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Refurbished CISCO M-ASR1K-RP3-8GB Datasheet

CISCO > ROUTERS

Cisco ASR 1000 Series Aggregation Services Routers

Route Processor Features, Benefits, Descriptions

Support for Cisco IOS XE Software	Supports a breadth of IP network services, including quality of service (QoS), MPLS, Layer 2 virtual private network (L2VPN), Layer 3 virtual private network (L3VPN), Application Visibility and Control, Performance Routing (PfR), AppNav infrastructure, Data Center Interconnect, Crypto and IPv6
High availability	Provides optional redundant-processor support and dual Cisco IOS Software support for single-route-processor solutions for a highly compact, fully redundant, high-availability solution
Stratum-3 clock circuitry and BITS input ports	Facilitates support of clocking for synchronous services such as SONET and SDH. BITS input ports are available on RP1, RP2 and ASR1002-X only.
Memory scalability of up to 16 GB; up to 64 GB for RP3	Allows pay-as-you-grow scalability so memory can increase as you add more users or features; the scalability offered through memory upgrades includes: Routing-table growth Additional MPLS VPN routing and forwarding instances Feature additions such as SBC and broadband aggregation (BBA)
Solid state drive support	Allows for greater storage area for code storage, boot, configurations, billing, logs, etc.
USB compact flash support	Allows for easier manageability for code storage, boot, configurations, logs, etc.
Modularity	Offers maximum investment protection and flexibility by allowing customers to upgrade to future Cisco ASR 1000 Series Route Processors Note: Cisco ASR 1002,and ASR1002-F have an integrated RP1 built into the chassis that is not upgradable. Note: Cisco ASR 1001, ASR 1001-X, and ASR 1002-X (part numbers ASR 1001, ASR 1001-X, ASR 1002-X) have an integrated RP2 built in to the chassis that is not upgradable.

Architectural Specifications

Item	Details
LAN ports	The Cisco ASR 1000 Series RP1, RP2, and RP3 have a single copper (RJ-45) 10/100/1000 management Ethernet port. For ASR 1001, 1001-X, 1001-HX, 1002, 1002-F, 1002-X, and 1002-HX, the single copper (RJ-45) 10/100/1000 management Ethernet ports are built into the chassis.
SDRAM	The Cisco ASR 1000 Series RP1 can support either 2 or 4 GB of synchronous dynamic RAM (SDRAM). Because the card holds 2 SDRAM slots, a route processor with 2 GB can hold two 1-GB dual in-line memory modules (DIMMs), whereas a route processor with 4 GB can hold two 2-GB DIMMs. The Cisco ASR 1000 Series RP2 can support either 8 or 16 GB of SDRAM. Because the card holds 4 SDRAM slots, a route processor with 8 GB can hold four 2-GB DIMMs, whereas a route processor with 16 GB can hold four 4-GB DIMMs. The Cisco ASR 1000 Series RP3 can support either 8, 16, 32, or 64 GB of SDRAM. The Cisco ASR 1001 and 1002-X built-in route processors support 4, 8, or 16 GB of SDRAM. The Cisco ASR 1001-X built-in route processor supports either 8 GB or 16 GB of SDRAM.
Hard disk drive (HDD)	The Cisco ASR 1000 Series RP1 and RP2 have a HDD for code storage, system configurations, and log files. The RP1 provides a 40-GB HDD mounted on the board itself. The RP1 HDD is field-replaceable, but not hot-swappable. The RP2 provides an 80-GB HDD that is front-mounted, field-replaceable, and hot-swappable. The RP3 provides a 100-GB SSD by default, which is upgradable to 200-GB or 400-GB. The Cisco ASR 1001, 1001-X, 1002, 1002-F, and 1002-X support built-in embedded USB (eUSB) 8 GB memory for code storage, system configurations, and log files. The ASR 1001-X supports an optional solid state drive, and the ASR 1002-X supports an optional HDD for additional code storage, system configurations, and log files.
Solid state drive (SSD)	The Cisco ASR 1001-X supports an optional SSD for additional code storage, system configurations, and log files.
USB port	One USB port is provided on the Cisco ASR 1000 Series RP1, and 2 ports are provided on the RP2 and RP3. All three route processors support 1-GB USB compact flash memory for the storage and

	portability of operating system software, system configurations, and log files.
Console and auxiliary ports	The Cisco ASR 1000 Series RP1, RP2, and RP3have built-in console and auxiliary ports. The ASR 1001, 1001-X, 1002, 1002-F, and 1002-X have built-in console and auxiliary ports on their respective chassis.

