Ascend

GRF 1600

FAQ

Refer to the GRF™ 400 FAQ released with the GRF 400 product launch documentation (also listed on Ascend's website) for additional FAQs.

1. *What is the aggregate bandwidth of the GRF 1600 IP Switch?*

   The GRF 1600's switch operates at 16 Gb/s and dedicates 1 Gb/s to each of the 16 IP Forwarding Media Cards.

2. *What is the packet throughput rate of the GRF 400?*

   The GRF 1600 forwards IP packets at 10 million pps using 105-byte packets.

3. *What are the media supported by GRF?*

   The GRF 400 supports up to four and the GRF 1600 supports up to 16 of the following cards:
   - 10/100Base-T (eight or four autosensing ports per card)
   - FDDI (four ports per card)
   - CDDI (four ports per card)
   - HSSI (two ports per card)
   - ATM OC-3c (two ports per card)
   - HIPPI (one port per card)
   - IP/SONET OC-3c (one port per card)
   - ATM OC-12C (one port per card; available 2Q97)

4. *What is the difference between the GRF 1600 and the GRF 400?*

   Both the GRF 400 and GRF 1600 are designed to offer high-performance IP Switching for ISPs', on-line service providers' and carriers' IP networks. Now with the GRF 1600, network designers can choose the system that best fits their network design, budget and future plans.

   The GRF 1600 extends the capabilities of the GRF technology with a 16 Gb/s switch to support up to 16 IP Forwarding Media Cards. Since the GRF 1600 dedicates 1 Gb/s of the switch to each media card, it will scale to its fullest capacity, even when using high-performance media such as SONET and ATM.

   The GRF 1600 supports four times the number of media cards than the GRF 400 at slightly more than the price of two GRF 400s. The table below is a side-by-side feature comparison.

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Feature	GRF 400	GRF 1600
Aggregate Switch Throughput	4 Gb/s	16 Gb/s
Number of IP Forwarding Media Cards Supported	4	16
Packet Forwarding Rate	2.8 pps	10 pps
Types of IP Forwarding Media Cards Supported	• 10/100Base-T (eight or four autosensing ports per card) • FDDI (four ports per card) • CDDI (four ports per card) • HSSI (two ports per card) • ATM OC-3c (two ports per card) • HIPPI (one port per card) • IP/SONET OC-3c (one port per card) • ATM OC-12C (one port per card; available 2Q97)	Offers the same media support as the GRF 400
Size	5.25" x 19" x 19"	21" x 19" x 19"

5. *What is the difference between the GRF 1600 and the GigaRouter?*

The primary difference between the two products is that the GigaRouter was designed by NetStar for high-performance computing applications, whereas the GRF 1600 was designed by Ascend especially for Internet applications.

The GRF 1600 offers the following benefits beyond those provided by the GigaRouter:

GigaRouter Implementation	GRF 1600 Implementation	GRF 1600 Benefit
29.5" x 19" x 18.5" chassis designed for the glass house	21" x 19" x 19" chassis designed for the POP	A new, smaller cabinet better fits into the restricted space in the POP and offers superior performance/square inch. (The GRF 1600 chassis is eight inches shorter and 2788.25 cubic inches smaller than the GigaRouter chassis.)
16 Gbps switch is located on the backplane	16 Gbps switch resides on IP Switch Board	Passive backplane design improves reliability
External 133 MHz Pentium Intel PC to run operating system and to provide route management	Functions of the external PC and 10 Mbps Ethernet connection have been implemented on a single Control Board containing an Intel Pentium 166 MHz CPU • The operating system and route management software reside in RAM instead of on a hard disk.	Higher performance • Communication from Kernel to IP Forwarding Media Cards three to four times faster as a result of the elimination of the external Ethernet connection • Higher-performing CPU • Improved reliability • Hard disk replaced by flash memory
	Additional operator commands	More administrative control
	Cost-reduced chassis design	Price tailored to the budgets of Internet Service Providers to deliver industry-leading price/performance.