



Release Notes for Cisco ASR 901 Series Aggregation Services Router for Cisco IOS Release 15.5(3)S

First Published Date: July 2015

This release notes is for the Cisco ASR 901 Series Aggregation Services Router for Cisco IOS Release 15.5(3)S and contains the following sections:

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Introduction

The Cisco ASR 901 Series Aggregation Services Router is a cell-site access platform specifically designed to aggregate and transport mixed-generation radio access network (RAN) traffic. The router is used at the cell site edge as a part of a 2G, 3G, or 4G RAN.

The Cisco ASR 901 router helps enable a variety of RAN solutions by extending IP connectivity to devices using Global System for Mobile Communications (GSM), General Packet Radio Service (GPRS), Node Bs using High Speed Packet Access (HSPA) or Long Term Evolution (LTE), base transceiver stations (BTSs) using Enhanced Data Rates for GSM Evolution (EDGE), Code Division Multiple Access (CDMA), CDMA-2000, EVDO, or WiMAX, and other cell-site equipment.

It transparently and efficiently transports cell-site voice, data, and signaling traffic over IP using traditional T1 and E1 circuits, as well as alternative backhaul networks such as Carrier Ethernet and DSL, Ethernet in the First Mile (EFM), and WiMAX. It also supports standards-based Internet



Engineering Task Force (IETF) Internet protocols over the RAN transport network, including those standardized at the Third-Generation Partnership Project (3GPP) for IP RAN transport. Custom designed for the cell site, the Cisco ASR 901 router features a small form factor, extended operating temperature, and cell-site DC input voltages.

Table 1 lists the Cisco ASR 901 1G Router model versions.

Table 1 Cisco ASR 901 1G Router Models

Power Source	TDM + Ethernet Version	Ethernet Version
DC Power	<ul style="list-style-type: none"> A901-12C-FT-D A901-4C-FT-D 	<ul style="list-style-type: none"> A901-12C-F-D A901-4C-F-D
AC Power	<ul style="list-style-type: none"> none 	<ul style="list-style-type: none"> none

Table 2 lists the Cisco ASR 901 10G Router model versions.

Table 2 Cisco ASR 901 10G Router Models

Power Source	TDM + Ethernet Version	Ethernet Version
DC Power	<ul style="list-style-type: none"> A901-6CZ-FT-D 	<ul style="list-style-type: none"> A901-6CZ-F-D A901-6CZ-FS-D
AC Power	<ul style="list-style-type: none"> A901-6CZ-FT-A 	<ul style="list-style-type: none"> A901-6CZ-F-A A901-6CZ-FS-A



Note Some of the Cisco ASR 901 models have port based licensing. For more details, see the [Licensing](#) chapter in Cisco ASR 901 Series Aggregation Services Router Software Configuration Guide.

System Specifications and Memory Details

Table 3 lists the supported system configurations and memory details for the Cisco ASR 901 router:

Table 3 Cisco IOS Release 15.5(3)S Memory Details

Platform	Software Image	Flash Memory	DRAM Memory	Runs From
Cisco ASR 901 Series Aggregation Services Router TDM version	asr901-universalk9-mz	128 MB	512 MB	RAM
Cisco ASR 901 Series Aggregation Services Router, Ethernet version	asr901-universalk9-mz	128 MB	512 MB	RAM
Cisco ASR 901 Series Aggregation Services Router, IPsec enabled Ethernet version	asr901sec-universalk9.mz	256 MB	512 MB	RAM

Determining the Software Version

To determine the image and version of Cisco IOS software running on your Cisco ASR 901 router, log in to the router and enter the **show version** command in the EXEC mode:

The following example shows output from Cisco ASR 901 router that supports normal IOS software.

```
ASR901_1> show version
```

```
Cisco IOS Software, 901 Software (ASR901-UNIVERSALK9-M), Version 15.5(3)S, RELEASE
SOFTWARE (fc3) Technical Support: http://www.cisco.com/techsupport Copyright (c) 1986-2015
by Cisco Systems, Inc.
Compiled Fri 24-Jul-15 10:37 by prod_rel_team
```

The following example shows output from Cisco ASR 901 Series Aggregation Services Router, IPsec enabled Ethernet version.

```
SANR1> show version
```

```
Cisco IOS Software, 901 Software (ASR901SEC-UNIVERSALK9-M), Version 15.5(3)S, RELEASE
SOFTWARE (fc3) Technical Support: http://www.cisco.com/techsupport Copyright (c) 1986-2015
by Cisco Systems, Inc.
Compiled Fri 24-Jul-15 10:25 by prod_rel_team
```

New and Changed Information

- [New Hardware Features in Release 15.5\(3\)S, page 3](#)
- [New Software Features in Release 15.5\(3\)S, page 3](#)
- [Modified Software Features in Release 15.5\(3\)S, page 5](#)

New Hardware Features in Release 15.5(3)S

There are no new hardware features in this release.

