

ASE Troubleshooting Guide

FAULT TRACING DIRECT.

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1 Overview

This guide contains troubleshooting information and card deployment and initialization solutions for Advanced Services Engine (ASE) cards for SmartEdge® 400, 600, 800, 1200 and 1200H routers.





2 Installing and Activating the ASE Card

To install and activate an ASE card:

1. Insert the ASE card into an open slot in the SmartEdge router. You cannot use the slot reserved for Cross-Connect Route Processor (XCRP) Controller cards.
2. Enter configuration mode, and activate the card by using the **card** command; for example:

```
[local]Redback# configure
Enter configuration commands, one per line, 'end' to exit
[local]Redback(config)# card ase 5
[local]Redback(config-card)# no shutdown
[local]Redback(config-card)# commit
Transaction committed.
[local]Redback(config-card)#
```

3. Verify the ASE card status and ensure that the system recognizes the card by using the following commands to view detailed hardware information:
 - **show chassis**— See Section 2.1 on page 3.
 - **show chassis power**— See Section 2.2 on page 4.
 - **show hardware**— See Section 2.3 on page 5.
 - **show hardware card slot detail**— See Section 2.4 on page 5.

2.1 Verify ASE Card Status

You can run on-demand diagnostics (ODD) to determine the ASE card status; see Section 5.1 on page 15.

You can also use the **show chassis** command to verify the ASE card status and ensure recognition by the system.

Table 1 describes the Initialized flags in the **show chassis** command output .

Table 1 Initialized Flags for ASE

Initialized Flag	Comments
Yes	ASE card is configured with the card ase slot command and is booting up.
Yes R	ASE card is inserted in slot slot in a ready state.
Yes P1UR	ASP1 Data Plane (DP) cores are ready and processes started.

**Table 1** *Initialized Flags for ASE*

Initialized Flag	Comments
Yes P1P2UR	ASP1 and ASP2 DP cores are ready and processes started. P1 corresponds to the first ASP and P2 to the second. U corresponds to the ASE card (meaning it is up), and R signifies the ASE card is traffic ready.
No	<ul style="list-style-type: none"> No card is loaded. If the Installed-type output field displays the output field none, it is possible that a card is loaded, but unsupported versions of the software or firmware are installed. See Upgrade Software and Firmware Manually.

The following example displays the ASE information in the output for the **show chassis** command.

```
[local]Redback# show chassis
Current platform is SE800e
(Flags:
  A-Active Crossconnect      B-Standby Crossconnect      C-SARC Ready
  D-Default Traffic Card     E-EPPA Ready                G-Upgrading FPGA
  H-Card Admin State SHUT    I-IPPA Ready                M-FPGA Upgrade Required
  N-SONET EU Enabled         O-Card Admin State ODD      P-Coprocessor Ready
  P1-ASP1 Ready              P2-ASP2 Ready              R-Traffic Card Ready
  S-SPPA Ready               U-Card PPAs/ASP UP         W-Warm Reboot
  X-XCRP mismatch)
```

Slot: Configured-type	Slot: Installed-type	Initialized Flags
1 : atm-oc3-4-port	1 : none	No
2 : none	2 : ase	No
3 : none	3 : none	No
4 : ge-10-port	4 : ge-10-port	Yes IEUDR
5 : ase	5 : ase	Yes P1P2UR
6 : none	6 : none	No
7 : xcrp4-base	7 : xcrp4-base	Yes A
8 : xcrp4-base	8 : xcrp4-base	Yes B
9 : ge-10-port	9 : ge-10-port	Yes IEUR
10 : ge-10-port	10 : ge-10-port	Yes IEUR
11 : ase	11 : ase	Yes P1P2UR
12 : none	12 : none	No
13 : none	13 : none	No
14 : none	14 : none	No

2.2 Check Available Power

Use the **show chassis power** command to check the power available and ASE card status fulfillment.

