

Portable Product Sheet - Router Perf



Last Updated: March 31, 2004

Router Switching Performance in Packets Per Second (PPS)

Numbers are given with 64 byte packet size, IP only, and are only an indication of *raw* switching performance. These are testing numbers, usually with FE to FE or POS to POS, no services enabled. As you add ACL's, encryption, compression, etc - performance will decline significantly from the given numbers, unless it is a hardware-assisted platform, such as the 7600 or 12000, which process QoS, ACL's, and other features in hardware (or when a hardware assist is installed, for instance an AIM-VPN in a 3745 will offload the encryption from the CPU). Every situation is different - please simulate the true environment to get applicable performance values.

Knowing the performance for a specific router platform is not a good indication of how well a specific feature will perform. If a feature is supported in the CEF path, for instance, and we know the feature-free CEF throughput in a specific configuration, then we only know the platform's "never-to-exceed" performance but we do not know the actual performance of any given feature, which will always be less.

All numbers are for IP packets only - no IPX/AT/DEC, etc.

Platform	Process Switching	Fast/CEF Switching	EOS?
801-5	1000 - cannot do fast switching		No
806		7,000	No
14xx	600	4,000	31-Aug-00
160x(-R)	600	4,000	28-Feb-03
1701	1,700	12,000	No
1710	1,300	7,000	No
1711/1712	1,700	13,500	No
1720	1,400	8,500	1-Aug-03
1721	1,700	12,000	No
1750	1,400	8,500	31-May-02
1751	1,500	12,000	No
1760	1,700	16,000	No
2500	800	4,400	30-Apr-02
261X	1,500	15,000	26-Apr-03
262X	1,500	25,000	26-Apr-03
265X	2,000	37,000	26-Apr-03
261X(XM)	1,500	20,000	No
262X(XM)	1,500	30,000	No
265X(XM)	2,000	40,000	No
2691	7,400	70,000	No
3620	2,000	20-40,000	31-Dec-03
3640/3640A	4,000	50-70,000	31-Dec-03
3660	12,000	100-120,000	31-Dec-03
3631	4,000	50-70,000	No
3725	7-8,000	100-120,000	No
3745	15-20,000	225-250,000	No

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Platform	Process Switching	Fast/CEF Switching	EOS?
MC3810	2,000	8,000	14-Dec-01
MC3810-V3	3,000	15,000	No
IAD2400	3,000	15,000	No
4000	1,800	14,000	10-Jul-98
4500	3,500	45,000	25-Nov-00
4700	4,600	75,000	25-Nov-00
7120	13,000	175,000	30-Nov-01
7140	20,000	300,000	30-Nov-01
7200-NPE100	7,000	100,000	30-Apr-00
7200-NPE150	10,000	150,000	30-Apr-00
7200-NPE175	9,000	177,848	15-Jul-00
7200-NPE200	13,000	200,000	1-Jan-02
7200-NPE225	13,000	233,170	No
7200-NPE300	20,000	353,000	31-Dec-01
7200-NPE400	20,000	420,000	No
7200-NPE-G1	79,000	1,018,000	No
7200-NSE-1	20,000	300,000 (Also has PXF)	No
7304-NSE-100		3,500,000 (PXF), 450,000 (non-PXF)	No
7304-NPE-G100		1,099,000	No
7301	79,000	1,018,000	No
7400	20,000	300,000 (Also has PXF)	No
7000-RP	2,500	30,000	31-Jul-97
7500-RSP2	5,000	220,000	16-Feb-03
7500-RSP4/4+	8,000	345,000	No
7500-RSP8	22,000	470,000	No
7500-RSP16	29,000	530,000	No
7500-VIP2/40	Punts to RSP	60,000-95,000	30-Apr-04
7500-VIP2/50	Punts to RSP	90,000-140,000	15-May-03
7500-VIP4/50	Punts to RSP	90,000-140,000	No
7500-VIP4/80	Punts to RSP	140,000-210,000	No
7500-VIP6/80	Punts to RSP	140,000-219,000	No

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"Punts to RSP" means that when a VIP cannot process the packets in a distributed manner (for instance, when doing MLPPP across different PA's instead of keeping the bundles on the same PA), it must push that forwarding decision and packet flow to the RSP for centralized processing. In these cases, use the RSP switching numbers.

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Platform	Process Switching	Hardware CEF Switching	EOS?
7600-MSFC2	20,000 (500,000 for software-switched CEF)	30,000,000 for central forwarding of non-DFC traffic - 15,000,000 for central forwarding of non-DFC traffic with classic linecards	No
7600-MSFC3 (Sup720)	20,000 (500,000 for software-switched CEF)	30,000,000 for central forwarding of non-DFC traffic - 15,000,000 for central forwarding of non-DFC traffic with classic linecards	No
7600-CEF256		15,000,000 per slot	No
7600-dCEF256 (6816)		24,000,000 per slot	No
7600-dCEF720		48,000,000 (sustained) per slot	No
10000-PRE1		2,800,000 (Also has 2xPXF)	No
10000-PRE2		6,200,000 (Also has 4xPXF)	No
10720	50,000	2,000,000 (Also has 2xPXF)	No
12000 (Engine 0)		400,000	No
12000 (Engine 1)		700,000	No
12000 (Engine 2)		4,000,000	No
12000 (Engine 3)		4,000,000	No
12000 (Engine 4/4+)		25,000,000	No

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The 7600 only slows centralized forwarding when a classic linecard is installed, and then only for flows that must be centrally forwarded. For instance, a system with a Sup720 with two 6748 DFC3A equipped cards has a legacy gigabit switching module installed - the 6148-GE-TX, for instance. Flows going to or originating from that card operate at 15Mpps, but flows going between the 6748's operate at full 48Mpps per slot. Therefore, distributed forwarding is unaffected by the insertion of a legacy card.