CHAPTER 1

Cisco 7600 Ethernet Services Plus Line Card Product Overview

This chapter provides an introduction to the Cisco 7600 Series Ethernet Services Plus (ES+) line cards and ES+ combo low queue line cards. It includes the following sections:

Introduction to the Cisco 7600 ES+ and ES+ Combo Low Queue Line Cards

The Cisco 7600 Series ES+ line cards are a multiple-fabric, fixed-port Ethernet line card for the Cisco 7600 series routers that are capable of 40 gbps full-duplex traffic forwarding using a fixed port interface design. The Cisco 7600 Series ES+ line card versions are:

- 40-port version: 7600-ES+40G3C
- 40-port version: 7600-ES+40G3CXL
- 20-port version: 7600-ES+20G3C
- 20-port version: 7600-ES+20G3CXL
- 4-port version: 7600-ES+4TG3C
- 4-port version: 7600-ES+4TGCXL
- 2-port version: 7600-ES+2TG3C
- 2-port version: 7600-ES+2TGCXL
- 2-port version: 76-ES+XT-2TG3C
- 2-port version: 76-ES+XT-2TG3CXL
- 4-port version: 76-ES+XT-4TG3C
- 4-port version: 76-ES+XT-4TG3CXL
- 20-port version: 76-ES+T-20G
- 2-port version: 76-ES+T-2TG

- 40-port version: 76-ES+T-40G
- 4-port version: 76-ES+T-4TG
- 11-port version: 76-ES+XC-20G3C
- 11-port version: 76-ES+XC-20G3CXL
- 22-port version: 76-ES+XC-40G3C
- 22-port version: 76-ES+XC-40G3CXL
- 11-port version: 76-ES+T+XC-20G
- 22-port version: 76-ES+T+XC-40G
- 8-port version: 76-ES+T-8TG
- 8-port version: 76-ES+XT-8TG

The difference between the versions are the link interface daughter cards that accept small form-factor pluggable (SFP, SFP+, or XFP[1]) optical transceivers. Additionally, each of the versions has a common baseboard card and a control processor daughter card, except for the 8 port version (76-ES+T-8TG) which has a different baseboard.

The SFP, SFP+, and XFP modules allow the line cards to be configured for different media types (copper or fiber) and different optical requirements (single mode fiber or multimode fiber) as available.

See Table 1-4 for information about which SFPs, SFP+, or XFPs are accepted on the different Cisco 7600 Series ES+ line cards.

Product Overview

The Cisco 7600 Series ES+ line cards have the following features:

The system features listed here specify some of the key performance metrics and capabilities of the line cards. The information below applies to all four line cards unless stated otherwise.

- Line rate feature processing performance with 64 byte packets for four ports of 10 GE or forty ports of GE (59.52Mpps). Note that the line card throughput is limited by the system switch fabric. The packet processor and internal sections of the line card are full line rate throughput capable for 40GbE.
- Large output buffers provide up to 200 mS of round-trip-time buffer (100 mS in each direction) per 10GE port or 10xGE ports to prevent transient output overloads from causing spurious packet loss.
- Up to 32K queues (per 10GE port or 10xGE ports) per direction for input or output queuing and scheduling.
- Programmable ingress and egress feature processing capability through the Trident.
- 40+ Mpps Layer 3 or Layer 4 forwarding, 125Mpps Layer 2 forwarding.
- Dual fabric attachment providing an aggregate bandwidth of 40Gb/s, full duplex (each fabric channel provides 20Gb/s, full duplex).
- 512-MB boot disk

1. SFP modules are optics modules with speeds lower than 10 Gbps; SFP+ and XFP modules are optics modules with speeds equal to or greater than 10 Gbps.

Cisco 7600 Series Ethernet Services Plus Line Card Product Numbers

Table 1-1 lists the Cisco product numbers for the line cards.

