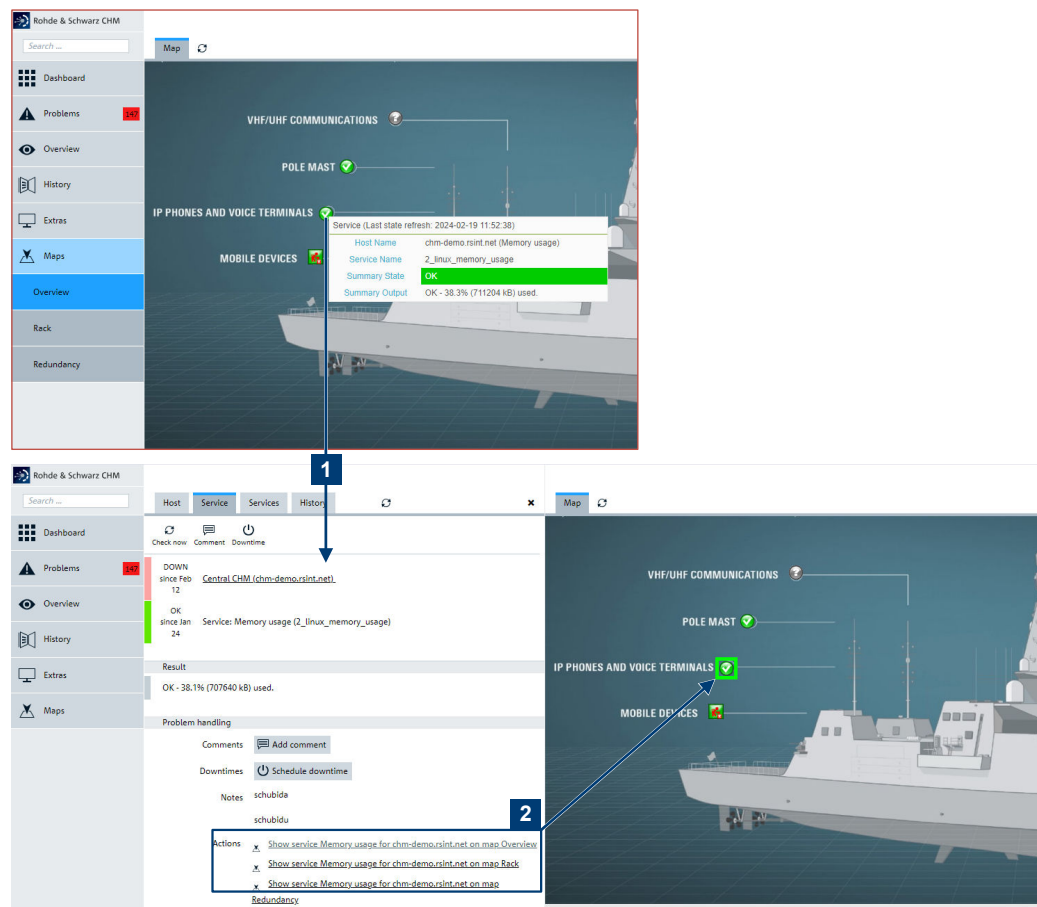
- 1 = "Maps" main menu
- 2 = Individual "Maps" views
- 3 = Mouse over on the status icon provides details. Select the status icon to navigate to the configured host or service.

Table 6-1: Meaning of the status icons

Color	Meaning
	Service/host status "OK"/"UP"
	Decorators indicate acknowledged problems or scheduled downtimes.
	Service status "WARNING"
	Service/host status "CRITICAL"/"DOWN"
	Service status "UNKNOWN"

### To navigate between maps and services or hosts

You can navigate between the different views without losing the focus on the current service or host problem.



**Figure 6-5: Navigation between map and service or host**

1 = Navigation from a map to a service  
 2 = Navigation from a service to a map

1. Select the status icon of the service or host of interest.  
 The corresponding "Service" view opens.
2. Select an action to show the location of the service this map or a different map again.  
 The status symbol is highlighted for some seconds by a green, flashing frame.

## 6.3 Checking states manually

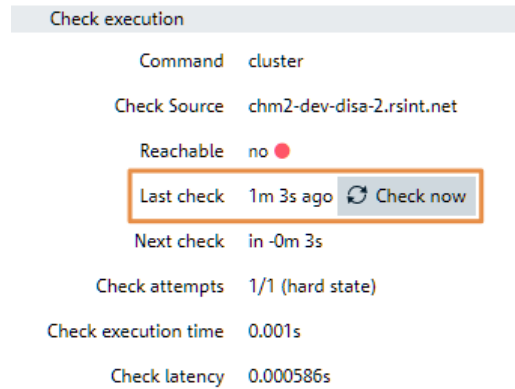
R&S CHM checks host or service states in configured check intervals.

