

Package „metel-app-config-change-server“ for IPLOG

This document describes the installation and basic configuration of the package **metel-app-config-change-server**. The basic functions of the package are:

- ❖ logging LAN-RING switch configuration changes to a local MySQL database
- ❖ sending configuration change messages to an external Syslog server

The sending of configuration changes from LAN-RING switches is activated by enabling the sending of SNMPv3 traps with the name **Configuration changed**. IPLOG stores records in a MySQL database named `config_change_server` in a table named `items`.

Showing Columns from the items Table

Field	Type	Null	Key	Default	Extra
<code>id</code>	<code>int(10) unsigned</code>	NO	PRI	NULL	<code>auto_increment</code>
<code>datetime</code>	<code>timestamp</code>	NO		<code>CURRENT_TIMESTAMP</code>	
<code>changer_ip</code>	<code>varchar(16)</code>	NO		NULL	
<code>sender_ip</code>	<code>varchar(16)</code>	NO		NULL	
<code>sender_uptime</code>	<code>varchar(24)</code>	NO		NULL	
<code>sender_trap_id</code>	<code>int(11)</code>	NO		NULL	
<code>oid</code>	<code>varchar(256)</code>	NO		NULL	
<code>value</code>	<code>varchar(256)</code>	NO		NULL	
<code>message</code>	<code>text</code>	NO		NULL	

Package Installation

When installing the package, the IPLOG must be connected to the Internet.

1) Start the Putty application and log in to the IPLOG unit as root. Enter the command „**opkg update**“.

```
root@iplog:~# opkg update
Downloading http://www.iplog.eu/opkg/base/Packages.gz.
Updated source 'base'.
Downloading http://www.iplog.eu/opkg/firmware/Packages.gz.
Updated source 'firmware'.
```

📖 Use the „**opkg list**“ command to display a list of all available packages.

2) Enter the command „**opkg install metel-app-config-change-server**“, which installs the package and starts the SNMP daemon.

Package Configuration

In the directory `/etc/metel/app/config_change_server/` two files are located.

snmp_trap_process.conf - configuration of the maximum number of records in the database and IP address of the syslog server to which the data will be forwarded.

📖 When the maximum number of records is exceeded, new records will start overwriting the older ones.

```
# Maximal number of items in local database
LOCALDB_MAX_ITEMS=10000

# Syslog target ip address
SYSLOG_TARGET_IP=0.0.0.0
```

snmp_trap_users.conf - setting SNMP credentials for a specific switch.

```
# SNMP trap users
#

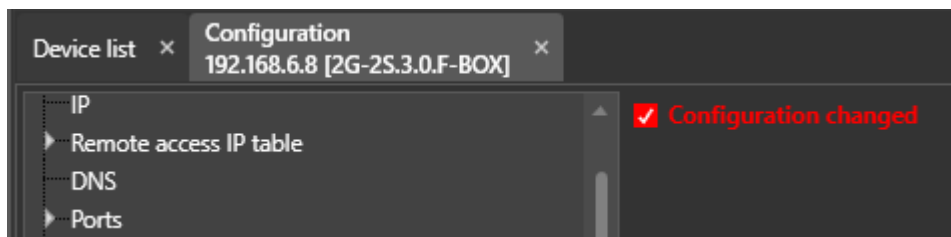
# users, one per row, format given by NetSNMP
#createUser -e 00000000engineid00000000 master SHA mastermaster AES

# allows the 'master' user to run application or script when the trap is received
```

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Enable Sending of SNMPv3 Traps from Switches

For monitoring configuration changes SNMP traps „**Configuration changed**“ must be enabled and the destination IP address for sending them is specified. In the configuration menu of the switch **/SNMP/Traps/Configuration** enable SNMP trap named „**Configuration changed**“.



In item **/SNMP/Traps/Trap destination IP** fill:

- IP address of the IPLOG unit
- SNMP trap port (default port 162)
- SNMP user name

Write all configuration changes to the switch.

The form shows the following fields:

- Enabled
- Destination IP: 192.168.6.50
- Destination Port: 162
- SNMPv1 Community/SNMPv3 Username: master

SNMP Engine ID

The SNMP Engine ID uniquely identifies the switch. Each switch has its own unique SNMP ID number. You can use any SNMP browser to detect it. The OID number to determine the SNMP Engine ID is „**.1.3.6.1.6.3.10.2.1.1.0**“. The read SNMP Engine ID is used in configuration of the IPLOG unit.

Result Table	
Name/OID	Value ▾
snmpEngineID.0	0x80 00 96 D8 05 20 14 09 30 26 45 37

SNMP Engine ID is a number consisting of the constant 800096D805 and the serial number of the switch, which can also be found in the Simuland application in the Basic menu.

Editing `snmp_trap_process.conf` in IPLOG unit

Edit the file `/etc/metel/app/config_change_server/snmp_trap_users.conf` and add a line with the SNMP Engine ID of the switch that will send SNMP traps, the SNMP user and his password.

createUser -e 800096D80520140930264537 master SHA mastermaster AES mastermaster

You can use a **vi** text editor for editing or install the **nano** text editor, which is available in `opkg` packages. Save the edited file.

```
# SNMP trap users
#
# users, one per row, format given by NetSNMP
#createUser -e 00000000engineid00000000 master SHA mastermaster AES
createUser -e 800096D80520140930264537 master SHA mastermaster AES mastermaster

# allows the 'master' user to run application or script when the trap is received
authUser execute master
```

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📖 Sample configuration file for two switches with different passwords and SNMP users

```
# METEL app Config change server
#
# SNMP trap users
#
# users, one per row, format given by NetSNMP
#createUser -e 00000000engineid00000000 master SHA mastermaster AES
createUser -e 800096D80520140930264537 master SHA mastermaster AES mastermaster
createUser -e 800096D80520141016253798 admin SHA password_856 AES password_933
# allows the 'master' user to run application or script when the trap is received
authUser execute master
authUser execute admin
```