Cisco ASR 1000 Series RP1 Product Specifications

Item	
Item	Details
Chassis support	Cisco ASR 1004 and ASR 1006 chassis (Note: The Cisco ASR 1002 chassis comes with the Cisco ASR 1000 Series RP1 built into the chassis.) (Note: Cisco ASR 1001, ASR 1001-X, and ASR 1002-X (part numbers ASR1001, ASR1001-X, ASR1002-X) have an integrated Route Processor built in to the chassis that is not upgradable)
Software compatibility	Cisco IOS XE Operating System, which is based on Cisco IOS Software Release 12.2SR (Please consult your Cisco account representative for additional details.)
Software protocols	Refer to Cisco IOS Software 12.2SR protocol support
Connectivity	Console port (RJ-45 connector) Auxiliary port (RJ-45 connector) 10/100/1000 Ethernet port (RJ-45 connector) Two RJ-48 connectors for BITS input clocks
Memory options	Two 1-GB Double Data Rate 2 (DDR2) mini-DIMMs Two 2-GB DDR2 mini-DIMMs Upgradable memory from 2-GB to 4-GB DRAM
Storage options	40-GB HDD (RP1 only) 1-GB USB Compact Flash memory
Performance	Scalability up to 1,000,000 IPv4 routes or 500,000 IPv6 routes BGP RR Scalability up to 5,000,000 IPv4 routes or 3,000,000 IPv6 routes
Reliability and availability	1 + 1 redundancy in dual-route-processor configuration Support for online insertion and removal (OIR) Support for NSF and Stateful Switchover (SSO) Support for ISSU
MIBs	RFC 2737 compliant
Network management	Telnet and Secure Shell (SSH) Protocol (command-line interface [CLI]) Console port (through the CLI) Simple Network Management Protocol (SNMP) RFC 2665
LEDs	PWR - Power Green - All power rails are within specifications STAT - Status Green - Cisco IOS Software has booted Yellow - BootROM has successfully loaded Red - System failure or during boot process ACTV- Active Green - Active route processor STBY - Standby Yellow - Standby route processor CRIT - Critical Red - Critical alarm or during boot process MAJ - Major Red - Major alarm MIN - Minor Amber - Minor alarm LINK - Management Ethernet link status Solid green - Link with no activity FLASH green - Link with activity Off - No link DISK0 - Internal Compact Flash FLASH Green - Activity indicator Off - No activity DISK1 - External Compact Flash FLASH green - Activity indicator Off - No activity DISK2 - Internal HDD FLASH green - Activity indicator Off - No activity CARRIER - BITS interface Off - Out of service Green - In frame and in service Amber - Fault or loop condition
Physical dimensions (H x W x D)	0.92 x 16.7 x 14.19 in. (0.02 x 0.428 x 0.36m)