Examples for typical check intervals:

- Service checks: 60 seconds
- Host check (up/down): 60 seconds
- Windows security update: 1 day

If necessary, you can check immediately for the current status of the host and all its monitored services.

1. Display the details of the host or service. How to: [Chapter 7, "Displaying status details"](#), on page 28
2. Under "Check execution", select "Check now".



**Figure 6-6: Immediate status check**

R&S CHM runs the check, updates the status and resets the last check time.

## 6.4 Handling issues

During integration or maintenance phases, where the system is only configured partially, it can be helpful to hide known problems transitionally.



You can select multiple items in a list to perform an action for these items at once. Hold down the key and then click the items to select.

- Use the [SHIFT] key to select adjacent items.
- Use the [CTRL] key to select non-adjacent items.

You can select these actions:

- ⏸ "Downtime"/"Schedule downtime"  
Intentionally hide host and service problems for time.
- ✎ "Acknowledge"  
Intentionally hide host and service problems until the host or service recovers. You can remove an acknowledgment in the "Host" details view if necessary (✕ "Remove acknowledgment").

Downtimes or acknowledgments are indicated by different colors on the web GUI. Inform other users during such phases with a helpful comment, e.g. *This server is down between 16 p.m and 20 p.m. due to system maintenance.*



The status of hosts and services that have been acknowledged or are in scheduled downtime are ignored for calculation of summary states. This measure provides more accurate summary states at the external interfaces, i.e. at client, trusted filter, etc.

The following procedure shows how you configure a downtime. The steps are similar for an acknowledgment.

### To schedule a host downtime

1. In the "Host" details view, select "Downtime" (1).

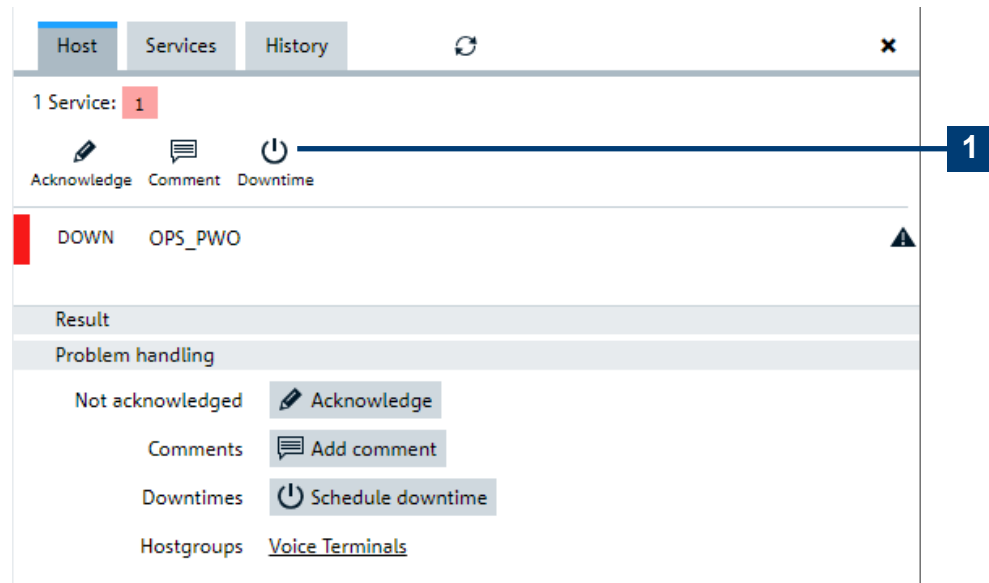


Figure 6-7: Schedule a downtime, part 1

2. Specify the mandatory details for this scheduled downtime, i.e. add a comment, the type of downtime (fixed or flexible) and downtime duration (2).

Host Services History

1 Service: 1

Acknowledge Comment Downtime

DOWN OPS\_PWO

Schedule Host Downtime

This command is used to schedule host and service downtimes. During the specified downtime, Icinga will not send notifications out about the hosts and services. When the scheduled downtime expires, Icinga will send out notifications for the hosts and services as it normally would. Scheduled downtimes are preserved across program shutdowns and restarts.

Comment \*

Type \* Fixed

Start Time \* 09/25/2023 02:43:01 PM

End Time \* 09/25/2023 03:43:01 PM

All Services

Child Hosts Do nothing with child hosts

Schedule downtime

Figure 6-8: Schedule a downtime, part 2

3. Select "Schedule downtime" to apply the changes (3).

The problems of this host are no longer shown on the web GUI > "Host Problems" for the period specified. The status of the host changes from ■ "CRITICAL" to ■ "(Handled)" (4).

