MANUAL ANSWITCH V6

Manual anSwitch V6 Support

Contents

1 Support Contacts Aarenet

1.1 Support Europe

1.1.1 Europe: Support Contact

Helpdesk – Online Ticketing Tool:

https://helpdesk.aarenet.com/en ↗

- ▶ Non-Business Hours (NBH1 & NBH2)
- ▶ For critical (Fault class 1) issues during NBH 1 & 2 Premium Customers are recommended to call the 24/7 support hotline.

The access is free for all Aarenet customers. Signing in for a new access account is necessary.

Support Mailbox

helpdesk@aarenet.com

- ▶ Non-Business Hours (NBH1 & NBH2)
- ▶ For critical (Fault class 1) issues during NBH 1 & 2 Premium Customers are recommended to call the 24/7 support hotline.

Support Hotlines

+41 31 980 28 17: Business Hours Support Hotline

- ▶ Business Hours BH: 08:00 – 18:00 GMT+1.

24/7 (Premium) Support Hotline

- ▶ The authorized customers get the number from the Regional Europe Operation Manager.
- ▶ Non-business hours (NBH1 & NBH2).

1.1.2   Europe: Support SLA Definitions

Europe: Business Hours & Non-Business Hours as per CMA

▸ Business Hours BH
   – Bern time zone (GMT+1)

Day	From	To
Monday	08:00	18:00
Tuesday	08:00	18:00
Wednesday	08:00	18:00
Thursday	08:00	18:00
Friday	08:00	18:00

▸ Non-Business Hours 1 NBH1
   – Bern time zone (GMT+1)

Day	From	To
Monday	18:00	08:00
Tuesday	18:00	08:00
Wednesday	18:00	08:00
Thursday	18:00	08:00
Friday	18:00	08:00

▸ Non-Business Hours 2 NBH2
   ▸ All day Saturday
   ▸ All day Sunday
   ▸ All Swiss holidays

Europe: Fault Classes

Fault Class	Description
1 - critical	Break-down or disruption of the entire system. The incidence degrades the operation of the system to an extent that requires immediate and continuing reaction. E.g., no new calls can be established or unavailability of inbound or outbound traffic.
2 - high	Severe disruption of parts the system (break-down or disruption of vital functions such as SS7 Gateways, Load Balancer etc.). The incidence degrades the operation of the system to an extend that requires immediate and continuing reaction. E.g., system failure that causes loss of redundancy.
3 - medium	Disruption of parts of the system (break-down or disruption of non-vital functions). The incidence degrades the operation of the system to an extend that requires immediate and continuing reaction. E.g., loss of redundancy of the provisioning system.
4 - minor	A deviation or disruption of a negligible feature or negligible function to the operation of the system. The incidence degrades the operation of the system minimal or without any influence. E.g., Call Waiting feature is not working

Europe: Standard Support as per CMA

Fault Class	Reaction Time	TTTR	Solution
1	30 minutes BH	2 hours BH	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
2	30 minutes BH	8 hours BH	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
3	2 hours BH	5 working days	Fault is cleared or workaround solves the problem
4	1 working day BH	1 month	Fault is cleared or workaround solves the problem

Europe: Premium Support as per CMA

Fault Class	Reaction time	TTTR	Solution
1	30 minutes BH, NBH1 and NBH2	2 hours BH, NBH1 and NBH2	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
2	30 minutes BH, NBH1 and NBH2	8 hours BH	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
3	2 hours BH	5 working days	Fault is cleared or workaround solves the problem
4	1 working day BH	1 month	Fault is cleared or workaround solves the problem

1.2   Support Asia-Pacific Economic Area APAC

1.2.1   APAC: Support Contact

Helpdesk – Online Ticketing Tool:

https://helpdesk.aarenet.com/en ↗

- ▶ Non-Business Hours (NBH1 & NBH2)
- ▶ For critical (Fault class 1) issues during NBH 1 & 2 Premium Customers are recommended to call the 24/7 support hotline.

The access is free for all Aarenet customers. Signing in for a new access account is necessary.

Support Mailbox

helpdesk@aarenet.com

- ▶ Non-Business Hours (NBH1 & NBH2)
- ▶ For critical (Fault class 1) issues during NBH 1 & 2 Premium Customers are recommended to call the 24/7 support hotline.

Support Hotlines

+48 28 7303 0149 : Business Hours Support Hotline

- ▶ Business hours: 08:00 AM – 18:00 PM GMT+7.

24/7 (Premium) Support Hotline

- ▶ The authorized customers get the number from the Regional Operation Manager APAC.
- ▶ Non-business hours (NBH1 & NBH2).