Table 1-1 Cisco 7600 Ethernet Services Plus Line Card Product Numbers

Description	Cisco Product Number	Field-Replaceable Unit (FRU) Product ID
20xGE SFP with DFC 3C	7600-ES+20G3C	7600-ES+20G3C=
20xGE SFP with DFC 3CXL	7600-ES+20G3CXL	7600-ES+20G3CXL=
2x10GE XFP with DFC 3C	7600-ES+2TG3C	7600-ES+2TG3C=
2x10GE XFP with DFC 3CXL	7600-ES+2TG3CXL	7600-ES+2TG3CXL=
40xGE SFP with DFC 3C	7600-ES+40G3C	7600-ES+40G3C=
40xGE SFP with DFC 3CXL	7600-ES+40G3CXL	7600-ES+40G3CXL=
4x10GE XFP with DFC 3C	7600-ES+4TG3C	7600-ES+4TG3C=
4x10GE XFP with DFC 3CXL	7600-ES+4TG3CXL	7600-ES+4TG3CXL=
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 2x10GE, XFP, DFC3C	76-ES+XT-2TG3C	76-ES+XT-2TG3C=
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 2x10GE, XFP, DFC3CXL	76-ES+XT-2TG3CXL	76-ES+XT-2TG3CXL=
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 4x10GE, XFP, DFC3C	76-ES+XT-4TG3C	76-ES+XT-4TG3C=
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 4x10GE, XFP, DFC3CXL	76-ES+XT-4TG3CXL	76-ES+XT-4TG3CXL=
20xGE with DFC 3CXL	76-ES+T-20G	76-ES+T-20G=
2x10GE with DFC 3CXL	76-ES+T-2TG	76-ES+T-2TG=
40xGE with DFC 3CXL	76-ES+T-40G	76-ES+T-40G=
4x10GE with DFC 3CXL	76-ES+T-4TG	76-ES+T-4TG=
7600 ES+XC, LAN/WAN PHY, OTN/G.709, Combo 10x1GE/ 1x10GE, DFC3C	76-ES+XC-20G3C	76-ES+XC-20G3C=
7600 ES+XC, LAN/WAN PHY, OTN/G.709, Combo 10x1GE/ 1x10GE, DFC3CXL	76-ES+XC-20G3CXL	76-ES+XC-20G3CXL=
7600 ES+XC, LAN/WAN PHY, OTN/G.709, Combo 20x1GE/ 2x10GE, DFC3C	76-ES+XC-40G3C	76-ES+XC-40G3C=
7600 ES+XC, LAN/WAN PHY, OTN/G.709, Combo 20x1GE/ 2x10GE, DFC3CXL	76-ES+XC-40G3CXL	76-ES+XC-40G3CXL=
7600 ES+XC, LAN/WAN PHY, OTN/G.709, Combo 10x1GE/ 1x10GE, DFC3CXL	76-ES+T+XC-20G	76-ES+T+XC-20G=
7600 ES+XC, LAN/WAN PHY, OTN/G.709, Combo 20x1GE/ 2x10GE, DFC3CXL	76-ES+T+XC-40G	76-ES+T+XC-40G=
8x10GE with DFC 3CXL	76-ES+T-8TG	76-ES+T-8TG=
8x10GE with DFC 3CXL	76-ES+XT-8TG3CXL	76-ES+XT-8TG3CXL=

Note The Distributed Forwarding Card (DFC) on a 7600 ES+ line card functions at the level of the lowest common denominator DFC in the system. If the only DFC in a system is a DFC 3CXL, then the system would operate at the 3CXL level. If a DFC 3CXL is configured in a system with a DFC3BXL present, then the system will function at the DFC 3BXL level. Additionally, a DFC 3CXL provides for more TCAM entries than does a DFC 3C.