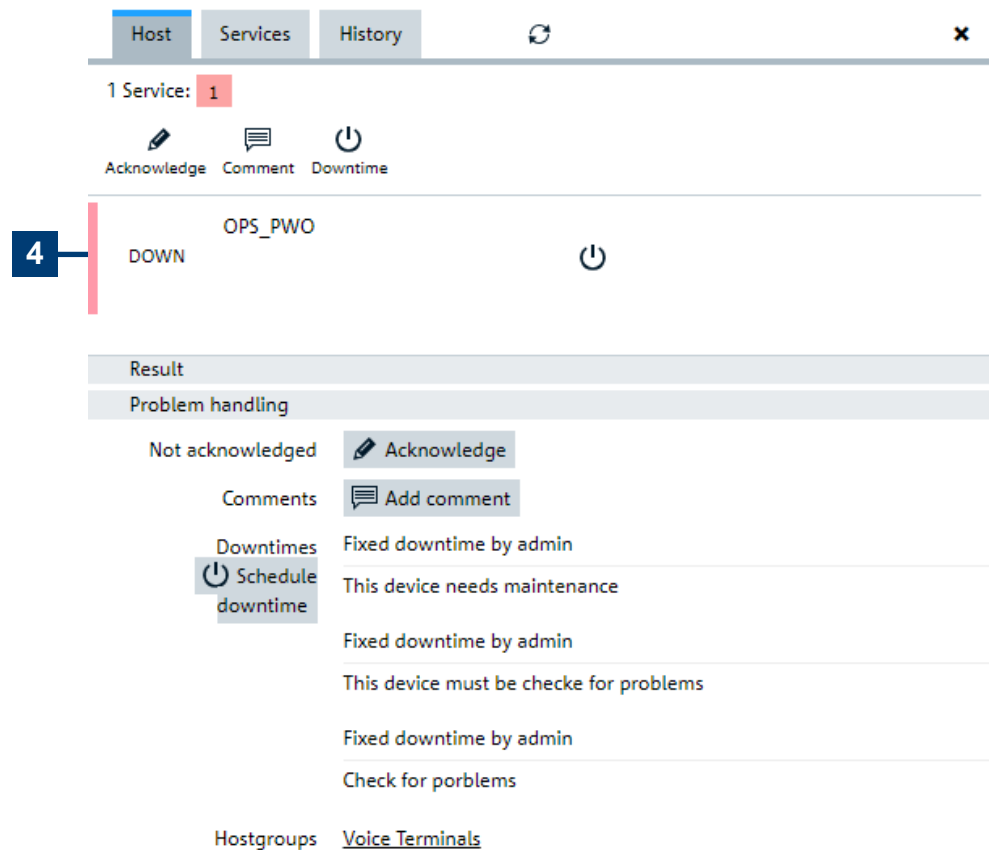


Figure 6-9: Handled host problems

See also: [Table 4-3](#)

### Overview on current downtimes

The "Current Downtimes" view provides a quick overview on all current downtimes.

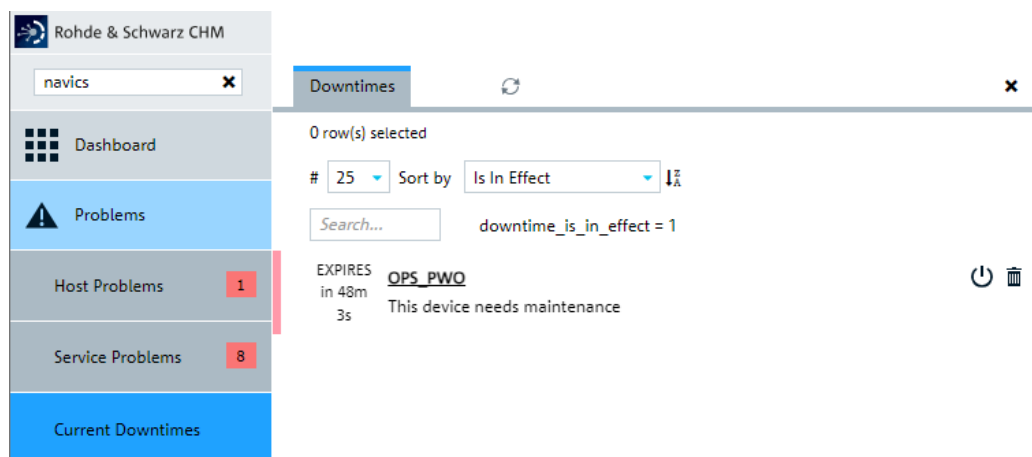


Figure 6-10: Current Downtimes view

## 7 Displaying status details

To display status details of a defective resource, you follow the links of this resource. There are different detail levels that you can access. The following example starts on the "Service Problems" view.

