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HITACHI Announces Two GR2000 B Model, High-performance, Compact Routers for Broadband Services

－The world's fastest class IPv4/IPv6 packet-forwarding of approximately 1 million packets/s in a 1U-sized[*1] router－

HITACHI, Ltd. has developed and will begin selling two new GR2000 B model routers, sales of which start November 30th in Japan. The GR2000 B routers feature an 1U-sized compact form and high-performance routing for broadband services which are being rapidly introduced by businesses and local governments. Furthermore, the new routers inherit the architecture of the current GR2000 series, and thus support the most advanced QoS functions as well as providing a IPv4/IPv6 routing performance (~1 million packets/second) that ranks among the world's fastest for a 1U-sized router.

Currently, the introduction of wide-bandwidth applications , such as the World Wide Web, has been on the rise among businesses and local governments, and the use of broadband services offered by carriers, such as IP-VPN, wide-area Ethernet, and local IP exchange, has been expanding, not only in urban areas, but also among rural communities. In addition, the need for such new features as communication quality management, IPv6 support and security assurance, as well as a demand for higher reliability, has been rising with the increase in the advanced use of networks.

To meet these demands, Hitachi decided to develop and release these two 1U-sized GR2000 B, high-performance routers that offer excellent price performance, for small-to-medium sized remote facilities of companies and governmental organizations.
As the low-end models of the current GR2000 series, these new routers inherit the same hardware architecture and software used by the current GR2000 series, which were launched as Japan's first domestic gigabit routers in February,1999. This ensures the new routers will have the same stable, reliable operation attested to by the thousands of current GR2000s in service. With the addition of the two new models to the current -2S, -4S, -6H, -10H and 20H models, the GR2000 series comprises a lineup of seven models.. This enables the construction of extensive advanced networks ranging from carriers and ISP backbones to enterprises and government offices , all based on the GR2000 series.

Pricing and Availability

Model	Specification	Price	Shipping date in Japan
GR2000-1B	1-Slot Type 10/100 Ethernet port× 2 (pre-installed)	780,000 yen～	April 1, 2002
GR2000-2B	2-Slot Type 10/100 Ethernet port× 4 (pre-installed)	1,080,000 yen～	April 1, 2002

Features

1. Small Size and High Performance
    - Hardware-Based Routing. Allows a forwarding rate of approximately 1 million packets/second, which is almost 100 times the rate of small routers using software-based routing. As other functions, such as QoS control, or filtering and packet-forwarding, are also implemented in hardware, it is possible to construct low-delay/high-speed networks in the actual environment where broadband services are used.
    - Supports High-Speed Lines. Implements high-speed networks, such as Gigabit Ethernet and ATM OC-3.
    - Dynamic Routing. Uses the GR2000 routing program, with its extensive record of achievement in the area of large-scale networks. The routing protocol supports RIP, OSPF, BGP4 and Multicast, and can be applied to various networks to enable stable network operation.
    - Small and Compact. Packaged in a 1U size, the GR2000 B saves space and offers flexibility in rack mounting.

2. IPv6 Support
    - High-speed IPv6 routing is implemented in hardware. The new GR2000 B is the world's smallest router to have IPv6 hardware-based routing.
    - Supports the latest IPv6 routing protocols, such as RIPng, OSPFv3, BGP4+ and PIM-SM (IPv6 multicast protocol).

Shifting to IPv6 networks is done easily due to IPv6 shifting support features, such as dual-stack IPv4/IPv6 and tunneling, which are pre-installed in the GR2000 B. These features have already been proven on the current GR2000 models.

3. Broadband-Support Functions
    - Packet-Shaping on Ethernet. Required bandwidth can be allocated for each of several addresses on the Ethernet port connected to the wide-area LAN services. Furthermore, the minimum bandwidth can be secured for each application within this bandwidth.
    - GFR[*2] on ATM. The partial speed-securing service of ATM makes it possible to store important packets such as those relating to buckbone fanctions, in the speed-secured bandwidth (shaping).
    - PPPoE[*3]. Support is PPPoE, which is used in various broadband services, including optical access services.

