AK624RU

CLI COMMAND CROSS-REFERENCE
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Revision History

Date	Version	Description	Author
March 17, 2015	0.3	Initial version	S Shah
February 2, 2016	R00	Official release 4.4.x	JF Mailhot

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1 INTRODUCTION

1.1 PURPOSE

This document provides the syntax for all the CLI commands supported in release R4.4.1 and R4.4.2 for the AK624RU when used to interoperate with a 3rd party DSLAM. The CLI is intended to provide user full ability to provision and monitor the AK624RU Universal CPE.

2 OVERVIEW

The CLI built into R4.4.1 and R4.4.2 has been designed for all the Positron Access products including the standalone AK624RU CPE. For this reason all commands also show the options for slots and CCA/CCB, however for the AK624s standalone the option string can be reduced to:

{CCA|CCB|1..16}/{CO|RT[1..4]}/{1..3|SFP} => **1/RT1/{1..2|SFP}**

The AK624 standalone is always slot 1/RT1

FlexStream AK624 Command Line is accessible using the craft port or using a Secured Shell (SSH). Remote sessions can be opened using a remote secured shell program such as Putty or xterm or SSH.

NOTE: Telnet session (unsecure) is not available.

Craft port: 9600, 8, 1, N

Default username and password for CLI is "superuser"

NOTE: Positron Access strongly recommends changing this default password. Using a centralized RADIUS AAA server is also more convenient and efficient when managing multiple devices.

"?" shows the help for the command

List of all top level commands:

clear	Command group to clear Ethernet counters and System logs
configure	Command group to configure system parameters
create	Command group to create various system entities
delete	Command group to remove various system entities
diag	Command group to start available diagnostics
export	Export log
generate	Generate SSH server keys
help	Help for the CLI
logout	Log out from privileged mode
ping	Ping an IP address
reboot	Reboot the entire system or individual units
reset	Resets the pm
set	Command group to set current session parameters
show	Command group to display various system settings

3 COMMANDS

3.1 USER ACCESS MANAGEMENT

3.1.1 Show Command Line Session

Command:

show session

Output:

```
RT>show session
Session information
------------------
Pause      : ENABLED
History    : 16 line(s)
Timeout    : 15 minutes(s)
Currently on : RT unit (Stand-alone mode AK6xxR)
```

3.1.2 Generate SSH Server Key

The first time the AK624RU boots from factory-default, it will generate the key automatically. Each device has a unique key. If a security breach occurs, a user can generate a new key by using this command

Command:

generate ssh-server hostkeys

Output:

```
RT>generate ssh-server hostkeys
Generating SSH host keys.  This may take a minute...
- Generating RSA key... done
- Generating DSS key... done
- Generating sync file... done
RT>
```

3.1.3   Define user Database Location: LOCAL, RADIUS, TACACS+

A user can manage the AK624 with a graphical interface using AKView/AKEMS; Or with CLI using the serial port or SSH.

For each different access type, it is possible to authenticate the user, locally, with RADIUS, or with TACACS+

By default, user access is validated to the local database. Make sure to configure a Radius or TACACS+ entry before changing this parameter.

- Serial port
- SSH
- XML (AKView, AKEMS)

Command:

configure cmdinterface {serial|SSH|XML} aaa {local|tacacs+|radius}

Output:

```
RT>configure cmdinterface serial aaa local

RT>configure cmdinterface ssh aaa local

RT>configure cmdinterface xml aaa local

RT>show config cmdinterface


Command Interface

-----------------

Intfc  AAA Priority

------ ------------

SERIAL LOCAL

SSH    LOCAL

XML    LOCAL


RT>
```

NOTE: Fallback can be configured. Priority is defined in the list with a comma (ex: "radius, tacacs+, local"). If "local" is required, make sure to put it at the end of the list.

3.1.4 User Access with local database

3.1.4.1 Create local user

Command:

create user <username>

Output:

```
RT>create user user1
Password:
Confirm Password:
```

NOTE:

- Local users always have Read/Write access. For read only access, TACACS+ or RADIUS must be used.
- Valid characters are:

#$%'()*+./0123456789<=>@ABCDEFGHIJKLMNOPQRSTUVWXYZ\^_`abcdefghijklmnopqrstuvwxyz{|}~

3.1.4.2 Change Password of a Local User

Command:

configure user <username>

Output:

```
RT>configure user user1
Password:
Confirm Password:
```

NOTE:

Valid characters are:
#$%'()*+./0123456789<=>@ABCDEFGHIJKLMNOPQRSTUVWXYZ\^_`abcdefghijklmnopqrstuvwxyz{|}~

3.1.4.3 Delete Local User

Command:

delete user <username>

Output:

```
RT>delete user user1
```

3.1.5 User Access with Radius

3.1.5.1 Show Radius Server Connection Entries

Command:

show config radius

Output:

```
show config radius


RADIUS Authentication Hosts

---------------------------

Auth Host IP    Secret  Port Timeout Priority

-------------- ------ ----- ------- --------

none


RADIUS Accounting Hosts

-----------------------

Acct Host IP    Secret  Port Timeout Priority

-------------- ------ ----- ------- --------

none
```

3.1.5.2 Create a Connection to a RADIUS Authentication Server

Up to 4 connections to different servers can be created.

<u>Command:</u>

create radius authhost <ipaddr> <Plain-text secret key>

<Plain-text secret key> Secret key (use an empty set of double-quotes if no key)

<u>Output:</u>

```
RT>create radius authhost 196.10.10.1 ""
RT>show config radius


RADIUS Authentication Hosts
---------------------------
Auth Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
196.10.10.1          1812    5     0


RADIUS Accounting Hosts
-----------------------
Acct Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
none


RT>
```

3.1.5.3 Remove a Connection to a RADIUS Authentication Server

<u>Command:</u>

delete radius authhost <ipaddr>

<u>Output:</u>

```
RT>delete radius authhost 196.10.10.1
RT>show config radius


RADIUS Authentication Hosts
---------------------------
Auth Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
none


RADIUS Accounting Hosts
-----------------------
Acct Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
none


RT>
```

3.1.5.4 Create a Connection to a RADIUS Accounting Server

Up to 4 connections to different servers can be created.

<u>Command:</u>

create radius accthost <ipaddr> <Plain-text secret key>

Plain-text secret key - Secret key (use an empty set of double-quotes if no key)

<u>Output:</u>

```
RT>create radius accthost 196.10.10.1 ""
RT>show config radius


RADIUS Authentication Hosts
--------------------------
Auth Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
none


RADIUS Accounting Hosts
-----------------------
Acct Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
196.10.10.1          1813    5      0


RT>
```

3.1.5.5 Remove a Connection to a RADIUS Accounting Server

<u>Command:</u>

delete radius accthost <ipaddr>

<u>Output:</u>

```
RT>delete radius accthost 196.10.10.1
RT>show config radius


RADIUS Authentication Hosts
---------------------------
Auth Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
none


RADIUS Accounting Hosts
----------------------
Acct Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
none


RT>
```

3.1.5.6 Configure Parameters a Connection to a RADIUS Authentication Server

<u>Command:</u>

configure radius authhost <ipaddr> <options>

Options:

port   {1..65535|default|legacy}- Specify UDP port number. Default=1812. Legacy=1645.

priority {0..65535} Specify new priority (0 = highest)

secret

timeout {1..30|default} default is 5 seconds

<u>Output:</u>

```
RT>configure radius authhost 172.18.0.36 port default
RT>configure radius authhost 172.18.0.36 priority 1
RT>configure radius authhost 172.18.0.36 secret testkey
RT>configure radius authhost 172.18.0.36 timeout default
RT>show config radius


RADIUS Authentication Hosts
---------------------------
Auth Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
172.18.0.36    ******  1812    5      1


RADIUS Accounting Hosts
-----------------------
Acct Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
172.18.0.36            1813    5      1
```

3.1.5.7 Configure Parameters a Connection to a RADIUS Accounting Server

<u>Command:</u>

configure radius accthost <ipaddr> <options>

Options:

port   {1..65535|default|legacy}- Specify UDP port number. Default=1813. Legacy=1646.

priority {0..65535} Specify new priority (0 = highest)

secret

timeout {1..30|default} default is 5 seconds

<u>Output:</u>

```
RT>configure radius accthost 172.18.0.36 port default
RT>configure radius accthost 172.18.0.36 priority 1
RT>configure radius accthost 172.18.0.36 secret testkey
RT>configure radius accthost 172.18.0.36 timeout default
RT>show config radius


RADIUS Authentication Hosts
---------------------------
Auth Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
172.18.0.36    ******  1812     5       1


RADIUS Accounting Hosts
-----------------------
Acct Host IP    Secret  Port Timeout Priority
-------------- ------ ----- ------- --------
172.18.0.36            1813     5       1
```

3.1.6   User Access with TACACS+

3.1.6.1   Show TACACS+ server connection entries

<u>Command:</u>

show config tacacs+

<u>Output:</u>

```
RT>show config tacacs+


TACACS+ Hosts

-------------

Host IP       Key Port  Timeout Priority

-------------- --- ----- ------- --------

172.18.0.36       49    5      0
```

3.1.6.2   Create a Connection to a TACACS+ Server

Up to 4 connections to different servers can be created.

