RUT301 SNMP

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Summary

Simple Network Management Protocol (SNMP) is a network management protocol used for collecting information and configuring network devices. This page is an overview of the SNMP function in RUT301 devices.

Note: SNMP is additional software that can be installed from the **System → Package Manager** page.

If you're having trouble finding this page or some of the parameters described here on your device's WebUI, you should **turn on "Advanced WebUI" mode**. You can do that by clicking the "Advanced" button, located at the top of the WebUI.

SNMP settings

The **SNMP settings** page is used to configure SNMP accessibility and general SNMP information for your device.

SNMP agent settings

Field	Value	Description
Enable SNMP service	off | on; default: **off**	Run SNMP service on system's startup.
Enable remote access	off | on; default: **off**	Open port in firewall so that SNMP service may be reached from WAN.
IP type	IPv4 | IPv6 | IPv4v6; default: **IPv4**	IP type used by SNMP.
Port	integer [0..65535]; default: **161**	SNMP service's port.
SNMP v1 Mode	off | on; default: **on**	Enable/disable SNMP v1 Mode.
SNMP v2c Mode	off | on; default: **on**	Enable/disable SNMP v2c Mode.
SNMP v3 Mode	off | on; default: **off**	Enable/disable SNMP v3 Mode.

SNMP System Summary

The **SNMP System Summary** section contains general information about SNMP on this device. You can also download this device's **MIB file** from this section.

Field	Value	Description
MIB file	-(interactive button)	Downloads the device's MIB file.
System OID	1.3.6.1.4.1.48690	OID or Object Identifier, is an identifier used to name and point to an object in the MIB hierarchy.
Location	string; default: **location**	Trap named sysLocation.
Contact	string; default: **email@example.com**	Trap named sysContact.
Name	string; default: **name**	Trap named sysName.

SNMP v3 users

The **SNMP v3 users** page is used to create and manage users, who can be authenticated using SNMP v3. To configure an SNMP user, you must first create it:

1. Enter a custom name for the new user in the 'Name' field.
2. Click the 'Add' button.
3. Click the 'Edit' button next to the newly created user.

The SNMP user configuration window should look similar to this:

Note: this table has coloring scheme to indicate which fields can be seen with different configuration.

Field	Value	Description
Enable	off | on; default: **off**	Turns this SNMP user on or off.
Username	string; default: **none**	Set username to access SNMP.
Security level	No authentication, no privacy | Authentication, no privacy | Authentication and privacy; default: **No authentication, no privacy**	A security level is an authentication strategy that is set up for the user. No authentication, no privacy - authenticates with a username. Authentication - provides MD5 or SHA algorithms for authentication. Privacy - Provides DES or AES encryption.
Authentication, no privacy | Authentication and privacy: Authentication type	SHA | MD5; default: **SHA**	Set authentication type to use with SNMP v3.
Authentication, no privacy | Authentication and privacy: Authentication passphrase	string; default: **none**	Set authentication passpharse to generate key for SNMP v3.
Authentication and privacy: Privacy type	DES | AES; default: **DES**	Set privacy type to use with SNMP v3.
Authentication and privacy: Privacy passphrase	string; default: **none**	Set privacy passpharse to generate key for SNMP v3.
Access Mode	Read-Only | Read-Write; default: **Read-Only**	The access mode specifies the access the hosts in the community are allowed with respect to retrieving and modifying the MIB variables from a specific SNMP agent.
MIB subtree	string; default: **none**	Leave empty to access full MIB tree.

Communities

The **SNMP Community** section is used to manage access rights. You can edit an SNMP community by clicking the 'Edit' button next to it:

This will redirect you to the community's configuration page.

Field	Value	Description
Community name	string; default: **none**	Name of the community.
IP Address	ip; default: **none**	IP address of the community.
IP Mask	ip; default: **none**	Netmask for IP of the community.

Access Mode	Read-Only | Read-Write; default: **Read-Only**	Access mode for current community.

