Release Notes for Cisco ASR 9000 Series Routers, IOS XR Release 7.8.1

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IOS XR 64-bit on Cisco ASR 9000 Series is the next generation operating system running in a virtualized environment with an underlying 64-bit Linux kernel. Cisco IOS XR operating system delivers greater agility, automation, and simplicity while reducing the cost of operating the networks.

References

For more information about Cisco ASR 9000 Series, see:

- Cisco ASR 9000 Data Sheet listing page
- Migration Guide for Cisco ASR 9000 Series Routers

What's New in Cisco IOS XR Release 7.8.1

Software Features Introduced and Enhanced

To learn about features introduced in other Cisco IOS XR releases, select the release from the Documentation Landing Page.

Feature	Description
Cloud Native BNG User Plane	
Subscriber Redundancy Group on Cloud Native BNG	You can now enable redundancy for subscriber sessions across two or more cnBNG user planes spread across different geographical locations by configuring redundancy for that subscriber group. Subscriber Redundancy Group (SRG) provides flexible redundancy pairing on an access link by mirroring the subscriber session to a standby node. When SRG is enabled, subscriber sessions are unaffected during the failure of the access link, and maintenance downtimes as the switchover happen from an active to a standby user plane automatically, or the BNG control plane assigns the active role to the user plane. This feature introduces the following command: **subscriber-redundancy**
Broadband Network Gateway	
BNG on ASR 9903 800G Multirate Port Expansion Card	BNG, the access point for subscribers connecting to the broadband network, is now supported on the Cisco ASR 9903 800G Multirate Port Expansion Card (A9903-8HG-PEC) line card, which offers 48 physical ports with maximum 800G data bandwidth capacity.
Programmability	

Feature	Description
gNMI Bundling Size Enhancement	With gRPC Network Management Interface (gNMI) bundling, the router internally bundles multiple gNMI `Update` messages meant for the same client into a single gNMI `Notification` message and sends it to the client over the interface. You can now optimize the interface bandwidth utilization by accommodating more gNMI updates in a single notification message to the client. We have now increased the gNMI bundling size from 32768 to 65536 bytes, and enabled gNMI bundling size configuration through Cisco native data model. Prior releases allowed only a maximum bundling size of 32768 bytes, and you could configure only through CLI. The feature introduces new XPaths to the `Cisco-IOS-XR-telemetry-model-driven-cfg.yang` Cisco native data model to configure gNMI bundling size. To view the specification of gNMI bundling, see Github repository.
System Management	
RSP Slot Location in Syslog	When an RSP switchover occurs, the router logs the active RSP slot location in the syslog message. This helps you quickly identify the active RSP slot from your router's system log messages. In earlier releases, the RSP switchover syslog message didn't include the active RSP slot location.
Smart Licensing Per Port for Segment Routing-Traffic Engineering	Cisco Smart Licensing is a cloud-based, flexible software licensing model that enables you to activate and manage Cisco software licenses across your organization. Under the flexible, automated software licensing model, we have Advantage licenses which are required on top of Essential Licenses for ports that use advanced features like L3VPN. This release allows you to allocate the Advantage licenses to the Segment Routing Traffic Engineering (SR-TE) based on the active ports under MPLS or SRV6. Before this release, when you configured SR-TE, all the ports used to consume Advantage licenses. This allows you to manage advantage licenses for SR-TE.
Netflow	
IPFIX Enablement for SRv6 and Services over SRv6 Core	This feature provides improved information about IP traffic flows, through the introduction of sub-menus to two commands. The **record ipv6** command is modified to support a new optional keyword, **srv6** . A new subtype for **ipv4 record** and **ipv6 record** is introduced for **l2-l3** records. For more information, see: • **record ipv6** • **show flow monitor-map**
Routing	
Configure flex-algo IS-IS maximum-path	This feature introduces the new **algorithm 0** command and provides information on the updated **flex-algo** command. These updates enable individual granularity for flex-algo and regular SPF algorithms.
Segment Routing	

Feature	Description
Circuit-Style SR-TE Policies	This solution allows Segment Routing to meet the requirements of a connection-oriented transport network, which was historically delivered over circuit-switched SONET/SDH networks. Circuit-style SR-TE policies allow a common network infrastructure to be used for both connection-oriented services and classic IP-based transport. This eliminates the need for multiple parallel networks, which greatly reduces both capital expenditures (CapEx) and operating expenditures (OpEx).
Path Tracing Midpoint Node	Path Tracing (PT) provides a log or record of the packet path as a sequence of interface IDs along with its time stamp. In Path Tracing, a node can behave as a source, midpoint, or sink node. The Path Tracing Midpoint feature is implemented in this release which measures the hop-by-hop delay, traces the path in the network and collects egress interface load information and interface Id, and stores them in the Midpoint Compressed Data (MCD) section of Hop-by-Hop Path Tracing (HbH-PT) header. This feature provides visibility to the Path Tracing Midpoint node that handles IPv6 transit in Path Tracing and full characterization of the packet delivery path. It provides real time information and the current status of the network. This feature introduces the following command: • **performance-measurement interface**
SR IS-IS Enhancements: max-metric and data plane updates	The new **anomaly** optional keyword is introduced to **affinity flex-algo** command. This keyword helps to advertise the flex-algo affinity when the performance measurement signals a link anomaly, such as an excessive delay on a link. You could use the anomaly option to exclude the link from flex-algo path computations. affinity flex-algo
SRv6 Provider Edge (PE) Lite	This feature provides VPN de-multiplexing-only behaviors (End.DT4/DT6/DT46) at an SRv6 PE node. This allows for a lightweight-PE implementation (no VPN encapsulation) that steers SRv6-encapsulated traffic across an SR-MPLS backbone after performing a VPN lookup.
Support for End.DT46 SRv6 Endpoint Behavior	This feature adds support for the “Endpoint with decapsulation and specific IP table lookup” SRv6 end-point behavior (End.DT46). The End.DT46 behavior is used for dual-stack L3VPNs. This behavior is equivalent to the single per-VRF VPN label (for IPv4 and IPv6) in MPLS.
Support for Explicit End.DT46 SRv6 SIDs	This feature allows you to configure explicit SIDs associated with SRv6-based L3VPN/Internet BGP services. In previous releases, these SIDs were only allocated dynamically by BGP. Explicit End.DT46 SRv6 SIDs are persistent over reloads and restarts.
Wide LIB uSID Allocation for End.DT46 SRv6 SIDs	This feature introduces support for Wide Local ID block (W-LIB). W-LIB provides an extended set of IDs available for local uSID allocation that can be used when a PE with large-scale pseudowire termination requires more local uSIDs than provided from the LIB. W-LIB uSID allocation is supported for End.DT46 SRv6 SIDs.
System Security	

Feature	Description
Dynamic Retrieval of NETCONF Access Control Model Policies	Your router now retrieves the NETCONF Access Control Model (NACM) policies or rules on-demand for an authorized user from a remote Lightweight Directory Access Protocol (LDAP) server to validate each NETCONF operation. As the policies are stored in an external server and retrieved dynamically, this feature eliminates the need to manually update policies on a per-router basis. Before this release, your router supported static NACM, where the NACM policies or rules were stored locally, requiring manual policy updates on each router. This feature introduces the **nacm enable-external-policies** command.
Selective Authentication Methods for SSH Server	You now have the flexibility to choose the preferred SSH server authentication methods on the router. These methods include password authentication, keyboard-interactive authentication, and public-key authentication. This feature allows you to selectively disable these authentication methods. By allowing the SSH clients to connect to the server only through these permitted authentication methods, this functionality brings in additional security for router access through SSH. Before this release, by default, the SSH server allowed all these authentication methods for establishing SSH connections. The feature introduces these changes: • **CLI**: New **disable auth-methods** command • **YANG Data Model**: New XPaths for `Cisco-IOS-XR-crypto-ssh-cfg.yang` Cisco native model (see GitHub)
Multicast	
IGMP VRF Override with BVI Interfaces	Overriding VRFs in IGMP is now supported with BVI interfaces. This feature allows mapping of IGMP packets entering through a user-to-user interface to the multicast routes in the global multicast routing table. This ensures that the interface in a specific VRF can be part of the outgoing list of BVI interfaces in the table for a multicast route.