New Software Features in Release 15.5(3)S

The following features are supported from this release.

BCM Parity Errors

BCM Parity Errors feature detects and recovers from parity errors which may get generated on Cisco ASR901 routers due to environmental conditions.

These parity errors, when get detected, generate following type of logs on the device –

unit 0 <TableName> entry <entryId> parity error

This feature automatically recovers parity error on a subset of the table. Therefore, if parity errors in above format are observed on some table, then please contact Cisco TAC for assistance.

HSRP Version 2

This feature uses the new IP multicast address 224.0.0.102 to send hello packets instead of the multicast address of 224.0.0.2, used by HSRP version 1. This new multicast address allows CGMP leave processing to be enabled at the same time as HSRP.

HSRP version 2 permits an expanded group number range, 0 to 4095, and consequently uses a new MAC address range 0000.0C9F.F000 to 0000.0C9F.FFFF. The expanded group number range was changed to allow the group number to match the VLAN number on sub interfaces. This feature allows the router to advertise and learn millisecond timer values. HSRP version 2 packet includes a 6-byte identifier field that is used to uniquely identify the sender of the message (usually populated with interface MAC address).

For detailed information about this feature, see *HSRP Version 2* feature at the following URL:

https://www.cisco.com/c/en/us/td/docs/wireless/asr_901/Configuration/Guide/b_asr901-scg/b_asr901-scg_chapter_011011.html

Layer 2 MAC ACLs

This feature provides the capability to filter packets at a fine granularity and allows the permission or denial of the packets based on the MAC source and destination addresses. MAC Access Control Lists (ACLs) are ACLs that filter traffic using information in the layer 2 header of each packet. This ability to filter packets in a modular and scalable way is important for both network security and network management.

For more information about this feature, see *Layer 2 MAC ACLs* feature guide at the following URL:

https://www.cisco.com/c/en/us/td/docs/wireless/asr_901/Configuration/Guide/b_asr901-scg/b_asr901-scg_chapter_0111000.html

NAT Traversal

This feature introduces support for IP Security (IPsec) traffic to travel through Network Address Translation (NAT) or Port Address Translation (PAT) points in the network by addressing many known incompatibilities between NAT and IPsec. This feature encapsulates the IPsec packets in a User Datagram Protocol (UDP) wrapper that allows the packets to travel across NAT devices.

For information about this feature, see *NAT Traversal* feature guide at the following URL:

https://www.cisco.com/c/en/us/td/docs/wireless/asr_901/Configuration/Guide/b_asr901-scg/b_asr901-scg_chapter_0101101.html

PTP Debugging over GRE Tunnel

Effective from Cisco IOS Release 3.16, the Cisco ASR 901 Router supports PTP debugging over GRE tunnel feature.

PTP Debugging over GRE Tunnel feature enables the transport of PTP debugging information and PTP packets originated by the device through a GRE tunnel.

For more information about this feature, see *PTP Debugging over GRE Tunnel* feature guide at the following URL:

http://www.cisco.com/c/en/us/td/docs/wireless/asr_901/Configuration/Guide/b_asr901-scg/b_asr901-scg_chapter_0110110.html

Smart Licensing

Effective from Cisco IOS Release 3.16, the Cisco ASR 901 Router supports Smart Licensing feature.

Smart Licensing is software based licensing end-to-end platform that consists of several tools and processes to authorize customers the usage and reporting of the Cisco products.

For more information about this feature, see *Smart Licensing* feature guide at the following URL:

https://www.cisco.com/c/en/us/td/docs/wireless/asr_901/Configuration/Guide/b_asr901-scg/b_asr901-scg_chapter_0110111.html

Modified Software Features in Release 15.5(3)S

There are no modified features in this release.

Supported Hardware

[Table 4](#) and [Table 5](#) shows the SFP modules supported on the Cisco ASR 901 routers:

Important Notes

- 10G SFPs inserted into 1GE port provides 1GE speed.
- 10G SFPs inserted into 10GE port without a valid license provides only 1GE speed.
- 100M SFP works only with **no negotiation auto** command.
- If 1G SFP is used to connect a 10G port to a 1G port, you do not have to explicitly configure the **no negotiation auto** command to bring up the link.
- Effective with Cisco IOS Release 15.4(3)S, the auto-select feature is supported on 100M SFPs. However, this feature is not supported on combo ports.
- Remote Fault Indication feature is not applicable for 1G mode in 10GE ports. It applies only to 10G mode in 10GE ports.