Supported Platforms

Table 1-2 lists the supported router platforms for Cisco 7600 ES+ line cards:

Table 1-2 Cisco 7600 ES+ Line Card Supported Router Platforms

Cisco 7600 ES+ Line Card	Supported Platform
7600-ES+20G3C	All Cisco 7600 series routers except for the Cisco 7603 router
7600-ES+20G3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
7600-ES+2TG3C	All Cisco 7600 series routers except for the Cisco 7603 router
7600-ES+2TG3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
7600-ES+40G3C	All Cisco 7600 series routers except for the Cisco 7603 router
7600-ES+40G3CXL	Except for the Cisco 7603 router, all Cisco 7600 series routers including 7603-S.
7600-ES+4TG3C	All Cisco 7600 series routers except for the Cisco 7603 router
7600-ES+4TG3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XT-2TG3C	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XT-2TG3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XT-4TG3C	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XT-4TG3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T-20G	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T-2TG	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T-40G	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T-4TG	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XC-20G3C	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XC-20G3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XC-40G3C	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XC-40G3CXL	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T+XC-20G	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T+XC-40G	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+T-8TG	All Cisco 7600 series routers except for the Cisco 7603 router
76-ES+XT-8TG3CXL	All Cisco 7600 series routers except for the Cisco 7603 router

Cisco IOS Software Release and Hardware Revision Requirements

The Cisco 7600 ES+ line cards have certain Cisco IOS software requirements. Also, to ensure compatibility with the software, your Cisco 7600 ES+ line card should have a specific hardware revision number. The number is printed on a label affixed to the component side of the card and is displayed by the **show diag** command.

Table 1-3 lists the hardware and software requirements for Cisco 7600 ES+ line cards.

Table 1-3 Cisco 7600 ES+ Line Card and Cisco IOS Release and Hardware Version Compatibility

Cisco 7600 ES+ Line Card	Cisco Product Number	Required Hardware Version	Minimum Cisco IOS Software Release
7600 ES+ Line Card, 20xGE SFP with DFC 3C	7600-ES+20G3C	68-2868-05	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 20xGE SFP with DFC 3CXL	7600-ES+20G3CXL	68-3030-05	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 2x10GE XFP with DFC 3C	7600-ES+2TG3C	68-2867-04	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 2x10GE XFP with DFC 3CXL	7600-ES+2TG3CXL	68-3029-04	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 40xGE SFP with DFC 3C	7600-ES+40G3C	68-2869-05	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 40xGE SFP with DFC 3CXL	7600-ES+40G3CXL	68-3032-05	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 4x10GE XFP with DFC 3C	7600-ES+4TG3C	68-2866-06	Cisco IOS Release 12.2(33)SRD
7600 ES+ Line Card, 4x10GE XFP with DFC 3CXL	7600-ES+4TG3CXL	68-3031-06	Cisco IOS Release 12.2(33)SRD
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 2x10GE, XFP, DFC3C	76-ES+XT-2TG3C	68-3558-01	Cisco IOS Release 12.2(33)SRD1
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 2x10GE, XFP, DFC3CXL	76-ES+XT-2TG3CXL	68-3335-03	Cisco IOS Release 12.2(33)SRD1
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 4x10GE, XFP, DFC3C	76-ES+XT-4TG3C	68-3557-01	Cisco IOS Release 12.2(33)SRD1
7600 ES+XT, LAN/WAN PHY, OTN/G.709, 4x10GE, XFP, DFC3CXL	76-ES+XT-4TG3CXL	68-3336-03	Cisco IOS Release 12.2(33)SRD1
7600 ES+T Line Card, 20xGE SFP with DFC 3CXL	76-ES+T-20G	68-3030-06	Cisco IOS Release 12.2(33)SRD4
7600 ES+XT, LAN/WAN PHY, OTN/G.709, Low Queue, 2x10GE, XFP, DFC3CXL	76-ES+T-2TG	68-3029-05	Cisco IOS Release 12.2(33)SRD4
7600 ES+T Line Card, 40xGE SFP with DFC 3CXL	76-ES+T-40G	68-3032-06	Cisco IOS Release 12.2(33)SRD4

Table 1-3 (continued)Cisco 7600 ES+ Line Card and Cisco IOS Release and Hardware Version Compatibility (continued)

