



# Release Notes for Cisco ASR 901 Series Aggregation Services Router for Cisco IOS Release 15.6(2)SP1

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This release notes is for the Cisco ASR 901 Series Aggregation Services Router for Cisco IOS Release 15.6(2)SP1 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"> <li>A901-12C-FT-D</li> <li>A901-4C-FT-D</li> </ul>	<ul style="list-style-type: none"> <li>A901-12C-F-D</li> <li>A901-4C-F-D</li> </ul>
AC Power	<ul style="list-style-type: none"> <li>none</li> </ul>	<ul style="list-style-type: none"> <li>none</li> </ul>

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"> <li>A901-6CZ-FT-D</li> </ul>	<ul style="list-style-type: none"> <li>A901-6CZ-F-D</li> <li>A901-6CZ-FS-D</li> </ul>
AC Power	<ul style="list-style-type: none"> <li>A901-6CZ-FT-A</li> </ul>	<ul style="list-style-type: none"> <li>A901-6CZ-F-A</li> <li>A901-6CZ-FS-A</li> </ul>



**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 15.6(2)SP1 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

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 15.6(2)SP1, RELEASE
SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Wed 23-Nov-16 12:07 by prod_rel_team
```

```
ROM: System Bootstrap, Version 15.5(3r)S1, RELEASE SOFTWARE (fc1)
```

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 15.6(2)SP1, RELEASE
SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Wed 23-Nov-16 12:21 by prod_rel_team
```

```
ROM: System Bootstrap, Version 15.5(3r)S1, RELEASE SOFTWARE (fc1)
```

## New and Changed Information

- [New Hardware Features in Release 15.6\(2\)SP1, page 3](#)
- [New Software Features in Release 15.6\(2\)SP1, page 3](#)
- [Modified Software Features in Release 15.6\(2\)SP1, page 4](#)

## New Hardware Features in Release 15.6(2)SP1

There are no new hardware features in this release.

## New Software Features in Release 15.6(2)SP1

The following features are supported from this release.

### Phase Profile G8275.1

With upcoming technologies like LTE-TDD, LTE-A CoMP, LTE-MBSFN and Location-based services, eNodeBs (base station devices) are required to be accurately synchronized in time and phase. Having GNSS systems at each node is not only expensive, but also introduces vulnerabilities.

Effective with Cisco IOS Release 15.6(2)SP1, Cisco ASR 901 routers support the G.8275.1 telecom profile. This profile targets accurate time and phase distribution and requires boundary clocks at every node in the network.

For more information, see [Cisco ASR 901 Series Aggregation Services Router Software Configuration Guide](#)

## Pseudowire Redundancy with Uni-directional Active-Active Support

Pseudowire Redundancy with Uni-directional Active-Active Support allows the pseudowires on both the working and protect circuits remain UP to allow traffic to flow from the upstream.

For more information, see [Cisco ASR 901 Series Aggregation Services Router Software Configuration Guide](#).

## Modified Software Features in Release 15.6(2)SP1

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.
- By default dual rate SFP works in 1G mode, to make it work in 100M mode, “no negotiation auto” should be configured.
- Dual rate SFP can be configured in 100M mode when inserted in 1G ports only.
- Dual rate SFP when inserted in 10G ports will work in 1G mode only.

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

<ul style="list-style-type: none"> <li>• CWDM-SFP-1470</li> <li>• CWDM-SFP-1490</li> <li>• CWDM-SFP-1510</li> <li>• CWDM-SFP-1530</li> <li>• CWDM-SFP-1550</li> <li>• CWDM-SFP-1570</li> <li>• CWDM-SFP-1590</li> <li>• CWDM-SFP-1610</li> <li>• CWDM SFP+</li> <li>• DWDM-SFP-XXXX<sup>1</sup></li> <li>• GLC-BX-U and GLC-BX-D<sup>2</sup></li> <li>• GLC-EX-SMD</li> <li>• GLC-LH-SMD</li> <li>• GLC-LX-SM-RGD</li> <li>• GLC-SX-MMD</li> </ul>	<ul style="list-style-type: none"> <li>• GLC-SX-MM-RGD</li> <li>• GLC-T</li> <li>• GLC-ZX-SM</li> <li>• GLC-ZX-SMD</li> <li>• GLC-ZX-SM-RGD</li> <li>• SFP-GE-L</li> <li>• SFP-GE-S</li> <li>• SFP-GE-T</li> <li>• SFP-GE-Z</li> <li>• GLC-BX40-D-I</li> <li>• GLC-BX40-DA-I</li> <li>• GLC-BX40-U-I</li> <li>• GLC-BX80-D-I</li> <li>• GLC-BX80-U-I</li> <li>• GLC-GE-DR-LX</li> </ul>
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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"> <li>• SFP-10G-ER</li> <li>• SFP-10G-LR</li> <li>• SFP-10G-LR-X</li> <li>• DWDM-SFP+</li> <li>• SFP-H10GB-CU1M</li> <li>• SFP-H10GB-CU3M</li> <li>• SFP-H10GB-CU5M</li> <li>• SFP-10G-SR</li> <li>• SFP-10G-SR-X</li> </ul>	<ul style="list-style-type: none"> <li>• SFP-10G-ZR</li> <li>• SFP-10G-LRM</li> <li>• SFP-H10GB-ACU7M</li> <li>• SFP-H10GB-ACU10M</li> <li>• SFP-10G-BX-D-I</li> <li>• SFP-10G-BX-U-I</li> <li>• SFP-10G-BX40-D-I</li> <li>• SFP-10G-BX40-U-I</li> </ul>
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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

There are no open caveats for the Cisco ASR 901 router running Cisco IOS Release 15.6(2)SP1.

Bug ID	Description
<a href="#">CSCvb81938</a>	IPv6 ACL is applied and memory allocated on the physical interface
<a href="#">CSCvb81982</a>	Traceback found while unconfiguring untag_EVC_Xconnect configs
<a href="#">CSCuz19614</a>	ASR 901, interrupt mem_alloc failed
<a href="#">CSCvb76526</a>	Tracebacks seen with policy-map on MLPPP interface

## Resolved Caveats

This section provides information about the resolved caveats for the Cisco ASR 901 router running Cisco IOS Release 15.6(2)SP1.

Bug ID	Description
<a href="#">CSCva69479</a>	TCAM entry is consumed for Egress ACL applied in the SVI
<a href="#">CSCva50139</a>	ASR901:PTP over ethernet does not work on interface where span enabled
<a href="#">CSCCuy96222</a>	Observing Operation Not Found error while removing IP SLA Configs
<a href="#">CSCva31422</a>	Port Manager not providing the next valid port idb
<a href="#">CSCCuy96212</a>	Ring State not reached Idle State even after the expiry of the WTR timer
<a href="#">CSCva01321</a>	SPAN option missing under monitor session configs
<a href="#">CSCCuv77123</a>	Garbage counters on TenGig Total O/P drops under fluctuations in regstrs
<a href="#">CSCva43334</a>	Increase fan duty cycle from 40% to 50% for fan failure
<a href="#">CSCva94419</a>	Marking not removed in Segmented CESoP even after policy-map deletion
<a href="#">CSCvb55517</a>	Policy-map removal is updated for 1st CEM ckt, other ckts are not updated
<a href="#">CSCvb04040</a>	Hold last-known leap second information during PTP Holdover

## 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](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](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*.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.

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