Table 4 SFPs Supported on the Cisco ASR 901 1G and 10G Routers for 1G Mode

<ul style="list-style-type: none"> • CWDM-SFP-1470 • CWDM-SFP-1490 • CWDM-SFP-1510 • CWDM-SFP-1530 • CWDM-SFP-1550 • CWDM-SFP-1570 • CWDM-SFP-1590 • CWDM-SFP-1610 • CWDM SFP+ • DWDM-SFP-XXXX¹ • GLC-BX-U and GLC-BX-D² • GLC-EX-SMD • GLC-LH-SMD • GLC-LX-SM-RGD • GLC-SX-MMD 	<ul style="list-style-type: none"> • GLC-SX-MM-RGD • GLC-T • GLC-ZX-SM • GLC-ZX-SMD • GLC-ZX-SM-RGD • SFP-GE-L • SFP-GE-S • SFP-GE-T • SFP-GE-Z • GLC-BX40-D-I • GLC-BX40-DA-I • GLC-BX40-U-I • GLC-BX80-D-I • GLC-BX80-U-I
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1. 40 wavelengths
2. These SFPs (GLC-BX-U and GLC-BX-D) should be connected back to back to bring the interface link up.

Table 5 SFPs Supported on the Cisco ASR 901 10G Router for 10G Mode

<ul style="list-style-type: none"> • SFP-10G-ER • SFP-10G-LR • SFP-10G-LR-X • DWDM-SFP+ • SFP-H10GB-CU1M • SFP-H10GB-CU3M • SFP-H10GB-CU5M 	<ul style="list-style-type: none"> • SFP-10G-SR • SFP-10G-SR-X • SFP-10G-ZR • SFP-10G-LRM • SFP-H10GB-ACU7M • SFP-H10GB-ACU10M
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Note

For information on how to configure SFPs, see the [Cisco ASR 901 Series Aggregation Services Router Software Configuration Guide](#).

Supported MIBs

The Cisco ASR 901 router supports the following MIBs:

- BGP4-MIB
- BRIDGE-MIB
- CISCO-ACCESSENVMON-MIB
- CISCO-CAR-MIB
- CISCO-CDP-MIB
- CISCO-CEF-MIB
- CISCO-CLASS-BASED-QOS-MIB
- CISCO-CONFIG-COPY-MIB
- CISCO-CONFIG-MAN-MIB
- CISCO-DATA-COLLECTION-MIB
- CISCO-DOT3-OAM-MIB
- CISCO-EIGRP-MIB
- CISCO-ENHANCED-MEMPOOL-MIB
- CISCO-ENTITY-ALARM-MIB
- CISCO-ENTITY-ASSET-MIB
- CISCO-ENTITY-VENDORTYPE-OID-MIB
- CISCO-ENVMON-MIB
- CISCO-FLASH-MIB
- CISCO-IETF-PW-MIB
- CISCO-IETF-PW-TC-MIB
- CISCO-IF-EXTENSION-MIB
- CISCO-IMAGE-MIB
- CISCO-IPSLA-ETHERNETMIB
- CISCO-MEMORY-POOL-MIB
- CISCO-STP-EXTENSIONS-MIB
- CISCO-SYSLOG-MIB
- CISCO-TC
- ENTITY-MIB
- ETHERLIKE-MIB
- HCNUM-TC
- IANAifType-MIB
- IEEE8021-CFM-MIB
- IF-MIB
- IMA-MIB
- INT-SERVE-MIB
- IP-FORWARD-MIB
- IP-MIB
- MPLS-LDP-MIB
- MPLS-LSR-MIB
- MPLS-VPN-MIB
- NOTIFICATION-LOG-MIB
- OLD-CISCO-CHASSIS-MIB
- OLD-CISCO-FLASH-MIB
- OLD-CISCO-INTERFACES-MIB
- OLD-CISCO-IP-MIB
- OLD-CISCO-SYS-MIB
- OLD-CISCO-TS-MIB
- OSPF-MIB