Weight	5.0 lb (2.3 kg)
Approvals and compliance	Safety UL60950-1 and CAN/CSA-C22.2 No. 60950-1-03 Information technology equipment AS/NZS 60950-1 IEC/EN 60950-1 Information technology equipment 73/23/EEC Electromagnetic Emissions Certification AS/NZ 3548: 1995 (including AMD I + II) Class B EN55022: 1998 Class B CISPR 22: 1997 EN55022: 1994 (including AMD I + II) 47 CFR Part 15: 2000 (FCC) Class B VCCI V-3/01.4 Class 2 CNS-13438: 1997 Class B GR1089: 1997 (including Rev. 1: 1999) Immunity EN300386: 2000-TNE EMC requirements; product family standard; high priority of service; central office and noncentral office locations EN50082-1: 1992/1997 EN50082-2: 1995-Generic Immunity Standard, Heavy Industrial CISPR24: 1997 EN55024: 1998-Generic ITE immunity standard EN61000-4-2: 1995 + AMD I + II ESD, Level 4/8 kV contact, 15 kV air IEC-1000-4-3: 1995 + AMD 1-Radiated Immunity, 10 V/m IEC-1000-4-4: 1995-Electrical Fast Transients, Level 4/4 kV/B IEC-1000-4-5: 1995 + AMD 1-DC Surge-Class 3; AC Surge-Class 4 EN61000-4-6: 1996 + AMD 1-RF conducted immunity, 10 Vrms EN61000-4-11: 1995-Voltage Dips and Sags ETS300 132-2: 1996 + corrigendum, December 1996 GR1089:1997 (including Rev1: 1999) Network Equipment Building Standards The module meets the following Networking Equipment Building Standards (NEBS): GR-1089-CORE GR-63-CORE European Telecommunication Standards Institute (ETSI) ETSI 300 386-1 - Levels for equipment with a "high priority of service" that is installed in "locations other than telecommunication centers" ETSI 300 386-2:1997 - Levels for equipment with a "high priority of service" that is installed in "locations other than telecommunication centers" ETSI 300 132-2: December 1994 - Power supply interfaces at the input to telecommunications equipment Sections 4.8 and 4.9
Environmental	Storage temperature: -38 to 150°F (-40 to 70°C) Operating temperature, nominal: 41 to 104°F (5 to 40°C) Operating temperature, short-term: 23 to 131°F (-5 to 55°C) Storage relative humidity: 5 to 95% relative humidity (RH) Operating humidity, nominal: 5 to 85% RH Operating humidity, short-term: 5 to 90% RH Operating altitude: -60 to 4000m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)

Cisco ASR 1000 Series RP2 Product Specifications

Item	
Item	Details
Chassis support	Cisco ASR 1004, ASR 1006, ASR 1006-X, ASR 1009-X and ASR 1013 chassis (Note: The Cisco ASR 1002 and ASR 1002 Fixed chassis come with the Cisco ASR 1000 Series RP1 built into the chassis.) (Note: Cisco ASR 1001, ASR 1001-X, and ASR 1002-X (part numbers ASR1001, ASR1001-X, ASR1002-X) have an integrated Route Processor built in to the chassis that is not upgradable)
Software compatibility	Cisco IOS XE Software, which is based on Cisco IOS Software Release 12.2SR (Please consult your Cisco account representative for additional details.)
Software protocols	Refer to Cisco IOS Software 12.2SR protocol support
Connectivity	Console port (RJ-45 connector) Auxiliary port (RJ-45 connector) 10/100/1000 Ethernet port (RJ-45 connector) RJ-48 connector for BITS input clock and output source
Memory options	Four 2-GB DDR2 mini-DIMMs Four 4 GB DDR2 mini-DIMMs Upgradable memory from 8-GB to 16-GB DRAM
Storage options	80-GB HDD (hot-swappable) 1-GB USB Compact Flash memory