The following example shows ASE cards in slots 5 and 9 in a SmartEdge 800 chassis, and the Power Available output as 546.24 Watts (11.38 A@-48V):



```
[local]Redback#show chassis power
```

```
Power Capacity: 1920.00 Watts (40.00 A@-48V) + 10% Tolerance
Power Allocated: 1565.76 Watts (32.62 A@-48V)
Power Available: 546.24 Watts (11.38 A@-48V)
```

Slot	Configured-type	Required Watts	Allocated A@-48V	Power Watts	A@-48V	Status
N/A	fan_and_alarm	142.56	2.97	142.56	2.97	full
1	: none	n/a	n/a	96.00	2.00	low
2	: none	n/a	n/a	96.00	2.00	low
3	: ge-10-port	141.60	2.95	141.60	2.95	full
4	: none	n/a	n/a	96.00	2.00	low
5	: ase	175.20	3.65	175.20	3.65	full
6	: none	n/a	n/a	96.00	2.00	low
7	: xcrp3	41.28	0.86	41.28	0.86	full
8	: xcrp3	41.28	0.86	41.28	0.86	full
9	: ase	175.20	3.65	175.20	3.65	full
10	: none	n/a	n/a	96.00	2.00	low
11	: none	n/a	n/a	96.00	2.00	low
12	: ge3-4-port	107.52	2.24	107.52	2.24	full
13	: none	n/a	n/a	96.00	2.00	low
14	: none	n/a	n/a	96.00	2.00	low

2.3 View System Hardware Summary

Use the **show hardware** command to display a summary of all system hardware. An uninitialized card results in a Temp output of N/A; an initialized card shows NORMAL.

To view details of a specific card, see Section 2.4 on page 5.

The following example shows ASE cards in slots 2, 5, and 11:

```
[local]Redback# show hardware
```

```
Fan Tray Status      Present
Fan(s) Status       Normal
Power Supply A Status Normal
Power Supply B Status No Power
Active Alarms        Chassis power failure - side B
```

Slot	Type	Serial No	Rev	Ver	Mfg Date	Voltage	Temp
N/A	backplane	8Y014070500574	1	4	29-AUG-2005	N/A	N/A
N/A	fan tray	9W024070500550	2	4	29-AUG-2005	N/A	N/A
2	ase	E10S5030800070	19	4	04-FEB-2008	N/A	N/A
4	ge-10-port	A922D290721752	22	4	17-JUL-2007	OK	NORMAL
5	ase	E101D5208D05TX	1	4	26-DEC-2008	OK	NORMAL
7	xcrp4-base	D201D350821261	0	4	31-AUG-2008	OK	NORMAL
8	xcrp4-base	D202G360840549	0	4	11-SEP-2008	OK	NORMAL
9	ge-10-port	A962G340740073	62	4	01-SEP-2007	OK	NORMAL
10	ge-10-port	A921S080604302	21	4	26-AUG-2006	OK	NORMAL
11	ase	E102D1609D0AJP	2	4	29-APR-2009	OK	NORMAL

2.4 View Card Status Details

Use the **show hardware card slot detail** command to verify the status of the card specified by the **slot** variable and ensure its recognition by the system.



Table 2 describes output fields for the **show hardware card slot detail** command that determine if the ASE card has been initialized.

Table 2 *show hardware card <slot> detail Outputs*

Output Field	Uninitialized	Initialized
Card Status	HW detected	HW initialized
Standby LED	Invalid	Off
Active LED	Invalid	On

The following example displays output for an uninitialized ASE card:

```
[local]Redback# show hardware card 2 detail

Slot           : 2                      Type           : ase
Serial No      : E10S5030800070        Hardware Rev    : 00S
EEPROM id/ver  : 0x5a/4                 Mfg Date       : 04-FEB-2008
Voltage        : N/A                   Temperature    : N/A
Card Status    : HW detected            POD Status     : Success
ODD Status     : Not Available          Active LED     : Invalid
Fail LED       : Invalid
Standby LED    : Invalid
Chass Entitlement : All (0x0)
Ports Entitled : All
Active Alarms  : N/A
```