Restarting the Service and Listing of the MySQL Database

In the IPLOG drive, restart the service with the command „/etc/init.d/S58config_change_server restart“. The list of values from the mysql database can be performed, for example, by the command `mysql -e "SELECT * FROM config_change_server.items"`

id	datetime	changer_ip	sender_ip	sender_uptime	sender_trap_id	oid	value	message
1	2020-07-22 06:03:19	192.168.6.59	192.168.6.8	012:37:12.38	2	1.3.6.1.4.1.38616.1.777.11.0	"02 70 07 54 01 00 00 00 01 "	SNMP Trap
2	2020-07-22 06:03:19	192.168.6.59	192.168.6.8	012:37:12.38	2	1.3.6.1.4.1.38616.1.777.11.0	"02 70 07 54 01 00 00 00 01 "	SNMP Trap
3	2020-07-22 06:04:53	192.168.6.59	192.168.6.8	012:38:46.62	8	1.3.6.1.4.1.38616.1.777.11.0	"02 70 05 66 c0 a8 06 c3 "	METEL-NETWORK-MIB:igmp.0
4	2020-07-22 06:04:53	192.168.6.59	192.168.6.8	012:38:46.62	8	1.3.6.1.4.1.38616.1.777.11.0	"02 70 05 66 c0 a8 06 c3 "	METEL-NETWORK-MIB:igmp.0
5	2020-07-22 06:19:16	192.168.6.59	192.168.6.8	012:53:07.80	9	1.3.6.1.4.1.38616.1.5.1.0	1	METEL-TOPOLOGY-MIB:activeTopologyProtocol.0
6	2020-07-22 06:19:33	192.168.6.59	192.168.6.8	012:53:07.80	8	1.3.6.1.4.1.38616.1.5.1.0	1	METEL-TOPOLOGY-MIB:activeTopologyProtocol.0
7	2020-07-22 06:20:59	192.168.6.59	192.168.6.8	012:54:37.11	10	1.3.6.1.4.1.38616.1.5.20.1.0	2	METEL-SWITCH-MULTICAST-MIB:multicastIcmpSnoothingEnable.0
8	2020-07-22 06:21:08	192.168.6.59	192.168.6.8	012:54:37.11	10	1.3.6.1.4.1.38616.1.5.20.1.0	2	METEL-SWITCH-MULTICAST-MIB:multicastIcmpSnoothingEnable.0
9	2020-07-22 06:21:06	192.168.6.59	192.168.6.8	012:54:37.11	11	1.3.6.1.4.1.38616.1.9.1.0	3	METEL-TOPOLOGY-MIB:activeTopologyProtocol.0
10	2020-07-22 06:21:06	192.168.6.59	192.168.6.8	012:54:37.11	11	1.3.6.1.4.1.38616.1.5.1.0	3	METEL-TOPOLOGY-MIB:activeTopologyProtocol.0
11	2020-07-22 06:22:08	192.168.6.59	192.168.6.8	012:56:01.44	12	1.3.6.1.4.1.38616.1.777.11.0	"02 70 06 6c 00 08 08 08 08 "	METEL-NETWORK-MIB:dns.0
12	2020-07-22 06:22:08	192.168.6.59	192.168.6.8	012:56:01.44	12	1.3.6.1.4.1.38616.1.777.11.0	"02 70 06 6c 00 08 08 08 08 "	METEL-NETWORK-MIB:dns.0

Extract from the Switch's Internal SD Card

Switches from the third generation contain an internal SD card, on which SNMP traps are stored by default. In the list of devices, click to select the device from which you want to read data and click the Syslog icon. A new window will open, where you select Low priority in the top tab.

📖 For a better overview of the records, we recommend enabling time synchronization with the NTP server.

Syslog

High priority Low priority

Idx	Date	Time	Event	Value	TrapIdx
1047568	01.01.2000	03:51:50	oid:1.3.6.1.4.1.38616.1.5.20.1.0 changed to:2 by:192.168.6.59 idx:56		56
1047567	01.01.2000	03:51:50	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 72 05 66 c0 a8 06 c8 by:192.168.6.59 idx:55		55
1047566	01.01.2000	03:51:50	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 70 11 16 4d 45 54 45 4c 2c 20 73 2e 20 72 2e 20 6f		54
1047565	01.01.2000	03:49:13	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 7a 07 54 10 04 00 00 00 00 by:192.168.6.59 idx:53		53
1047564	01.01.2000	03:49:13	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 78 07 54 10 03 00 00 00 00 by:192.168.6.59 idx:52		52
1047563	01.01.2000	03:49:13	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 76 07 54 10 02 00 00 00 00 by:192.168.6.59 idx:51		51
1047562	01.01.2000	03:49:13	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 74 07 54 10 01 00 00 00 00 by:192.168.6.59 idx:50		50
1047561	01.01.2000	03:49:13	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 72 07 54 10 00 00 00 00 00 by:192.168.6.59 idx:49		49
1047560	01.01.2000	03:49:13	oid:1.3.6.1.4.1.38616.1.777.11.0 changed to:0x02 70 07 54 01 01 00 00 00 00 by:192.168.6.59 idx:48		48
1047559	01.01.2000	03:48:42	Port G2 link	up	47
1047558	01.01.2000	03:48:42	Port G1 link	down	46
1047557	01.01.2000	03:48:42	Port P3 link	up	45
1047556	01.01.2000	03:48:42	Port P2 link	down	44

Done. Last 100

Read Save As... Cancel