The figure consists of two screenshots of the Rohde & Schwarz CHM web GUI. The top screenshot shows the 'Service Problems' view with a list of critical service problems. A link labeled '1' points to a specific service problem entry. A link labeled '3' points to a host link in the same entry. The bottom screenshot shows the detailed view of the selected service problem, with a link labeled '2' pointing to the 'Service' tab. The detailed view shows the service status, result, and problem handling options.

**Figure 7-1: Navigating on the web GUI**

- 1 = Show detailed information for selected service on related host.
- 2, 3 = Show detailed information for selected host.



Use the "Back" function of the web browser to return to the previous view.

## 8 Verifying status history

To obtain an overview of the system states over time, select "History" > "Event Overview". For example, you can list all status changes or just a filtered subset of status changes.

#	Sort by	Occurrence	Timestamp	Status	Description
Sunday, September 24, 2023 at 11:32:56 PM GMT+02:00					
		✓	23:32:56	OK	Port 1 on PortServer02 OK - server port Interface: 2
		✓	23:32:56	OK	Port 3 on PortServer01 OK - server port Interface: 2
Sunday, September 24, 2023 at 11:32:55 PM GMT+02:00					
		✓	23:32:55	OK	Port 3 on PortServer02 OK - server port Interface: 2
Sunday, September 24, 2023 at 11:32:35 PM GMT+02:00					
		▲	23:32:35	UNKNOWN	Port 3 on PortServer02 Unknown - SNMP error: No SNMP response received before timeout
		▲	23:32:35	UNKNOWN	Port 1 on PortServer02 Unknown - SNMP error: No SNMP response received before timeout
		▲	23:32:35	UNKNOWN	Port 3 on PortServer01 Unknown - SNMP error: No SNMP response received before timeout
Wednesday, September 20, 2023 at 12:13:40 PM GMT+02:00					
		✓	12:13:40	OK	Port 1 on PortServer02 OK - server port Interface: 2
Wednesday, September 20, 2023 at 12:13:20 PM GMT+02:00					
		▲	12:13:20	UNKNOWN	Port 1 on PortServer02 Unknown - SNMP error: No SNMP response received before timeout

Figure 8-1: Event Overview - list and filter for specific events

## 9 Customizing the web GUI

You can customize the following settings of the web GUI to suit your needs.

### 9.1 Changing the theme

The default theme is **light**, which is suitable in bright surroundings. The **dark** theme uses a black background and light labeling and is suitable in darkish surroundings.

#### To apply the dark theme

1. On the left menu, select "<user\_name>" > "My Account".
2. Under "Preferences", set the "Theme" to "rs-company-theme/dark".
3. Save the settings to take the changes effect. You can apply the setting for the current session or make the setting permanent until you change it again.

The theme changes to dark.

### 9.2 Adapting the refresh interval of the web GUI

The default refresh interval of the web GUI is 10 s. You can shorten or prolong this interval. A shorter interval shows the monitoring results faster without user interaction. But the shorter the refresh interval, the higher the load on the R&S CHM host.

1. On the left menu, select "<user\_name>" > "My Account".
2. Under "Preferences", adapt the "Auto refresh speed" to suit your needs.

Available refresh intervals:

- "Fast": 5 s
  - "Default": 10 s
  - "Moderate": 20 s
  - "Slow": 40 s
3. Save the settings to take the changes effect. You can apply the setting for the current session or make the setting permanent until you change it again.

The web GUI refreshes according to the set interval.

## Glossary: Abbreviations and terms

### C

**client:** A client is a host that runs the R&S CHM client application. It is intended for running the [web GUI](#) with additional features.

**CSV:** Character separated values, comma-separated values or colon separated values

### G

**GUI:** Graphical user interface

### H

**HTML5:** Hypertext mark-up language, version 5

### L

**LDAP:** Lightweight directory access protocol

### P

**PDF:** Portable document format. Frequently used file format for saving and exchanging documents.

### S

**SNMP:** Simple network management protocol. It allows devices to exchange monitoring and managing information between network devices.

**SSH:** Secure shell

### W

**web GUI:** Short for R&S CHM web GUI. The web GUI runs in a browser. It shows all information collected by R&S CHM. If you run the web GUI on a Windows client, you can take advantage of additional features.

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