The following example shows output for an initialized ASE card:

```
[local]Redback# show hardware card 5 detail

Slot           : 5                      Type           : ase
Serial No      : E101D5208D05TX        Hardware Rev    : 01
EEPROM id/ver  : 0x5a/4                 Mfg Date       : 26-DEC-2008
Voltage 1.200V : 1.201 (+0%)            Voltage 1.800V  : 1.797 (-0%)
Voltage 2.500V : 2.505 (+0%)            Voltage 3.300V  : 3.262 (-1%)
Voltage nanV   : 0.000 (+0%)            Temperature    : NORMAL (45 C)
Card Status    : HW initialized          POD Status     : Success
ODD Status     : Not Available          Active LED     : On
Fail LED       : Off
Standby LED    : Off
Chass Entitlement : All (0x0)
Ports Entitled : All
Active Alarms  : NONE
```



3 Software and Firmware Upgrade

To view information about the software version, enter the **show version** command. To view different levels of detailed hardware information, enter the **show chassis** or **show hardware** commands, in any mode.

If the SmartEdge OS, Open Firmware, or minikernel software are not compatible, the SmartEdge OS does not recognize the ASE card. For compatible software versions, see the *General Troubleshooting Guide*.

The following example shows the output of the **show version** and **show chassis** commands for supported software and firmware versions. ASE cards are located in slots 5 and 11:

```
[local]Redback# show version

Redback SmartEdge OS Version SEOS-6.1.5.3-Release
Built by sysbuild@SWB-node14 Fri Dec 4 14:05:46 PST 2009
Copyright (C) 2009, Redback Networks Inc. All rights reserved.
System Bootstrap version is Mips,rev2.0.2.42
Installed minikernel version is 11.7
Router Up Time - 5 days, 23 hours 59 minutes 44 secs

[local]Redback# show chassis
Current platform is SE800s
(Flags:
  A-Active Crossconnect      B-Standby Crossconnect      C-SARC Ready
  D-Default Traffic Card     E-EPPA Ready                G-Upgrading FPGA
  H-Card Admin State SHUT    I-IPPA Ready                M-FPGA Upgrade Required
  N-SONET EU Enabled         O-Card Admin State ODD      P-Coprocessor Ready
  P1-ASP1 Ready              P2-ASP2 Ready              R-Traffic Card Ready
  S-SPPA Ready               U-Card PPAs/ASP UP         W-Warm Reboot
  X-XCRP mismatch)

Slot: Configured-type      Slot: Installed-type      Initialized Flags
-----
1 : none                  1 : none                  No
2 : none                  2 : none                  No
3 : none                  3 : none                  No
4 : none                  4 : none                  No
5 : ase                   5 : ase                   Yes P1P2UR
6 : none                  6 : none                  No
7 : xcrp                  7 : xcrp                  Yes A
8 : xcrp                  8 : xcrp                  Yes B
9 : none                  9 : none                  No
10 : none                 10 : none                 No
11 : ase                  11 : ase                   Yes P1P2UR
12 : none                 12 : none                  No
13 : none                 13 : none                  No
14 : none                 14 : none                  No
```

Note: Unsupported software or firmware versions result in the ASE card initialized flags showing no loaded card.

The following example shows sample output for the **show version**, **show chassis**, or **show hardware** commands where unsupported software or firmware is in use:

```
Slot: Configured-type      Slot: Installed-type      Initialized Flags
-----
5 : none                  5 : none                  No
```



3.1 Upgrade Software and Firmware Manually

XCRP or ASE card problems may require a manual software or firmware (Boot ROM and Minikernel) upgrade. For the compatible firmware versions for your SmartEdge OS release, see *General Troubleshooting Guide*.