Cisco 7600 ES+ Line Card	Cisco Product Number	Required Hardware Version	Minimum Cisco IOS Software Release
7600 ES+XT, LAN/WAN PHY, OTN/G.709, Low Queue, 4x10GE, XFP, DFC3CXL	76-ES+T-4TG	68-3031-05	Cisco IOS Release 12.2(33)SRD4
7600 ES+XC Combo 10x1GE/ 1x10GE, DFC3C	76-ES+XC-20G3C	68-3168-06	Cisco IOS Release 12.2(33)SRE
7600 ES+XC Combo 10x1GE/ 1x10GE, DFC3CXL	76-ES+XC-20G3CXL	68-3169-06	Cisco IOS Release 12.2(33)SRE
7600 ES+XC Combo 20x1GE/ 2x10GE, DFC3C	76-ES+XC-40G3C	68-3166-06	Cisco IOS Release 12.2(33)SRE
7600 ES+XC Combo 20x1GE/ 2x10GE, DFC3CXL	76-ES+XC-40G3CXL	68-3167-06	Cisco IOS Release 12.2(33)SRE
7600 ES+XC Combo low queue 10x1GE/ 1x10GE, DFC3CXL	76-ES+T+XC-20G	68-4492-2	Cisco IOS 15.2(2)S
7600 ES+XC Combo low queue 20x1GE/ 2x10GE, DFC3CXL	76-ES+T+XC-40G	68-4492-1	Cisco IOS 15.2(2)S
7600 ES+T Low queue 8x 10GE, DFC3CXL	76-ES+T-8TG		Cisco IOS 15.2(4)S
7600 ES+T High queue 8x 10GE, DFC3CXL	76-ES+XT-8TG3CXL	68-4765-01	Cisco IOS 15.3(1)S

The **show diag** *slot_number*, **show version**, and **show hardware** commands display the current hardware configuration of the router, including the system software version that is currently loaded and running, and the hardware revision number. For complete descriptions of **show** commands, refer to the *Cisco IOS Configuration Fundamentals Configuration Guide* and the *Cisco IOS Configuration Fundamentals Command Reference* for the installed Cisco IOS release.

If the command displays indicate that the Cisco IOS software is a version earlier than you need, check the contents of flash memory to determine if the required images are available on your system. The **dir** *devicename* command displays a list of all files stored in flash memory. If you do not have the correct software version, contact Cisco customer service.

For software configuration information, refer to the Cisco IOS software configuration and command reference publications for the installed Cisco IOS release. Also refer to the Cisco IOS software release notes for additional information.

Modular Optics Compatibility

The Cisco 7600 Series ES+ line cards use small form-factor pluggable (SFP, SFP+, or XFP) optical transceivers to provide network connectivity. Table 1-4 provides links to tables showing the supported modules for the different Cisco 7600 Series ES+ line cards.

Table 1-4 Supported Optical Transceiver Modules

Line Cards	Supported Modules
7600-ES+20G3C	Cisco 7600 ES+ 20G3C, -20G3CXL Supported SFP Modules; see Table 2-16 on page 2-16.
7600-ES+20G3CXL	
7600-ES+2TG3C	Cisco 7600 ES+ 2TG3C, -3CXL Supported XFP Modules; see Table 2-5 on page 2-7.
7600-ES+2TG3CXL	
7600-ES+40G3C	Cisco 7600 ES+ 40G3C, -40G3CXL Supported SFP Modules; see Table 2-21 on page 2-21.
7600-ES+40G3CXL	
7600-ES+4TG3C	Cisco 7600 ES+ 4TG3C, -4TG3CXL Supported XFP Modules; see Table 2-10 on page 2-11.
7600-ES+4TG3CXL	
76-ES+XT-2TG3C	Cisco 76-ES+XT-2TG3C, -2TG3CXL Supported XFP Modules; see Table 2-26 on page 2-26.
76-ES+XT-2TG3CXL	
76-ES+XT-4TG3C	Cisco 76-ES+XT-2TG3C, -2TG3CXL Supported XFP Modules; see Table 2-31 on page 2-31.
76-ES+XT-4TG3CXL	
76-ES+T-20G	Supported SFP Modules; see Table 2-16 on page 2-16
76-ES+T-2TG	Supported XFP Modules; see Table 2-26 on page 2-26
76-ES+T-40G	Supported SFP Modules; see Table 2-21 on page 2-21
76-ES+T-4TG	Supported XFP Modules; see Table 2-31 on page 2-31
76-ES+XC-20G3C	Supported SFP Modules; see TBD; Supported XFP Modules; see TBD
76-ES+XC-20G3CXL	Supported SFP Modules; see TBD; Supported XFP Modules; see TBD
76-ES+XC-40G3C	Supported SFP Modules; see TBD; Supported XFP Modules; see TBD
76-ES+XC-40G3CXL	Supported SFP Modules; see TBD; Supported XFP Modules; see TBD
76-ES+T-8TG	Supported SFP+ Modules; see Table 2-78.
76-ES+XT-8TG	Supported SFP+ Modules; see Table 2-83