YANG Data Models Introduced and Enhanced

This release introduces or enhances the following data models. For detailed information about the supported and unsupported sensor paths of all the data models, see the Github repository. To get a comprehensive list of the data models supported in a release, navigate to the **Available-Content.md** file for the release in the Github repository. The unsupported sensor paths are documented as deviations. For example, `openconfig-acl.yang` provides details about the supported sensor paths, whereas `cisco-xr-openconfig-acl-deviations.yang` provides the unsupported sensor paths for openconfig-acl.yang on Cisco IOS XR routers.

Feature	Description
Programmability	
Cisco-IOS-XR-crypto-ssh-cfg.yang	We have introduced the following Xpaths to this Cisco native data model for you to selectively disable the SSH server authentication methods on the router: • `/ssh/server/disable/AuthMethods/Password` • `/ssh/server/disable/AuthMethods/KeyboardInteractive` • `/ssh/server/disable/AuthMethods/PublicKey`

Feature	Description
openconfig-aft.yang Revision 0.6.0	The OpenConfig data model is revised from version 0.3.0 to 0.6.0. The revised version introduces the support for NMS to receive essential interface characteristics, such as next-hop and next-hop group using the following XPaths to simplify the forwarding process: `openconfig-network-instance/network-instances/network-instance/afts/` • `next-hop-groups/next-hop-group/` • `next-hops/next-hop` To view the operational data of the system, you can stream Event-driven and Model-driven telemetry data.

Feature	Description
openconfig-sampling-sflow Revision 0.1.0	The OpenConfig data model revision 0.1.0 supports the following XPaths to configure the parameters such as sampling rate, sampling size, the source address of the router, collector port number, IPv4 or IPv6 addresses, and network-instance (VRF) to monitor real-time traffic in data networks using a sampling mechanism in the sFlow agent. `openconfig-sampling-sflow:sampling/sflow` • `config/enabled` • `config/source-address` • `config/sampling-size` • `config/sampling-rate` • `state/enabled` • `state/source-address` • `state/sampling-size` • `state/sampling-rate` • `collectors/collector[address,port]/address` • `collectors/collector[address,port]/port` • `collectors/collector[address,port]/config/address` • `collectors/collector[address,port]/config/port` • `collectors/collector[address,port]/config/network-instance` • `collectors/collector[address,port]/state/address` • `collectors/collector[address,port]/state/port` • `collectors/collector[address,port]/state/network-instance` • `interfaces/interface[name]/name` • `interfaces/interface[name]/config/name` • `interfaces/interface[name]/config/enabled` • `interfaces/interface[name]/config/sampling-rate` • `interfaces/interface[name]/state/name` • `interfaces/interface[name]/state/enabled` • `interfaces/interface[name]/state/sampling-rate` This release introduces **source-address** command.

Hardware Introduced

Cisco IOS XR Release 7.8.1 introduces the following hardware support:

There is no new hardware introduced in this release.

Hardware Feature	Description
9903 800G PEC OIR	From this release, you can perform the online insertion and removal of the 0.8T Port Expansion Card (A9903-8HG-PEC). OIR allows interfaces on the card to be reconfigured while other interfaces on the router remain unchanged. For more information on 0.8T PEC, see Cisco ASR 9903 Compact High-Performance Router Data Sheet

Caveats

These caveats are applicable for Cisco IOS XR Software:

Table 1: Cisco ASR 9000 Series Router Specific Bugs

Bug ID	Headline
CSCwd52391	show tech cef platform crashes gcp_lpts_pifib on LS LCs

Supported Packages and System Requirements

Feature Set (Software Images)

Visit the Cisco Software Download page to download the Cisco IOS XR software.

Cisco IOS XR 64 bit

This table lists the feature set matrix (ISO and RPM files) and associated filenames available for the Cisco IOS XR 64 bit 7.8.1 Release supported on the Cisco ASR 9000 Series Aggregation Services Router.

Table 2: Cisco IOS XR 64 bit Software Release 7.8.1 TAR Files

Feature Set	Filename	Description
Cisco IOS XR IP/MPLS Core Software [for RSP and RP systems]	ASR9K-x64-iosxr-px-7.8.1.tar	• Cisco IOS XR Manageability Package • Cisco IOS XR MPLS Package • Cisco IOS XR MPLS -TE and RSVP Package • Cisco IOS XR Multicast Package • Cisco IOS XR Optics Package • Cisco IOS XR BNG Package • Cisco IOS XR Lawful Intercept Package • Cisco IOS XR Satellite Package • Cisco IOS XR EIGRP Package • Cisco IOS XR ISIS Package • Cisco IOS XR OSPF Package • Cisco IOS XR Service Package
Cisco IOS XR IP/MPLS Core Software 3DES [for RSP and RP systems]	ASR9K-x64-iosxr-px-k9-7.8.1.tar	• Cisco IOS XR Manageability Package • Cisco IOS XR MPLS Package • Cisco IOS XR MPLS -TE and RSVP Package • Cisco IOS XR Multicast Package • Cisco IOS XR Optics Package • Cisco IOS XR BNG Package • Cisco IOS XR Lawful Intercept Package • Cisco IOS XR Satellite Package • Cisco IOS XR Security Package • Cisco IOS XR EIGRP Package • Cisco IOS XR ISIS Package • Cisco IOS XR OSPF Package • Cisco IOS XR Service Package

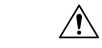
Feature Set	Filename	Description
Cisco IOS XR IP Unicast Routing Core Bundle and Migration to IOS XR 64 bit tar image	asr9k-mini-x64-migrate_to_eXR.tar-7.8.1	Contains the required core packages, including OS, Admin, Base,Forwarding, Modular Services Card, Routing, FPD, SNMP Agent, and Alarm Correlation. Contains mini.iso file for XR 64 bit 7.8.1 and additional software for migration to 64 bit.

Table 3: Cisco IOS XR 64 bit Software Release 7.8.1 ISO and RPM Files

Composite Package		
Feature Set	**Filename**	**Description**
Cisco IOS XR IP Unicast Routing Core Bundle	asr9k-mini-x64-7.8.1.iso	Contains the required core packages, including OS, Admin, Base,Forwarding, Modular Services Card, Routing, FPD, SNMP Agent, and Alarm Correlation. The mini iso file is used for upgrading to the new release.
Individually-Installable Optional Packages		
Feature Set	**Filename**	**Description**
Cisco IOS XR 64 bit EIGRP package	asr9k-eigrp-x64-1.0.0.0-r781.x86_64.rpm	Includes EIGRP protocol support software
Cisco IOS XR BNG Package	asr9k-bng-x64-1.1.0.0-r781.x86_64.rpm	Includes binaries to support BNG features.
Cisco IOS XR 64 bit ISIS package	asr9k-isis-x64-1.1.0.0-r781.x86_64.rpm	Includes IS-IS Link state protocol support software
Cisco IOS XR 64 bit OSPF package	asr9k-ospf-x64-1.1.0.0-r781.x86_64.rpm	Includes OSPF link state protocol support software
Cisco IOS XR Manageability Package	asr9k-mgbl-x64-3.0.0.0-r781.x86_64.rpm	CORBA2 agent, XML3 Parser, and HTTP server packages. This RPM also contains some SNMP MIB infrastructure. Certain MIBs won't work if this RPM is not installed. IPSLA and environment MIBs are part of the mgbl rpm.
Cisco IOS XR 64 bit MPLS-TE and RSVP package	asr9k-mpls-te-rsvp-x64-1.2.0.0-r781.x86_64.rpm	MPLS Traffic Engineering (MPLS-TE), Resource Reservation Protocol (RSVP).