3.1.1 Prerequisites

You must perform the following procedures before upgrading the software or firmware.

For more information about upgrading software and firmware, see *Installing the SmartEdge OS*.

3.1.1.1 Accessing the Open Firmware Mode

To manually upgrade software and firmware, you access the Open Firmware mode (also known as the Boot ROM shell) CLI.

To access the Open Firmware mode CLI through the controller card console port on the front of each controller card:

1. Enter the `reload` command (in exec mode) from the console port.
2. Watch the reload progress messages carefully. When the following message appears, type `se*` within five seconds:

```
Auto-boot in 5 seconds - press se* to abort, ENTER to boot:
```

If you type `se*` within 5 seconds, the OpenBoot `ok` prompt appears. The system sets the autoboot time limit to 5 seconds; however, during some operations, such as a release upgrade, the system sets the time limit to 1 second to speed up the process, then returns it to 5 seconds when the system reboots. If you missed the time limit, the reload continues; start again with Step 1.

The following example shows the output on the terminal console when you are accessing the BootROM shell:



Welcome to SmartFirmware(tm) for Ericsson PowerPC Copyright (c) 1999-2005 by Ericsson AB.
version 1.0b1272

SmartFirmware(tm) Copyright 1996-2000 by CodeGen, Inc.
All Rights Reserved.

Executing POST

```

PPC0 L2 Cache Test : PASSED
Sandisk Screen Test : PASSED
  Bridge Test : PASSED
  PPC SDRAM Test : PASSED
  SCC SDRAM Test : PASSED
Serial(16552) Test : PASSED
Ethernet Test : PASSED
ISA Bridge Test : PASSED
  Forte Test : PASSED
  Opus Test : PASSED
  Max Test : PASSED
  Bits Test : PASSED
  SCC Test : PASSED
Compact Flash Test : PASSED
  PC Card Test : PASSED

```

PASSED Loop 1 of 1, 2009/06/14 00:44:06

POST PASSED

Auto-boot in 3 seconds - press se* to abort, CR-CR to boot: aborted (Enter se* at this point.

ok

3.1.1.2 Setting the Required Environment Download Parameters

The following information must be correct to set required environment download parameters:

- IP address
- Gateway address
- File Transfer Protocol (FTP)/Trivial FTP (TFPT) server IP address

The following example shows the command sequence to set the required environment download parameters in the BootROM shell. After each instance of the **setenv** command, the Boot ROM shell responds with the parameter it set.

```

ok setenv ip-addr 10.18.19.18:255.255.255.0      [setting the IP address and subnet mask]
ip-addr = 10.18.19.18:255.255.255.0
ok
ok setenv gateway-ip-addr 10.18.19.254          [setting the Gateway]
gateway-ip-addr = 10.18.19.254
ok
ok setenv server-ip-addr 155.53.12.7            [Setting the FTP/TFPT server address]
server-ip-addr = 155.53.12.7
ok
ok printenv                                     [Displays the configured parameters]

```

Variable	Value	(Default Value)
vx-config-flags	0x0	(0x0)
vx-other	0x7a	(0x7a)
vx-startup-script		()
vx-target-name		()
vx-host-name		()
verbose-output?	true	(true)
ignore-cfgfile?	false	(false)
update-ofw?	false	(false)
user-auth?	true	(true)
gateway-ip-addr	10.18.19.254	()
server-ip-addr	155.53.12.7	()
ip-addr	10.18.19.18:255.255.255.0	()
mac_addr	00:30:88:00:00:50	(00:30:88:00:00:50)



3.1.2 Loading the Required Minikernel Version

To load the required minikernel version, enter the `upgrade minikernel url` command.



4 Advanced Services Processor Provisioning

Note: For more information about ASPs, see *Advanced Services Startup, Failure, and Recovery*.

Table 4 describes the potential statuses of the Advanced Services Processor (ASP) after completed provisioning and shows the associated output.