Power Management

The Cisco ES+ line cards consume chassis power; you must make sure the chassis is within the power budget on Cisco 7600 series routers. See Table 1-5.

Table 1-5 Cisco 7600 ES+ Line Card Power Consumption

Cisco 7600 Series ES+ line cards	Power Consumption (Maximum in Watts)
7600-ES+20G3C	277
7600-ES+20G3CXL	305
7600-ES+2TG3C	269
7600-ES+2TG3CXL	297
7600-ES+40G3C	391
7600-ES+40G3CXL	419
7600-ES+4TG3C	371
7600-ES+4TG3CXL	399
76-ES+XT-2TG3C	273
76-ES+XT-2TG3CXL	301
76-ES+XT-4TG3C	378
76-ES+XT-4TG3CXL	406
76-ES+T-20G	305
76-ES+T-2TG	301
76-ES+T-40G	419
76-ES+T-4TG	406
7600-ES+XC-20G3C	309
7600-ES+XC-20G3CXL	337
7600-ES+XC-40G3C	399
7600-ES+XC-40G3CXL	427
76-ES+T+XC-20G	337
76-ES+T+XC-40G	427
76-ES+T-8TG	433
76-ES+XT-8TG	433

If the power limit is exceeded, the Cisco ES+ line card is not powered up and an error message is displayed.

```
Router#%C7KPWR-SP-4-POWERDENIED:insufficient power, module in slot 3 power denied.
```

On a Cisco 7600 series router, use the **show power** command on the Route Processor to determine how much power you have available in the chassis and how much is being used or reserved by line cards, supervisor engines, and fan trays.

Note The **show power** command displays only the values programmed in the IDPROM and the IDPROM is not dynamically updated for different power values.

This is sample output for the **show power** command on a Cisco 7600 series router:

```
Router# show power

system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total =     3795.12 Watts (90.36 Amps @ 42V)
system power used =      3320.94 Watts (79.07 Amps @ 42V)
system power available =  474.18 Watts (11.29 Amps @ 42V)
                         Power-Capacity PS-Fan Output Oper
PS   Type                Watts   A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1    WS-CAC-4000W-INT   3795.12 90.36  OK     OK     on
2    none
                         Pwr-Allocated  Oper
Fan  Type                Watts   A @42V State
---- ------------------ ------- ------ -----
1    WS-C6K-13SLT-FAN2   298.20  7.10  OK
                         Pwr-Requested  Pwr-Allocated  Admin Oper
Slot Card-Type           Watts   A @42V Watts   A @42V State State
---- ------------------ ------- ------ ------- ------ ----- -----
2    7600-SIP-200        240.24  5.72   240.24  5.72  on    on
3    WS-X6724-SFP        125.16  2.98   125.16  2.98  on    on
4    7600-SIP-400        265.02  6.31   265.02  6.31  on    on
7    RSP720-3CXL-GE      354.06  8.43   354.06  8.43  on    on
8    RSP720-3C-GE        354.06  8.43   354.06  8.43  on    on
9    7600-ESM-BASE       304.92  7.26   304.92  7.26  on    on
10   7600-ES+20G3CXL     297.36  7.08   297.36  7.08  on    on
11   7600-SIP-600        341.88  8.14   341.88  8.14  on    on
12   7600-SIP-600        341.88  8.14   341.88  8.14  on    on
13   WS-X6704-10GE       398.16  9.48   398.16  9.48  on    on
Router#
```