Performance	With 8-GB memory: Up to 1,000,000 IPv4 routes or 1,000,000 IPv6 routes BGP RR Scalability up to 8,000,000 IPv4 routes or 6,000,000 IPv6 routes With 16-GB memory: Up to 4,000,000 IPv4 routes or 4,000,000 IPv6 routes BGP RR Scalability up to 24,000,000 IPv4 routes or 17,000,000 IPv6 routes
Reliability and availability	1 + 1 redundancy in dual-route-processor configuration Support for OIR Support for NSF and SSO Support for ISSU
MIBs	RFC 2737 compliant
Network management	Telnet and SSH (CLI) Console port (through the CLI) SNMP RFC 2665
LEDs	PWR - Power Green - All power rails are within specifications STAT - Status Green - Cisco IOS Software has booted Yellow - BootROM has successfully loaded Red - System failure or during boot process ACTV- Active Green - Active route processor STBY - Standby Yellow - Standby route processor CRIT - Critical Alarm Red - Critical alarm or during boot process MAJ - Major Alarm Red - Major alarm MIN - Minor Alarm Amber - Minor alarm HD - Internal HDD FLASH Green - Activity indicator Off - No activity USB - External Compact Flash FLASH green - Activity indicator BF - Boot Flash (Internal) FLASH green - Activity indicator Off - No activity CARRIER BITS I/F Mode Off - Out of service or not configured Green - Normal or Bridging Amber - Fast DTI Mode Off - Warm-up, free-run, or holdover Green - In service or working properly Amber - Fault or loop condition LINK - Management Ethernet link status Solid green - Link with no activity FLASH green - Link with activity Off - No link DISK2 - Internal HDD FLASH green - Activity indicator Off - No activity CARRIER - BITS interface Off - Out of service Green - In frame and in service Amber - Fault or loop condition
Physical dimensions (H x W x D)	0.92 x 16.7 x 14.19 in. (0.02 x 0.428 x 0.36m)
Weight	5.0 lb (2.3 kg)
Approvals and compliance	Safety UL60950-1 and CAN/CSA-C22.2 No. 60950-1-03 Information technology equipment AS/NZS 60950-1 IEC/EN 60950-1 Information technology equipment 73/23/EEC Electromagnetic Emissions Certification CFR 47 Part 15: (FCC) Class A ICES 003 Class A AS/NZ CISPR 22: Class A CISPR 22 (EN55022) Class A VCCI Class A KN22 IEC/EN 61000-3-2 (or 3-12 as applicable): AC Power Line Harmonics IEC/EN 61000-3-3 (or 3-11 as applicable): AC Voltage Fluctuations and Flicker Immunity IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV Contact, 15-kV Air) IEC/EN-61000-4-3: Radiated Immunity (10 V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV Power, 1-kV Signal) IEC/EN-61000-4-5: Surge AC Port (4-kV CM, 2-kV DM) IEC/EN-61000-4-5: Surge Signal Ports (1-kV indoor, 2-kV outdoor) IEC/EN-61000-4-5: Surge DC Port 1-kV IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m)

	IEC/EN-61000-4-11: Voltage Dips, Short Interruptions, and Voltage Variations Network Equipment Building Standards The module meets the following NEBS: GR-1089-CORE GR-63-CORE ETSI and EN Standards EN300 386: Telecommunications Network Equipment (EMC), OTC EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: 1995-Generic Immunity Standard
Environmental	Storage temperature: -38 to 150°F (-40 to 70°C) Operating temperature, nominal: 41 to 104°F (5 to 40°C) Operating temperature, short-term: 23 to 131°F (-5 to 55°C) Storage relative humidity: 5 to 95% RH Operating humidity, nominal: 5 to 85% RH Operating humidity, short-term: 5 to 90% RH Operating altitude: -60 to 4000m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)

Cisco ASR 1000 Series RP3 Product Specifications

Item	Details
Chassis support	Cisco ASR 1006-X, 1009-X, and 1013 chassis
Software compatibility	Minimum Cisco IOS XE 16.3.1 Software (Please consult your Cisco account representative for additional details.)
Software protocols	Refer to Cisco IOS XE 16.3.1 and later versions for protocol support
Connectivity	Console port (RJ-45 connector) Auxiliary port (RJ-45 connector) 10/100/1000 Ethernet port (RJ-45 connector) RJ-48 connector for BITS input clock and output source
Memory options	8-GB memory default; upgradable to 16-GB, 32-GB, or 64-GB memory
Storage options	100-GB SSD (hot-swappable); upgradable to 200-GB or 400-GB SSD 1-GB USB compact flash memory
Performance	With 8-GB memory: Up to 1,000,000 IPv4 routes or 1,000,000 IPv6 routes BGP RR scalability up to 8,000,000 IPv4 routes or 6,000,000 IPv6 routes With 16-GB memory: Up to 4,000,000 IPv4 routes or 4,000,000 IPv6 routes BGP RR scalability up to 24,000,000 IPv4 routes or 17,000,000 IPv6 routes With 32-GB memory: Up to 8,500,000 IPv4 routes or 7,500,000 IPv6 routes BGP RR scalability up to 24,000,000 IPv4 routes or 17,000,000 IPv6 routes
Reliability and availability	1 + 1 redundancy in dual-route-processor configuration Support for OIR Support for NSF and SSO Support for ISSU
MIBs	RFC 2737 compliant
Network management	Telnet and SSH (CLI) Console port (through the CLI) SNMP RFC 2665
Physical dimensions (H x W x D)	
Physical dimensions (H x W x D)	0.92 x 16.7 x 14.19 in. (0.02 x 0.428 x 0.36m)
Weight	7 lb (3.2 kg)
Approvals and compliance	Safety UL60950-1 and CAN/CSA-C22.2 No. 60950-1-03 Information technology equipment AS/NZS 60950-1 IEC/EN 60950-1 Information technology equipment 73/23/EEC Electromagnetic Emissions Certification CFR 47 Part 15: (FCC) Class A ICES 003 Class A AS/NZ CISPR 22: Class A CISPR 22 (EN55022) Class A