Table 3 Advanced Services Processor Status

ASP Provision Status	Message Received in Output
Provisioned but not assigned on an ASP group.	The Operating State is up. The Group is (none). The Active or Backup is unassigned.
Not ready. ⁽¹⁾	The Operating State is perm-failure.
Ready and working.	The Configured ASPs are: 1. 5/1 (up/unassigned) 2. 5/2 (up/unassigned)
Provisioned and assigned on an ASP group	The Operating State is up. The Active or Backup is active. The Assigned ASPs and Configured ASPs are: 1. 5/1 (up/active) 2. 5/2 (up/active)
Provisioned and assigned on an Active/Standby ASP group setup	For the ASP ID : 5/1 group: • The Operating State is up. • Active or Backup is shared backup. For the ASP ID : 11/1 group: • The Operating State is up. • The Active or Backup is shared backup.

(1) This status results if the ASP is still booting or has a problem.

4.1 ASP Traffic Information and Statistics

You can display ASP statistics and system information using the `show security asp slot/asp-id statistics [packet slot | system]` command.

The following example shows ASP packet statistics for the ASP in slot 4, port 1. The statement, Packets QOS Dropped: 4251034 implies ingress congestion, so low priority packets are dropped.



```
[local]Redback#show security asp 4/1 statistics packet 4
Slot 4 :
```

Ingress:

```
Packets: 74441621
Error Packets: 0
Packets QOS Dropped: 4251034
Bytes Processed: 10098440687
QOS Bytes Dropped: 569781196
```

Packet Distribution:

Packet-Length(Bytes)	Number-of-Packets
64	29169485
65-127	14577145
128-255	22462175
256-511	0
512-1023	3981782
1024-1518	0
Greater than 1518	0

Egress:

```
Packets: 20626403
Bytes: 3185917175
```

```
[local]Redback#show security asp 5/2 statistics packet 4
Slot 4 :
```

Ingress:

```
Packets: 74812298
Error Packets: 0
Packets QOS Dropped: 4252393
Bytes Processed: 10147312712
QOS Bytes Dropped: 570237889
```

Packet Distribution:

Packet-Length(Bytes)	Number-of-Packets
64	29331613
65-127	14649760
128-255	22578819
256-511	0
512-1023	3999713
1024-1518	0
Greater than 1518	0

Egress:

```
Packets: 20479581
Bytes: 3165843587
```

4.2 Collect show tech-support Command Output for ASE Cards

To view the output of the **show** commands available for an ASE card, enter the **show tech-support ase** command from the XCRP controller card. This command consolidates the output of the various show commands for troubleshooting.

For information about the areas covered in the basic and focussed versions of the command, see *Data Collection Guideline for the SmartEdge Router*

Table 4 lists the commands run by the **show tech-support ase** command (a macro that runs a series of **show** commands). Information is shown for each ASP.



Note: Some commands in the `show tech-support ase` macro do not appear in the CLI and are used by customer support for troubleshooting. They are not supported for customer use outside the macro.

Table 4 Show Commands in the show tech-support ase Command

Command	Comments
<code>show version</code>	SmartEdge OS version for ASE cards.
<code>show chassis</code>	Chassis line card summary.
<code>show dpmon all</code>	Summary status of DPs.
<code>show disk</code>	Summary of CompactFlash (CF) card on the ASE card.
<code>show disk internal</code>	CF card details.
<code>show memory</code>	Summary of the CP memory.
<code>show sharedmemory detail</code>	Shared memory details.
<code>show process</code>	Summary of processes running on CP.
<code>show process hidden_all</code>	Hidden processes information.
<code>show process hidden_all detail</code>	Detailed hidden process information.
<code>show process detail</code>	Details of all processes running on CP.
<code>show process crash-info</code>	Crash information for ASE processes, if any.
<code>show ipc process</code>	Summary of Interprocess Communication (IPC) usage by SmartEdge OS processes.
<code>show log</code>	Summary log since bootup.





