

TRB245 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 TRB245 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 type	Authentication, no privacy Authentication and privacy : SHA MD5; default: SHA	Set authentication type to use with SNMP v3.
Authentication passphrase	Authentication, no privacy Authentication and privacy : string; default: none	Set authentication passphrase to generate key for SNMP v3.
Privacy type	Authentication and privacy : DES AES; default: DES	Set privacy type to use with SNMP v3.
Privacy passphrase	Authentication and privacy : string; default: none	Set privacy passphrase 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.
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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.

Signal strength

Field	Value	Description
Enable	off on; default: off	Enable or disable this rule.
Action	Signal strength trap	Rule will be triggered if signal strength falls below specified number.
Signal strength	integer [-130..0]; default: none	GSM signal's strength value in dBm, e.g. -85

Connection type

Field	Value	Description
Enable	off on; default: off	Enable or disable this rule.
Action	Connection type trap	Rule will be triggered when connection type will change.

Input/Output

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.
Input/Output type	Input/Output ADC ; default: Input/Output	Which type of Inputs and Outputs to use in this rule.
Input/Output: Input/Output name	Configurable Input/Output([2..4]); default: Configurable Input/Output(2)	Which type of Inputs and Outputs to use in this rule.

Input/Output: State change	High level Low level Both; default: Both	On which Input/Output state will this rule be triggered.
ADC: Input/Output name	ADC; default: ADC	Which type of Inputs and Outputs to use in this rule.
ADC: Voltage	positive float [0..40]; default: none	At which voltage value will this rule be triggered.

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 From SMS; default: All	Informs on if the device was rebooted.
Startup	Device startup completed	Informs on when the device is fully booted.
GPS	All Entered geofence Left geofence; default: All	Informs on when the device has entered or left a user defined geofence zone.
Mobile data	All Connected Disconnected; default All	Informs on changes to the state of the device's mobile connection.
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.
Signal strength	All - 121 dBm - 113 dBm - 113 dBm - 98 dBm - 98 dBm - 93 dBm - 93 dBm - 75 dBm - 75 dBm - 60 dBm - 60 dBm - 50 dBm; default: All	Informs on signal strength changes.
SMS	SMS received	Informs on received SMS messages.
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
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		
modemNum	.1.3.6.1.4.1.48690.2.1.0	The number of modems (regardless of their current state) present on this system
mIndex	.1.3.6.1.4.1.48690.2.2.1.1.1	Available modem indexes; used to index OIDs between when the device has multiple modems
mDescr	.1.3.6.1.4.1.48690.2.2.1.2.1	Modem description
mImei	.1.3.6.1.4.1.48690.2.2.1.3.1	Modem IMEI
mModel	.1.3.6.1.4.1.48690.2.2.1.4.1	Modem model
mManufacturer	.1.3.6.1.4.1.48690.2.2.1.5.1	Modem manufacturer
mRevision	.1.3.6.1.4.1.48690.2.2.1.6.1	Modem firmware version
mSerial	.1.3.6.1.4.1.48690.2.2.1.7.1	Modem serial number
mIMSI	.1.3.6.1.4.1.48690.2.2.1.8.1	Modem IMSI number
mSimState	.1.3.6.1.4.1.48690.2.2.1.9.1	SIM card status
mPinState	.1.3.6.1.4.1.48690.2.2.1.10.1	PIN status
mNetState	.1.3.6.1.4.1.48690.2.2.1.11.1	Mobile network registration status
mSignal	.1.3.6.1.4.1.48690.2.2.1.12.1	Signal strength level
mOperator	.1.3.6.1.4.1.48690.2.2.1.13.1	Current mobile network operator
mOperatorNumber	.1.3.6.1.4.1.48690.2.2.1.14.1	Mobile operator number (MCC+MNC)
mConnectionState	.1.3.6.1.4.1.48690.2.2.1.15.1	Mobile data connection state
mConnectionType	.1.3.6.1.4.1.48690.2.2.1.16.1	Mobile data connection type
mTemperature	.1.3.6.1.4.1.48690.2.2.1.17.1	Modem's temperature in 0.1 degrees Celsius
mCellID	.1.3.6.1.4.1.48690.2.2.1.18.1	Cell (Base transceiver station) ID
mSINR	.1.3.6.1.4.1.48690.2.2.1.19.1	SINR value in dB
mRSRP	.1.3.6.1.4.1.48690.2.2.1.20.1	RSRP value in dBm
mRSRQ	.1.3.6.1.4.1.48690.2.2.1.21.1	RSRQ value in dB
mSent	.1.3.6.1.4.1.48690.2.2.1.22.1	Total bytes sent
mReceived	.1.3.6.1.4.1.48690.2.2.1.23.1	Total bytes received
mIP	.1.3.6.1.4.1.48690.2.2.1.24.1	Modem IP address(es)
mSentToday	.1.3.6.1.4.1.48690.2.2.1.25.1	Bytes sent today
mReceivedToday	.1.3.6.1.4.1.48690.2.2.1.26.1	Bytes received today
mICCID	.1.3.6.1.4.1.48690.2.2.1.27.1	SIM ICCID
mSentCurrentWeek	.1.3.6.1.4.1.48690.2.2.1.28.1	Bytes sent this week
mReceivedCurrentWeek	.1.3.6.1.4.1.48690.2.2.1.29.1	Bytes received this week
mSentCurrentMonth	.1.3.6.1.4.1.48690.2.2.1.30.1	Bytes sent this month
mReceivedCurrentMonth	.1.3.6.1.4.1.48690.2.2.1.31.1	Bytes received this month
connectionUptime	.1.3.6.1.4.1.48690.2.3.0.1	Mobile connection uptime
GPS		
latitude	.1.3.6.1.4.1.48690.3.1.0	GPS Latitude value
longitude	.1.3.6.1.4.1.48690.3.2.0	GPS Longitude value
accuracy	.1.3.6.1.4.1.48690.3.3.0	GPS coordinate accuracy
datetime	.1.3.6.1.4.1.48690.3.4.0	GPS coordinate fix time
numSatellites	.1.3.6.1.4.1.48690.3.5.0	Number of available GPS satellites
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
digitalio2Notification	.1.3.6.1.4.1.48690.4.2.5	Digital I/O 2 trap
adc0Notification	.1.3.6.1.4.1.48690.4.2.11	ADC 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
hssTimeLimit	.1.3.6.1.4.1.48690.5.6.1.9.1
hssIdleTimeout	.1.3.6.1.4.1.48690.5.6.1.10.1
hssDwBandwidth	.1.3.6.1.4.1.48690.5.6.1.11.1
hssUpBandwidth	.1.3.6.1.4.1.48690.5.6.1.12.1
hssURL	.1.3.6.1.4.1.48690.5.6.1.13.1