Notes

1. U: Unit 1U(unit) is approximately 44.45 mm
2. PPPoE: Point-to-Point Protocol on Ethernet
3. GFR: Guaranteed Frame Rate

Trademarks

Ethernet is a product name of Xerox Corporation.

Product Information

Internet URL　http://www.hitachi.co.jp/network

Contact

－Contact for general questions about the products；

Mr. Hiroshi Kanai
Hitachi, Ltd.
Network Systems Department
Enterprise Server Division

TEL:0463 87 7496　e-mail: hiroshi.kanai@itg.hitachi.co.jp

APPENDIX

1. Specifications of the new GR2000-1B and GR2000-2B

Number of Lines Accommodated [*1]

Line Type		GR2000-1B	GR2000-2B
WAN	High-speed digital line/ISDN (Primary group) 1.5Mbit/s	1	2
	High-speed digital line/ISDN (Basic group) 64/128kbit/s	4[*2] (1) [*3]	8[*2] (2) [*3]
	Dedicated lines (V.24、V.35、X.21)	2	4
ATM	150 Mbit/s (MMF)	1[*2]	1[*2]
	25 Mbit/s	1	1
LAN	1000BASE-SX	1[*2]	1[*2]
	1000BASE-LX	1[*2]	1[*2]
	10BASE-T/100BASE-TX	6[*2] (2) [*3]	12[*2] (4) [*3]

*1: This table shows the maximum number of the lines accommodated. There are mounting limitations or conditions depending on the functions used or the combination of the mounted media.
*2: Support is planned for July 2002.
*3: The number in "( )" shows the accommodated lines which will be supported starting in April 2002.

Product Specifications

		GR2000-1B	GR2000-2B
Switching performance (Internal bus)		Approximately 2 Gbit/s (Approximately 2 Gbit/sx1)	Approximately 4 Gbit/s (Approximately 2 Gbit/sx2)
The number of the slot for mounting an interface card		1	2
Routing process (common between IPv4 and IPv6)		Hardware	
Interface (common between IPv4 and IPv6)	WAN	High-speed digital line (Basic, Primary group) Dedicated line (V.24, V.35, X.21), ISDN (Basic, Primary group), Frame relay[*1]	
	ATM	25 Mbit/s,OC-3 (150 Mbit/s)	
	LAN	10BASE-T/100BASE-TX, 1000BASE-SX, 1000BASE-LX	
Protocol		IPv4, IPv6, IPX, RIP, RIP2, OSPF, CIDR, BGP4, RIPng, OSPFv3, BGP4+,Static routing, PPP, PPPoE[*2], IPv4 multi-cast (PIM/DVMRP/IGMP), IPv6 multi-cast (PIM-SM/MLD)	
Bridge function		Spanning tree, Transparent, Translation, Filtering	
Network function (with optional functions included)		IPv4/IPv6 QoS (Priority control, Bandwidth limitation, Discard control, Diff-serv), Filtering, Line Backup (ISDN,etc.)[*1], Load balancing, Over Load[*1], Hot stand-by (VRRP)[*1], NAT (IPv4-IPv4, IPv4-IPv6)[*2], DHCP server[*2], DHCP client[*2], Packet switching (X.25)[*2], Tag-VLAN linkage, Ethernet bandwidth control[*2], Coding [*2], Policy routing, IP tunnel (IPv4 over IPv6, IPv6 over IPv4)	
Operation management		SNMP (Agent function), MIB-II/IPv6 MIB, Command line interface, Browser operation, syslog, e-mail	
Operational features of IPv6 system		Ping6, Traceroute6, telnet, rlogin, ftp, Autonomous address setting, etc.	