5 ASE Card Failure, Debugging, and Recovery

The following sections describe debugging and recovery processes you can use when an ASE card fails.

5.1 Is it a Hardware Problem? (Running ODD)

Note: Power-on diagnostic (POD) tests are run when an ASE boots up. After provisioning ASPs, you can run ODD tests to check the state of an ASE card. If a component fails to pass POD or ODD tests, you might need to replace it. Contact your local technical support representative for more information about the results of a failed test.

If ASE memory errors are found, perform one of the following actions:

- If there were any multibit errors during the memory testing, RMA the card immediately.
- If there were only single bit errors during the memory testing, RMA the card at the next scheduled service period if a replacement is not available now.

To determine the status of an ASE card after a failure, run ODD to determine if the failure is hardware related. For more information about ODD, see *General Troubleshooting Guide*.

Before you run ODD on an ASE card, you must remove the card from service. To get full results for tests, at least one ASP must be provisioned.

To remove the ASE card from service and run ODD on it:

1. In global configuration mode, enter the `card ase slot` command.
2. Enter the `shutdown` command.
3. Enter the `on-demand-diagnostic` and `end` commands.
4. In exec mode, enter the `diag on-demand card slot level level-num loop loop-num` command.

The four test levels perform the following tests:

- 1—Tests all components and performs a short memory test, similar to POD tests (completed in 5 to 10 seconds)



- 2—Level 1 tests with additional comprehensive memory test (completed in 5 to 10 minutes)
- 3—Level 1 and 2 tests with additional internal data path testing (completed in 10 to 15 minutes)
- 4—Level 1, 2, and 3 tests and tests the entire card using external loopbacks; must be run on site with external loopback cables installed (completed in 15 to 20 minutes)

The `loop loop-num` construct specifies that tests are run from 1 to 10 times.

To return the ASE card to service:

1. In global configuration mode, enter the `card ase slot` command.
2. Enter the `no on-demand diagnostic` command.
3. Enter the `no shutdown` command and `end` commands

When ODD is run on an ASE card, it tests both the overall card functionality and the card components. You cannot run ODD on a particular ASP.

You can observe the resulting tests as they are run in the log from the CLI by entering the `terminal monitor` command before starting these steps.

To view the results of the ODD tests, enter the `show diag on-demand` command.

For level 1, the following output displays when an ASE2 card is functional:

```
[local]Redback#show diag on-demand card 10 detail
```

Slot	Type	POD Status (Enabled)
10	ase2	PASS
	Start at 03:33:17 03/23/2011	
	Card Type Valid	PASS
	SCL Hub	PASS
	Verify Card Type	PASS
	Verify EEPROM Check Sum	PASS
	ADT 7461-1 Register Test	PASS
	ADT 7461-2 Register Test	PASS
	Nautilus Register Test	PASS
	Nautilus Config	PASS
10	ase2 - CPU 1	PASS
	OFW ASP Post Code Test	PASS
	OFW ASP Card Results Test	PASS
10	ase2 - CPU 2	PASS
	OFW ASP Post Code Test	PASS
	OFW ASP Card Results Test	PASS

In this example, the first section is card-level information and the other two sections show test results for the ASPs.



5.2 Debugging Stuck ASPs After an ASE Card Failure

After an ASE card failure, one or both ASPs may become stuck in OFW mode or may not come up, for the following reasons:

- ASPs are stuck at the OK prompt.
- The Connection Points (CP) are up but some or all DP cores did not come up.
- ASPs are continuously reloading.

To determine the reason for this problem:

1. Run the **show chassis** command.

To view sample output of the **show chassis** command and the meaning of the initialized flags, see *Verify ASE Card Status*.