Cisco IOS XR 64 bit MPLS Package	asr9k-mpls-x64-2.1.0.0-r781.x86_64.rpm	Label Distribution Protocol (LDP), MPLS Forwarding, MPLS Operations, Administration, and Maintenance (OAM), Link Manager Protocol (LMP), Optical User Network Interface (OUNI) and Layer-3 VPN.
Cisco IOS XR 64 bit Multicast Package	asr9k-mcast-x64-2.0.0.0-r781.x86_64.rpm	Multicast Routing Protocols (PIM, Multicast Source Discovery Protocol [MSDP], Internet Group Management Protocol [IGMP], Auto-RP), Tools (SAP, MTrace), and Infrastructure [(Multicast Routing Information Base [MRIB], Multicast-Unicast RIB [MURIB], Multicast forwarding [MFWD]), and Bidirectional Protocol Independent Multicast (BIDIR-PIM).
Cisco IOS XR 64 bit Optics Package	asr9k-optic-x64-1.0.0.0-r781.x86_64.rpm	Firmware for the optics feature for Cisco ASR 9000 Series Aggregation Services Router Chassis. It enables Transport / OTN feature under interfaces.
Cisco IOS XR 64 bit Lawful Intercept (LI) Package	asr9k-li-x64-1.1.0.0-r781.x86_64.rpm	Includes LI software images.
Cisco IOS XR Security Package	asr9k-k9sec-x64-3.1.0.0-r781.x86_64.rpm	Support for Encryption, Decryption,, Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).
Cisco IOS XR Satellite Package -ASR9000v	asr9k-9000v-nV-x64-1.0.0.0-r781.x86_64.rpm	Includes rpm to support Cisco ASR9000v Series Router Software and to support Cisco ASR 9000v Series Router as a satellite for Cisco ASR 9000 Series Router
Cisco IOS XR 64 bit Services Package	asr9k-services-x64-1.0.0.0-r781.x86_64.rpm	Includes rpm to support Cisco IOS XR 64-bit inline MAP-T function

Memory



Caution If you remove the media in which the software image or configuration is stored, the router may become unstable and fail.

The available memory for Cisco ASR 9000 Series Aggregation Services Router running Cisco IOS XR Software Release consist of the following:

- 32 GB memory on the A99-RP-F
- 16 GB memory on the RSP880, RSP880-LT, RP2, A99-RSP-TR and A99-RSP-SE
- 16 GB memory on the RP2 transport optimised (TR) variant and 32 GB memory on the RP2 service edge (SE) variant

- 24 GB memory on the RP3 transport optimised (TR) variant and 40 GB memory on the RP3 service edge (SE) variant
- 24 GB memory on the RP3-X transport optimised (TR) variant and 48 GB memory on the RP3-X service edge (SE) variant
- 24 GB memory on the RSP5 transport optimised (TR) variant and 40 GB memory on the RSP5 service edge (SE) variant
- 24 GB memory on the RSP5-X transport optimised (TR) variant and 48 GB memory on the RSP5-X service edge (SE) variant
- 2 GB compact flash on route switch processors (RSPs)
- 8 GB memory on the line cards (LCs) running Cisco IOS XR 64-bit image

Software Compatibility

Cisco IOS XR Software Release is compatible with the following Cisco ASR 9000 Series Aggregation Services Router systems.

- Cisco ASR 9900 Series Chassis
  - Cisco ASR 9922 Chassis
  - Cisco ASR 9912 Chassis
  - Cisco ASR 9910 Chassis
  - Cisco ASR 9906 Chassis
  - Cisco ASR 9904 Chassis
  - Cisco ASR 9903 Chassis
  - Cisco ASR 9902 Chassis
  - Cisco ASR 9901 Chassis
- Cisco ASR 9000 Series Chassis
  - Cisco ASR 9010 Chassis
  - Cisco ASR 9006 Chassis

For Cisco license support, please contact your Cisco Sales Representative or Customer Service at 800- 553-NETS (6387) or 408-526-4000. For questions on the program other than ordering, please send e-mail to: cwm-license@cisco.com.

Determining Installed Packages

To determine the version of Cisco IOS XR Software packages installed on your router, log in to the router and enter the **show install active summary** command:

Cisco IOS XR 64 bit

```
Router# show install active summary
Label : 7.8.1
    Active Packages: 17
        asr9k-xr-7.8.1 version=7.8.1
        asr9k-isis-x64-1.1.0.0-r781
        asr9k-mpls-x64-2.0.0.0-r781
        asr9k-m2m-x64-2.0.0.0-r781
        asr9k-k9sec-x64-2.1.0.0-r781
```

```
asr9k-ospf-x64-1.0.0.0-r781
asr9k-mcast-x64-2.0.0.0-r781
asr9k-optic-x64-1.0.0.0-r781
asr9k-9000v-nV-x64-1.0.0.0-r781
asr9k-bng-supp-x64-1.0.0.0-r781
asr9k-bng-x64-1.0.0.0-r781
asr9k-bng-pppoe-x64-1.0.0.0-r781
asr9k-mgbl-x64-2.0.0.0-r781
asr9k-mpls-te-rsvp-x64-2.1.0.0-r781
asr9k-bng-ipoe-x64-1.0.0.0-r781
asr9k-eigrp-x64-1.0.0.0-r781
asr9k-services-x64-1.0.0.0-r781
asr9k-li-x64-1.1.0.0-r781
```

Firmware Support on Cisco IOS XR 64-bit

To check the firmware code running on the Cisco ASR 9000 Series Router, run the **show fpd package** command in admin mode:

> **Note** The show command output lists supported and EOL hardware PIDs. To know the PIDs that are supported in this release, see the Supported Hardware section in this Release Notes.

```
(sysadmin-vm)#show fpd package

=================================================================================
                             Field Programmable Device Package
                 ==================================================
                                                Req     SW        Min Req    Min Req
Card Type              FPD Description           Reload  Ver       SW Ver     Board Ver
=================== ========================== ====== =======   ==========  =========
A99-10X400GE-X-CM     Aldrin-FPGA                YES     1.05         1.05       0.0
                      Beachcomber-0              YES     0.01         0.01       0.0
                      Beachcomber-1              YES     0.01         0.01       0.0
                      CBC                        NO     62.05        62.05       0.0
                      IPU-DDR4                   YES     1.06         1.06       0.0
                      Primary-BIOS               YES    25.30        25.30       0.0
                      Sunstreaker                YES     0.14         0.14       0.0
                      TAMFW-Sunstreaker          YES     2.65         2.65       0.0
                      Trailbreaker-0             YES     0.24         0.24       0.0
                      Trailbreaker-1             YES     0.24         0.24       0.0
----------------------------------------------------------------------------------
A99-10X400GE-X-SE     Aldrin-FPGA                YES     1.05         1.05       0.0
                      Beachcomber-0              YES     0.01         0.01       0.0
                      Beachcomber-1              YES     0.01         0.01       0.0
                      CBC                        NO     62.05        62.05       0.0
                      IPU-DDR4                   YES     1.06         1.06       0.0
                      Primary-BIOS               YES    25.30        25.30       0.0
                      Sunstreaker                YES     0.14         0.14       0.0
                      TAMFW-Sunstreaker          YES     2.65         2.65       0.0
                      Trailbreaker-0             YES     0.24         0.24       0.0
                      Trailbreaker-1             YES     0.24         0.24       0.0
----------------------------------------------------------------------------------
A99-10X400GE-X-TR     Aldrin-FPGA                YES     1.05         1.05       0.0
                      Beachcomber-0              YES     0.01         0.01       0.0
                      Beachcomber-1              YES     0.01         0.01       0.0
                      CBC                        NO     62.05        62.05       0.0
                      IPU-DDR4                   YES     1.06         1.06       0.0
                      Primary-BIOS               YES    25.30        25.30       0.0
                      Sunstreaker                YES     0.14         0.14       0.0
                      TAMFW-Sunstreaker          YES     2.65         2.65       0.0
```

	Trailbreaker-0	YES	0.24	0.24	0.0
	Trailbreaker-1	YES	0.24	0.24	0.0
A99-12X100GE	CBC	NO	46.06	46.06	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Morra-0	YES	1.05	1.05	0.1
	Morra-1	YES	1.05	1.05	0.1
	Primary-BIOS	YES	9.34	9.34	0.1
	Sideswipe-0	YES	1.02	1.02	0.1
	Sideswipe-1	YES	1.02	1.02	0.1
A99-12X100GE-CM	CBC	NO	46.06	46.06	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Morra-0	YES	1.05	1.05	0.1
	Morra-1	YES	1.05	1.05	0.1
	Primary-BIOS	YES	9.34	9.34	0.1
	Sideswipe-0	YES	1.02	1.02	0.1
	Sideswipe-1	YES	1.02	1.02	0.1
A99-16X100GE-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A99-16X100GE-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A99-16X100GE-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A99-16X100GE-X-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
A99-24HG-FLEX-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0