1.2.2   APAC: Support SLA Definitions

APAC: Business Hours & Non-Business Hours as per CMA

▶ Business Hours BH
– HCMC time zone (GMT+7)

Day	From	To
Monday	08:00 AM	06:00 PM
Tuesday	08:00 AM	06:00 PM
Wednesday	08:00 AM	06:00 PM
Thursday	08:00 AM	06:00 PM
Friday	08:00 AM	06:00 PM

▶ Non-Business Hours 1 NBH1
– HCMC time zone (GMT+7)

Day	From	To
Monday	06:00 PM	08:00 AM
Tuesday	06:00 PM	08:00 AM
Wednesday	06:00 PM	08:00 AM
Thursday	06:00 PM	08:00 AM
Friday	06:00 PM	08:00 AM

▶ Non-Business Hours 2 NBH2
  ▶ All day Saturday
  ▶ All day Sunday
  ▶ All Vietnamese holidays

APAC: Fault Classes

| Fault Class	Description
1 - critical	Break-down or disruption of the entire system. The incidence degrades the operation of the system to an extent that requires immediate and continuing reaction. E.g., no new calls can be established or unavailability of inbound or outbound traffic.
2 - high	Severe disruption of parts the system (break-down or disruption of vital functions such as SS7 Gateways, Load Balancer etc.). The incidence degrades the operation of the system to an extend that requires immediate and continuing reaction. E.g., system failure that causes loss of redundancy.
3 - medium	Disruption of parts of the system (break-down or disruption of non-vital functions). The incidence degrades the operation of the system to an extend that requires immediate and continuing reaction. E.g., loss of redundancy of the provisioning system.
4 - minor	A deviation or disruption of a negligible feature or negligible function to the operation of the system. The incidence degrades the operation of the system minimal or without any influence. E.g., Call Waiting feature is not working

APAC: Standard Support as per CMA

Fault Class	Reaction Time	TTTR	Solution
1	30 minutes BH	2 hours BH	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
2	30 minutes BH	8 hours BH	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
3	2 hours BH	5 working days	Fault is cleared or workaround solves the problem
4	1 working day BH	1 month	Fault is cleared or workaround solves the problem

APAC: Premium Support as per CMA

Fault Class	Reaction time	TTTR	Solution
1	30 minutes BH, NBH1 and NBH2	2 hours BH, NBH1 and NBH2	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
2	30 minutes BH, NBH1 and NBH2	8 hours BH	Fault is cleared or workaround solves the problem or mutual downgrade of fault class
3	2 hours BH	5 working days	Fault is cleared or workaround solves the problem
4	1 working day BH	1 month	Fault is cleared or workaround solves the problem

2 Overview Support anSwitch V6

2.1 Somewhere Here Lies the Problem
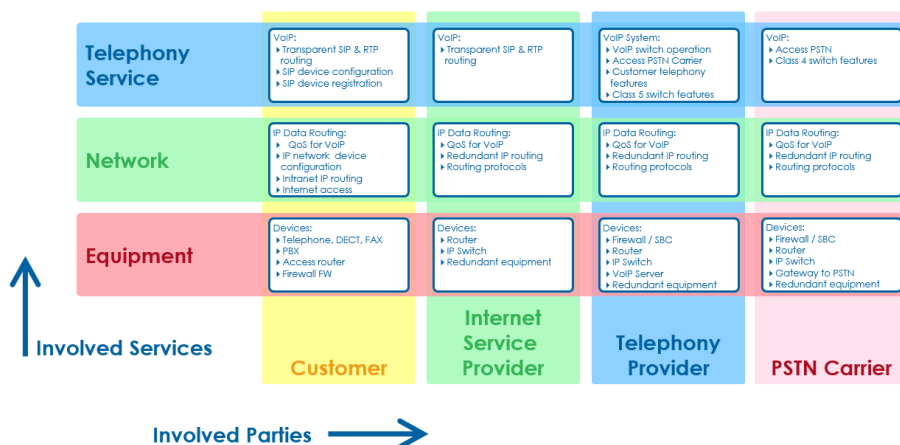
The anSwitch V6 provides a big number of integrated supporting tools which helps the support personnel to solve most problems. In most cases external tools are not needed.

The support personnel must have the role of "Operator" to be able to provide adequate assistance. The Administrator has additional tools for supervising the VoIP system and checking the anSwitch V6 components.

2.2 How to Start?

Exclude IP network problems!
➔ See "Check the SIP Registration Status of SIP Devices" ↗.
If yes, then the Equipment and Network layer is very probably ok.

Check the available call data!
➔ See "Check the Call Data of Successful or Unsuccessful Calls" ↗.
"May the Force be with you!" …

2.3 Check the SIP Registration Status of SIP Devices

The anSwitch V6 provides registration information in a generalized manner at different places. The "Phone Related Status" provides the detailed registration information of each SIP phone that is registered or was registered once.

This tool is useful for analyzing:
▸ The registration status of a SIP device.
▸ As first check of the IP connectivity between the SIP device and the anSwitch V6.