<u>Command:</u>

create tacacs+ host <ipaddr> <Plain-text secret key>

<Plain-text secret key> Secret key (use an empty set of double-quotes if no key)

<u>Output:</u>

```
RT>create tacacs+ host 196.10.20.1 ""
RT>show config tacacs+


TACACS+ Hosts

-------------

Host IP       Key Port  Timeout Priority

-------------- --- ----- ------- --------

196.10.20.1       49    5      0


RT>
```

3.1.6.3 Remove a Connection to a TACACS+ Server

Command:

delete tacacs+ host <ipaddr>

Output:

```
RT>delete tacacs+ host 196.10.20.1
RT>
```

3.1.6.4 Configure Parameters for a Connection to a TACACS+ Server

Command:

configure tacacs+ host <ipaddr> <options>

Options:

key

port   {1..65535|default}- Specify UDP port number. Default=49

priority {0..65535} Specify new priority (0 = highest)

timeout {1..30|default} default is 5 seconds

Output:

```
RT>configure tacacs+ host 172.18.0.36 key testkey
RT>configure tacacs+ host 172.18.0.36 port default
RT>configure tacacs+ host 172.18.0.36 priority 1
RT>configure tacacs+ host 172.18.0.36 timeout default
RT>show config tacacs+


TACACS+ Hosts
-------------
Host IP      Key Port  Timeout Priority
-------------- --- ----- ------- --------
172.18.0.36    ***   49     5     1
```

3.2 SYSTEM COMMANDS

3.2.1 System Information

3.2.1.1   Show Inventory

Command:

show inventory {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}]

Output:

```
RT>show inventory all


Slot Unit XSPAN ID Serial    CLEI Code  MAC Address      Hardware Rev Software Rev Options
Description
---- ---- -------- ---------- ---------- ----------------- ----------- ----------- ------------------------------------
1   RT1  1      1012376    VBMAC10HRA 00:0e:d8:00:1c:ba E09         r4.4.1
AK624RU :RT Compact Ethernet Remote Unit, 8-Pairs VDSL2/ADSL2+
```

3.2.1.2   Show System

Command:

Show system

Output:

```
RT>show system
Mon Mar  2 15:42:54 UTC 2015
Inband IP Address :
Inband Net Mask   :
OOB IP Address    : 192.168.101.155
OOB Net Mask      : 255.255.255.0
Gateway           : 192.168.101.1
```

NOTE: The output of this command will vary depending on the configuration of service type and inband management.

3.2.2 Show System Date/Time and Time zone

<u>Command:</u>

Show clock

<u>Output:</u>

```
RT>show clock
Mon Mar  2 15:40:25 UTC 2015
```

3.2.3 Configure System Date/Time and Time zone

NTP or timezone is not currently supported in this release. The date/time must be set manually.

3.2.3.1 Date and Time Configuration

<u>Command:</u>

configure clock <hh:mm:ss> <mm-dd-yyyy>

<u>Output:</u>

```
RT> configure clock 15:22:00 07-15-2015
RT>show clock
Wed Jul 15 15:22:09 UTC 2015
```

3.2.3.2 Time Zone Configuration

By default, the system is set to UTC

<u>Command:</u>

Configure equipment 1/rt1 timezone <location-string>

<location-string> - The timezone abreviations

<u>Output:</u>

```
RT>show clock
Mon Mar  2 15:40:25 UTC 2015
```

NOTE: <u>Timezone is not currently supported in this release. The system is set to UTC by default.</u>

3.2.4 System Software Management

3.2.4.1 Show Version

Command:

Show version all

Output:

```
RT>show version all

Slot Unit XSPAN ID Serial    Model     CLEI      Hardware Rev Software Ver Standby Ver

---- ---- -------- --------- --------- --------- ------------ ------------ -----------

1   RT1  1        1012366   AK624RU             E04          r4.4.1       r4.4.2
```

3.2.4.2 Revert System to Factory Default

Command:

configure system factory-default

Output:

```
RT>configure system factory-default

Reset to factory default, system will now reboot...
```

NOTE: *Be careful, there is no confirmation warning.*

3.2.4.3 Revert System Software to Alternate Bank

Command:

configure system revertsw {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

Output:

```
RT>configure system revertsw 1/rt1

Rebooting this board...

RT>
```

NOTE: Be careful, there is no confirmation warning.

3.2.4.4 Software Upgrade

Command:

Not available

Output:

NOTE: *Software upgrade must be done using AKVIEW or the Web craft tool.*

3.2.4.5 Reboot System

> Command:

> reboot {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

> Output:

```
RT>reboot 1/rt1
RT1 rebooted
```

NOTE: Be careful, there is no confirmation warning.

3.2.5 Equipment Provisioning

3.2.5.1 Show Equipment Configuration

> Command:

> Show config equipment {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}]

> Output:

```
RT>show config equipment all
Slot/Unit        : 1/RT1
System Id        : RT
IP Address       : 192.168.98.130
Net Mask         : 255.255.248.0
Gateway          : 192.168.101.1
IPv6 Gateway     :
Contact          :
Location         :
Time Zone        : UTC
```

3.2.5.2 Configure Equipment

<u>Command:</u>

configure equipment {CCA|CCB|1..16}/{CO|RT[1..4]}…

- ➢ contact <contact-string>
- ➢ defaultgw <ipaddr>
- ➢ ipaddr <ipaddr>
- ➢ location <location-string>
- ➢ sysid <system id>
- ➢ timezone <timezone-string>

<contact-string>	: String up to 64 characters
<ipaddr>	: IP address, ex: 192.168.101.10
<netmask>	: Network mask, ex: 255.255.255.0
<gateway>	: Gateway address, ex: 192.168.101.1
<location-string>	: String up to 64 characters
<system id>	: String up to 20 characters

<u>Output:</u>

```
RT>configure equipment 1/rt1 contact Technical-Support
RT>configure equipment 1/rt1 location Lab
RT>configure equipment 1/rt1 sysid RT-Test
RT>
RT-Test>show config equipment 1/rt1
Slot/Unit          : 1/RT1
System Id          : RT-Test
IP Address         : 192.168.101.178
Net Mask           : 255.255.248.0
Gateway            : 8.8.8.8
Contact            : Technical-Support
Location           : Lab
Time Zone          : UTC


RT-Test>
```

3.2.6 Inband Management Provisioning

Inband management must be created, configured and then bond to a port. Execute the "show" command to verify whether an entry already exists.

3.2.6.1 Check Existing Inband Management Config

Command:

show config Ethernet ibmgmt

Output:

```
RT>show config ethernet ibmgmt
No records found
```

3.2.6.2 Create Inband Management

Command:

create ibmgmt {1..4090|pritag|untag} {dhcp|ipaddr} <netmask>

<1..4090>	: VLAN number
<pritag>	: System will process VLAN tag 0
<untag>	: No VLAN required
dhcp	: dhcp client
ipaddr	: IP address for management
netmask	: network mask

Output:

```
RT>create ibmgmt 100 ipaddr 10.192.1.1 255.255.255.0
RT>
```

NOTE: Pritag and untag inband management is only supported in either transparent-switch or NAT servicetype.

3.2.6.3 Configure Inband Management IP Address

Command:

configure ethernet ibmgmt ipaddr <ip address> <subnet mask>

Output:

```
RT>configure ethernet ibmgmt ipaddr 10.10.100.1 255.255.255.0
RT>
```

3.2.6.4 Configure Inband Management with DHCP Support

Command:

configure ethernet ibmgmt dhcp {enable|disable}

Output:

```
RT>configure ethernet ibmgmt dhcp enable
RT>
```

3.2.6.5 Bind Interfaces to Inband Management

Command:

Configure ethernet ibmgmt bind {CC|1..16}/{CO|RT[1..4]}/{1..3|SFP}

Note: Please use '1' for slot, RT1/{1..3|SFP} for interface.

Output:

```
RT>configure ethernet ibmgmt bind 1/rt1/SFP
RT>
```

NOTE: VLAN trust mode must be enabled to bind inband management on an AK624RU

3.2.6.6 UnBind Interfaces from Inband Management

Command:

configure ethernet ibmgmt unbind {CC|1..16}/{CO|RT[1..4]}/{1..3|SFP}

Note: Please use '1' for slot, RT1/{1..3|SFP} for interface.

Output:

```
RT>configure ethernet ibmgmt unbind 1/rt1/SFP
RT>
```

3.2.6.7   Configure Inband Management VLAN ID (VID)

Command to modify the Management VID

Command:

Configure ethernet ibmgmt vid {1..4090|pritag|untag}

Output:

```
RT>configure ethernet ibmgmt vid 101
RT>
```

> *NOTE:* Untag and pritag only supported for transparent-switch and NAT servicetype modes.

3.2.6.8   Configure Inband Management Default Gateway

Command to modify the default gateway

Command:

Configure ethernet ibmgmt defaultgw <A.B.C.D>

Output:

```
RT>configure ethernet ibmgmt defaultgw 10.10.100.254
RT>
```

> *NOTE:* Only one default gateway can be configured per AK624RU

3.3 SNMP MANAGEMENT

The AK624RU supports SNMP traps. It is possible to query information using a MIB browser. The SNMP agent only support GET commands (read only). It is not possible to configure the AK624RU with "set" commands.

Versions V1, V2c and V3 are supported.

