



Portable Product Sheets – Cat 4k supervisors

last updated July 17, 2008 with IOS release 12.2(44)SG

Table 1. Catalyst 4x00 High Performance Layer 3 Supervisors

FEATURES	SUP IV WS-X4515=	SUP V WS-X4516=	SUP V – 10GE WS-X4516-10GE	SUP 6-E WS-X45-Sup6-E
Chassis Support	4x06/4503/4507-R	All	All except 4003	All
End-of-Sale	No	No	No	No
Redundant Capable	Yes (4507R Only)	Yes (4507R, 4510R)	Yes (4507R, 4510R)	Yes (4507R, 4510R)
High Availability	SSO/ ISSU	SSO/ ISSU	SSO/ ISSU	SSO/ NSF/ ISSU
CPU	333 MHz MPC	400 MHz MPC	800 MHz MPC	1.3 GHz
Layer 2 ASIC Used	K2	K2	K2	K5
Layer 3	Yes (no 4232-L3 Support)	Yes (no 4232-L3 Support)	Yes (no 4232-L3 Support)	Yes (no 4232-L3 Support)
L3 Hardware Protocols	IP	IP	IP	IP
L3 Software Protocols	AT/ IPX	AT/ IPX	AT/ IPX	No AT/ IPX
802.1ab LLDP & Partial LLDP-MED (for voice support)	Yes	Yes	Yes	Yes
L3 Software Support	IOS	IOS	IOS	IOS
Software Required	12.1(12c)EW	12.2(18)EW	12.2(25)EW	12.2(40)SG
Uplink Ports	GBIC (2)	GBIC (2)	2 Xenpak 10GE or 4 SFP (one type active at one time 10GE or GE)	2 X2 10GE or 4 SFP w/ Twin-Gig Converter
Active Uplinks w/ Redundant Sups	2 (ports 1/1 & 2/1)	4 (all ports)	2 10GE (any 2 ports, any Sup) or 4 GE (any 4 ports, any Sup)	4 10GE 2:1 oversubscribed or 8 GE (Twin-Gig)
NetFlow Services Card	Yes – Modular	Yes – Modular	Yes – integrated	NO
NetFlow Capacity	64,000 Flows	64,000 Flows	85,000 Flows	N/A
4510R Slot 10 Restrictions	N/A	2-port GE card or AGM only	Any C4K linecard	Any “Classic” C4K linecard, NO E series cards in slots 8, 9 & 10
Trunking	802.1Q, ISL	802.1Q, ISL	802.1Q, ISL	802.1Q
Backplane	64 Gbs	96 Gbs	136 Gbs	320 Gbs
Forwarding Capacity	48 Mpps (L2, IP, basic L3 includes PIM, RIP, static)	72 Mpps (L2, IP, basic L3 includes PIM, RIP, static)	102 Mpps (L2, IP, Basic L3 includes PIM, RIP, static)	250 Mpps (L2, IP, Basic L3 incl PIM, RIP, static, L4 TCP/ UDP)
Broadcast Suppression	Software	Hardware	Hardware	Hardware

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FEATURES (CONT.)	SUP IV WS-X4515=	SUP V WS-X4516=	SUP V – 10GE WS-X4516-10GE	SUP 6-E WS-X45-Sup6-E
"PFC-Like" TCAM	Yes	Yes	Yes	Yes (CenterFlex TCAM4)
Multicast Suppression	No	Yes	Yes	Hardware
Q-In-Q	Pass-Through	Hardware	Hardware	L2 Passthrough
External Flash Slot	Yes	Yes	Yes	Yes
Flash Capacity	64 Mbs/ 128 Mbs	64 Mbs/ 128 Mbs	64 Mbs/ 128 Mbs	64 Mbs/ 128 Mbs
Onboard Flash	64 Mbs	64 Mbs	64 Mbs	64 Mbs
Buffering	16 Mbs	16 Mbs	16 Mbs	16 Mbs
DRAM	512 Mbs	512 Mbs	512 Mbs	SDRAM 512 Mbs (upgradeable to 1 Gb)
DRAM Slots	1	1	1	1
NVRAM	512 Kbs	512 Kbs	512 Kbs	No through bootflash (64 Mbs)
Enhanced POE	N/A	N/A	N/A	20W PoE Support – WS-X4648-RJ45V-E & WS-X4648-RJ45V+E
Queue's Per Port	4	4	4	8
Ingress Policers	1024	1024	8000	16,000
Egress Policers	1024	1024	8000	16,000
Management Ports	1 RJ-45 Console 1 10/100Mbps Ethernet	1 RJ-45 Console 1 10/100Mbps Ethernet	1 RJ-45 Console 1 10/100Mbps Ethernet	1 RJ-45 Console 1 10/100/1000Mbps Ethernet
Maximum # of MAC's	32,000	32,000	55,000	55,000
Operating Temp	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
StorageTemp	-40 to 167°F (-40 to 75°C)	-40 to 167°F (-40 to 75°C)	-40 to 167°F (-40 to 75°C)	-40 to 167°F (-40 to 75°C)
Relative Humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing

Supervisor 6-E

- For additional information on the Supervisor 6-E the architecture paper can be found at http://wwwin.cisco.com/ewtg/gsbu/docs/Architecture_Overview_of_Catalyst_4500_101507.doc .

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Table 2. Catalyst 4x00 Entry Level Layer 3 Supervisors

FEATURES	SUP 2+ WS-X4013=	SUP 2+ TS WS-X4013+TS=	SUP 2+ 10GE WS-X4013+10GE=	SUP 3 WS-X4014=
Chassis Support	4x06/4503/4507-R	4503	4x06/4503/4507-R	4006
End of Sale	No	No	No	Yes (July 26, 2004)
Redundant Sup's	Yes (4507-R Only)	No	Yes (4507-R Only)	No
SSO	Yes	No	Yes	No
ISSU	Yes	No	Yes	No
CPU	266MHz MPC	266MHz MPC	667MHz	300MHz MPC8245
L2 ASIC Used	K2	K2	K2	K2
Layer 3	Included (4232-L3 unsupported)	Included (4232-L3 unsupported)	Included (4232-L3 unsupported)	Included (4232-L3 unsupported)
L3 Hardware Protocols	IP	IP	IP	IP
L3 Software Protocols	IPX, Appletalk, EIGRP Stub	IPX, Appletalk, EIGRP Stub	IPX, Appletalk, EIGRP Stub	IPX, Appletalk, EIGRP Stub
Software Support	IOS Only	IOS Only	IOS Only	IOS Only
Software Required	12.2(25)SG	12.2(25)SG	12.2(25)SG	12.1(8a)EW
Fixed Uplinks	2 GBIC	8 SFP, 12 10/100/1000 802.3af PoE	2 10GE (X2), 4 SFP	2 GBIC
Netflow Services Card	No	No	No	No
Uplinks Active When Redundant	2 (ports 1/1 and 2/1)	N/A	2 10GE (X2), 4 SFP	N/A
4510R - 10th slot	N/A	N/A	N/A	N/A
Trunking	802.1q & ISL	802.1q & ISL	802.1q & ISL	802.1q & ISL
Backplane	64 Gbps	64 Gbps	108 Gbps	64 Gbps
Forwarding Capacity	48Mpps (L2, IP, basic L3 ONLY)	48Mpps (L2, IP, basic L3 ONLY)	81Mpps (L2, IP, basic L3 ONLY)	48Mpps (L2, IP, basic L3 includes PIM, RIP, static)
"PFC-Like" TCAM	Yes (Basic)	Yes (Basic)	Yes (Basic)	Yes (Enhanced)
Broadcast Suppression	Software	Now Called Storm Control	Hardware	---
Multicast Suppression	No	Now Called Storm Control	Hardware	---
Q-in-Q	Pass-through	Pass-through	Hardware	---
External Flash Slot	Yes	Yes	Yes	Yes