This tool is available for:
▸ Operator with access to the ConfigCenter
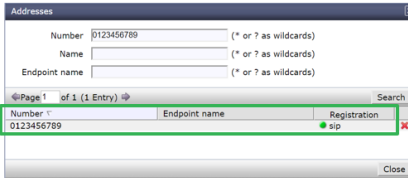
General overview of the registration status via the address lists at system and account level:
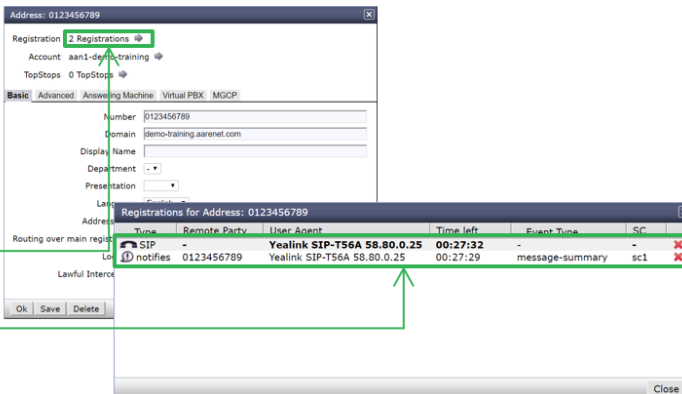
For checking the detailed SIP registration and presence subscription status via the address configuration dialog:

Open the detailed registration information.

Registration and subscription information.

2.4 Check the Call Data of Successful or Unsuccessful Calls

The Call Data is a list of all call attempts and successful and unsuccessful calls the support personnel is allowed to check.

Note	The call data are the perfect starting point for investigating a call with problems!

- ▸ What happened within the anSwitch V6 concerning this call?
  - ▸ Use the Call ID as search string in the Support log.
    For details see "Support Tool: Support Log" ↗.

- ▸ Which SIP messages and their contents were exchanged between the anSwitch V6 and the peering SIP devices?
  - ▸ Click the button "Trace" and download the SIP message flow as PCAP formatted file. Investigate the PCAP file with a 3rd party application, e.g. Wireshark.
    For details see "Support Tool: Trace" ↗.

- ▸ The voice transmission was poor or non-existent.
  - ▸ Click the button "Media Trace". All available codec and RTP/SRTP statistical information is presented.
    For details see "Support Tool: Media Trace" ↗.

Get the Call Data:

1. Access ConfigCenter Menu: "Rating" > "Call Data"
2. Set the desired filters:
   - ▸ Date/Time
   - ▸ Duration
     - ▸ Set the duration to "00:00:00" for displaying unsuccessful calls too.
   - ▸ Calling A and/or called B number.
     - ▸ Wild cards "*" and "?" are possible in numbers.
   - ▸ Charges

3. Start the search by clicking button: Search .

4. Double click the row of call for obtaining the call detail information.

The call data provides call detail information on a glance, and it enables direct access to further call logging data:

The Call ID can be used for searching the Support Log.

Directly download the SIP message trace between the anSwitch V6 and the peering SIP device.

Directly check the QoS data of the audio stream between the anSwitch V6 and the peering SIP device.

For further investigations of the call/connections:

▸ What happened within the anSwitch V6 concerning this call?

   ▸ Use the Call ID as search string in the Support log.
For details see "Support Tool: Support Log" ↗.

▸ Which SIP messages and their contents were exchanged between the anSwitch V6 and the peering SIP devices?

   ▸ Click the button "Trace" and download the SIP message flow as PCAP formatted file. Investigate the PCAP file with a 3rd party application, e.g. Wireshark.
For details see "Support Tool: Trace" ↗.

▸ The voice transmission was poor or non-existent.

   ▸ Click the button "Media Trace". All available codec and RTP/SRTP statistical information is presented.
For details see "Support Tool: Media Trace" ↗.

3　anSwitch V6 Integrated Support Tools

3.1　General Information

The anSwitch V6 support tools obtain their information from the internal round-robin log buffer that every an-Switch V6 component maintains and from the call detail records CDR which are stored in the database. The round-robin log buffers are dimensioned so that the logs can hold the logs of the last 3 days. CDRs are kept in the database for 30 – 90 days, depending on the Telephone Service Provider requirement.

The support tools collect the needed information from servers and arrange them for display or download. This process may need some time depending on the amount of data that has to be collected by the support tool.

Note	In a multi-tenant system, the support personnel of a tenant only see support information that relates to their own tenant.

3.2　Support Tool: Support Log
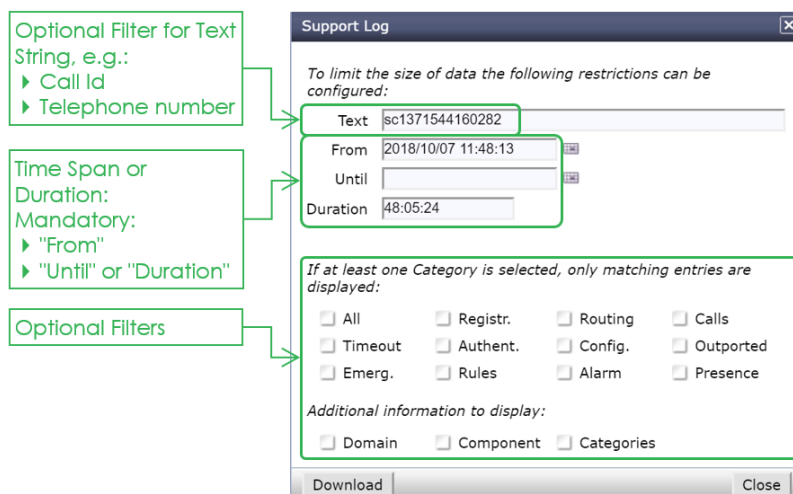
The ConfigCenter support tool "Support Log" provides the supporting personnel with information from the internal processes of the ServiceCenter, e.g.:

- Device registration
- Call routing
- Connection establishing and released
- Ruleset used
- Executed call forwards
- Occurred errors
- etc.