	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-24HG-FLEX-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-24HG-FLEX-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-24X10GE-1G-CM	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A99-24X10GE-1G-SE	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A99-24X10GE-1G-TR	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A99-32X100GE-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0

	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
A99-32X100GE-DENS	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0
	Grapple-0	YES	0.12	0.12	0.0
	Grapple-1	YES	0.12	0.12	0.0
	IPU-DDR4	YES	1.08	1.08	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.08	0.08	0.0
	Skylynx-1	YES	0.08	0.08	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-32X100GE-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
A99-32X100GE-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
A99-32X100GE-X-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-32X100GE-X-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0

	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-32X100GE-X-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	57.04	57.04	0.0
	Grapple-0	YES	0.15	0.15	0.0
	Grapple-1	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Mixmaster-1	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Skylynx-1	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-48X10GE-1G-CM	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Leadfoot-1	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A99-48X10GE-1G-SE	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Leadfoot-1	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A99-48X10GE-1G-TR	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Leadfoot-1	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A99-4HG-FLEX-FC	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	63.03	63.03	0.0
	IPU-DDR4	YES	1.05	1.05	0.0
	Moonracer	YES	0.14	0.14	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skywarp-0	YES	0.11	0.11	0.0
	Skywarp-1	YES	0.11	0.11	0.0
	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-4HG-FLEX-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	63.03	63.03	0.0
	IPU-DDR4	YES	1.05	1.05	0.0
	Moonracer	YES	0.14	0.14	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skywarp-0	YES	0.11	0.11	0.0

	Skywarp-1	YES	0.11	0.11	0.0
	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-4HG-FLEX-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	63.03	63.03	0.0
	IPU-DDR4	YES	1.05	1.05	0.0
	Moonracer	YES	0.14	0.14	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skywarp-0	YES	0.11	0.11	0.0
	Skywarp-1	YES	0.11	0.11	0.0
	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A99-4X100GE-SE	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-4X100GE-SE	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-4X100GE-SE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-4X100GE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-4X100GE-TR	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-4X100GE-TR	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0

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                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-4X100GE-TR-TAA   CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-8X100GE-CM       CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-8X100GE-SE       CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-8X100GE-SE       CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-8X100GE-SE-TAA   CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-8X100GE-TAA      CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
                     Meldun-1                    YES     1.07        1.07       0.0
                     Primary-BIOS                YES     8.51        8.51       0.0
-----------------------------------------------------------------------------------
A99-8X100GE-TR       CBC                         NO     38.23       38.23       0.0
                     Dalla                       YES     1.09        1.09       0.0
                     IPU-FPGA                    YES     1.99        1.99       0.0
                     IPU-FSBL                    YES     1.113       1.113      0.0
                     IPU-Linux                   YES     1.113       1.113      0.0
                     Meldun-0                    YES     1.07        1.07       0.0
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	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-8X100GE-TR	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-8X100GE-TR-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99-RP-F	Aldrin-0-FPGA	YES	1.06	1.06	0.0
	CBC	NO	59.13	59.13	0.0
	Lionheart-FPGA	YES	0.30	0.30	0.0
	Longshot	YES	2.16	2.16	0.0
	Primary-BIOS	YES	33.30	33.30	0.0
	TamFW-Longshot	YES	2.65	2.65	0.0
	Wolfpack-FPGA	YES	0.19	0.19	0.0
A99-RP2-SE	Alpha-FPGA	YES	0.16	0.16	0.0
	CBC-0	NO	35.14	35.14	0.0
	CBC-1	NO	35.14	35.14	0.0
	Cha-FPGA	YES	0.09	0.09	0.0
	IPU-FPGA	YES	0.72	0.72	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.20	0.20	0.0
	Optimus-FPGA	YES	0.12	0.12	0.0
	Primary-BIOS	YES	14.39	14.39	0.0
A99-RP2-TR	Alpha-FPGA	YES	0.16	0.16	0.0
	CBC-0	NO	35.14	35.14	0.0
	CBC-1	NO	35.14	35.14	0.0
	Cha-FPGA	YES	0.09	0.09	0.0
	IPU-FPGA	YES	0.72	0.72	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.20	0.20	0.0
	Optimus-FPGA	YES	0.12	0.12	0.0
	Primary-BIOS	YES	14.39	14.39	0.0
A99-RP3-SE	Aldrin-0-FPGA	YES	1.03	1.03	0.0
	Aldrin-1-FPGA	YES	1.00	1.00	0.0
	Beta-FPGA	YES	0.07	0.07	0.0
	CBC-0	NO	51.12	51.12	0.0
	CBC-1	NO	51.12	51.12	0.0
	IPU-DDR4	YES	0.20	0.20	0.0
	Orion-FPGA	YES	0.23	0.23	0.0
	Primary-BIOS	YES	30.36	30.36	0.0
	Zenith-FPGA	YES	0.10	0.10	0.0
A99-RP3-TR	Aldrin-0-FPGA	YES	1.03	1.03	0.0
	Aldrin-1-FPGA	YES	1.00	1.00	0.0
	Beta-FPGA	YES	0.07	0.07	0.0

	CBC-0	NO	51.12	51.12	0.0
	CBC-1	NO	51.12	51.12	0.0
	IPU-DDR4	YES	0.20	0.20	0.0
	Orion-FPGA	YES	0.23	0.23	0.0
	Primary-BIOS	YES	30.36	30.36	0.0
	Zenith-FPGA	YES	0.10	0.10	0.0
A99-RP3X-TR	Aldrin-0-FPGA	YES	1.00	1.00	0.0
	Aldrin-1-FPGA	YES	32.00	32.00	0.0
	Beta-FPGA	YES	2.02	2.02	0.0
	CBC-0	NO	12.04	12.04	0.0
	CBC-1	NO	51.12	51.12	0.0
	IPU-DDR4	YES	3.03	3.03	0.0
	Orion-FPGA	YES	2.03	2.03	0.0
	Primary-BIOS	YES	35.03	35.03	0.0
	Sigma	YES	3.33	3.33	0.0
	TamFW-Sigma	YES	2.07	2.07	0.0
	Zenith-FPGA	YES	2.07	2.07	0.0
A99-RP3X-TR	Aldrin-0-FPGA	YES	1.00	1.00	0.0
	Aldrin-1-FPGA	YES	32.00	32.00	0.0
	Beta-FPGA	YES	2.02	2.02	0.0
	CBC-0	NO	12.04	12.04	0.0
	CBC-1	NO	51.12	51.12	0.0
	IPU-DDR4	YES	3.03	3.03	0.0
	Orion-FPGA	YES	2.03	2.03	0.0
	Primary-BIOS	YES	35.03	35.03	0.0
	Sigma	YES	3.33	3.33	0.0
	TamFW-Sigma	YES	2.07	2.07	0.0
	Zenith-FPGA	YES	2.07	2.07	0.0
A99-RSP-SE	Alpha-FPGA	YES	0.16	0.16	0.0
	CBC	NO	43.03	43.03	0.0
	Cha-FPGA	YES	0.09	0.09	0.0
	IPU-FPGA	YES	0.72	0.72	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.20	0.20	0.0
	Optimus-FPGA	YES	0.12	0.12	0.0
	Primary-BIOS	YES	16.18	16.18	0.0
A99-RSP-TR	Alpha-FPGA	YES	0.16	0.16	0.0
	CBC	NO	43.03	43.03	0.0
	Cha-FPGA	YES	0.09	0.09	0.0
	IPU-FPGA	YES	0.72	0.72	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.20	0.20	0.0
	Optimus-FPGA	YES	0.12	0.12	0.0
	Primary-BIOS	YES	16.18	16.18	0.0
A99-SFC-S	CBC	NO	44.02	44.02	0.0
	IPU-FPGA	YES	0.37	0.37	0.0
	IPU-FSBL	YES	1.100	1.100	0.0
	IPU-Linux	YES	1.100	1.100	0.0
A99-SFC-T	CBC	NO	44.02	44.02	0.0
	IPU-FPGA	YES	0.37	0.37	0.0
	IPU-FSBL	YES	1.100	1.100	0.0
	IPU-Linux	YES	1.100	1.100	0.0
A99-SFC2	CBC	NO	37.20	37.20	0.0
	IPU-FPGA	YES	0.37	0.37	0.0
	IPU-FSBL	YES	1.100	1.100	0.0