This is sample output for the **show power** command on a Cisco 7600 series router for a 76-ES+T+XC-40G low queue combo card:

```
A3-2#show power
system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total = 2671.20 Watts (63.60 Amps @ 42V)
system power used = 1477.14 Watts (35.17 Amps @ 42V)
system power available = 1194.06 Watts (28.43 Amps @ 42V)
Power-Capacity PS-Fan Output Oper
PS Type Watts A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1 WS-CAC-6000W 2671.20 63.60 OK OK on
2 none
Pwr-Requested Pwr-Allocated Admin Oper
Slot Card-Type Watts A @42V Watts A @42V State State
---- ------------------ ------- ------ ------- ------ ----- -----
1 7600-SIP-600 341.88 8.14 341.88 8.14 on on
4 7600-ES20-GE3C 340.20 8.10 - - off off (admin request)
5 (Redundant Sup) - - 354.06 8.43 - -
6 RSP720-3CXL-GE 354.06 8.43 354.06 8.43 on on
7 7600-ES+20G3C 276.36 6.58 - - off off (admin request)
8 7600-ES20-GE3C 340.20 8.10 - - off off (admin request)
9 '76-ES+T+XC-40G' 427.14 10.17 427.14 10.17 on on
```

This is sample output for the **show power** command on a Cisco 7600 series router for a 76-ES+T+XC-20G low queue combo card:

```
A1-2#show power
system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total = 2669.10 Watts (63.55 Amps @ 42V)
system power used = 2181.90 Watts (51.95 Amps @ 42V)
system power available = 487.20 Watts (11.60 Amps @ 42V)
Power-Capacity PS-Fan Output Oper
PS Type Watts A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1 PWR-2700-AC 2669.10 63.55 OK OK on
2 none
Pwr-Allocated Oper
Fan Type Watts A @42V State
---- ------------------ ------- ------ -----
1 FAN-MOD-6HS 180.18 4.29 OK
Pwr-Requested Pwr-Allocated Admin Oper
Slot Card-Type Watts A @42V Watts A @42V State State
---- ------------------ ------- ------ ------- ------ ----- -----
1 76-ES+T+XC-20G 337.26 8.03 337.26 8.03 on on
2 WS-X6748-GE-TX 325.50 7.75 325.50 7.75 on on
3 7600-ES20-10G3CXL 340.20 8.10 340.20 8.10 on on
4 7600-SIP-600 341.88 8.14 341.88 8.14 on on
5 (Redundant Sup) - - 328.44 7.82 - -
6 WS-SUP720-3BXL 328.44 7.82 328.44 7.82 on on
```

This is sample output for the **show power** command on a Cisco 7600 series router for a 76-ES+T-8TG low queue card:

```
Router#show power
system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total =     2671.20 Watts (63.60 Amps @ 42V)
system power used =      1536.36 Watts (36.58 Amps @ 42V)
system power available = 1134.84 Watts (27.02 Amps @ 42V)
                       Power-Capacity PS-Fan Output Oper
PS   Type              Watts   A @42V Status Status State
---- ----------------- ------- ------ ------ ------ -----
1    WS-CAC-6000W      2671.20 63.60  OK     OK     on
2    none
                       Pwr-Allocated  Oper
Fan  Type              Watts   A @42V State
---- ----------------- ------- ------ -----
1    FAN-MOD-9SHS       241.50  5.75  OK
2    FAN-MOD-9SHS       241.50  5.75  OK
                       Pwr-Requested  Pwr-Allocated  Admin Oper
Slot Card-Type         Watts   A @42V Watts   A @42V State State
---- ----------------- ------- ------ ------- ------ ----- -----
2    76-ES+T-8TG        432.60 10.30   432.60 10.30  on    on
5    (Redundant Sup)      -     -      310.38  7.39  -     -
6    RSP720-3C-GE       310.38  7.39   310.38  7.39  on    on
```