The use of the "Support Log" is possible for support staff with the Roles: Administrator, Operator

Get the support log data:

1. Access ConfigCenter Menu: "Support" > "Support Log"
2. The dialog allows filtering according to specific:
   - Duration with start and end date/time
   - Text within an entry, e.g. the internal call ID
   - Filters by specific events

3. By clicking button [Download], the log is displayed in a web page on the PC.
   By saving the log to file on the PC the evaluation and detailed analysis can then be done with any ASCII editor.

Analyze the support log data:

▸ A support log entry contains:

▸ Date / Time

▸ At which ServiceCenter the entry was created, e.g. sc1 on the server *-sc-01.

▸ Internal Call ID

▸ Log event text.

3.3 Support Tool: Trace

The ConfigCenter support tool "Trace" provides the supporting personnel with information from the message traffic between the anSwitch V6 and peering SIP and MGCP devices, e.g. SIP-PSTN Gateway, SIP CPE, SIP phones or MGCP phones.

A "Trace" contains information:

▸ SIP messages

▸ MGCP audit and connection messages

▸ SDP media transfer negotiation messages

Traces are captured as PCAP-formatted files. The evaluation and detailed analysis of a trace must take place with a 3rd-party application, e.g. Wireshark (see https://www.wireshark.org↗).

The use of the "Trace" is possible for support staff with the Roles: Administrator, Operator

Get the trace log:

▸ Variant 1: For a **single** connection or call attempt

1. Search the call in the call list, see for details "Check the Call Data of Successful or Unsuccessful Calls"↗.

2. Open the CDR dialog and click button: Trace

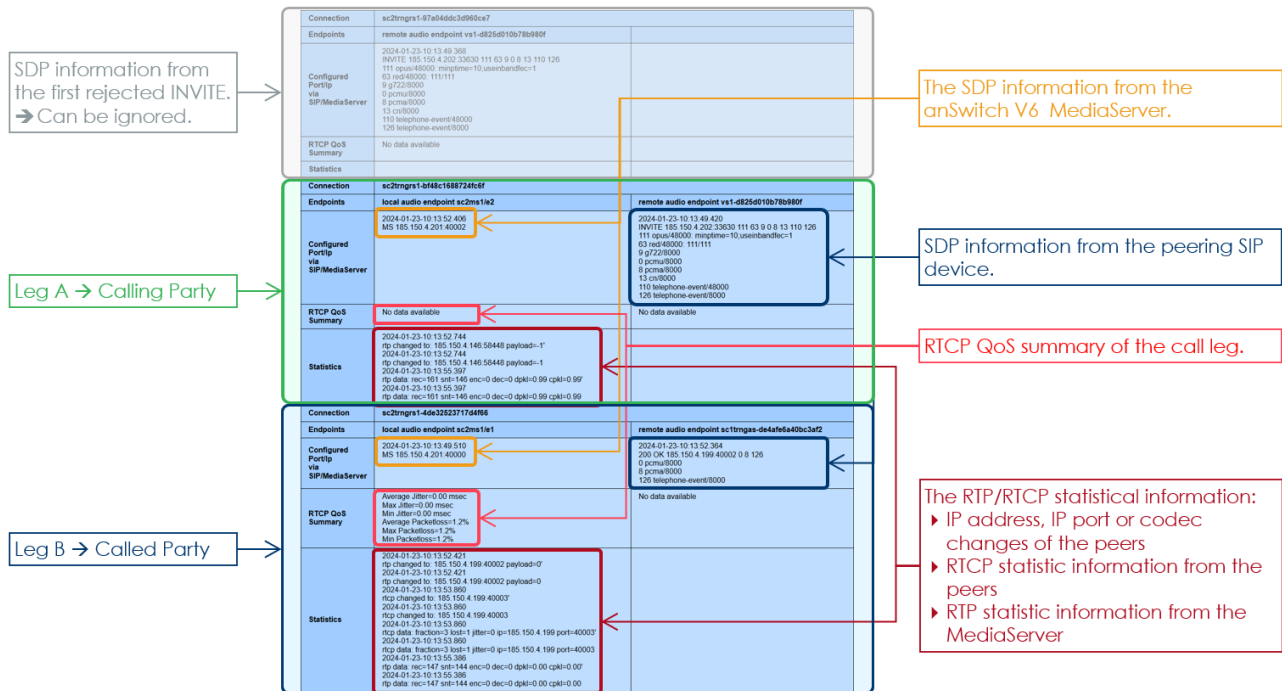▸ Variant 2: For **all** messages exchanged between the anSwitch V6 and all peering devices.