	VCCI Class A KN22 IEC/EN 61000-3-2 (or 3-12 as applicable): AC Power Line Harmonics IEC/EN 61000-3-3 (or 3-11 as applicable): AC Voltage Fluctuations and Flicker Immunity IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV Contact, 15-kV Air) IEC/EN-61000-4-3: Radiated Immunity (10 V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV Power, 1-kV Signal) IEC/EN-61000-4-5: Surge AC Port (4-kV CM, 2-kV DM) IEC/EN-61000-4-5: Surge Signal Ports (1-kV indoor, 2-kV outdoor) IEC/EN-61000-4-5: Surge DC Port 1-kV IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m) IEC/EN-61000-4-11: Voltage Dips, Short Interruptions, and Voltage Variations Network Equipment Building Standards The module meets the following NEBS: GR-1089-CORE GR-63-CORE ETSI and EN Standards EN300 386: Telecommunications Network Equipment (EMC), OTC EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: 1995-Generic Immunity Standard
Environmental	Storage temperature: -38 to 150°F (-40 to 70°C) Operating temperature, nominal: 41 to 104°F (5 to 40°C) Operating temperature, short-term: 23 to 131°F (-5 to 55°C) Storage relative humidity: 5 to 95% RH Operating humidity, nominal: 5 to 85% RH Operating humidity, short-term: 5 to 90% RH Operating altitude: -60 to 4000m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)

Cisco ASR 1001 Integrated Route Processor Product Specifications

Item	Details
Chassis support	Cisco ASR 1001 chassis
Software compatibility	Cisco IOS XE Software Release 3.2.0S and later versions
Software protocols	Refer to Cisco IOS XE 3.2.0S and later versions for protocol support
Connectivity	Not applicable - route processor is integrated inside the chassis
Memory options	Cisco ASR 1001 ships with 4-GB memory by default. It can be upgraded to 8- or 16-GB memory Cisco ASR 1001 has 4 DRAM memory slots, which can take either 2- or 4-GB DRAM each When shipped with 4-GB DRAM (M-ASR1K-1001-4 GB), 2 slots are filled with 2 GB each When shipped with 8-GB DRAM (M-ASR1K-1001-8 GB), 4 slots are filled with 2 GB each When shipped with 16-GB DRAM (M-ASR1K-1001-16 GB), 4 slots are filled with 4 GB each
Storage options	8-GB eUSB is partitioned as two 32-MB of memory for nonvolatile RAM (NVRAM) and the rest for mass storage The Cisco ASR 1001-HDD model includes 160-GB HDD for storage
Performance	With 4-GB memory: Up to 500,000 IPv4 or 500,000 IPv6 routes With 8-GB or 16-GB memory: Up to 1,000,000 IPv4 or 1,000,000 IPv6 routes BGP RR Scalability up to 5,250,000 IPv4 or 4,250,000 IPv6 routes - 8 GB Memory BGP RR Scalability up to 11,500,000 IPv4 or 10,000,000 IPv6 routes - 16 GB Memory
Reliability and availability	No route-processor hardware redundancy Software redundancy available (requires software redundancy license and 8-GB memory)
MIBs	RFC 2737 compliant
Network management	Telnet and SSH Protocol (CLI) Console port (through the CLI) SNMP RFC 2665
LEDs	PWR - Power Green - All power rails are within specifications STAT - Status Green - Cisco IOS Software has booted Yellow - BootROM has successfully loaded Red - System failure or during boot process ACTV- Active Green - Active route processor STBY - Standby Yellow - Standby route processor CRIT - Critical Alarm Red - Critical alarm or during boot process MAJ - Major Alarm Red - Major alarm