The AK624 supports standard MIBs and has a private Positron Access (Aktino) MIB.

3.3.1 Show SNMP Configuration

<u>Command:</u>

show config snmp

<u>Output:</u>

```
RT>show config snmp


System ID  : RT
Contact    : Technical-Support
Location   : Lab


SNMP Community
--------------
read-only  : public


v1/v2c TrapHost Version Community
-------------- ------- -------------------------------
none


v3 TrapHost    User                     Security Level Auth Type Priv Type Engine ID
-------------- ------------------------------ -------------- --------- --------- -------------
none


User (SNMP v3)               Access Level Security Level Auth Type Priv Type
------------------------------ ----------- -------------- --------- ---------
none
RT>
```

3.3.1.1 Configure SNMP Basic Information

Command:

configure snmp community <name> ro

configure snmp contact <name>

configure snmp location <name>

ro   - Read-only

community   - Set read-only community-string (default is "public")

contact   - Text for mib object sysContact (same as "configure   equipment contact")

location   - Text for mib object sysLocation (same as "configure   equipment location")

Output:

```
RT>configure snmp community public ro
RT>configure snmp contact user1
RT>configure snmp location lab
```

3.3.1.2 Create SNMP V3 user

Command:

create snmp user <name> <access level> {AUTH|PRIV} {MD5|SHA} <auth-password> {DES|AES} <priv-password>

<access level> - This version supports readonly.

{AUTH|PRIV}   - Minimum security level: Authentication or privacy (encryption) mode

{MD5|SHA}   – Authentication algorithm

<auth-password>   - SNMP authentication password

{DES|AES}   - Encryption algorithm

<priv-password>   - Optional. SNMP privacy (encryption) password. If not specified, authentication password is used.

Output:

```
RT>create snmp user testuser1 READONLY AUTH MD5 testuser1pass DES
RT>
```

3.3.1.3 Modify SNMP V3 user

Command:

configure snmp user <name> {accesslevel|authparms|securitylevel}

{AUTH|PRIV} {MD5|SHA} <auth-password> {DES|AES} <priv-password>

<accesslevel>   {READONLY} - This version supports readonly.

<authparms>

{AUTH|PRIV} - Minimum security level: Authentication or privacy (encryption) mode

{MD5|SHA}   – Authentication algorithm

<auth-password>   - SNMP authentication password

<securitylevel>

{DES|AES}   - Encryption algorithm

<priv-password>   - Optional. SNMP privacy (encryption) password. If not specified, authentication password is used.

Output:

```
RT>configure snmp user testuser1 authparams MD5 test222pass AES
RT>
```

3.3.1.4 Delete SNMP V3 user

Command:

delete snmp user <name>

Output:

```
RT>delete snmp user testuser1
RT>
```

NOTE: Please note that there is no confirmation prompt with this command. The SNMP V3 User will be deleted without any opportunity for the administrator to undo the deletion.

3.3.1.5 Create SNMP trap host

Command:

For V1/V2c

create snmp traphost <IPv4 address> {v1|v2c} <community-string>

For V3

For V3, the SNMP manager receiving the traps must have a user and engine id defined in its database.

create snmp traphost <IPv4 address> v3 <user> <engine id>

<engine id>   - SNMP engine ID. 10 to 64 hex characters (even count)

Output:

```
RT>create snmp traphost 192.168.101.1 v1 public
RT>
```


3.3.1.6 Modify SNMP trap host

A SNMP trap host cannot be edited. The entry must be deleted and recreated

Command:

delete snmp traphost <IPv4 address>

create snmp traphost <IPv4 address> … Refer to "Create a SNMP traps host"

NOTE: Please note that the administrator is not prompted to confirm the changes. The changes are immediate.

3.3.1.7 Delete SNMP trap host

Command:

delete snmp traphost <IPv4 address>

Output:

```
RT>delete snmp traphost 192.168.101.1
RT>
```


NOTE: Please note that the administrator is not prompted to confirm the changes. The changes are immediate.

3.4 ETHERNET PROVISIONING

3.4.1 Show Ethernet Ports Configuration

Command:

show config ethernet ports all

Output:

```
RT>show config ethernet ports all


Slot Unit XSPAN ID Port State Speed Duplex Flow     Priority         Port VLAN Trust Untagged Loopback Frame Type
Ckt ID
                                Control Precedence     Pri  Mode      VLAN ID  Enabled


---- ---- -------- ---- ----- ----- ------ ------- ----------------- ---- ---------- -------- -------- ---------- ---------
1   RT1  1     1   UP   AUTO  AUTO         VLAN,PORT           1 NO           NO     All
1   RT1  1     2   UP   AUTO  AUTO         VLAN,PORT           1 NO           NO     All
1   RT1  1    SFP  UP   1000  AUTO          VLAN,PORT          1 NO           NO     All
```

3.4.2 Configure Ethernet Interface

<u>Command:</u>

Configure Ethernet ports {CCA|CCB|1..16}/{CO|RT[1..4]}/{1..3|SFP}

> circuitid <circuit-id>
> default
> duplex [auto|full|half]
> frametype {untagged|tagged|all}
> prioprecedence [diffserv-vlan-port|vlan-port|diffserv-port|port]
> priority [1..8]
> speed [auto|1000|100|10]
> state [up|down]
> untaggedvid [1..4095]
> vlantrustmode [yes|no]

<circuit-id>   - Set circuit id with string up to 48 characters

default   - Restore interface to defaults

duplex   - Set the duplex mode to {auto, full, or half}

frametype   - Set the Frame Type to {untagged, tagged or all}

prioprecedence – Set priority precedence to:

1. **diffserv-vlan-port** – Priority set based on DSCP bits, if DSCP bits not set then priority set based on p-bit and if p-bit absent then priority is set based on port priority settings.
2. **vlan-port** – Priority set based on vlan p-bits and if p-bit are not set then set priority based on port
3. **diffserv-port** – Priority set based on DSCP bits and if DSCP bits are not set then set priority based on port
4. **port** – Set priority based on port priority setting

priority   - Set interface priority from 1 (lowest) to 8 (highest)

speed   - Set the link speed to {auto, 1000, 100, or 10}

state   - Set the specified interface state

untaggedvid   - Set the untagged traffic with the provisioned VLAN ID tag

vlantrustmode - Set the VLAN trust mode to yes or no

<u>Output:</u>

```
RT>configure ethernet ports 1/rt1/sfp circuitid port-client123
RT>
```

3.4.3   Creating, Configuring and Deleting VLANs

For each VLAN configuration, the system's servicetype must be set to tunneled-vlan. Here is the command to set service type:

```
RT>configure ethernet servicetype 1 tunneled-vlan
```

3.4.3.1   Creating VLAN

Command to create a vlan and assign a name to it.

Command:

Create vlan {1..4090} <VLAN name>

Output:

```
RT>create vlan 110 Test-Data-vlan
```

NOTE: The servicetype must be set to tunneled VLAN to create VLANs.

3.4.3.2   Configuring different VLAN parameters

Command:

RT>configure ethernet vlan {1..4090}

> ➢ bind <Interface>   - Bind interface to VLAN
> ➢ name <name-string> - Assign Name to VLAN
> ➢ type <vlan type>   - Configure VLAN type
> ➢ unbind <Interface> - Unbind interface from VLAN

<Interface>   : {CC|1..16}/{CO|RT[1..4]}/{1..3|SFP|CPU} ex: 1/RT/SFP

<name-string> : String up to 31 characters

<vlan type>   : {data|twamadmin} twapadmin is used as an RFC 6038 twamp reflector

Output:

```
RT>configure ethernet vlan 110 bind 1/rt1/sfp
RT>
```

NOTE: Interface must be set to vlantrustmode if binding an interface to multiple VLANs

3.4.3.3   Delete VLAN parameters

Command:

RT>delete vlan {1..4090}

Output:

```
RT>delete vlan 110
RT>
```

NOTE: Interface must be set to vlantrustmode if binding to multiple VLANs

3.4.3.4 Create a TWAMP Administrative VLAN

Command:

Step1: create vlan <VLAN ID> <VLAN name>

Step2: configure Ethernet vlan <VLAN ID> type twampadmin

Output:

```
RT>create vlan 120 TwampAdminVLAN
RT>show config ethernet vlan all
    VLAN ID    : 120
    VLAN Name   : TwampAdminVLAN
    VLAN Type   : DATA
    Uplink-Port :
    RT-Port(s)  :
RT>configure ethernet vlan 120 type twampadmin
RT>show config ethernet vlan all
    VLAN ID    : 120
    VLAN Name   : TwampAdminVLAN
    VLAN Type   : TWAMPADMIN
    Uplink-Port :
    RT-Port(s)  :
    RT>
```

3.4.4 Ethernet Services Provisioning

3.4.4.1 Show service type configuration

Command:

show config ethernet servicetype [1..16|ALL]

Output:

```
RT>show config servicetype all
```

```
Slot Service Type            CO QOS Mode RT QOS Mode TailDrop threshold

---- ---------------------------- ---------- ---------- ------------------

1   TRANSPARENT-SWITCH           QOS        QOS        96
```

3.4.4.2 Configure service type

<u>Command:</u>

Configure ethernet servicetype [1..16|ALL]

Servicetype values

transparent-switch   = all ethernet ports and xDSL connected together Layer-2)

transparent-port   = not supported by standalone AK624RU

tunneled-vlan   = vlan mapping

nat   = Network Address Translation between LAN and WAN

> coqos   - CO QoS. [qos|lossless]
> rtqos   - RT QoS[qos|lossless]
> taildropthreshold   - [48..384|default]

<u>Output:</u>

```
RT>configure ethernet servicetype 1 tunneled-vlan

RT>

RT>show config ethernet servicetype all


Slot Service Type            CO QoS Mode RT QoS Mode Tail Drop Threshold

---- ---------------------------- ---------- ---------- -------------------

1   TUNNELED-VLAN                QoS      QoS      96

RT>
```


NOTE: coqos field is not valid for AK624 but need to be set in the chain of commands to get to the rtqos setting.

ex: configure ethernet servicetype 1 tunneled-vlan coqos qos rtqos qos

3.4.4.3 Show Differential Services QOS configuration

<u>Command:</u>

show config Ethernet qos ipdscp all

This command displays the assignment of dscp to a priority queue.