1. Access ConfigCenter Menu: "Support" > "Trace"

2. The dialog allows filtering according to specific:

- ▸ Duration with start and end date/time
- ▸ Text within an entry, e.g. the internal call ID

3. By clicking button [Download], the log is downloaded as PCAP-formatted file to the PC.
The evaluation and detailed analysis of a trace must take place with a 3rd-party application, e.g. Wireshark (see https://www.wireshark.org↗).

3.4 Support Tool: Media Trace

The ConfigCenter support tool "Media Trace" provides the supporting personnel with information about the negotiated audio codecs for a call and the RTP media Quality of Service QoS information during a connection.

A "Media Trace" contains information:

- ▸ Negotiated codec and other media exchange parameters.
- ▸ Negotiated IP addresses and UDP port for RTP streams exchange.
- ▸ RTCP statistical information delivered by the anSwitch V6 MediaServer.
- ▸ RTCP statistical information as delivered by the SIP devices.
- ▸ RTCP QoS summary of each call leg.

| Note | RTCP information can only be provided when the audio media streams of the involved peering SIP devices of a connection are routed via a anSwitch V6 MediaServer. |

The use of the "Media Trace" is possible for support staff with the Roles: Administrator, Operator

Get the media trace log:

1. Search the call in the call list, see for details "Check the Call Data of Successful or Unsuccessful Calls" ↗.
2. Open the CDR dialog and click button: Media Trace

3. The media information of the call is displayed on a web page of the PC.

Analyze the media trace data:

SDP information from the first rejected INVITE.
➔ Can be ignored.

The SDP information from the anSwitch V6 MediaServer.

Leg A ➔ Calling Party

SDP information from the peering SIP device.

RTCP QoS summary of the call leg.

Leg B ➔ Called Party

The RTP/RTCP statistical information:
▸ IP address, IP port or codec changes of the peers
▸ RTCP statistic information from the peers
▸ RTP statistic information from the MediaServer

Details about the statistic information:

RTCP statistical information from peer:
▸ Timestamp of the event
▸ RTCP IP address, IP port
▸ Information of exchanged RTCP messages, e.g.:
  rtcp data: fraction=0 lost=0 jitter=96 ip=185.150.4.10 port=50233'

RTP statistical information from VoIP Switch MediaServer:
▸ Timestamp of the event
▸ RTP counted messages on the MediaServer, e.g.:
  rtp data: rec=212 snt=269 enc=0 dec=0 dpkl=0.00 cpkl=0.00
  rec = received packets
  snt = sent packets
  enc = encoded packets
  dec = decoded packets
  dpkl = delta packet loss, packet loss calculated since the last interval
  cpkl = cumulative packet loss, packet loss since start of the packet exchange.
         0.00 means no packet loss, >0.00 packet loss (consider QoS analysis if >0.1)
         The packet loss is calculated with the sequence numbers:
         cpkl = 1 - received_packets/(last_sequence_number - first_sequence_number)

Consider QoS measures if:

- High "lost" or "jitter" values.
- To big difference between "rec" and "snt" values.
- "rec" and/or "snt" equals 0 or very low values.
- "cplk" > 0.1

3.5 Support Tool: History

The ConfigCenter support tool "History" provides the supporting personnel with information with information who made changes in the ConfigCenter and AdminCenter, e.g.:

▸ Date/time of a configuration activity.
▸ Severity of the activity
▸ Via which ConfigCenter or AdminCenter component the activity was executed
▸ The user who executed the activity
▸ A description of the activity

The use of the "Support Log" is possible for support staff with the Roles: Administrator, Operator

Get the history log:

1. Access ConfigCenter Menu: "Support" > "History"
2. The dialog allows filtering according to specific:

   ▸ Duration with start and end date/time
   ▸ Text within an entry

Usage of "History" dialog parameters:
▸ Text:
  Define a filter criteria
▸ From:
  Select the start date/time
▸ Until:
  Select the end date/time
▸ Duration:
  Define the duration since the start date/time
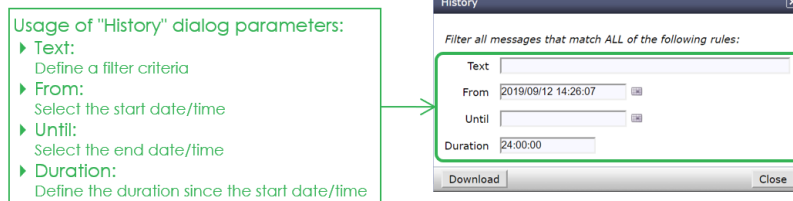
3. By clicking button [Download], the log is displayed in a web page on the PC.
   By saving the log to file on the PC the evaluation and detailed analysis can then be done with any ASCII editor.

Analyze the history log:

   ▸ A history entry contains:

3.6   Support Tool: Utilization

The ConfigCenter support tool "Utilization" provides the supporting personnel with information about the usage of the anSwitch V6 instances, e.g.:

‣   Number of enabled (active) and disabled customer accounts.
‣   Number of active and inactive registrations of SIP devices.
‣   etc.