	MIN - Minor Alarm Amber - Minor alarm HD - Internal HDD FLASH Green - Activity indicator Off - No activity USB - External Compact Flash FLASH green - Activity indicator BF - Boot Flash (Internal) FLASH green - Activity indicator Off - No activity CARRIER BITS I/F Mode Off- Out of service or not configured Green - Normal or Bridging Amber - Fast DTI Mode Off- Warm-up, free-run, or holdover Green - In service or working properly Amber - Fault or loop condition LINK - Management Ethernet link status Solid green - Link with no activity FLASH green - Link with activity Off - No link DISK2 - Internal HDD FLASH green - Activity indicator Off - No activity CARRIER - BITS interface Off - Out of service Green - In frame and in service Amber - Fault or loop condition
Approvals and compliance	Safety UL60950-1 and CAN/CSA-C22.2 No. 60950-1-03 Information technology equipment AS/NZS 60950-1 IEC/EN 60950-1 Information technology equipment 73/23/EEC Electromagnetic Emissions Certification CFR 47 Part 15: (FCC) Class A ICES 003 Class A AS/NZ CISPR 22: Class A CISPR 22 (EN55022) Class A VCCI Class A KN22 IEC/EN 61000-3-2 (or 3-12 as applicable): AC Power Line Harmonics IEC/EN 61000-3-3 (or 3-11 as applicable): AC Voltage Fluctuations and Flicker Immunity IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV Contact, 15-kV Air) IEC/EN-61000-4-3: Radiated Immunity (10 V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV Power, 1-kV Signal) IEC/EN-61000-4-5: Surge AC Port (4-kV CM, 2-kV DM) IEC/EN-61000-4-5: Surge Signal Ports (1-kV indoor, 2-kV outdoor) IEC/EN-61000-4-5: Surge DC Port 1-kV IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m) IEC/EN-61000-4-11: Voltage Dips, Short Interruptions, and Voltage Variations ETSI and EN Standards EN300 386: Telecommunications Network Equipment (EMC), OTC EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: 1995-Generic Immunity Standard
Environmental	Storage temperature: -38 to 150°F (-40 to 70°C) Operating temperature, nominal: 41 to 104°F (5 to 40°C) Operating temperature, short-term: 23 to 131°F (-5 to 55°C) Storage relative humidity: 5 to 95% RH Operating humidity, nominal: 5 to 85% RH Operating humidity, short-term: 5 to 90% RH Operating altitude: -60 to 4000m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)

Cisco ASR 1001-X Integrated Route Processor Product Specifications

Item	
Item	Details
Chassis support	Cisco ASR 1001-X chassis
Software compatibility	Cisco IOS XE Software Release 3.12.0S and later versions
Software protocols	Refer to Cisco IOS XE 3.12.0S and later versions for protocol support
Connectivity	Not applicable - route processor is integrated inside the chassis
Memory options	Cisco ASR 1001-X ships with 8-GB memory by default. It can be upgraded 16-GB memory Cisco ASR 1001-X has 2 DRAM memory slots, which can take either 4- or 8-GB DRAM each When shipped with 8-GB DRAM (M-ASR1001X-8 GB), 2 slots are filled with 4 GB each When shipped with 16-GB DRAM (M-ASR1001X-16 GB), 2 slots are filled with 8 GB each
Performance	
Performance	With 8-GB or 16-GB memory: Up to 1,000,000 IPv4 or 1,000,000 IPv6 routes - 8 GB Memory Up to 3,500,000 IPv4 or 3,000,000 IPv6 routes - 16 GB Memory BGP RR Scalability up to 5,250,000 IPv4 or 4,250,000 IPv6 routes - 8 GB Memory BGP RR Scalability up to 11,500,000 IPv4 or 10,000,000 IPv6 routes - 16 GB Memory
Reliability and availability	No route-processor hardware redundancy