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FEATURES (cont.)	SUP 2+ WS-X4013=	SUP 2+ TS WS-X4013+TS=	SUP 2+ 10GE WS-X4013+10GE=	SUP 3 WS-X4014=
Flash Card Capacity	64Mb,128Mb	64Mb,128Mb	64Mb,128Mb	64Mb,128Mb
Onboard Flash	32 Mb	32 Mb	64 Mb	64 Mb
Buffering	16 Mb	16 Mb	16 Mb	16 Mb
DRAM	256 Mb	256 Mb	256 Mb	256 Mb
DRAM Slots	1	1	1	1
NVRAM	512 Kb	512 Kb	512 Kb	512 Kb
Queues Per Port	4	4	4	4
Ingress Policers	512	512	508	1024
Egress Policers	512	512	508	1024
Management Ports	1 RJ-45 Console 1 10/100Mbps Ethernet	1 RJ-45 Console 1 10/100Mbps Ethernet	1 RJ-45 Console 1 10/100Mbps Ethernet	1 RJ-45 Console 1 10/100Mbps Ethernet
Max # of MAC's	32,000	32,000	32,000	32,000
Operating Temp	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
Storage Temp	-40 to 167°F (-40 to 75°C)	-40 to 167°F (-40 to 75°C)	-40 to 167°F (-40 to 75°C)	-40 to 167°F (-40 to 75°C)
Relative Humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing

Table 3. Catalyst 4x00 Layer 2 Supervisors

FEATURES	SUP 1 WS-X4012=	SUP 2 WS-X4013=
Chassis Support	4003	4006/ 4503
End of Sale	Yes (July 26, 2004)	Yes (May 3, 2005)
Redundant Sup's	No	No
CPU	150MHz R5000	150MHz R5000
L2 ASIC Used	K1	K1
Layer 3	Optional, using 4232-L3, 4604	Optional, using 4232-L3, 4604
Layer 3 Protocols	IP, IPX, AT	IP, IPX, AT
Software Support	CatOS Only	CatOS Only
Software Required	4.4	5.4
FEATURES (cont.)	SUP 1	SUP 2

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	WS-X4012=	WS-X4013=
Fixed Uplinks	None	2 GBIC
Trunking	802.1q	802.1q
Backplane	12 Gbps	3 x 10Gbps
Forwarding Capacity	18Mpps (L2), 6Mpps(L3/IP, using 4232-L3, 4604)	18Mpps (L2), 6Mpps(L3/IP, using 4232-L3, 4604)
"PFC-Like" TCAM	No	No
External Flash Slot	No	No
Flash Card Capacity	N/A	N/A
Onboard Flash	12MB	16MB
Buffering	8MB	24MB
DRAM	64MB	64MB
DRAM Slots	1	1
NVRAM	512KB	512KB
Queues Per Port	2	2
Ingress Policers	0	0
Egress Policers	0	0
Management Ports	1 DB-25 Console, 1 10 Mbps Ethernet	1 DB-25 Console, 1 10/100 Mbps Ethernet
Max # of MAC's	16,000	16,000
Operating Temp	32 to 104 Deg. F (0 to 40 Deg. C)	32 to 104 Deg. F (0 to 40 Deg. C)
Storage Temp	-40 to 167 Deg. F (-40 to 75 Deg. C)	-40 to 167 Deg. F (-40 to 75 Deg. C)
Relative Humidity	10% to 90%, noncondensing	10% to 90%, noncondensing

Catalyst 4x00 Supervisor 2 Notes

- Backplane performance may be increased (4006 only) in two ways –
 - Issuing the set switchacceleration enable 1 command
 - (Note that this will disable the two onboard Supervisor GE ports)
- Installing the WS-X4019= blade
- These methods may be combined, as well.

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4232-L3 Blade

- Data-plane ACL's (filters) are not configurable on any FE port, subinterface, or port-channel interfaces.
- The GE ports of this blade are the only ISL-capable ports of a Supervisor 1/2 Cat4K.
- Base IP license includes static routes, RIP, PIM, and Appletalk. Enhanced adds EIGRP and OSPF.

Jumbo (or Giant) Frames

- Supervisor 1/2 do not support frames larger than 1536 bytes.
- Supervisor 2+/3/4/5 support jumbo frames (up to 9216 bytes) on non-blocking GE ports.



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