The use of the "Utilization" is possible for support staff with the Role: Administrator

Get the utilization data:

1.   Access ConfigCenter Menu: "System" > " Utilization "

Analyze the utilization:

Usage of accounts & addresses
‣ Accounts:
   Number of valid accounts
‣ Accounts "total":
   Total number of valid plus invalid accounts
‣ Addresses:
   Number of valid addresses
‣ Addresses "total":
   Total number of valid plus invalid addresses

Installed SIP registrations:
‣ Registration:
   Number of active and valid registrations
‣ Registration "total":
   Total number of active and outdated (invalid) registrations

System Utilization	
Tenants	61
Accounts	33406 (total 41628)
Addresses	93449 (total 117088)
Answering Machines	6101
Messages	2102
Cdrs	16135465
Calls	1
SIP Registrations	33394 (total 48715)
MGCP Registrations	1588
Gateways	13
Devices	2541
Pricelists	3
TopStops	41379
Rulesets	43
Rules	190
Routing Tables	4
Routes	97
Profiles	25
Numbering Plans	4
Admin	160
Call Forwards	40203
VAS Numbers	56483
VAS Tariffs	1112
Subscriptions	971

Refresh   Close

3.7 Support Tool: Components

The ConfigCenter support tool "Components" provides the supporting personnel with information about the anSwitch V6 components, e.g.:

- ▸ Working status of the component.
- ▸ etc.

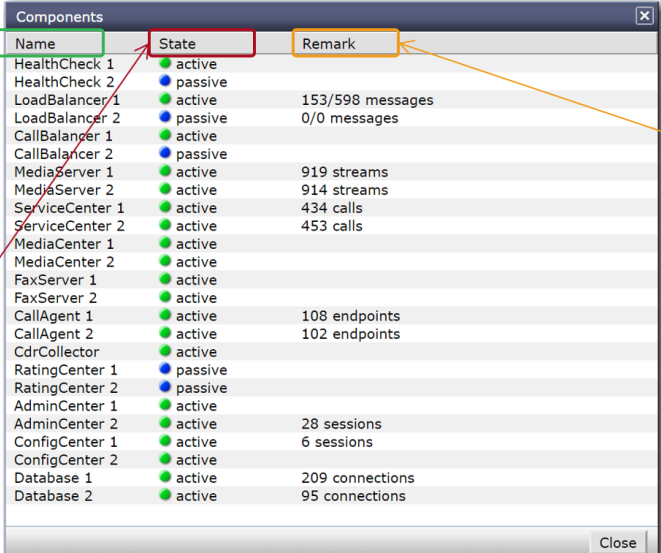The use of the "Components" is possible for support staff with the Role: Administrator

The support tool "Components" is also used by maintenance personnel of the anSwitch V6. For maintenance work, e.g. firmware updates, it may be necessary to take a component out of operation without interrupting the telephone service (see manual "Manual anSwitch V6 Maintenance & Monitoring).

Get the component data:

1. Access ConfigCenter Menu: "System" > "Components"

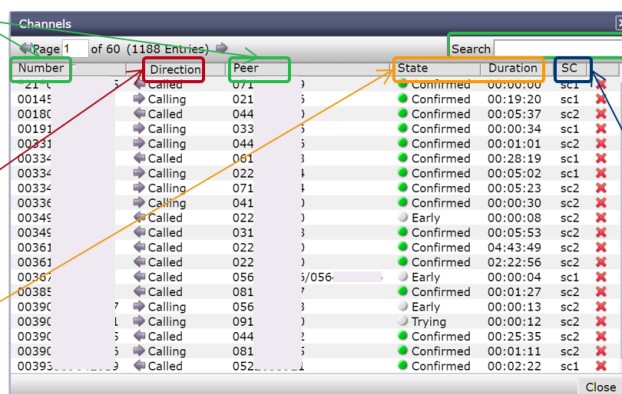Analyze the utilization:

- ▸ Component activity overview:

Name of all installed components

The Presents the state of a connection:
- ● active:
  The component is working correctly and is active.
- ● passive:
  The component is correctly working and ready for jumping in.
- ● barred:
  The component is correctly working but is suspended from its task.
- ● unavailable:
  The component is not working correctly!

In the remarks mostly the load of an active component is displayed.
In an exceptional situation a short description is given.

- ▸ By clicking on the row of a component a dialog pops up, which provides:
  - ▸ More detailed information.
  - ▸ Manage the workload of the component.
  - ▸ Enables to generate a log entry which may generate a message (e.g. email to defined recipients) by a monitoring system, e.g. the default "Support Tool: Xymon Monitor" ↗.

IP address of the component within the VoIP Switch internal communication

Installed software version of the component

The Acceptance defines the workload that a component must take over.
A value of 0 puts the component in the "barred" state.

Enables the possibility to generate a message with a certain severity and any text in the log files of the component.

With a severity higher than "Info" an e-mail will be sent to the defined addressees.