<u>Output:</u>

```
RT>show config Ethernet qos ipdscp all
IP Differential Service Priority
Slot: 1
Unit: RT1
Queue : DSCP In for each Queue
1    : 0 1 2 3 4 5 6 7
2    : 8 9 10 11 12 13 14 15
3    : 16 17 18 19 20 21 22 23
4    : 24 25 26 27 28 29 30 31
5    : 32 33 34 35 36 37 38 39
6    : 40 41 42 43 44 45 46 47
7    : 48 49 50 51 52 53 54 55
8    : 56 57 58 59 60 61 62 63
Default Queue : 1
```

3.4.4.4 Show QOS queue scheduling configuration

<u>Command:</u>

> show config Ethernet qos queuescheduling all
>
> This command displays scheduling setting for all 8 queues.

<u>Output:</u>

RT>show config Ethernet qos queuescheduling all

Queue Scheduling

Slot: 1

Unit: RT1

Queue: Scheduling/Weight/VLAN PCP:

Queue 1:   Strict/NA/0

Queue 2:   Strict/NA/1

Queue 3:   Strict/NA/2

Queue 4:   Strict/NA/3

Queue 5:   Strict/NA/4

Queue 6:   Strict/NA/5

Queue 7:   Strict/NA/6

Queue 8:   Strict/NA/7

3.4.4.5 Configure Scheduling type for system

<u>Command:</u>

config ethernet qos schedtype 1/RT1 {strict|wfq|wfq+strict|default}

<u>Output:</u>

Set overall scheduling type to strict:

RT>config ethernet qos schedtype 1/RT1 strict

Set overall scheduling type to Weighted Fair Queuing:

RT>config ethernet qos schedtype 1/RT1 wfq

Set overall scheduling to strict and Weighted Fair Queuing:

RT>config ethernet qos schedtype 1/RT1 wfq+strict

Set overall scheduling to factory default:

RT>config ethernet qos schedtype 1/RT1 default

NOTE:

<u>Default Queue Scheduling</u>

<u>Queue: Scheduling/Weight/VLAN PCP:</u>

<u>Queue 1:   Strict/NA/0</u>

<u>Queue 2:   Strict/NA/1</u>

<u>Queue 3:   Strict/NA/2</u>

<u>Queue 4:   Strict/NA/3</u>

<u>Queue 5:   Strict/NA/4</u>

<u>Queue 6:   Strict/NA/5</u>

<u>Queue 7:   Strict/NA/6</u>

<u>Queue 8:   Strict/NA/7</u>

3.4.4.6 Configure Queue Scheduling parameters for each queue

<u>Command:</u>

config ethernet qos queuescheduling {CC|1..16}/{CO|RT[1..4]} <queue1_setting..queue8_setting>

The queue settings can be:

{strict|wfq/{1..100}}|{strict|wfq/{1..100}}/{0..7}

<u>Output:</u>

```
RT>configure ethernet qos queuescheduling 1/rt1 wfq/10/0 wfq/20/1 wfq/30/2 wfq/40/3 wfq/50/4 wfq/60/5
wfq/70/6 strict//7

RT>show config ethernet qos queuescheduling all



Queue Scheduling

Slot: 1

Unit: RT1

Queue:    Scheduling/Weight/VLAN PCP:

Queue 1:  WFQ/10/0

Queue 2:  WFQ/20/1

Queue 3:  WFQ/30/2

Queue 4:  WFQ/40/3

Queue 5:  WFQ/50/4

Queue 6:  WFQ/60/5

Queue 7:  WFQ/70/6

Queue 8:  Strict/NA/7



RT>
```

3.4.4.7 Provision QOS IP Differential Services Priority Map

Command:

config Ethernet qos ipdscppprioritymap {CC|1..16}/{CO|RT[1..4]}

- ➤ Default   - Reset IP diffserv priority map to default
- ➤ Defaultqueue – Set default queue for unmapped IP DSCP priorities
- ➤ queue {1..8} {0..63,...,0..63}

Output:

1. The following command maps IP diffserv priorities 39 & 23 to queue 1

    RT>configure ethernet qos ipdscppprioritymap 1/RT1 queue 1 39,23

RT>configure ethernet qos ipdscppprioritymap 1/RT1 queue 1 39,23

RT>show config ethernet qos ipdscp all

IP Differential Service Priority

Slot: 1

Unit: RT1

Queue : DSCP In for each Queue

1   : 0 1 2 3 4 5 6 7 23 39

2   : 8 9 10 11 12 13 14 15

3   : 16 17 18 19 20 21 22

4   : 24 25 26 27 28 29 30 31

5   : 32 33 34 35 36 37 38

6   : 40 41 42 43 44 45 46 47

7   : 48 49 50 51 52 53 54 55

8   : 56 57 58 59 60 61 62 63

Default Queue : 1

RT>

---

2. The following command resets IP diffserv map to default values

    RT>configure ethernet qos ipdscpprioritymap 1/RT1 default

---

RT>configure ethernet qos ipdscpprioritymap 1/rt1 default

RT>show config ethernet qos ipdscp all

IP Differential Service Priority

Slot: 1

Unit: RT1

Queue : DSCP In for each Queue

1   : 0 1 2 3 4 5 6 7

2   : 8 9 10 11 12 13 14 15

3   : 16 17 18 19 20 21 22 23

4   : 24 25 26 27 28 29 30 31

5   : 32 33 34 35 36 37 38 39

6   : 40 41 42 43 44 45 46 47

7   : 48 49 50 51 52 53 54 55

8   : 56 57 58 59 60 61 62 63

Default Queue : 1

RT>

3.4.4.8 Provision QOS VLAN Priority Map

Command:

config Ethernet qos vlanprioritymap {CC|1..16}/{CO|RT[1..4]}

> ➢ Default   - Reset IP VLAN priority map to default
> ➢ {0..7} – Select the VLAN PCP

Output:

1. The following command maps VLAN P bit 0 to queue 2

    RT>

```
RT>configure ethernet qos vlanprioritymap 1/rt1 0 queue 2

RT RT>show config ethernet qos vlanpriority all


VLAN Priority

Slot: 1

Unit: RT1

Scheduling Type:            Strict Priority

Service Ether Type:         8100

MAC Address Aging Timeout (sec): 300

VLAN PCP/Queue: 0/2  1/2  2/3  3/4  4/5  5/6  6/7  7/8


RT>
```

2. The following command resets VLAN priority map to default values

    RT>configure ethernet qos vlanprioritymap 1/RT1 default

```
RT>configure ethernet qos vlanprioritymap 1/rt1 default

RT>show config ethernet qos vlanpriority all


VLAN Priority

Slot: 1

Unit: RT1

Scheduling Type:            Strict Priority

Service Ether Type:          8100

MAC Address Aging Timeout (sec): 300

VLAN PCP/Queue: 0/1  1/2  2/3  3/4  4/5  5/6  6/7  7/8


RT>
```

3.4.5 Bandwidth Profiles and Flow Counters

Bandwidth profiles are used to limit traffic based on the Metro Ethernet Forum specifications CIR/CBS/PIR/PBS

A flow counter doesn't limit traffic, it is use for monitoring traffic only. With a flow counter, statistics on a specific vlan/CoS are available.