If the card is stuck at the OK prompt, the initialized **yes** flag appears, indicating that the ASPs are not up. If only one ASP is up, a **P?** flag is set in the position of the down ASP. If the ASP is continuously reloading, these flags toggle.

2. Document the situation that caused the ASE card problem, the results of the diagnostic steps, and the observed results, and then contact your customer support representative.
3. If you can access the CLI, enter the **show tech-support ase** command.
4. Reload the ASE card using the **reload card slot soft-reset** command. You can also reload the card by using the **no card** and **card** commands. This method has greater impact on service.

For more information about using this command, see the *Command List*.

5. If you see an ASP prompt, enter the **show log** command at the prompt to show the status of the DP cores and processes that started.

If the DPs fail to come up, the command stalls, indicating that the DPs are not booting up, but the CP cores are up.

6. Submit a Customer Support Request and attach the **show tech-support ase** command output and the system logs and crash dump files. For more information about submitting a customer service request (CSR), see *Data Collection Guideline for the SmartEdge Router*

5.3 Recovering After an XCd or L4L7d Restart

Sometimes after an XCd or L4L7d process restart, mini-pm is not updated. In this state, ASPs are up and communication occurs, but XCRP and ASP processes are not synced.



To sync XCRP and ASP processes and update the mini-pm:

1. Use the CLI `show asp detail` command to view the Operating State output field. The Operating State reports perm-failure.
2. Enter the `show tech-support ase` command and save the output for technical support. Document the situation that caused the ASP problem.
3. Use the `reload card slot processor ID soft-reset` command to perform a soft reset of the ASP to recover it from this initialization failure state.

Note: Use caution when resetting ASPs repeatedly or frequently. An error may result in which the ASE card and ASPs are up and appear to be configured, but data cannot be communicated and is dropped. If such an error occurs, contact your technical support representative.

4. Contact your customer support representative, giving detailed steps and the output of the `show tech-support ase`, `show asp detail`, and `show proc` commands.



6 Deep Packet Inspection Information and Statistics

SmartEdge OS documentation lists all **show** commands available for debugging the Deep Packet Inspection (DPI) feature. This section describes frequently used commands for debugging or gathering information. Both Broadband Remote Access Server (BRAS)-level subscribers **show** commands and DPI-specific commands are used.

6.1 View Active Subscriber DPI Information

Use the **show subscribers active all** command to retrieve information about DPI policy for subscribers. Use it for all subscribers, or for a specific subscriber by providing the username. The output field in the following example, `dpi traffic-management policy-name(applied)` provides information on individual policies applied to the specific subscriber.

```
[local]Redback#show subscribers active all
user_port2_vlan101_1
  Circuit 4/9 vLan-id 101 pppoe 41
  Internal Circuit 4/9:1023:63/6/2/125
  Interface bound pppoe_subs_1
  Current port-limit unlimited
  ip pool ip_pool1 (applied from sub_default)
  ip address 16.1.0.6 (applied from pool)
  timeout idle 35400000 (applied from sub_default)
  dpi traffic-management dpi_pol_01 (applied from sub_default)
user_port2_vlan101_2
  Circuit 4/9 vLan-id 101 pppoe 42
  Internal Circuit 4/9:1023:63/6/2/126
  Interface bound pppoe_subs_1
  Current port-limit unlimited
  ip pool ip_pool1 (applied from sub_default)
  ip address 16.1.0.7 (applied from pool)
  timeout idle 35400000 (applied from sub_default)
  dpi traffic-management dpi_pol_01 (applied from sub_default)
```

6.2 View Subscriber-to-ASP Mapping

Use the **show security circuits username user** command to show subscriber-to-ASP mapping information.