	IPU-Linux	YES	1.100	1.100	0.0
A99-SFC3	CBC	NO	49.03	49.03	0.0
	IPU-DDR4	YES	0.25	0.25	0.0
A99-SFC3-S	CBC	NO	44.02	44.02	0.0
	IPU-DDR4	YES	0.25	0.25	0.0
A99-SFC3-T	CBC	NO	44.02	44.02	0.0
	IPU-DDR4	YES	0.25	0.25	0.0
A99L-4X100GE-SE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99L-4X100GE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99L-4X100GE-TR-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99L-8X100GE-SE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99L-8X100GE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A99L-8X100GE-TR-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0

A9K-1600W-AC	PO-PriMCU	NO	17.137	17.137	0.0
A9K-1600W-DC	PO-PriMCU	NO	1.09	1.09	0.0
A9K-16X100GE-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A9K-16X100GE-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A9K-16X100GE-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A9K-16X100GE-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A9K-20HG-FLEX-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Trailbreaker-0	YES	0.24	0.24	0.0
	Trailbreaker-1	YES	0.24	0.24	0.0
	Windcharger-0	YES	0.08	0.08	0.0
	Windcharger-1	YES	0.08	0.08	0.0
A9K-20HG-FLEX-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Trailbreaker-0	YES	0.24	0.24	0.0
	Trailbreaker-1	YES	0.24	0.24	0.0
	Windcharger-0	YES	0.08	0.08	0.0
	Windcharger-1	YES	0.08	0.08	0.0
A9K-20HG-FLEX-TR	Aldrin-FPGA	YES	1.05	1.05	0.0

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                    CBC                       NO     58.09       58.09      0.0
                    IPU-DDR4                  YES     1.18        1.18      0.0
                    Primary-BIOS              YES    25.30       25.30      0.0
                    Sunstreaker               YES     0.14        0.14      0.0
                    TAMFW-Sunstreaker         YES     2.65        2.65      0.0
                    Trailbreaker-0            YES     0.24        0.24      0.0
                    Trailbreaker-1            YES     0.24        0.24      0.0
                    Windcharger-0             YES     0.08        0.08      0.0
                    Windcharger-1             YES     0.08        0.08      0.0
--------------------------------------------------------------------------------
A9K-24X10GE-1G-CM   CBC                       NO     47.03       47.03      0.1
                    IPU-FPGA                  YES     1.90        1.90      0.1
                    IPU-FSBL                  YES     1.113       1.113     0.1
                    IPU-Linux                 YES     1.113       1.113     0.1
                    Leadfoot-0                YES     1.00        1.00      0.1
                    Lewis                     YES     1.11        1.11      0.1
                    Primary-BIOS              YES    18.34       18.34      0.1
--------------------------------------------------------------------------------
A9K-24X10GE-1G-SE   CBC                       NO     47.03       47.03      0.1
                    IPU-FPGA                  YES     1.90        1.90      0.1
                    IPU-FSBL                  YES     1.113       1.113     0.1
                    IPU-Linux                 YES     1.113       1.113     0.1
                    Leadfoot-0                YES     1.00        1.00      0.1
                    Lewis                     YES     1.11        1.11      0.1
                    Primary-BIOS              YES    18.34       18.34      0.1
--------------------------------------------------------------------------------
A9K-24X10GE-1G-TR   CBC                       NO     47.03       47.03      0.1
                    IPU-FPGA                  YES     1.90        1.90      0.1
                    IPU-FSBL                  YES     1.113       1.113     0.1
                    IPU-Linux                 YES     1.113       1.113     0.1
                    Leadfoot-0                YES     1.00        1.00      0.1
                    Lewis                     YES     1.11        1.11      0.1
                    Primary-BIOS              YES    18.34       18.34      0.1
--------------------------------------------------------------------------------
A9K-400G-DWDM-TR    CBC                       NO     42.04       42.04      0.0
                    Doran                     YES     1.05        1.05      0.0
                    Frenzy                    YES    49.00       49.00      0.0
                    IPU-FPGA                  YES     1.97        1.97      0.1
                    IPU-FSBL                  YES     1.103       1.103     0.1
                    IPU-Linux                 YES     1.103       1.103     0.1
                    Martell                   YES     1.03        1.03      0.0
                    Meldun                    YES     1.07        1.07      0.1
                    Primary-BIOS              YES     8.51        8.51      0.1
--------------------------------------------------------------------------------
A9K-400GE-LSP       Aldrin-FPGA               YES     1.05        1.05      0.0
                    CBC                       NO     63.03       63.03      0.0
                    IPU-DDR4                  YES     1.05        1.05      0.0
                    Moonracer                 YES     0.14        0.14      0.0
                    Primary-BIOS              YES    25.30       25.30      0.0
                    Skywarp-0                 YES     0.11        0.11      0.0
                    Skywarp-1                 YES     0.11        0.11      0.0
                    Sunstreaker               YES     0.15        0.15      0.0
                    TAMFW-Sunstreaker         YES     2.65        2.65      0.0
--------------------------------------------------------------------------------
A9K-48X10GE-1G-CM   CBC                       NO     47.03       47.03      0.1
                    IPU-FPGA                  YES     1.90        1.90      0.1
                    IPU-FSBL                  YES     1.113       1.113     0.1
                    IPU-Linux                 YES     1.113       1.113     0.1
                    Leadfoot-0                YES     1.00        1.00      0.1
                    Leadfoot-1                YES     1.00        1.00      0.1
                    Lewis                     YES     1.11        1.11      0.1
                    Primary-BIOS              YES    18.34       18.34      0.1
--------------------------------------------------------------------------------
A9K-48X10GE-1G-SE   CBC                       NO     47.03       47.03      0.1
```

	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Leadfoot-1	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A9K-48X10GE-1G-TR	CBC	NO	47.03	47.03	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Leadfoot-0	YES	1.00	1.00	0.1
	Leadfoot-1	YES	1.00	1.00	0.1
	Lewis	YES	1.11	1.11	0.1
	Primary-BIOS	YES	18.34	18.34	0.1
A9K-4HG-FLEX-FC	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	63.03	63.03	0.0
	IPU-DDR4	YES	1.05	1.05	0.0
	Moonracer	YES	0.14	0.14	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skywarp-0	YES	0.11	0.11	0.0
	Skywarp-1	YES	0.11	0.11	0.0
	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A9K-4HG-FLEX-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	63.03	63.03	0.0
	IPU-DDR4	YES	1.05	1.05	0.0
	Moonracer	YES	0.14	0.14	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skywarp-0	YES	0.11	0.11	0.0
	Skywarp-1	YES	0.11	0.11	0.0
	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A9K-4HG-FLEX-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	63.03	63.03	0.0
	IPU-DDR4	YES	1.05	1.05	0.0
	Moonracer	YES	0.14	0.14	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skywarp-0	YES	0.11	0.11	0.0
	Skywarp-1	YES	0.11	0.11	0.0
	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A9K-4X100GE	CBC	NO	46.06	46.06	0.1
	IPU-FPGA	YES	1.90	1.90	0.1
	IPU-FSBL	YES	1.113	1.113	0.1
	IPU-Linux	YES	1.113	1.113	0.1
	Morra-0	YES	1.05	1.05	0.1
	Primary-BIOS	YES	9.34	9.34	0.1
	Sideswipe-0	YES	1.02	1.02	0.1
A9K-4X100GE-SE	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0

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A9K-4X100GE-SE       CBC                        NO     38.23        38.23       0.0
                     Dalla                      YES     1.09         1.09       0.0
                     IPU-FPGA                   YES     1.99         1.99       0.0
                     IPU-FSBL                   YES     1.113        1.113      0.0
                     IPU-Linux                  YES     1.113        1.113      0.0
                     Meldun-0                   YES     1.07         1.07       0.0
                     Meldun-1                   YES     1.07         1.07       0.0
                     Primary-BIOS               YES     8.51         8.51       0.0
-----------------------------------------------------------------------------------
A9K-4X100GE-SE-TAA   CBC                        NO     38.23        38.23       0.0
                     Dalla                      YES     1.09         1.09       0.0
                     IPU-FPGA                   YES     1.99         1.99       0.0
                     IPU-FSBL                   YES     1.113        1.113      0.0
                     IPU-Linux                  YES     1.113        1.113      0.0
                     Meldun-0                   YES     1.07         1.07       0.0
                     Meldun-1                   YES     1.07         1.07       0.0
                     Primary-BIOS               YES     8.51         8.51       0.0
-----------------------------------------------------------------------------------
A9K-4X100GE-TAA      CBC                        NO     38.23        38.23       0.0
                     Dalla                      YES     1.09         1.09       0.0
                     IPU-FPGA                   YES     1.99         1.99       0.0
                     IPU-FSBL                   YES     1.113        1.113      0.0
                     IPU-Linux                  YES     1.113        1.113      0.0
                     Meldun-0                   YES     1.07         1.07       0.0
                     Meldun-1                   YES     1.07         1.07       0.0
                     Primary-BIOS               YES     8.51         8.51       0.0
-----------------------------------------------------------------------------------
A9K-4X100GE-TR       CBC                        NO     38.23        38.23       0.0
                     Dalla                      YES     1.09         1.09       0.0
                     IPU-FPGA                   YES     1.99         1.99       0.0
                     IPU-FSBL                   YES     1.113        1.113      0.0
                     IPU-Linux                  YES     1.113        1.113      0.0
                     Meldun-0                   YES     1.07         1.07       0.0
                     Meldun-1                   YES     1.07         1.07       0.0
                     Primary-BIOS               YES     8.51         8.51       0.0
-----------------------------------------------------------------------------------
A9K-4X100GE-TR       CBC                        NO     38.23        38.23       0.0
                     Dalla                      YES     1.09         1.09       0.0
                     IPU-FPGA                   YES     1.99         1.99       0.0
                     IPU-FSBL                   YES     1.113        1.113      0.0
                     IPU-Linux                  YES     1.113        1.113      0.0
                     Meldun-0                   YES     1.07         1.07       0.0
                     Meldun-1                   YES     1.07         1.07       0.0
                     Primary-BIOS               YES     8.51         8.51       0.0
-----------------------------------------------------------------------------------
A9K-4X100GE-TR-TAA   CBC                        NO     38.23        38.23       0.0
                     Dalla                      YES     1.09         1.09       0.0
                     IPU-FPGA                   YES     1.99         1.99       0.0
                     IPU-FSBL                   YES     1.113        1.113      0.0
                     IPU-Linux                  YES     1.113        1.113      0.0
                     Meldun-0                   YES     1.07         1.07       0.0
                     Meldun-1                   YES     1.07         1.07       0.0
                     Primary-BIOS               YES     8.51         8.51       0.0
-----------------------------------------------------------------------------------
A9K-4X100GE-TR-V2    Aldrin-FPGA                YES     1.05         1.05       0.0
                     CBC                        NO     48.09        48.09       0.0
                     Grapple-0                  YES     0.15         0.15       0.0
                     IPU-DDR4                   YES     1.09         1.09       0.0
                     Mixmaster-0                YES     0.13         0.13       0.0
                     Primary-BIOS               YES    21.43        21.43       0.0
                     Scamper                    YES     0.23         0.23       0.0
                     Skylynx-0                  YES     0.12         0.12       0.0
-----------------------------------------------------------------------------------
A9K-8HG-FLEX-CM      Aldrin-FPGA                YES     1.05         1.05       0.0
```