SNMPv6 community configuration page:

Field	Value	Description
Community name	string; default: **public**	Name of the community.
Source	ip6 | domain name; default: **default**	Source of the community.
Access Mode	Read-Only | Read-Write; default: **Read-Only**	Access mode for current community.

Trap Settings

SNMP Traps are used to send alert messages to a central collector, the “SNMP manager” when an important event happens. A benefit of using Traps for reporting alarms is that they trigger instantaneously, rather than waiting for a status request from the manager.

Trap settings page is divided in two sections - **Trap service settings** and **Trap rules**. Trap service settings lets you manage hosts which will get configured alert messages, Trap rules lets you manage rules which when triggered will send alerts.

Trap Service Settings

The **Trap Service Settings** is used to manage **hosts** which will be alerted when an SNMP trap is triggered. The host list is empty by default thus, to begin configuration you must first create at least one host.

Click the 'Add' button at the bottom-right side of the table to create a new host.

The newly added Host configuration should look similar to this:

Field	Value	Description
Host/IP	url | ip; default: **none**	Hostname or IP address to transfer SNMP traffic to.
Port	integer [0..65535]; default: **162**	Trap host's port number.
Community	string; default: **Public**	Name of the community to which the trap belongs.
Delete	- (interactive button)	Deletes the host next to the button.
off/on slider	off | on; default: **off**	Turns the host on or off. SNMP traffic is only sent to enabled hosts.

Trap Rules

SNMP Trap Rules are alerts that trigger when certain user-specified events occur. When the trigger event happens, the trap will notify known SNMP hosts.

You can create a new trap rule by clicking the 'Add' button.

You should be redirected to the rule's configuration page which should look something like this:

Above is an example of what rule configuration window looks like. Below is a table with detailed explanations on how to configure the rule and what each of the fields mean.

To avoid redundancy, screenshots for the other rules will not be provided, since the structures, syntax and the overall look of the configuration windows for each rule are very similar. Instead, only tables containing information on how to edit each rule will be provided.

Input/Output

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field name	value1	description
Enable	off | on; default: **off**	Enable or disable this rule.
Action	Input/Output trap	Rule will be triggered when specified input or output state will change.

Events log

Event	Event subtype	Description
Config change	All | Specific config change; default: **all**	Informs on changes to the device's configuration.
Reboot	All | From Web UI | From ping reboot | From reboot scheduler | From button; default: **All**	Informs on if the device was rebooted.
Startup	Device startup completed	Informs on when the device is fully booted.
New DHCP client	All | Connected from LAN; default **All**	Informs on new DHCP lease give outs.
Ports state	All | Link speed | Link state | Unplugged | Plugged in | Specific port; default: **All**	Informs on Ethernet port state (plugged in or unplugged) or speed (100 Mbps or 1000 Mbps) changes.
Reboot	All | From button | From Input/Output | From Ping Reboot | From Reboot Scheduler | From WebUI | From SMS; default: **All**	Informs after device reboot occurrences.
SSH	All | Successful authentication | Unsuccessful authentication; default: **All**	Informs on successful or unsuccessful SSH login attempts.

Topology state	Topology changes	Informs on changes to the device's network topology.
WebUI	ALL | Successful authentication | Unsuccessful authentication; default: **All**	Informs on successful or unsuccessful HTTP/HTTPS login attempts.