3.4.5.1 Create bandwidth profile

Command:

create bwprofile {1..16}/{CO|RT[1..4]}/{1..3|SFP|ICC} <name> {port|portvlan|portvlancos} <vlanid> <cos> <cir> <cbs> <pir> <pbs> {none|pbit|dscp} <remarkarking value>

<name>	- Bandwidth profile entry name
port	- Port-type bandwidth profile
portvlan	- Port+VLAN type bandwidth profile
portvlancos	- Port+VLAN+CoS type bandwidth profile
vlan ID	- 1-4090
cos	- 0-7
<cir>	- Committed Information Rate (CIR) in Mbps (1-1000)
<cbs>	- Committed Burst Size (CBS) in bytes {16384..1048576}
<pir>	- Peak Information Rate (PIR) in Mbps. (1-1000)
<pbs>	- Peak Burst Size (PBS) in bytes {16384..1048576}
{none|pbit|dscp}	- Yellow frame remarking.
<remarking value>	- Enter new value for yellow frame {pbit:0..7, dscp:0..64}

Example:

```
RT>create bwprofile 1/rt1/sfp testbw1 portvlancos 1 7 100 16384 110 16384 none
```

3.4.5.2 Show bandwidth profile

<u>Command:</u>

show config Ethernet bwprofile
{1..16|ALL}[/{CO|RT[1..4]|ALL}[/{1..3|SFP|ICC|ALL}[/{1..4090|ALL}[/{0..7|ALL}]]]]

<u>Example:</u>

```
RT>show config ethernet bwprofile all


Name                   Type          Slot Unit Port VLAN ID CoS  CIR    CBS    PIR    PBS    Remark Yellow Yellow
                                                            (Mbps) (Bytes) (Mbps) (Bytes)     P-Bit  DSCP
------------------------------ ------------ ---- ---- ---- ------- --- ------ ------- ----- ------- ------ ------ ------
testbw1                PortVlanCoS    1 RT1  SFP    1  7  100  16384  110  16384  NONE
RT>
```

3.4.5.3 Configure bandwidth profile

<u>Command:</u>

configure ethernet bwprofile {1..16}[/{CO|RT[1..4]}[/{1..3|SFP|ICC}[/{1..4090}[/{0..7}]]]]

cbs   - Configure bandwidth profile entry Committed Burst Size

cir   - Configure bandwidth profile entry Committed Information Rate (CIR)

name   - Configure bandwidth profile entry name

pbs   - Configure bandwidth profile entry Peak Burst Size.

pir   - Configure bandwidth profile entry Peak Information Rate (PIR).

remark   - Configure bandwidth profile remarking of yellow frames

<u>Output:</u>

```
RT> configure ethernet bwprofile 1/rt1/sfp/1/7 cir 100
```

3.4.5.4 Delete bandwidth profile

<u>Command:</u>

delete bwprofile {1..16}[/{CO|RT[1..4]}[/{1..3|SFP|ICC}[/{1..4090}[/{0..7}]]]]

<u>Output:</u>

```
RT> delete bwprofile 1/rt1/sfp/1/7
RT>
```

3.4.5.5 Create flow counter

Command:

create flowcounter {1..16}/{CO|RT[1..4]}/{1..3|SFP|ICC} <name>
{port|portvlan|portvlancos} <vlanid> <cos>

<name>	- Bandwidth profile entry name
port	- Port-type bandwidth profile
portvlan	- Port+VLAN type bandwidth profile
portvlancos	- Port+VLAN+CoS type bandwidth profile
vlan ID	- 1-4090
cos	- 0-7

Output:

```
RT> create flowcounter 1/rt1/sfp testfc1 portvlancos 1 7
RT>
```

3.4.5.6 Show flow counter

Command:

show config Ethernet flowcounter
{1..16|ALL}[/{CO|RT[1..4]|ALL}[/{1..3|SFP|ICC|ALL}[/{1..4090|ALL}[/{0..7|ALL}]]]]

Output:

```
RT>show config ethernet flowcounter all

Name                          Type         Slot Unit Port VLAN ID CoS


------------------------------ ------------- ---- ---- ---- ------- ---
testfc1                       PortVlanCoS    1 RT1   SFP     1  7
RT>
```

3.4.5.7 Configure flow counter

Only the name can be changed.

Command:

configure ethernet flowcounter {1..16}[/{CO|RT[1..4]}[/{1..3|SFP|ICC}[/{1..4090}[/{0..7}]]
name <name>

Output:

```
RT> configure ethernet flowcounter 1/rt1/sfp/1/7 name test2
RT>
```

3.4.5.8 Delete flow counter

Command:

delete flowcounter {1..16}[/{CO|RT[1..4]}[/{1..3|SFP|ICC}[/{1..4090}[/{0..7}]]

Output:

```
RT> delete flowcounter 1/rt1/sfp/1/7
RT>
```

3.5   NAT (NETWORK ADDRESS TRANSLATION)

To enable NAT, you must set the proper service type.

Command: configure ethernet servicetype 1 nat

NAT consists of 1 WAN interface with a visible IP (public IP) and up to 4 LAN interfaces with private IPs. The AK624RU will use the WAN IP for all requests going to the uplink. The LAN IP (private) will be hidden to other devices connected upstream of the WAN port (DSL or SFP).

The WAN interface IP can be set manually (static IP).

The LAN interfaces can act as a DHCP server to provide IP addresses to end users.

It possible to create up to 4 DHCP servers, one for each LAN (1 untagged + 3 with VLANs). The IP range that can be used depends on the network mask when the LAN was created. The server will validate and reject IP range that includes any existing static IPs.

3.5.1 General

Command:

show config nat

Output:

```
RT>show config nat
NAT Configuration
-----------------
SFP port network interface: LAN


WAN
---
WAN IP Address          :
WAN Network Mask        : 255.255.255.0
WAN VLAN ID             : Untagged
WAN Allow ICMP          : NO
WAN Management from WAN  : NO
WAN Port Forwarding Rules : No rules defined


LAN 194.1.1.1
-------------
LAN IP Address          : 194.1.1.1
LAN Network Mask        : 255.255.255.0
LAN VLAN ID             : Untagged
LAN Name                : test-lan1
LAN DHCP Enabled        : NO
LAN DHCP IP Start       :
LAN DHCP IP End         :
LAN DHCP Lease Time (Minutes) : 1440
LAN DHCP Primary DNS    :
LAN DHCP Secondary DNS  :
LAN DHCP Static Client Table : No clients defined
RT>
```

3.5.1.1 SFP port assignation: LAN or WAN

By default, The SFP port belongs to the LAN interface. It is possible to use the SFP as an uplink by assigning the port to the WAN interface.

Command:

configure nat port 1/rt1/SFP networkintfc {lan|wan}

Output:

```
RT>configure nat port 1/rt1/SFP networkintfc lan
RT>
```

3.5.2 LAN Options

3.5.2.1 Create LAN

By default, no LAN is created; you must create at least one LAN to use NAT. The AK624RU supports up to 4 LANs. Only one LAN can be untag, the others must be set with a VLAN tag. Note: A LAN is not tied to a specific port, port 1-2 and SFP can have access to all LANs.

<u>Command:</u>

create nat lan <IP> <MASK> {1..4090|pritag|untag} <name>
> <1..4090> : VLAN number
> <pritag>   : System will process VLAN tag 0
> <untag>   : No VLAN required
> <name>   : user define name

<u>Output:</u>

```
RT>create nat lan 194.1.1.1 255.255.255.0 untag test-lan1

RT>show config nat


NAT Configuration

----------------

SFP port network interface: LAN


WAN

---

WAN IP Address          :

WAN Network Mask        : 255.255.255.0

WAN VLAN ID            : Untagged

WAN Allow ICMP         : NO

WAN Management from WAN   : NO

WAN Port Forwarding Rules : No rules defined


LAN 194.1.1.1

------------

LAN IP Address           : 194.1.1.1

LAN Network Mask         : 255.255.255.0

LAN VLAN ID             : Untagged

LAN Name                : test-lan1

LAN DHCP Enabled         : NO

LAN DHCP IP Start        :

LAN DHCP IP End          :

LAN DHCP Lease Time (Minutes) : 1440

LAN DHCP Primary DNS      :

LAN DHCP Secondary DNS      :

LAN DHCP Static Client Table : No clients defined

RT>
```

3.5.2.2 Delete LAN

Command:

delete nat lan <lan IP>

Output:

```
RT> delete nat lan 194.1.1.1
RT>
```

NOTE: Please note the LAN is deleted without prompting the administrator for a confirmation.

3.5.2.3 DHCP server on LAN

3.5.2.3.1 Enabling DHCP server on LAN

Command:

configure nat lan <ipaddr> dhcp

{disable|enable|iprange|leasetime|primarydns|secondarydns|staticclient}

disable   - Disable LAN DHCP server

enable   - Enable LAN DHCP server

iprange   - Configure LAN DHCP server's client pool IP range. <starting IP> <ending IP>

leasetime   - Configure LAN DHCP server's lease time in minutes. (Minimum is 60 minutes. 1 day=1440)

primarydns   - Configure LAN DHCP server's primary DNS IP address

secondarydns   - Configure LAN DHCP server's secondary DNS IP address

staticclient   - Configure NAT LAN DHCP static client table

Output:

```
RT>configure nat lan 196.10.1.1 dhcp iprange 196.10.1.100 196.10.1.200
RT>
```

3.5.2.3.2 View DHCP IP leases

Command:

show dhcp leases

Output:

```
RT>show dhcp leases
DHCP leases for lan 194.1.1.1
----------------------------
Mac Address      IP Address    Host Name      Expires in


RT>
```

3.5.2.3.3 Show static client entry

Command:

show config nat

Output:

```
~

LAN 194.1.1.1
-------------
LAN IP Address          : 194.1.1.1
LAN Network Mask         : 255.255.255.0
LAN VLAN ID             : Untagged
LAN Name                : test-lan1
LAN DHCP Enabled          : NO
LAN DHCP IP Start          :
LAN DHCP IP End           :
LAN DHCP Lease Time (Minutes) : 1440
LAN DHCP Primary DNS        :
LAN DHCP Secondary DNS       :
LAN DHCP Static Client Table  : Client MAC Address Client IP Address Name          Enabled
                : ----------------- ----------------- ------------------------------- -------
                : 00:00:00:00:01:01  194.1.1.200     test-pc1           YES
RT>
```