Note: This is a context-specific command. Check that the output field `USER_BOUND` is `true` to ensure a proper association to the ASP; see the following example:



```
[local]Redback#context isp1 show security circuits username user1@isp1
```

```
CCT      = 6/1:1023:63/1/2/11
ctxt-id  = 40080002
pg-id    = 1
vsg-id   = 2
sm-cct   = 6/1:1023:63/1/2/11
sm-pg-id = 1
sm-asp-id = 5/1
asp-homing-attempts = 1
asp-homing-history  = 5/1,
asp-homed           = true
user_id             = 3000000b
user_name           = user1@isp1
dpi_policy          = p1
FLAGS:
  SEND_USER_BIND      -> false
  SEND_USER_UNBIND    -> false
  SEND_UNBIND_PREV    -> false
  USER_BOUND          -> true
  SEND_ISM_CCT_CFG    -> false
  SEND_ISM_CCT_UNCFG  -> false
```

6.3 View DPI Subscriber Information

Use the **show dpi card slot/asp-id traffic-management statistics subscriber** command to view DPI-bound subscribers at the ASP level. This command provides a cumulative count:

```
[local]Redback#show dpi card 5/1 traffic-management statistics subscriber
Current Subscriber Count: 24000
Maximum Subscriber Count: 24000
Subscribers Per Profile:
  Profile-Name      Subscriber-Count
  dpi_pol_01        24000
```

The following example shows the output for all subscribers:

```
[local]Redback#show subscribers summary all
-----
Total=48000

Type      Authenticating      Active      Disconnecting
PPP        0                0            0
PPPoE      0            48000        0
DOT1Q      0                0            0
CLIPs      0                0            0
ATM-B1483  0                0            0
ATM-R1483  0                0            0
Mobile-IP  0                0            0
```

6.4 View DPI Protocol Matching Information

The following example shows protocol matching information for an ASP:



```
[local]Redback#show dpi card 5/1 traffic-management statistics protocol yahoo-messenger
Protocol: yahoo-messenger
Packets Received: 43135812
Bytes Received: 5762860962
Packets Dropped: 0
Bytes Dropped: 0
Flow Count: 13778
Packets Inspected: 14818
Packets Rate Limited: 0
Packets Sent: 43135811
Bytes Sent: 5762860779
[local]Redback#show dpi card 5/1 traffic-management statistics protocol bit-torrent
Protocol: bit-torrent
Packets Received: 0
Bytes Received: 0
Packets Dropped: 0
Bytes Dropped: 0
Flow Count: 0
Packets Inspected: 0
Packets Rate Limited: 0
Packets Sent: 0
Bytes Sent: 0
```

6.5 DPI Application Problems

In an ASE system, packets can be dropped in a number of places, and packets may not be forwarded properly for a specific service. Use the following steps to collect troubleshooting information:

- Check that the DPI policies are configured correctly. See Check for Applied DPI Policies.
- Check to see if packets are being dropped on ASE, and determine whether this is because of overload or another issue.

6.5.1 XCRP – ASE Control Plane Issues

This section describes how to check for control plane issues and provides supporting `show` commands and sample output.

6.5.1.1 Check for Applied DPI Policies

Use the `show subscriber active username user` command to check if the DPI policy is applied. The output field `dpi traffic-management policy-name(applied)` provides the name of the policy that is applied for the subscriber.

Note: This is a context-specific command.

The following example displays the command to check the DPI policy:



```
[local]Redback#context isp1 show subscribers active username user1@isp1
user1@isp1
  Session state Up
  Circuit 6/1 vlan-id 1
  Internal Circuit 6/1:1023:63/1/2/11
  Interface bound subs
  Current port-limit unlimited
  ip address 100.1.1.1 255.255.255.252 (applied)
  dpi traffic-management policy pl (applied from sub_default)
```

If DPI policy information is incomplete in the output, ensure that all DPI is properly configured.

Verify that:

- DPI policies and rules are configured.
- The subscriber authorization profile on the Authentication, Authorization and Accounting (AAA) server has a DPI policy associated with it.
- The subscriber authorization profile is being retrieved from the AAA server.

For information and procedures for these tasks, see *Application Traffic Management Configuration and Operation*.