	CBC	NO	58.09	58.09	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Trailbreaker-0	YES	0.24	0.24	0.0
	Windcharger-0	YES	0.08	0.08	0.0
A9K-8HG-FLEX-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Trailbreaker-0	YES	0.24	0.24	0.0
	Windcharger-0	YES	0.08	0.08	0.0
A9K-8HG-FLEX-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Trailbreaker-0	YES	0.24	0.24	0.0
	Windcharger-0	YES	0.08	0.08	0.0
A9K-8X100GE-CM	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A9K-8X100GE-L-SE	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A9K-8X100GE-L-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A9K-8X100GE-L-TR	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A9K-8X100GE-SE	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0

```
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-SE-TAA  CBC                     NO     38.23       38.23      0.0
                    Dalla                   YES     1.09        1.09      0.0
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-TAA     CBC                     NO     38.23       38.23      0.0
                    Dalla                   YES     1.09        1.09      0.0
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-TR      CBC                     NO     38.23       38.23      0.0
                    Dalla                   YES     1.09        1.09      0.0
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-TR-TAA  CBC                     NO     38.23       38.23      0.0
                    Dalla                   YES     1.09        1.09      0.0
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-X-CM    Aldrin-FPGA             YES     1.05        1.05      0.0
                    CBC                     NO     48.09       48.09      0.0
                    Grapple-0               YES     0.15        0.15      0.0
                    IPU-DDR4                YES     1.09        1.09      0.0
                    Mixmaster-0             YES     0.13        0.13      0.0
                    Primary-BIOS            YES    21.43       21.43      0.0
                    Scamper                 YES     0.23        0.23      0.0
                    Skylynx-0               YES     0.12        0.12      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-X-SE    Aldrin-FPGA             YES     1.05        1.05      0.0
                    CBC                     NO     48.09       48.09      0.0
                    Grapple-0               YES     0.15        0.15      0.0
                    IPU-DDR4                YES     1.09        1.09      0.0
                    Mixmaster-0             YES     0.13        0.13      0.0
                    Primary-BIOS            YES    21.43       21.43      0.0
                    Scamper                 YES     0.23        0.23      0.0
                    Skylynx-0               YES     0.12        0.12      0.0
--------------------------------------------------------------------------------
A9K-8X100GE-X-TR    Aldrin-FPGA             YES     1.05        1.05      0.0
                    CBC                     NO     48.09       48.09      0.0
                    Grapple-0               YES     0.15        0.15      0.0
```

	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A9K-8X100GE-X-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	48.09	48.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.09	1.09	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	21.43	21.43	0.0
	Scamper	YES	0.23	0.23	0.0
	Skylynx-0	YES	0.12	0.12	0.0
A9K-8X100GE-X2-CM	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A9K-8X100GE-X2-SE	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A9K-8X100GE-X2-TR	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	Grapple-0	YES	0.15	0.15	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Mixmaster-0	YES	0.13	0.13	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Skylynx-0	YES	0.12	0.12	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
A9K-8X100GELSE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A9K-8X100GELTR-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0
	IPU-FPGA	YES	1.99	1.99	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Meldun-0	YES	1.07	1.07	0.0
	Meldun-1	YES	1.07	1.07	0.0
	Primary-BIOS	YES	8.51	8.51	0.0
A9K-MOD200-CM	Blaster	YES	1.27	1.27	0.1

	CBC	NO	39.09	39.09	0.1
	IPU-FPGA	YES	1.97	1.97	0.1
	IPU-FSBL	YES	1.103	1.103	0.1
	IPU-Linux	YES	1.103	1.103	0.1
	Primary-BIOS	YES	8.51	8.51	0.1
A9K-MOD200-SE	Blaster	YES	1.27	1.27	0.1
	CBC	NO	39.09	39.09	0.1
	IPU-FPGA	YES	1.97	1.97	0.1
	IPU-FSBL	YES	1.103	1.103	0.1
	IPU-Linux	YES	1.103	1.103	0.1
	Primary-BIOS	YES	8.51	8.51	0.1
A9K-MOD200-TR	Blaster	YES	1.27	1.27	0.1
	CBC	NO	39.09	39.09	0.1
	IPU-FPGA	YES	1.97	1.97	0.1
	IPU-FSBL	YES	1.103	1.103	0.1
	IPU-Linux	YES	1.103	1.103	0.1
	Primary-BIOS	YES	8.51	8.51	0.1
A9K-MOD400-CM	Blaster	YES	1.27	1.27	0.1
	CBC	NO	39.09	39.09	0.1
	IPU-FPGA	YES	1.97	1.97	0.1
	IPU-FSBL	YES	1.103	1.103	0.1
	IPU-Linux	YES	1.103	1.103	0.1
	Primary-BIOS	YES	8.51	8.51	0.1
A9K-MOD400-SE	Blaster	YES	1.27	1.27	0.1
	CBC	NO	39.09	39.09	0.1
	IPU-FPGA	YES	1.97	1.97	0.1
	IPU-FSBL	YES	1.103	1.103	0.1
	IPU-Linux	YES	1.103	1.103	0.1
	Primary-BIOS	YES	8.51	8.51	0.1
A9K-MOD400-TR	Blaster	YES	1.27	1.27	0.1
	CBC	NO	39.09	39.09	0.1
	IPU-FPGA	YES	1.97	1.97	0.1
	IPU-FSBL	YES	1.103	1.103	0.1
	IPU-Linux	YES	1.103	1.103	0.1
	Primary-BIOS	YES	8.51	8.51	0.1
A9K-RSP5-SE	Aldrin-0-FPGA	YES	1.06	1.06	0.0
	Beta-FPGA	YES	0.07	0.07	0.0
	CBC	NO	53.10	53.10	0.0
	IPU-DDR4	YES	0.20	0.20	0.0
	Orion-FPGA	YES	0.23	0.23	0.0
	Primary-BIOS	YES	31.36	31.36	0.0
	Zenith-FPGA	YES	0.10	0.10	0.0
A9K-RSP5-TR	Aldrin-0-FPGA	YES	1.06	1.06	0.0
	Beta-FPGA	YES	0.07	0.07	0.0
	CBC	NO	53.10	53.10	0.0
	IPU-DDR4	YES	0.20	0.20	0.0
	Orion-FPGA	YES	0.23	0.23	0.0
	Primary-BIOS	YES	31.36	31.36	0.0
	Zenith-FPGA	YES	0.10	0.10	0.0
A9K-RSP5X-TR	Aldrin-0-FPGA	YES	51.00	51.00	0.0
	Beta-FPGA	YES	2.02	2.02	0.0
	CBC	NO	14.04	14.04	0.0
	IPU-DDR4	YES	3.03	3.03	0.0
	Orion-FPGA	YES	2.03	2.03	0.0
	Primary-BIOS	YES	35.03	35.03	0.0
	Sigma	YES	3.33	3.33	0.0