3.5.2.3.4 Create static client entry

<u>Command:</u>

create nat lan <LAN ipaddr> dhcpstaticclient <MAC address xx:xx:xx:xx:xx:xx> <client ipaddr> <name>

<u>Output:</u>

```
RT>create nat lan 196.10.1.1 dhcpstaticclient 00:e0:9a:00:00:ef 196.10.1.101 staticuser101
RT>show config nat


NAT Configuration
------------------
SFP port network interface: LAN


WAN
---
WAN IP Address        : 192.168.10.2
WAN Network Mask       : 255.255.255.0
WAN VLAN ID          : Untagged
WAN Allow ICMP        : NO
WAN Management from WAN   : NO
WAN Port Forwarding Rules : No rules defined


LAN 196.10.1.1
--------------
LAN IP Address         : 196.10.1.1
LAN Network Mask        : 255.255.255.0
LAN VLAN ID          : 1
LAN Name           : test196
LAN DHCP Enabled       : NO
LAN DHCP IP Start       : 196.10.1.100
LAN DHCP IP End        : 196.10.1.200
LAN DHCP Lease Time (Minutes) : 1440
LAN DHCP Primary DNS     :
LAN DHCP Secondary DNS     :
LAN DHCP Static Client Table  : Client MAC Address Client IP Address Name            Enabled
             : ----------------- ---------------- ------------------------------- -------
             : 00:e0:9a:00:00:ef  196.10.1.101    staticuser101          YES
RT>
```

3.5.2.3.5 Configure static client entry

<u>Command:</u>

configure nat lan <ipaddr> dhcp staticclient <MAC address xx:xx:xx:xx:xx:xx>

disable   - Disable LAN DHCP server's static client

enable   - Enable LAN DHCP server's static client

ipaddr   - Configure IP address of the DHCP server's static client

macaddr   - Configure MAC address of the DHCP server's static client

name   - Configure name of the DHCP server's static client

<u>Output:</u>

```
RT>configure nat lan 196.10.1.1 dhcp staticclient 00:e0:9a:00:00:ef disable
RT>
```

3.5.2.3.6 Delete static client entry

<u>Command:</u>

 delete nat lan <LAN ipaddr> dhcpstaticclient <MAC address xx:xx:xx:xx:xx:xx>

<u>Output:</u>

```
RT>delete nat lan 196.10.1.1 dhcpstaticclient 00:e0:9a:00:00:ef
RT>
```

NOTE: <u>Please note this command will not prompt the administrator for a confirmation</u>

3.5.3 WAN Options

3.5.3.1 Configure WAN

icmp   - Configure NAT WAN interface ICMP filter

ipaddr   - Configure NAT WAN interface IP address and network mask

mgmt   - Configure NAT WAN interface management filter

portforward   - Configure NAT WAN interface port forwarding rules

vid   - Configure NAT WAN interface VLAN ID

3.5.3.2 Configure wan IP address

Command:

configure nat wan ipaddr <ipaddr> <mask>

Output:

```
RT>configure nat wan ipaddr 10.10.10.1 255.255.255.0
RT>
```

3.5.4 Device Management from WAN Interface

By default, management access from the WAN is disable. The AK624 will not respond to ping or CLI/Web/XML requests.

3.5.4.1 Allow/block responses to ping requests

Command:

Configure nat wan icmp {enable|disable}

Output:

```
RT>configure nat wan icmp enable
RT>
```

3.5.4.2 Allow/block management access CLI/Web/XML

Command:

Configure nat wan mgmt {enable|disable}

Output:

```
RT>configure nat wan mgmt enable
RT>
```

3.5.5 NAT Port Forwarding

When enabling NAT, all traffic from LAN to WAN will be translated, but traffic from session originating from the WAN to the LAN will be dropped unless you create port forwarding rules.

3.5.5.1 Show port forwarding WAN to LAN

<u>Command:</u>

Show config nat

<u>Output:</u>

```
WAN
---
WAN IP Address        :
WAN Network Mask       : 255.255.255.0
WAN VLAN ID          : Untagged
WAN Allow ICMP        : NO
WAN Management from WAN  : NO
WAN Port Forwarding Rules :   Port(s) Fwd IP Address[:Port]  Proto Name              Enabled
             : ---------- -------------------- ------- ------------------------------ -------
             : 49000-49001 194.1.1.111        TCP+UDP test1             YES
```

3.5.5.2 Create Port forwarding WAN to LAN

Port range   - Client IP address on LAN-side on which the data is forwarded to (and optionally, destination port)

TCP|UDP|TCP+UDP   - Specify protocol

Name   - The name for the port forwarding rule

<u>Command:</u>

create nat wan portforward <port range> <dest IP:port> {TCP|UDP|TCP+UDP} <name>

<u>Output:</u>

```
RT>create nat wan portforward 100-111 196.10.1.101 TCP+UDP user101
RT>
```

NOTE: You cannot specify a destination port for rules that are using port range

3.5.5.3 Modify Port forwarding WAN to LAN

<u>Command:</u>

configure nat wan portforward <port range> <options>

clientip - Configure NAT WAN interface port forwarding rule client IP/destination port

disable   - Disable NAT WAN interface port forwarding rule

enable   - Enable NAT WAN interface port forwarding rule

name   - Configure NAT WAN interface port forwarding rule name

portrange   - Configure NAT WAN interface port forwarding new port range

proto   - Configure NAT WAN interface port forwarding protocol

<u>Output:</u>

```
RT>configure nat wan portforward 100-111 disable
```

NOTE: <u>Please note that the administrator will not be prompted to confirm this command</u>

3.5.5.4 Delete Port forwarding WAN to LAN

<u>Command:</u>

delete nat wan portforward <port range>

Port range   - Client IP address on LAN-side on which the data is forwarded to (and optionally, destination port)

<u>Output:</u>

```
RT>delete nat wan portforward 100-111
RT>
```

NOTE: <u>Please note that the administrator will not be prompted to confirm this command</u>

3.6 DIAGNOSTICS

3.6.1 Alarms

3.6.1.1 Active alarms

Command:

Show alarm active {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

Output:

```
RT>show alarm active all

Sev Unit Entity   Slot XSPAN ID Port MA/MEG MEP  Alarm                         SvAff Date/Time
--- ---- -------- ---- -------- ---- ------ ---- ----------------------------------- ----- -------------
NA  RT1  ETHERNET 1    1        2              Link Down                     YES  2015-06-12 04:36:41
NA  RT1  ETHERNET 1    1        SFP            Link Down                     YES  2015-06-12 04:36:41
```

3.6.1.2 Alarm history

Command:

Show alarm history {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

Output:

```
RT>show alarm history all

Sev Unit Entity   Slot XSPAN Port MA/  MEP  Alarm                           SvAff First Date/Time    Last Date/Time
Occur
          ID    MEG
--- ---- -------- ---- ----- ---- ---- ---- ----------------------------------- ----- ------------------ ------------------- -----
CR  RT1  XSPAN    1    1              Loss of Signal                  YES  2015-06-12 04:36:46 2001-06-12 04:38:07 2
NA  RT1  ETHERNET 1    1    2         Link Down                       YES  2015-06-12 04:36:41 2001-06-12 04:36:41 1
NA  RT1  ETHERNET 1    1    SFP       Link Down                       YES  2015-06-12 04:36:41 2001-06-12 04:36:41 1
NA  RT1  COM      1    1              System Reboot                   YES  2015-06-12 04:36:37 2001-06-12 04:36:37 1
```

3.6.1.3 Logs

<u>Command:</u>

Show alarm log {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

<u>Output:</u>

```
RT>show alarm log all


Sev Unit Entity   Slot XSPAN ID Port MA/MEG MEP  Alarm                              SvAff Active Date/Time
--- ---- -------- ---- -------- ---- ------ ---- ----------------------------------- ----- ------ --------------------
CR  RT1 XSPAN   1   1                         Loss of Signal                   YES  NO   2015-06-12 04:39:38
CR  RT1 XSPAN   1   1                         Loss of Signal                   YES  YES  2015-06-12 04:38:07
CR  RT1 XSPAN   1   1                         Loss of Signal                   YES  NO   2015-06-12 04:38:02
CR  RT1 XSPAN   1   1                         Loss of Signal                   YES  YES  2015-06-12 04:36:46
NA  RT1 ETHERNET 1   1        2              Link Down                        YES  YES  2015-06-12 04:36:41
NA  RT1 ETHERNET 1   1        SFP            Link Down                        YES  YES  2015-06-12 04:36:41
NA  RT1 COM     1   1                         System Reboot                    YES  YES  2015-06-12 04:36:37
```

3.6.1.4 Clear Logs

<u>Command:</u>

clear log

<u>Output:</u>

```
RT>clear log
RT>
```

> ***NOTE:*** <u>Please note that the administrator will not be prompted to confirm this command</u>.