	Software redundancy available (requires software redundancy license and 8-GB memory)
MIBs	RFC 2737 compliant
Network management	Telnet and SSH Protocol (CLI) Console port (through the CLI) SNMP RFC 2665
LEDs	PWR – Power Green - All power rails are within specifications STAT – Status Green - Cisco IOS Software has booted Yellow - BootROM has successfully loaded Red - System failure or during boot process ACTV- Active Green - Active route processor STBY - Standby Yellow - Standby route processor CRIT - Critical Alarm Red - Critical alarm or during boot process MAJ - Major Alarm Red - Major alarm MIN - Minor Alarm Amber - Minor alarm HD - Internal HDD FLASH Green - Activity indicator Off - No activity USB - External Compact Flash FLASH green - Activity indicator BF - Boot Flash (Internal) FLASH green - Activity indicator Off - No activity CARRIER BITS I/F Mode Off- Out of service or not configured Green - Normal or Bridging Amber - Fast DTI Mode Off- Warm-up, free-run, or holdover Green - In service or working properly Amber - Fault or loop condition LINK - Management Ethernet link status Solid green - Link with no activity FLASH green - Link with activity Off - No link DISK2 - Internal HDD FLASH green - Activity indicator Off - No activity CARRIER - BITS interface Off - Out of service Green - In frame and in service Amber - Fault or loop condition
Approvals and compliance	Safety UL60950-1 and CAN/CSA-C22.2 No. 60950-1-03 Information technology equipment AS/NZS 60950-1 IEC/EN 60950-1 Information technology equipment 73/23/EEC Electromagnetic Emissions Certification CFR 47 Part 15: (FCC) Class A ICES 003 Class A AS/NZ CISPR 22: Class A CISPR 22 (EN55022) Class A VCCI Class A KN22 IEC/EN 61000-3-2 (or 3-12 as applicable): AC Power Line Harmonics IEC/EN 61000-3-3 (or 3-11 as applicable): AC Voltage Fluctuations and Flicker Immunity IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV Contact, 15-kV Air) IEC/EN-61000-4-3: Radiated Immunity (10 V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV Power, 1-kV Signal) IEC/EN-61000-4-5: Surge AC Port (4-kV CM, 2-kV DM) IEC/EN-61000-4-5: Surge Signal Ports (1-kV indoor, 2-kV outdoor) IEC/EN-61000-4-5: Surge DC Port 1-kV IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m) IEC/EN-61000-4-11: Voltage Dips, Short Interruptions, and Voltage Variations ETSI and EN Standards EN300 386: Telecommunications Network Equipment (EMC), OTC EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: 1995-Generic Immunity Standard
Environmental	Storage temperature: -38 to 150°F (-40 to 70°C) Operating temperature, nominal: 32 to 104°F (0 to 40°C) Operating temperature, short-term: 32 to 131°F (0 to 55°C) Storage relative humidity: 5 to 95% RH Operating humidity, nominal: 10 to 90% RH Operating humidity, short-term: 5 to 95% RH Operating altitude: -60 to 4000m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)

Cisco ASR 1002-X Integrated Route Processor Product Specifications

Item	
Item	Details
Chassis support	Cisco ASR 1002-X chassis
Software compatibility	Cisco IOS XE Software Release 3.7.0S and later versions