SNMP variables list

Name	OID	Description
Device		
serial	.1.3.6.1.4.1.48690.1.1.0	Device serial number
routerName.0	.1.3.6.1.4.1.48690.1.2.0	Device name
productCode	.1.3.6.1.4.1.48690.1.3.0	Device product (ordering) code
batchNumber	.1.3.6.1.4.1.48690.1.4.0	Device batch number
hardwareRevision	.1.3.6.1.4.1.48690.1.5.0	Device hardware revision
fwVersion	.1.3.6.1.4.1.48690.1.6.0	Device RutOS firmware version
deviceUptime	.1.3.6.1.4.1.48690.1.7.0	Device uptime
Mobile notifications		
signalChangeNotification	.1.3.6.1.4.1.48690.4.1.1	Signal strength trap
networkTypeNotification	.1.3.6.1.4.1.48690.4.1.2	Network type trap
Input/Output notifications		
digitalio0Notification	.1.3.6.1.4.1.48690.4.2.3	Digital I/O 0 trap
digitalio1Notification	.1.3.6.1.4.1.48690.4.2.4	Digital I/O 1 trap
Hotspot Notifications		
clientConnectedNotification	.1.3.6.1.4.1.48690.4.3.1	Hotspot client connected trap
clientDisconnectedNotification	.1.3.6.1.4.1.48690.4.3.2	Hotspot client disconnected trap
Hotspot		
hsState	.1.3.6.1.4.1.48690.5.1.0	Current Hotspot state
hsIP	.1.3.6.1.4.1.48690.5.2.0	Hotspot IP address
hsNet	.1.3.6.1.4.1.48690.5.3.0	WiFi interface ID
hsAuth	.1.3.6.1.4.1.48690.5.4.0	Hotspot authentication type
hsSessionCount	.1.3.6.1.4.1.48690.5.5.0	Hotspot current active session (connected user) count
Hotspot Sessions		
hssIndex	.1.3.6.1.4.1.48690.5.6.1.1.1	Connected Hotspot user indexes
hssMAC	.1.3.6.1.4.1.48690.5.6.1.2.1	Hotspot user MAC addresses
hssIP	.1.3.6.1.4.1.48690.5.6.1.3.1	Hotspot user local IP addresses
hssID	.1.3.6.1.4.1.48690.5.6.1.4.1	Hotspot user session unique IDs
hssUsername	.1.3.6.1.4.1.48690.5.6.1.5.1	Hotspot connected user usernames
hssState	.1.3.6.1.4.1.48690.5.6.1.6.1	Hotspot user session states
hssDwLimit	.1.3.6.1.4.1.48690.5.6.1.7.1	Hotspot user download limits
hssUpLimit	.1.3.6.1.4.1.48690.5.6.1.8.1	Hotspot user upload limits
hssTimeLimit	.1.3.6.1.4.1.48690.5.6.1.9.1	Hotspot user session time limit
hssIdleTimeout	.1.3.6.1.4.1.48690.5.6.1.10.1	Hotspot user maximum idle timeout values
hssDwBandwidth	.1.3.6.1.4.1.48690.5.6.1.11.1	Hotspot user maximum download speed
hssUpBandwidth	.1.3.6.1.4.1.48690.5.6.1.12.1	Hotspot user maximum upload speed
hssURL	.1.3.6.1.4.1.48690.5.6.1.13.1	Hotspot URL
Input/Output		
ioCount	.1.3.6.1.4.1.48690.6.1	Count of I/O
ioTable	.1.3.6.1.4.1.48690.6.2	A list of I/O. The number of entries is given by the value of ioCount
ioEntry	.1.3.6.1.4.1.48690.6.2.1	An entry containing information of a particular I/O
ioIndex	.1.3.6.1.4.1.48690.6.2.1.1	A unique value, greater than zero, for each session
ioSystemName	.1.3.6.1.4.1.48690.6.2.1.2	The name of the I/O
ioName	.1.3.6.1.4.1.48690.6.2.1.3	The name of the I/O, as displayed in WebUI
ioType	.1.3.6.1.4.1.48690.6.2.1.4	A description of I/O type
ioBidirectional	.1.3.6.1.4.1.48690.6.2.1.5	Is I/O bidirectional?
ioState	.1.3.6.1.4.1.48690.6.2.1.6	State of I/O
ioInput	.1.3.6.1.4.1.48690.6.2.1.7	Is I/O an input?
ioInverted	.1.3.6.1.4.1.48690.6.2.1.8	Is value of I/O inverted?
ioCurrent	.1.3.6.1.4.1.48690.6.2.1.9	Current amount flowing though ACL
ioPercentage	.1.3.6.1.4.1.48690.6.2.1.10	Percentage of ACL
ioStateNumeric	.1.3.6.1.4.1.48690.6.2.1.11	Numeric state of I/O
Port based vlan		
pVlanCount	.1.3.6.1.4.1.48690.8.1	Amount of port-based virtual networks
pVlanTable	.1.3.6.1.4.1.48690.8.2	A list port-based virtual networks
pVlanEntry	.1.3.6.1.4.1.48690.8.2.1	An entry containing information about a port-based VLAN
pVlanIndex	.1.3.6.1.4.1.48690.8.2.1.1	The index of the port-based VLAN