	TamFW-Sigma	YES	2.07	2.07	0.0
	Zenith-FPGA	YES	2.07	2.07	0.0
A9K-RSP5X-TR	Aldrin-0-FPGA	YES	51.00	51.00	0.0
	Beta-FPGA	YES	2.02	2.02	0.0
	CBC	NO	14.04	14.04	0.0
	IPU-DDR4	YES	3.03	3.03	0.0
	Orion-FPGA	YES	2.03	2.03	0.0
	Primary-BIOS	YES	35.03	35.03	0.0
	Sigma	YES	3.33	3.33	0.0
	TamFW-Sigma	YES	2.07	2.07	0.0
	Zenith-FPGA	YES	2.07	2.07	0.0
A9K-RSP880-LT-SE	Aldrin-FPGA	YES	1.11	1.11	0.0
	Alpha-FPGA	YES	0.05	0.05	0.0
	CBC	NO	50.03	50.03	0.0
	IPU-FPGA	YES	0.20	0.20	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.07	0.07	0.0
	Optimus-FPGA	YES	0.05	0.05	0.0
	Primary-BIOS	YES	17.41	17.41	0.0
A9K-RSP880-LT-TR	Aldrin-FPGA	YES	1.11	1.11	0.0
	Alpha-FPGA	YES	0.05	0.05	0.0
	CBC	NO	50.03	50.03	0.0
	IPU-FPGA	YES	0.20	0.20	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.07	0.07	0.0
	Optimus-FPGA	YES	0.05	0.05	0.0
	Primary-BIOS	YES	17.41	17.41	0.0
A9K-RSP880-SE	Alpha-FPGA	YES	0.16	0.16	0.0
	CBC	NO	34.39	34.39	0.0
	Cha-FPGA	YES	0.09	0.09	0.0
	IPU-FPGA	YES	0.72	0.72	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.20	0.20	0.0
	Optimus-FPGA	YES	0.12	0.12	0.0
	Primary-BIOS	YES	10.69	10.69	0.0
A9K-RSP880-TR	Alpha-FPGA	YES	0.16	0.16	0.0
	CBC	NO	34.39	34.39	0.0
	Cha-FPGA	YES	0.09	0.09	0.0
	IPU-FPGA	YES	0.72	0.72	0.0
	IPU-FSBL	YES	1.113	1.113	0.0
	IPU-Linux	YES	1.113	1.113	0.0
	Omega-FPGA	YES	0.20	0.20	0.0
	Optimus-FPGA	YES	0.12	0.12	0.0
	Primary-BIOS	YES	10.69	10.69	0.0
A9K-TEST_LSQ_DX1	Aldrin-FPGA	YES	1.05	1.05	0.0
	CBC	NO	58.09	58.09	0.0
	IPU-DDR4	YES	1.18	1.18	0.0
	Primary-BIOS	YES	25.30	25.30	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Trailbreaker-0	YES	0.24	0.24	0.0
	Windcharger-0	YES	0.08	0.08	0.0
A9KL-4X100GE-SE-TAA	CBC	NO	38.23	38.23	0.0
	Dalla	YES	1.09	1.09	0.0

```
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
-------------------------------------------------------------------------------
A9KL-4X100GE-TAA    CBC                     NO     38.23       38.23      0.0
                    Dalla                   YES     1.09        1.09      0.0
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
-------------------------------------------------------------------------------
A9KL-4X100GE-TR-TAA CBC                     NO     38.23       38.23      0.0
                    Dalla                   YES     1.09        1.09      0.0
                    IPU-FPGA                YES     1.99        1.99      0.0
                    IPU-FSBL                YES     1.113       1.113     0.0
                    IPU-Linux               YES     1.113       1.113     0.0
                    Meldun-0                YES     1.07        1.07      0.0
                    Meldun-1                YES     1.07        1.07      0.0
                    Primary-BIOS            YES     8.51        8.51      0.0
-------------------------------------------------------------------------------
ASR-9006-AC         CBC                     NO      7.105       7.105     0.0
-------------------------------------------------------------------------------
ASR-9006-AC-V2      CBC                     NO      7.105       7.105     0.0
-------------------------------------------------------------------------------
ASR-9006-FAN        CBC                     NO      5.04        5.04      0.0
-------------------------------------------------------------------------------
ASR-9006-FAN-V2     CBC                     NO      5.05        5.05      0.0
-------------------------------------------------------------------------------
ASR-9010-AC         CBC                     NO      7.105       7.105     0.0
-------------------------------------------------------------------------------
ASR-9010-AC-V2      CBC                     NO      7.105       7.105     0.0
-------------------------------------------------------------------------------
ASR-9010-FAN        CBC                     NO      4.03        4.03      0.0
-------------------------------------------------------------------------------
ASR-9010-FAN-V2     CBC                     NO     29.12       29.12      0.0
-------------------------------------------------------------------------------
ASR-9901-LC         CBC                     NO     55.07       55.07      0.1
                    Gamora-FPGA             YES     0.36        0.36      0.1
                    IPU-FPGA                YES     1.10        1.10      0.1
                    IPU-FSBL                YES     1.104       1.104     0.1
                    IPU-Linux               YES     1.104       1.104     0.1
                    Primary-BIOS            YES    23.23       23.23      0.1
-------------------------------------------------------------------------------
ASR-9901-RP         CBC                     NO     54.11       54.11      0.1
                    Drax-FPGA               YES     0.38        0.38      0.1
                    IPU-FPGA                YES     2.05        2.05      0.1
                    IPU-FSBL                YES     1.104       1.104     0.1
                    IPU-Linux               YES     1.104       1.104     0.1
                    Primary-BIOS            YES    22.27       22.27      0.1
-------------------------------------------------------------------------------
ASR-9902            FAN-CBC                 NO     61.25       61.25      0.0
-------------------------------------------------------------------------------
ASR-9902-LC         Aldrin-FPGA             YES     1.05        1.05      0.0
                    CBC                     NO     17.03       17.03      0.0
                    Chromia                 YES     0.14        0.14      0.0
                    IPU-DDR4                YES     1.17        1.17      0.0
                    Primary-BIOS            YES    34.30       34.30      0.0
                    Skywarp-0               YES     0.11        0.11      0.0
                    Skywarp-1               YES     0.11        0.11      0.0
```