3.8   Support Tool: Channels

The ConfigCenter support tool "Channels" provides the supporting personnel with information about the actual situation of call states and connections, e.g.:

   ▶   Status of each call, e.g.: early, trying, confirmed.
   ▶   A and B numbers
   ▶   Connection duration
   ▶   etc.

The use of the "Channels" is possible for support staff with the Role: Administrator

The support tool "Channels" is also used by maintenance personnel of the anSwitch V6. For maintenance work, e.g. firmware updates, it may be necessary to close calls that still block the maintenance work (see manual "Manual anSwitch V6 Maintenance & Monitoring).

Get the component data:

1.   Access ConfigCenter Menu: "System" > "Channels"

Analyze the channels:

   ▶   Channel activity overview:

   ▶   Staff with sufficient rights can close a connection by clicking the icon ✖.

3.9   Support Tool: Call Statistics

The ConfigCenter support tool "Call Statistics" provides the supporting personnel with information about the standardized statistical ASR and ASD, e.g.:

▸   The call statistics analyze the call detail records CDR of the requested period and computes the ASR and ASD values.
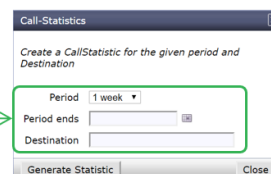
The use of the "Call Statistics" is possible for support staff with the Roles: Administrator, Operator

Get the component data:

1.   Access ConfigCenter Menu: "Support" > "Call Statistics"

2.   Select and define the required parameters:

Usage of "Call Statistic" dialog parameters:
▸ Period:
     Determines the duration of the period for the call statistics to be displayed.
▸ Period ends:
     Date/time when the period of the call statistics to be displayed should end.
▸ Destination:
     Defines a destination filter criteria


Analyze the call statistics:

▸   Statistical graphs:

Generated statistical output::
▸ ASR1:
     Ratio of all initiated connections to the connections made.
     Interpretation:
        A poor ratio of connections established against not established indicates that SIP messages could not be transmitted correctly. This can be the case, for example, if a gateway has failed and redundant gateways were unable to process the additional load.
▸ ASR2:
     Ratio of all answered connections that are disconnected by the initiating side.
     Interpretation:
        Example: A mailbox always accepts incoming calls to a certain number range, e.g. German numbers. Since a mailbox always answers, the callers hang up. Normally this is not the case as statistically 50% of the connections are disconnected by the initialling or called peer.
▸ ACD:
     The average connection time of all answered connections
     Interpretation:
        If the connection time decreases, this indicates a problem in the voice transmission, because the participants hang up early.
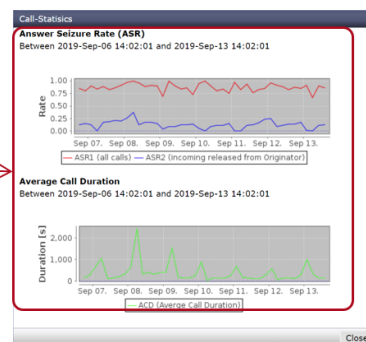
▸   ASR / ACD – What is normal?

   ▸   A high ASR indicates a reliable network since most calls that are attempted are answered.

   ▸   ASR should be at least 40–50%, and anything above 60% would indicate an excellent quality service.

   ▸   A high ACD suggests that few calls are dropped or abandoned due to quality issues.

   ▸   An ACD of 4–5 minutes is considered okay, whereas anything above 6 minutes is excellent.

3.10   Support Tool: SIP Messages

The ConfigCenter support tool "SIP Messages" provides the supporting personnel with information about the source of SIP messages and evaluate statistical data about SIP messages.

The data can help to identify sources that produce many incoming SIP messages, e.g. a fraudulent source that sends SIP registers (the identified source IP address can then be blocked in a firewall).

The tool analyzes the call detail records CDR of the requested period and evaluates the requested information. The generation of these data doesn't block the database and can be applied at any time.

The use of the "SIP Messages" is possible for support staff with the Roles: Administrator, Operator

Get the component data:

1.   Access ConfigCenter Menu: "Support" > "SIP Messages"

2.   Define the required parameters:

3.   By clicking button [Search] or [Show Graph], the data is displayed in a web page on the PC.

Analyze the SIP messages data:

For example:
▸ Search for SIP registrations

Suspect number of registrations by one IP address!

3.11 Support Tool: Xymon Monitor

The anSwitch V6 has a built-in monitor and alarm tool based on the open source "Xymon Project". The Xymon monitor allows to display the all over state not only of the anSwitch V6 but also of the devices of the VoIP system.

Xymon Basic features are:

▸ Supervises the server/host internal states.
▸ Supervises the state of the anSwitch components.
▸ Supervises the anSwitch V7 component log entries.
▸ Supervises the IP connectivity between the anSwitch V6 servers and external devices.
▸ Alarms by email if one of the defined alarm, error, warning conditions is met.