- CISCO-NETSYNC-MIB
- CISCO-NTP-MIB
- CISCO-OSPF-MIB
- CISCO-PING-MIB
- CISCO-PROCESS-MIB
- CISCO-PRODUCTS-MIB
- CISCO-PTP-MIB
- CISCO-QUEUE-MIB
- CISCO-RESILIENT-ETHERNET-PROTOCOL-MIB
- CISCO-RTTMON-MIB
- CISCO-SENSOR-ENTITY-MIB
- CISCO-SMI-MIB
- CISCO-SNAPSHOT-MIB
- CISCO-SNMP-TARGET-EXT-MIB
- OSPFv3-MIB
- PerfHist-TC-MIB
- RFC1213-MIB
- RMON2-MIB
- RMON-MIB
- SNMP-FRAMEWORKMIB
- SNMP-TARGET-MIB
- SNMPv2-MIB
- SNMPv2-SMI
- SNMPV2-TC
- TCP-MIB
- UDP-MIB
- CISCO-IPSEC-FLOW-MONITOR-MIB
- CISCO-IPSEC-MIB

Caveats

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats, severity 2 caveats are less serious, and severity 3 caveats are the least serious of these three severity levels. Only select severity 3 caveats are listed.

This section contains the following topics:

- [Bug Search Tool](#)
- [Open Caveats](#)
- [Resolved Caveats](#)

Bug Search Tool

The Caveats section only includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a particular bug you must use the Bug Search Tool.

Use the following link to access the tool: <https://tools.cisco.com/bugsearch/search>

You will be prompted to log into Cisco.com. After successful login, the Bug Search Tool page opens. Use the Help link in the Bug Search Tool to obtain detailed help.

Open Caveats

This section provides information about the open caveats for the Cisco ASR 901 router running Cisco IOS Release 15.5(3)S.

Bug ID	Description
CSCuu62478	Licensing infrastructure is NOT initialized during boot up.
CSCuv09066	Incorrect P-bit for CPU originated packets once EoMPLS VC on.
CSCut82476	ASR901-Operational status for Fan and power module shown as critical.

Resolved Caveats

This section provides information about the resolved caveats for the Cisco ASR 901 router running Cisco IOS Release 15.5(3)S.

Bug ID	Description
CSCuu32285	"permit any any" configuration should override default "deny any any" FP entry.
CSCut90473	Extra FP entry consumed in TCAM after removing all ACE entries from ACL.
CSCuu07921	Extra IFP created by ACL for 'default deny rule' when configuration explicitly.
CSCun07153	TCAM exhaustion for V4 and V6 Multicast needs proper handling.
CSCun13361	ASR901 IGMP: Reports received on an interface and interface is default, then 901 is generating error messages.
CSCun14606	MLD Snooping: Wrong configuration command, report-suppression instead of listener-msg.
CSCut86932	Observing error messages when defaulting router interface receiving IGMP.
CSCun07003	SANTORINI: Traceback seen while enabling multicast.
CSCuo21189	Console logs are printed on 1st unauthenticated VTY session.
CSCur87571	Exceed action is not working in policer having match cos as 2nd statement.
CSCui88779	Missing or illegal IP address messages seen on reloading ASR901.
CSCuu28678	ASR901: AIS on TDM AC does not trigger L-bit to be set in SAToP CW.
CSCun62977	TDM defect. No ARP triggered with Static Route.
CSCum82774	Tracebacks seen at %SYS-2-BADSHARE: Bad refcount in datagram_done.
CSCur39624	901: Telecom profile BMCA does not work.

Troubleshooting

The following sections describe troubleshooting commands you can use with the router.

Collecting Data for Router Issues

To collect data for reporting router issues, issue the following command:

- **show tech-support**—Displays general information about the router if it reports a problem.

Collecting Data for ROMMON Issues

To collect data for ROMMON issues, issue the following command while in the EXEC mode:

- **show rom-monitor**—Displays currently selected ROM monitor.



Note

If you contact Cisco support for assistance, we recommend that you provide any crashinfo files stored in flash memory. For more information about crashinfo files, see http://www.cisco.com/en/US/products/hw/routers/ps167/products_tech_note09186a00800a6743.shtml.

Related Documentation

Documents related to the Cisco ASR 901 Series Aggregation Services Router include the following:

- *Cisco ASR 901 Series Aggregation Services Router Hardware Installation Guide*
- *Cisco ASR 901 Series Aggregation Services Router Software Configuration Guide*
- *Regulatory Compliance and Safety Information for Cisco ASR 901 Series Aggregation Services Routers*
- *Cisco ASR 901 Series Aggregation Services Router Series MIB Specifications Guide*

To access the related documentation on Cisco.com, go to:

- Cisco ASR 901 1G Router home page:
http://www.cisco.com/en/US/partner/products/ps12077/tsd_products_support_series_home.html
- Cisco ASR 901 10G Router home page:
<http://www.cisco.com/c/en/us/support/routers/asr-901-10g-series-aggregation-services-routers/tsd-products-support-series-home.html>

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

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