pVlanNum	.1.3.6.1.4.1.48690.8.2.1.2	The vlan number of the port-based VLAN
pVlanPorts	.1.3.6.1.4.1.48690.8.2.1.3	The assigned ports of the port-based VLAN
pVlanVID	.1.3.6.1.4.1.48690.8.2.1.4	The vlan ID of the port-based VLAN
Interface based vlan		
iVlanCount	.1.3.6.1.4.1.48690.8.3	Amount of interface-based virtual networks
iVlanTable	.1.3.6.1.4.1.48690.8.4	A list interface-based virtual networks
iVlanEntry	.1.3.6.1.4.1.48690.8.4.1	An entry containing information about an interface-based VLAN
iVlanIndex	.1.3.6.1.4.1.48690.8.4.1.1	The index of an iface-based VLAN
iVlanName	.1.3.6.1.4.1.48690.8.4.1.2	The name of an iface-based VLAN
iVlanType	.1.3.6.1.4.1.48690.8.4.1.3	The type of an iface-based VLAN
iVlanIfName	.1.3.6.1.4.1.48690.8.4.1.4	The interface name of an iface-based VLAN
iVlanVID	.1.3.6.1.4.1.48690.8.4.1.5	The VLAN ID of an iface-based VLAN
Smart Queue Management		
queueCount	.1.3.6.1.4.1.48690.9.1	Amount of traffic shaping configs
queueTable	.1.3.6.1.4.1.48690.9.2	A list of traffic shaping configs
queueEntry	.1.3.6.1.4.1.48690.9.2.1	Entry containg info of a traffic shaping config
queueIndex	.1.3.6.1.4.1.48690.9.2.1.1	The index of the queue
queueName	.1.3.6.1.4.1.48690.9.2.1.2	The internal name of the queue
queueEnabled	.1.3.6.1.4.1.48690.9.2.1.3	Is the queue enabled?
queueIface	.1.3.6.1.4.1.48690.9.2.1.4	The assigned interface of the queue
queueDownLimit	.1.3.6.1.4.1.48690.9.2.1.5	The download limit of the queue
queueUpLimit	.1.3.6.1.4.1.48690.9.2.1.6	The upload limit of the queue
queueQdisk	.1.3.6.1.4.1.48690.9.2.1.7	The queuing discipline in use for this queue
queueScript	.1.3.6.1.4.1.48690.9.2.1.8	The queuing discipline setup script used in this queue
Port		
portCount	.1.3.6.1.4.1.48690.10.1.0	Number of ports on device
portTable	.1.3.6.1.4.1.48690.10.2.0	A list of port entries. The number of entries is given by the value of portCount
portEntry	.1.3.6.1.4.1.48690.10.2.1.0	An entry containing information of a particular port
pIndex	.1.3.6.1.4.1.48690.10.2.1.1	A unique value, greater than zero, for each port
pName	.1.3.6.1.4.1.48690.10.2.1.2	Port's name
pNumber	.1.3.6.1.4.1.48690.10.2.1.3	Port's number
pPosition	.1.3.6.1.4.1.48690.10.2.1.4	Port's physical position
pState	.1.3.6.1.4.1.48690.10.2.1.5	Port's state
pSpeed	.1.3.6.1.4.1.48690.10.2.1.6	Port's speed
pDuplex	.1.3.6.1.4.1.48690.10.2.1.7	Boolean value whether port is duplex or not