Input/Output

ioCount	.1.3.6.1.4.1.48690.6.1
ioTable	.1.3.6.1.4.1.48690.6.2
ioEntry	.1.3.6.1.4.1.48690.6.2.1
ioIndex	.1.3.6.1.4.1.48690.6.2.1.1
ioSystemName	.1.3.6.1.4.1.48690.6.2.1.2
ioName	.1.3.6.1.4.1.48690.6.2.1.3
ioType	.1.3.6.1.4.1.48690.6.2.1.4
ioBidirectional	.1.3.6.1.4.1.48690.6.2.1.5
ioState	.1.3.6.1.4.1.48690.6.2.1.6
ioInput	.1.3.6.1.4.1.48690.6.2.1.7
ioInverted	.1.3.6.1.4.1.48690.6.2.1.8
ioCurrent	.1.3.6.1.4.1.48690.6.2.1.9
ioPercentage	.1.3.6.1.4.1.48690.6.2.1.10
ioStateNumeric	.1.3.6.1.4.1.48690.6.2.1.11

Interface based vlan

iVlanCount	.1.3.6.1.4.1.48690.8.3
iVlanTable	.1.3.6.1.4.1.48690.8.4
iVlanEntry	.1.3.6.1.4.1.48690.8.4.1
iVlanIndex	.1.3.6.1.4.1.48690.8.4.1.1
iVlanName	.1.3.6.1.4.1.48690.8.4.1.2
iVlanType	.1.3.6.1.4.1.48690.8.4.1.3
iVlanIfName	.1.3.6.1.4.1.48690.8.4.1.4
iVlanVID	.1.3.6.1.4.1.48690.8.4.1.5

Smart Queue Management

queueCount	.1.3.6.1.4.1.48690.9.1
queueTable	.1.3.6.1.4.1.48690.9.2
queueEntry	.1.3.6.1.4.1.48690.9.2.1
queueIndex	.1.3.6.1.4.1.48690.9.2.1.1
queueName	.1.3.6.1.4.1.48690.9.2.1.2
queueEnabled	.1.3.6.1.4.1.48690.9.2.1.3
queueIface	.1.3.6.1.4.1.48690.9.2.1.4
queueDownLimit	.1.3.6.1.4.1.48690.9.2.1.5
queueUpLimit	.1.3.6.1.4.1.48690.9.2.1.6
queueQdisk	.1.3.6.1.4.1.48690.9.2.1.7
queueScript	.1.3.6.1.4.1.48690.9.2.1.8

Port

portCount	.1.3.6.1.4.1.48690.10.1.0
portTable	.1.3.6.1.4.1.48690.10.2.0
portEntry	.1.3.6.1.4.1.48690.10.2.1.0
pIndex	.1.3.6.1.4.1.48690.10.2.1.1
pName	.1.3.6.1.4.1.48690.10.2.1.2
pNumber	.1.3.6.1.4.1.48690.10.2.1.3
pPosition	.1.3.6.1.4.1.48690.10.2.1.4
pState	.1.3.6.1.4.1.48690.10.2.1.5
pSpeed	.1.3.6.1.4.1.48690.10.2.1.6
pDuplex	.1.3.6.1.4.1.48690.10.2.1.7

Hotspot user upload limits
Hotspot user session time limit
Hotspot user maximum idle timeout values
Hotspot user maximum download speed
Hotspot user maximum upload speed
Hotspot URL

Count of I/O
A list of I/O. The number of entries is given by the value of ioCount
An entry containing information of a particular I/O
A unique value, greater than zero, for each session
The name of the I/O
The name of the I/O, as displayed in WebUI
A description of I/O type
Is I/O bidirectional?
State of I/O
Is I/O an input?
Is value of I/O inverted?
Current amount flowing though ACL
Percentage of ACL
Numeric state of I/O

Amount of interface-based virtual networks
A list interface-based virtual networks
An entry containing information about an interface-based VLAN
The index of an iface-based VLAN
The name of an iface-based VLAN
The type of an iface-based VLAN
The interface name of an iface-based VLAN
The VLAN ID of an iface-based VLAN

Amount of traffic shaping configs
A list of traffic shaping configs
Entry containg info of a traffic shaping config
The index of the queue
The internal name of the queue
Is the queue enabled?
The assigned interface of the queue
The download limit of the queue
The upload limit of the queue
The queuing discipline in use for this queue
The queuing discipline setup script used in this queue

Number of ports on device
A list of port entries. The number of entries is given by the value of portCount
An entry containing information of a particular port
A unique value, greater than zero, for each port
Port's name
Port's number
Port's physical position
Port's state
Port's speed
Boolean value whether port is duplex or not