Software protocols	Refer to Cisco IOS XE 3.7.0S and later versions for protocol support
Connectivity	Not applicable - route processor is integrated inside the chassis
Memory options	Cisco ASR 1002-X ships with 4-GB memory by default. It can be upgraded to 8- or 16-GB memory Cisco ASR 1002-X has 4 DRAM memory slots, which can take either 2- or 4-GB DRAM each When shipped with 4-GB DRAM (M-ASR1002X-4 GB), 2 slots are filled with 2 GB each When shipped with 8-GB DRAM (M-ASR1002X-8 GB), 4 slots are filled with 2 GB each When shipped with 16-GB DRAM (M-ASR1002X-16 GB), 4 slots are filled with 4 GB each
Storage options	8-GB eUSB memory is partitioned as two 32-MB of memory for NVRAM and the rest for mass storage The Cisco ASR 1002-X has an optional 160-GB HDD for storage
Performance	With 4-GB memory: Up to 500,000 IPv4 or 500,000 IPv6 routes With 8-GB or 16-GB memory: Up to 1,000,000 IPv4 or 1,000,000 IPv6 routes - 8 GB Memory Up to 3,500,000 IPv4 or 3,000,000 IPv6 routes - 16 GB Memory BGP RR Scalability up to 5,250,000 IPv4 or 4,250,000 IPv6 routes - 8 GB Memory BGP RR Scalability up to 11,500,000 IPv4 or 10,000,000 IPv6 routes - 16 GB Memory
Reliability and availability	No route-processor hardware redundancy Software redundancy available (requires software redundancy license and 8-GB memory)
MIBs	RFC 2737 compliant
Network management	Telnet and SSH Protocol (CLI) Console port (through the CLI) SNMP RFC 2665
LEDs	PWR – Power Green - All power rails are within specifications STAT - Status Green - Cisco IOS Software has booted Yellow - BootROM has successfully loaded Red - System failure or during boot process CRIT - Critical Alarm Red - Critical alarm or during boot process MAJ - Major Alarm Red - Major alarm MIN - Minor Alarm Amber - Minor alarm LINK - Management Ethernet link status Solid green - Link with no activity FLASH green - Link with activity Off - No link BOOT FLASH Green - Activity indicator Off - No activity BITS Off- Out of service or not configured Green - In frame and In service Amber - Fault condition HDD FLASH green - Activity indicator GPS Off- Port not connected Green - In service or working properly Amber - Fault condition
Approvals and compliance	Safety UL60950-1 and CAN/CSA-C22.2 No. 60950-1-03 Information technology equipment AS/NZS 60950-1 IEC/EN 60950-1 Information technology equipment 73/23/EEC Electromagnetic Emissions Certification CFR 47 Part 15: (FCC) Class A ICES 003 Class A AS/NZ CISPR 22: Class A CISPR 22 (EN55022) Class A VCCI Class A KN22 IEC/EN 61000-3-2 (or 3-12 as applicable): AC Power Line Harmonics IEC/EN 61000-3-3 (or 3-11 as applicable): AC Voltage Fluctuations and Flicker Immunity IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV Contact, 15-kV Air) IEC/EN-61000-4-3: Radiated Immunity (10 V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV Power, 1-kV Signal) IEC/EN-61000-4-5: Surge AC Port (4-kV CM, 2-kV DM) IEC/EN-61000-4-5: Surge Signal Ports (1-kV indoor, 2-kV outdoor) IEC/EN-61000-4-5: Surge DC Port 1-kV IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m) IEC/EN-61000-4-11: Voltage Dips, Short Interruptions, and Voltage Variations Network Equipment Building Standards The module meets the following NEBS: GR-1089-CORE GR-63-CORE ETSI and EN Standards EN300 386: Telecommunications Network Equipment (EMC), OTC EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: 1995-Generic Immunity Standard
Environmental	Storage temperature: -38 to 150°F (-40 to 70°C) Operating temperature, nominal: 41 to 104°F (5 to 40°C) Operating temperature, short-term: 23 to 131°F (-5 to 55°C) Storage relative humidity: 5 to 95% relative humidity (RH) Operating humidity, nominal: 5 to 85% RH Operating humidity, short-term: 5 to 90% RH

Operating altitude: -60 to 4000m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)

Cisco ASR 1000 Series RP1, RP2, and RP3 System Requirements

Item	Details
Hardware	Cisco ASR 1000 Series RP1 Cisco ASR 1004 and 1006 Cisco ASR 1000 Series RP2 Cisco ASR 1004, 1006, 1006-X, 1009-X, and 1013 Cisco ASR 1000 Series RP3 Cisco ASR 1006-X, 1009-X, and 1013
Memory	Cisco ASR 1000 Series RP1 4 GB (default for RP1) Cisco ASR 1000 Series RP2 8 GB (default for RP2) 16 GB (maximum RP2) Note: Memory is field-upgradable from 8 to 16 GB. Cisco ASR 1000 Series RP3 8 GB (default for RP3) 16 GB 32 GB 64 GB (maximum for RP3) Note: Memory is field-upgradable from 8 to 64 GB.
Minimum software release	Cisco ASR 1000 Series RP1 Cisco IOS XE Software Release 2.1.0 Cisco ASR 1000 Series RP2 Cisco IOS XE Software Release 2.3.0 Cisco ASR 1000 Series RP3 Cisco IOS XE Software Release 16.3.1

The next steps...

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