		GR2000-1B	GR2000-2B
Power Requirements and Physical Characteristics	Input voltage	Single-phase 100 VAC	
	Required power [VA]	170	190
	Outer dimension [W×D×H(mm)]	435 x 395x 44	
	Maximum weight [kg]	9	10

*1: Supports only IPv4 *2: Planned to be supported

2. Specification Overview for the Current GR2000 Models

			GR2000-20H	GR2000-10H	GR2000-6H	GR2000-4S	GR2000-2S	GR2000-2B	GR2000-1B
Backplane switching performance		Cross-bar switch (full double-sized capacity)	Approx. 45 Gbit/s	Approx. 25 Gbit/s	Approx. 15 Gbit/s	—			
		Internal Bus	—			Approx. 4 Gbit/s (2 Gbit/s×2)			Approx. 2 Gbit/s
The number of the installable interface cards			20	10	6	4	2	2	1
The number of the installable routing processing units			10	5	3	1			
The number of the interfaces	WAN	High-speed digital lines Basic/Primary/Secondary rate Interface	160/160/20	80/80/10	48/48/6	32/16/4	16/16/2	2 (8[*4])/2/—	1 (4[*4])/1/—
		Dedicated lines (V.24,V.35,X.21),	160	80	48	32	16	4	2
		OC-3c POS (150 Mbit/s,)	80	40	24	4	4	—	—
		OC-12c POS (600 Mbit/s)	40	20	12	1	—	—	—
		OC-48c POS (2.4 Gbit/s, 2/40/80 km)	10	5	3	—	—	—	—
		T3	40	20	12	8	4	—	—
	ATM	25Mbit/s,	20	10	6	2	2	1	1
		OC-3c(150 Mbit/s)	80	40	24	2	2	1[*4]	1[*4]
		OC-12c (600 Mbit/s)	20	10	6	—	—	—	—
	LAN	10BASE-T/100BASE-TX	160/80[*3]	80/40[*3]	48/24[*3]	32/8[*3]	20/8[*3]	4 (12[*4])/ 4 (8[*4])[*3]	2 (6[*4])/ 2 (6[*4])[*3]
		100BASE-FX (2/15/40 km)	80	40	24	8	8	—	—
		1000BASE-SX	40	20	12	1	—	1[*4]	1[*4]
		1000BASE-LX	40	20	12	1	—	1[*4]	1[*4]
		1000BASE-LH (40/80/100 km)	40	20	12	1	—	—	—
Protocol	IPv4		IPv4, RIP, RIP2, OSPF, CIDR, BGP4, PPP, Static routing, Multi-cast, (PIM-SM /DM, DVMRP, IGMP), Frame relay, Packet switching (X.25) function[*2], PPPoE[*2]						
	IPv6		IPv6, RIPng, BGP4+, OSPFv3, PPP, Static routing, Multi-cast (PIM-SM, MLD)						
	Bridge, etc.		IPX, Spanning tree, Transparent, Translation, Filtering						
Network functions (with optional functions included)			QoS (Priority control, Bandwidth control, Discard control, Diffserv), Ethernet bandwidth control, Filtering, Load balancing, Overload [*1], Line backup (ISDN, etc.) [*1], Hot stand-by(VRRP) [*1], Tag-VLAN linkage Policy routing, IP tunnel (IPv4 over IPv6, IPv6 over IPv4), NAT (IPv4-IPv4, IPv4-IPv6)[*2], DHCPserver[*2], DHCP client[*2], etc.						
			Line redundant (APS) [*1], MPLS[*1]					Coding function[*2],	
Operation management features			SNMP (Agent function), MIB- , etc., Command Line Interface (CLI), browser interface						
Operational features of IPv6 system			IPv6MIB (collectable by SNMP/IPv4), ping6, traceroute6, telnet, rlogin, ftp, Autonomous address setting), syslog, e-mail, etc.						

			GR2000-20H	GR2000-10H	GR2000-6H	GR2000-4S	GR2000-2S	GR2000-2B	GR2000-1B
High reliability			Common parts are duplicable, Power redundancy is possible			Power redundancy is possible	—		
Facility conditions	Input power (select AC or DC)	AC	Single-phase 100/200 VAC		Single-phase 100 VAC				
		DC	DC-48V			—			
	Required power [VA]		2,900	1,600	1,200	360	200	190	170
	Outer dimension [W×D×H(mm)]		440×600×890	440×600×630	440×480×360	440×480×133	440×480×88	435×395×44	
	Maximum weight [kg]		160	120	60	25	15	10	9

*1) Supports only in IPv4

*2) Planned to be supported

*3) Maximum number of 100BASE-TX which can be operated simultaneously

*4) Will be supported in July of 2002