3.6.2 PM Counters

3.6.2.1 Ethernet Statistics

3.6.2.1.1 Ethernet Port statistics summary report

<u>Command:</u>

Show pm ethernet summary {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

     Specify the Slot/Unit/Port

<u>Output:</u>

```
Counter        Slot Unit Port    Slot Unit Port    Slot Unit Port    Slot Unit Port
-------------- ------------------ ------------------ ------------------ ------------------
          1   RT1  1
-------------- ------------------ ------------------ ------------------ ------------------
Time           2015/06/13 02:49:19
State          UP
Resolved       YES
Speed          1000
Duplex         FULL
In Frames             162637
Out Frames                 4
In Errors              0
Discarded Pkts          0
In Octets          50854536
Bad Octets             0
Undersize              0
Oversize               0
Fragments              0
Align Errors           0
Jabber                 0
Collision              0
LAG group ID               0
Actor Sys ID      00:00:00:00:00:00
Partner Sys ID    00:00:00:00:00:00
LACP Rx state   NA
LACP Mux state  NA
```

3.6.2.1.2 Ethernet Port Statistics Detailed Report

<u>Command:</u>

show pm ethernet detail {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

<u>Output:</u>

```
RT>show pm ethernet detail 1/rt1/1


In and Out Parameters

Counter        Slot Unit Port  Slot Unit Port  Slot Unit Port  Slot Unit Port

--------------- --------------- --------------- --------------- ---------------

         1   RT1  1

--------------- --------------- --------------- --------------- ---------------

In Unicast Pkts       80518

In Broadcasts           0

In Pause               0

In Multicasts        83203

In Octets        51193451

In 64 Octets           0

In 127 Octets        80519

In 255 Octets        2684

In 511 Octets          0

In 1023 Octets       80518

In Max Octets          0

Out Unicasts           0

Out Broadcasts          0

Out Pause              0

Out Multicasts         4

Out Octets           424

Out 64 Octets          0

Out 127 Octets         0

Out 255 Octets         0

Out 511 Octets         0

Out 1023 Octets        0

Out Max Octets         0
```

3.6.2.1.3 Clear Ethernet counters

Command:

clear pm ethernet-counters {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

Output:

```
RT>clear pm ethernet-counters all
RT>
```

> **NOTE**: Please note the administrator will not be prompted to confirm this command.

3.6.2.2 Bandwidth Profile Statistics

3.6.2.2.1 Bandwidth profile statistics report

Command:

show pm ethernet bwprofile {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

Specify the Slot/Unit/Port

Output:

```
RT>show pm ethernet bwprofile all

Slot Unit Port VLAN ID CoS Switch Port    Total In    In Green    In Yellow     In Red    Total Out
---- ---- ---- ------- --- ----------- -------------- -------------- -------------- -------------- --------------
  1  RT1  2    222        2      0          0          0            0          0
                   IXS1       0                                    0
RT>
```

3.6.2.2.2 Clear bandwidth profile counters

Command:

clear pm ethernet bwprofile {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

Output:

```
RT>clear pm ethernet bwprofile all
RT>
```

> **NOTE:** Please note the administrator will not be prompted to confirm this command.

3.6.2.3 Flow Counter Statistics

3.6.2.3.1 Flow Counter statistics report

Command:

show pm ethernet flowcounter {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

Specify the Slot/Unit/Port

Output:

```
RT>show pm ethernet flowcounter all

Slot Unit Port VLAN ID CoS Switch Port      Total In     Total Out
---- ---- ---- ------- --- ----------- -------------- ---------------
  1  RT1   1              1         0          0
                    IXS1          0          0

  1  RT1   2   22         2          0          0
                    IXS1          0          0
RT>
```

3.6.2.3.2 Clear Flow counters

Command:

clear pm ethernet flowcounter {CCA|CCB|1..16}[/{CO|RT[1..4]}/{1..3|SFP|ALL}

Output:

```
RT>clear pm ethernet flowcounter all
RT>
```

NOTE: Please note the administrator will not be prompted to confirm this command.

3.6.2.4   XSPAN PM

3.6.2.4.1 XSPAN summary report

Command:

show pm xspan summary {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/ {1..4|ALL}

Output:

```
RT>show pm xspan summary 1/rt1/1


XSPAN Summary

Time Period       Slot/   State   Capacity Rate  Capacity Rate   Standard    US0    Bandplan   VDSL2 VDSL2
TX Rate RX Rate Tx Frames      Rx Frames     Tail Drops
         Unit/       Ds      Ds     Us     Us            Mask           Limit Profile Kbps    Kbps
         XSPAN ID      Kbps   Kbps  Kbps   Kbps                      Mask
------------------ -------- -------- ------- ------ -------- ------   ----------- -------- ----------- ----- ------- ------- ------- ----------    ----- --
------------ ----------
06/13/2015 22:16:55 1 /RT1/1 DATA      308884 243660    93700 82391 VDSL2       NA     NA          NA   17a
0    0         1       0       0
```

3.6.2.4.2 Display XSPAN Current 15 Min PM information

Command:

show pm xspan current15min {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

Output:

```
RT>show pm xspan current15min 1/rt1/1


XSPAN Current 15 Minutes

Ending Time      Slot Unit XSPAN ID ES  SES UAS Min Cap Max Cap Min Rate Max Rate EFS  TX Rate RX Rate
Interval                       Kbps  Kbps  Kbps   Kbps   %   Kbps   Kbps
------------------ ---- ---- -------- --- --- --- ------- ------- ------- -------- ----- ------- -------
06/13/2015 22:22:50 1   RT1      1  0  0  0 297896 318775  243660  243660 100.0    0     0
```

3.6.2.4.3 Display XSPAN Current 24 hour PM information

Command:

show pm xspan current24hr {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

Output:

```
RT>show pm xspan current24hr 1/rt1/1


XSPAN Current 24 Hours
Time      Slot Unit XSPAN ID ES   SES  UAS  Min Cap Max Cap Min Rate Max Rate EFS  TX Rate RX Rate
Interval                    Kbps  Kbps  Kbps  Kbps   %   Kbps  Kbps
---------- ---- ---- -------- ----- ----- ----- ------- ------- -------- -------- ----- ------- -------
10/16/2015 1   RT1  1       18   5   0  796291 835568 682020  682020 100.0   0    0
RT>
```

3.6.2.4.4 Display XSPAN Historical 15 Min PM information

The AK624RU will keep up to 97 bins (96 + current) of 15 minutes to cover 24 hours.

Command:

show pm xspan history15min {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

Output:

```
RT>show pm xspan history15min 1/rt1/1


XSPAN History 15 Minutes
Ending Time    Slot Unit XSPAN ID ES  SES UAS Min Cap Max Cap Min Rate Max Rate EFS  TX Rate RX Rate
Interval                    Kbps  Kbps  Kbps  Kbps   %   Kbps  Kbps
---------------- ---- ---- -------- --- --- --- ------- ------- -------- -------- ----- ------- -------
10/16/2015 15:57 1   RT1  1       0  0  0  820977 821350 682020  682020 100.0   0    0
10/16/2015 15:45 1   RT1  1       0  0  0  820926 821404 682020  682020 100.0   0    0
10/16/2015 15:30 1   RT1  1       0  0  0  820856 821346 682020  682020 100.0   0    0
10/16/2015 15:15 1   RT1  1       7  1  0  796291 835082 682020  682020 99.1    0    0
10/16/2015 15:00 1   RT1  1       0  0  0  820814 821321 682020  682020 100.0   0    0
```

3.6.2.4.5 Display XSPAN Historical 24 hour PM information

The AK624RU will keep up to 8 bins (7 + current) of 1-day to cover 7 days.

Command:

show pm xspan history24hr {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

Output:

```
RT>show pm xspan history24hr 1/rt1/1


XSPAN History 24 Hours

Ending     Slot Unit XSPAN ID ES    SES   UAS   Min Cap Max Cap Min Rate Max Rate EFS   TX Rate RX Rate
Time                            Kbps  Kbps  Kbps  Kbps    %     Kbps    Kbps

---------- ---- ---- -------- ----- ----- ----- ------- ------- -------- -------- ----- ------- -------
10/16/2015 1   RT1  1        18    5     0  796291 835568  682020   682020 100.0    0       0
10/15/2015 1   RT1  1         0    0     0  820803 821918  682020   682020 100.0    0       0
10/14/2015 1   RT1  1         0    0     0  821046 821848  682020   682020 100.0    0       0
10/13/2015 1   RT1  1         0    0     0  821174 821972  682020   682020 100.0    0       0
10/12/2015 1   RT1  1         0    0     0  821071 821957  682020   682020 100.0    0       0
10/11/2015 1   RT1  1         0    0     0  821256 822131  682020   682020 100.0    0       0
10/10/2015 1   RT1  1         0    0     0  821165 822159  682020   682020 100.0    0       0
10/09/2015 1   RT1  1        29    6     0  782297 835397  681871   682020 100.0    0       0
RT>
```

3.6.2.4.6 Reset PM

Command:

reset pm {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

Output:

```
RT>reset pm all
RT>
```

NOTE: Reset pm will clear all pm counters for XSPAN and pairs.