The use of the "Xymon Monitor" must be enabled by the IT responsible of the Telephone Service Provider.
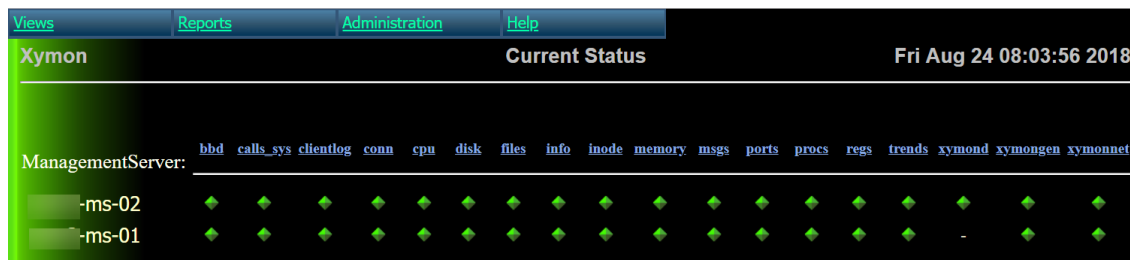
Access to the Xymon main web page:

http://IP_ADDRESS/xymon/

▸ The IP address must be published by the IP responsible of the Telephone Service Provider.

Analyze the Xymon display:

▸ All is good: All icons are green.

▸ Something is not good: One or more icons are yellow or red.

‣ What do the little red/yellow/green icons mean?

Color	Recently changed	Last change > 24 hours
Green: Status is OK	😀	◆
Yellow: Warning	😵	❗
Red: Critical	😠	✖
Clear: No data	😕	▨
Purple: No report	😈	◣
Blue: Disabled	😐	●

‣ Of special interest are the "trends". They display in graphs the call load and the registration situation:

Example of a failure situation in the Telephone Service Provider's IP network displayed in the "trends"!
→ Ca. 1000 phones could not register to the anSwitch V6.

‣ Accessing the error information of an instance:

> Click the status icon of interest that indicates a problem.
   ‣ Study the information and act.
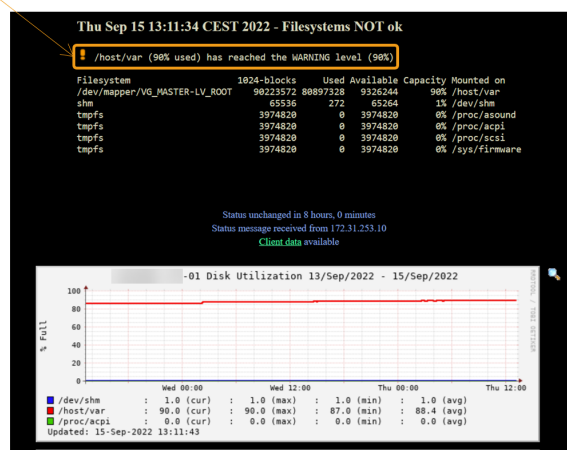
▸   Accessing the history log of an instance:

> Click the status icon of interest.

    ▸ The messages page of the entity pops up.

    > Click the button: History.

      ▸ The history page of the entity pops up.

    > Click the row of the error of interest.

      ▸ Study the information.

Xymon Error Message Interpretation:

▸   Most error descriptions are easy to understand.

▸   The following system alert or error reports must be considered as VoIP system threatening issues!
➔ **Address them immediately!**

Bare-metal server issues, e.g.

▸   Power source failed.
▸   Mother board issues.
▸   RAID and hard disk failures.
▸   Temperature failures.

Operating system issues, e.g.

▸   Hard disk full.
▸   Supervised processes stopped.
▸   Supervised IP ports closed.
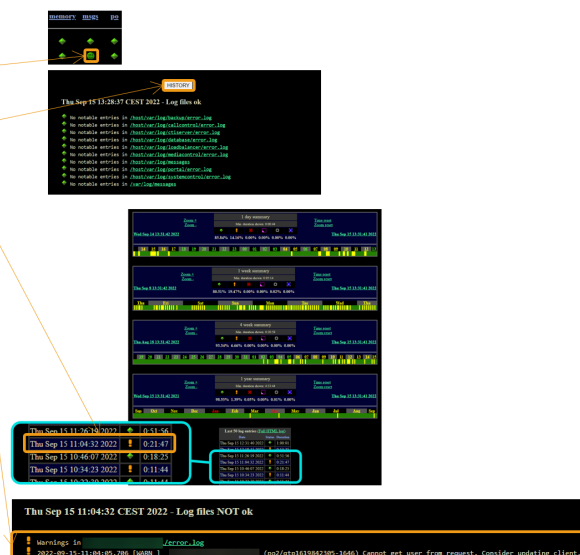
IT network issues, e.g.

▸   Supervised IP connections lost to devices.
▸   The trend "Registration" shows slumps in the graph.
▸   The trend "System Calls" shows slumps in the graph.
▸   Traffic shaper indication.

anSwitch V6 issues, e.g.

▸   anSwitch V6 components down.
▸   Database replication broken.
▸   Fraud indication.

Note	Not all red alarms are as critical as they appear to be. The combination of a few or many yellow errors can endanger the telephony service even more.

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