3.6.2.5   XSPAN Pair PM

3.6.2.5.1 Display XSPAN pair summary report

<u>Command:</u>

show pm xspan rt-pair summary {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

<u>Output:</u>

```
RT>show pm xspan rt-pair summary 1/rt1/all


XSPAN RT Pair Summary

ELL stands for Electrical Loop Length

Time Period      Slot/   Slot/        State   Capacity Rate  Margin Capacity Rate  Margin Delay INP      G.INP  INP
Rs Overhead ELL

             Pair/   Remote Pair/       Ds     Ds     Ds    Us     Us     Us    ms    (*250us) State   REIN    %
(dB)

             Unit    Unit            Kbps   kbps  dB   Kbps   kbps  dB                 (*250us)

-------------------- -------- ------------ -------- -------- ------ ------ -------- ------ ------ ----- -------- -------- -------- ----------- ----
06/13/2015 22:36:01 1/RT1/1  Unknown      LOS     0      0    0.0     0      0    0.0    0       0.0 INACTIVE          0
0.0  0.0

06/13/2015 22:36:01 1/RT1/2  Unknown      ACTIVE   97624  75702  8.1  29790  26224   5.9     6     2.5
INACTIVE     0     20.0  0.0

06/13/2015 22:36:01 1/RT1/3  Unknown      ACTIVE  101975  82407  8.1  32088  27703   6.2     6     2.0
INACTIVE     0     20.0  0.0

06/13/2015 22:36:01 1/RT1/4  Unknown      ACTIVE   98409  85551  9.9  31903  28464   6.1     6     2.0
INACTIVE     0     17.9  0.0
```

3.6.2.5.2 Display XSPAN pair Current 15 Min PM information

<u>Command:</u>

show pm xspan rt-pair current15min {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

<u>Output:</u>

```
RT> show pm xspan rt-pair current15min all


XSPAN RT Pair Current 15 Minutes
Time              Slot Unit Pair CS  ES  SES UAS LEFTRS Min    Max    Min    Max    Min   Max   EFS
Interval                                       Cap    Cap    Rate   Rate   Mar   Mar   %
                                               (Kbps) (Kbps) (Kbps) (Kbps) (dB)  (dB)
------------------- ---- ---- ---- --- --- --- --- ------ ------ ------ ------ ------ ----- ----- -----
10/16/2015 16:08:14 1   RT1   1  96  0   0   0     0 98953  99088  85151  85151  3.4   3.5 100.0
10/16/2015 16:08:14 1   RT1   2  1   0   0   0     0 108443 108548 85744  85744  4.9   5.0 100.0
10/16/2015 16:08:14 1   RT1   3  11  0   0   0     0 102919 103028 84387  84387  3.8   3.8 100.0
10/16/2015 16:08:14 1   RT1   4  27  0   0   0     0 94633  94858  84069  84069  4.4   4.5 100.0
10/16/2015 16:08:14 1   RT1   5  2   0   0   0     0 101194 101311 86000  86000  5.6   5.6 100.0
10/16/2015 16:08:14 1   RT1   6  0   0   0   0     0 107165 107176 85514  85514  7.0   7.0 100.0
10/16/2015 16:08:14 1   RT1   7  0   0   0   0     0 102499 102589 84210  84210  6.5   6.5 100.0
10/16/2015 16:08:14 1   RT1   8  2   0   0   0     0 105013 105013 86945  86945  7.8   7.8 100.0
RT>
```

3.6.2.5.3 Display XSPAN pair Current 24 hour PM information

Command:

show pm xspan current24hr {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

Output:

```
RT> show pm xspan rt-pair current24hr all


XSPAN RT Pair Current 24 Hours
Time              Slot Unit Pair CS    ES    SES  UAS  LEFTRS Min    Max    Min    Max    Min   Max   EFS
Interval                                        Cap   Cap   Rate   Rate  Mar   Mar   %
                                                (Kbps) (Kbps) (Kbps) (Kbps) (dB)  (dB)
------------------- ---- ---- ---- ----- ----- ----- ----- ------ ------ ------ ------ ------ ----- ----- -----
10/16/2015 16:09:19 1   RT1   1 10688   3    2    0    0 91836 104457 85151  85151  0.5  5.3 100.0
10/16/2015 16:09:19 1   RT1   2  78   13   11    0    0 101812 111298 85744  85744  2.6  5.8 100.0
10/16/2015 16:09:19 1   RT1   3 1340    3    0    0    0 98611 105199 84387  84387  2.6  4.3 100.0
10/16/2015 16:09:19 1   RT1   4 1769    5    2    0    0 89758 97461 84069  84069  2.6  5.0 100.0
10/16/2015 16:09:19 1   RT1   5  85    0    0    0    0 99531 102157 86000  86000  5.1  5.8 100.0
10/16/2015 16:09:19 1   RT1   6  68    0    0    0    0 106263 107188 85514  85514  6.4  7.3 100.0
10/16/2015 16:09:19 1   RT1   7  55    0    0    0    0 101233 103218 84210  84210  5.4  6.9 100.0
10/16/2015 16:09:19 1   RT1   8  89    0    0    0    0 105013 105013 86945  86945  7.2  8.2 100.0
RT>
```

3.6.2.5.4 Display XSPAN pair Historical 15 Min PM information

The AK624RU will keep up to 97 bins (96 + current) per pair of 15 minutes to cover 24 hours.

Command:

show pm xspan rt-pair history15min {CCA|CCB|1..16}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

Output:

```
RT>show pm xspan rt-pair history15min 1/rt1


XSPAN RT Pair History 15 Minutes
Time         Slot Unit Pair CS ES  SES UAS LEFTRS Min   Max   Min   Max   Min  Max  EFS
Interval                             Cap   Cap   Rate  Rate  Mar  Mar  %
                                    (Kbps) (Kbps) (Kbps) (Kbps) (dB)  (dB)
---------------- ---- ---- ---- --- --- --- --- ------ ------ ------ ------ ------ ----- ----- -----
10/16/2015 16:12 1   RT1   1   148 0  0  0  0 98922 99088 85151 85151 3.4  3.5 100.0
10/16/2015 16:00 1   RT1   1   249 0  0  0  0 98941 99104 85151 85151 3.4  3.5 100.0
10/16/2015 15:45 1   RT1   1   199 0  0  0  0 98953 99092 85151 85151 3.4  3.5 100.0
10/16/2015 15:30 1   RT1   1   207 0  0  0  0 98914 99046 85151 85151 3.4  3.5 100.0
10/16/2015 15:15 1   RT1   1   223 1  1  0  0 94070 104321 85151 85151 0.5  5.2 99.8
10/16/2015 15:00 1   RT1   1   182 0  0  0  0 98964 99112 85151 85151 3.4  3.5 100.0
10/16/2015 14:45 1   RT1   1   225 0  0  0  0 98910 99088 85151 851--MORE--
```

3.6.2.5.5 Display XSPAN pair Historical 24 hour PM information

The AK624RU will keep up to 8 bins (7 + current) per pair of 1-day to cover 7 days.

<u>Command:</u>

show pm xspan rt-pair history24hr {CCA|CCB|1..16}[/{CO|RT[1..4]|ALL}/{1..4|ALL}

<u>Output:</u>

```
RT>show pm xspan rt-pair history24hr 1/rt1


XSPAN RT Pair History 24 Hours
Time       Slot Unit Pair CS   ES   SES  UAS  LEFTRS Min   Max   Min   Max   Min  Max  EFS
Interval                            Cap  Cap  Rate   Rate  Mar   Mar   %
                                    (Kbps)(Kbps)(Kbps)(Kbps)(dB) (dB)
---------- ---- ---- ---- ----- ----- ----- ----- ------ ------ ------ ------ ------ ----- ----- -----
10/16/2015 1  RT1   1 10746   3    2    0    0 91836 104457 85151 85151  0.5  5.3 100.0
10/15/2015 1  RT1   1 13791   0    0    0    0 98929 99260 85151 85151  3.5  3.5 100.0
10/14/2015 1  RT1   1 13812   0    0    0    0 98926 99252 85151 85151  3.5  3.5 100.0
10/13/2015 1  RT1   1 14400   0    0    0    0 98953 99248 85151 85151  3.5  3.5 100.0
10/12/2015 1  RT1   1 13264   0    0    0    0 98937 99248 85151 85151  3.5  3.5 100.0
10/11/2015 1  RT1   1 13048   0    0    0    0 98953 99283 85151 85151  3.5  3.5 100.0
10/10/2015 1  RT1   1 13034   0    0    0    0 98918 99333 85151 8--MORE--
```

3.6.2.5.6 Reset PM

<u>Command:</u>

reset pm {CCA|CCB|1..16|ALL}[/{CO|RT[1..4]|ALL}

<u>Output:</u>

NOTE: <u>Please note the administrator will not be prompted to confirm this command</u>

Reset pm will clear all pm counters for XSPAN and pairs.

3.6.3 Tests

3.6.3.1   Ping

Command:

ping <A.B.C.D>

Output:

```
RT>ping 192.168.10.2
PING 192.168.10.2 (192.168.10.2): 56 data bytes
64 bytes from 192.168.10.2: seq=0 ttl=64 time=0.650 ms
64 bytes from 192.168.10.2: seq=1 ttl=64 time=0.453 ms
64 bytes from 192.168.10.2: seq=2 ttl=64 time=0.419 ms
64 bytes from 192.168.10.2: seq=3 ttl=64 time=0.419 ms
64 bytes from 192.168.10.2: seq=4 ttl=64 time=0.421 ms


--- 192.168.10.2 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.419/0.472/0.650 ms
RT>
```

NOTE: Host name not supported. Must be an IP address.