	Sunstreaker	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
ASR-9903	FAN-CBC	NO	61.25	61.25	0.0
ASR-9903-LC	Aldrin-0-FPGA	YES	1.05	1.05	0.0
	CBC	NO	60.12	60.12	0.0
	Harpoon-0	YES	0.11	0.11	0.0
	Harpoon-1	YES	0.11	0.11	0.0
	IPU-DDR4	YES	1.25	1.25	0.0
	Metalmaster-0	YES	0.02	0.02	0.0
	Metalmaster-1	YES	0.02	0.02	0.0
	Primary-BIOS	YES	34.30	34.30	0.0
	Scattershot	YES	0.14	0.14	0.0
	Sunstreaker	YES	0.14	0.14	0.0
	Supernaut	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker	YES	2.65	2.65	0.0
	Warstar-0	YES	0.02	0.02	0.0
	Warstar-1	YES	0.02	0.02	0.0
ASR-9903-PXC800G-LC	Harpoon-0	YES	0.11	0.11	0.0
	Harpoon-1	YES	0.11	0.11	0.0
ASR-9904-AC	CBC	NO	7.105	7.105	0.0
ASR-9904-FAN	CBC	NO	31.06	31.06	0.0
ASR-9906	CBC	NO	7.105	7.105	0.0
ASR-9906-FAN	CBC	NO	56.01	56.01	0.0
	PSOC	NO	2.06	2.06	0.0
ASR-9910	CBC	NO	7.105	7.105	0.0
ASR-9910-FAN	CBC	NO	45.02	45.02	0.0
	PSOC	NO	2.06	2.06	0.0
ASR-9912-AC	CBC	NO	7.105	7.105	0.0
ASR-9912-FAN	CBC	NO	31.06	31.06	0.0
ASR-9912-SFC220	CBC	NO	37.20	37.20	0.0
	IPU-FPGA	YES	0.37	0.37	0.0
	IPU-FSBL	YES	1.100	1.100	0.0
	IPU-Linux	YES	1.100	1.100	0.0
ASR-9922-AC	CBC-0	NO	7.105	7.105	0.0
	CBC-1	NO	7.105	7.105	0.0
ASR-9922-FAN	CBC	NO	29.12	29.12	0.0
ASR-9922-FAN-V2	CBC	NO	40.07	40.07	0.0
	PSOC	NO	2.06	2.06	0.0
ASR-9922-FAN-V3	CBC	NO	40.07	40.07	0.0
	PSOC	NO	2.06	2.06	0.0
PWR-1.6KW-AC	PriMCU	NO	17.20	17.20	0.0
PWR-1.6KW-DC	PriMCU	NO	1.03	1.03	0.0
PWR-2KW-DC-V2	DT-PriMCU	NO	6.03	6.03	0.12
	DT-Sec54vMCU	NO	6.02	6.02	0.12
	DT-Sec5vMCU	NO	6.03	6.03	0.12

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                    EM-PriMCU                 NO      3.12        3.12      0.12
                    EM-Sec54vMCU              NO      3.21        3.21      0.12
                    EM-Sec5vMCU               NO      3.20        3.20      0.12
--------------------------------------------------------------------------------
PWR-3KW-AC-V2       DT-PriMCU                 NO      6.02        6.02      1.0
                    DT-Sec54vMCU              NO      6.02        6.02      1.0
                    DT-Sec5vMCU               NO      6.04        6.04      1.0
                    EM-Sec54vMCU              NO      3.12        3.12      0.21
                    EM-Sec5vMCU               NO      3.18        3.18      0.21
sysadmin-vm:0_RSP0#

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RP/0/RSP0/CPU0:STARLORD-BNG-EXR#sh fpd package
Thu Dec  1 06:34:27.460 UTC

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                                        Field Programmable Device Package
                                 ============================================
                                          Req     SW      Min Req   Min Req
Card Type           FPD Description       Reload  Ver     SW Ver  Board Ver
================== ========================= ====== ======= ======== =========
--------------------------------------------------------------------------------
A99-10X400GE-X-CM   Aldrin-FPGA(A)           YES     1.05      1.05      0.0
                    Beachcomber-0(A)          YES     0.01      0.01      0.0
                    Beachcomber-1(A)          YES     0.01      0.01      0.0
                    CBC(A)                    NO     62.05     62.05      0.0
                    IPU-DDR4(A)               YES     1.06      1.06      0.0
                    Primary-BIOS(A)           YES    25.30     25.30      0.0
                    QDD_0_3                   NO     61.23     61.23      0.0
                    QDD_0_5                   NO     61.23     61.23      0.0
                    QDD_0_6                   NO     61.23     61.23      0.0
                    QDD_0_7                   NO     61.23     61.23      0.0
                    QDD_0_9                   NO     61.23     61.23      0.0
                    Sunstreaker(A)            YES     0.14      0.14      0.0
                    TAMFW-Sunstreaker(A)      YES     2.65      2.65      0.0
                    TimingIC-A                YES     7.216     7.216     0.0
                    TimingIC-B-0              YES     7.216     7.216     0.0
                    TimingIC-B-1              YES     7.216     7.216     0.0
                    Trailbreaker-0(A)         YES     0.24      0.24      0.0
                    Trailbreaker-1(A)         YES     0.24      0.24      0.0
--------------------------------------------------------------------------------
A99-10X400GE-X-SE   Aldrin-FPGA(A)           YES     1.05      1.05      0.0
                    Beachcomber-0(A)          YES     0.01      0.01      0.0

RP/0/RSP0/CPU0:STARLORD-BNG-EXR#sh fpd package | inc A9903-20HG-PEC
Thu Dec  1 06:34:41.212 UTC
A9903-20HG-PEC      QDD_1_0                   NO     61.23     61.23      0.0
RP/0/RSP0/CPU0:STARLORD-BNG-EXR#sh fpd package
Thu Dec  1 06:34:50.176 UTC

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                                        Field Programmable Device Package
                                 ============================================
                                          Req     SW      Min Req   Min Req
Card Type           FPD Description       Reload  Ver     SW Ver  Board Ver
================== ========================= ====== ======= ======== =========
--------------------------------------------------------------------------------
A99-10X400GE-X-CM   Aldrin-FPGA(A)           YES     1.05      1.05      0.0
                    Beachcomber-0(A)          YES     0.01      0.01      0.0
                    Beachcomber-1(A)          YES     0.01      0.01      0.0
                    CBC(A)                    NO     62.05     62.05      0.0
```

	IPU-DDR4(A)	YES	1.06	1.06	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_3	NO	61.23	61.23	0.0
	QDD_0_5	NO	61.23	61.23	0.0
	QDD_0_6	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	QDD_0_9	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B-0	YES	7.216	7.216	0.0
	TimingIC-B-1	YES	7.216	7.216	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Trailbreaker-1(A)	YES	0.24	0.24	0.0
A99-10X400GE-X-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	Beachcomber-0(A)	YES	0.01	0.01	0.0
	Beachcomber-1(A)	YES	0.01	0.01	0.0
	CBC(A)	NO	62.05	62.05	0.0
	IPU-DDR4(A)	YES	1.06	1.06	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_3	NO	61.23	61.23	0.0
	QDD_0_5	NO	61.23	61.23	0.0
	QDD_0_6	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	QDD_0_9	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B-0	YES	7.216	7.216	0.0
	TimingIC-B-1	YES	7.216	7.216	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Trailbreaker-1(A)	YES	0.24	0.24	0.0
A99-10X400GE-X-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	Beachcomber-0(A)	YES	0.01	0.01	0.0
	Beachcomber-1(A)	YES	0.01	0.01	0.0
	CBC(A)	NO	62.05	62.05	0.0
	IPU-DDR4(A)	YES	1.06	1.06	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_3	NO	61.23	61.23	0.0
	QDD_0_5	NO	61.23	61.23	0.0
	QDD_0_6	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	QDD_0_9	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B-0	YES	7.216	7.216	0.0
	TimingIC-B-1	YES	7.216	7.216	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Trailbreaker-1(A)	YES	0.24	0.24	0.0
A99-12X100GE	CBC(A)	NO	46.06	46.06	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Morra-0(A)	YES	1.05	1.05	0.1
	Morra-1(A)	YES	1.05	1.05	0.1
	Primary-BIOS(A)	YES	9.34	9.34	0.1
	Sideswipe-0(A)	YES	1.02	1.02	0.1
	Sideswipe-1(A)	YES	1.02	1.02	0.1
A99-12X100GE-CM	CBC(A)	NO	46.06	46.06	0.1

	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Morra-0(A)	YES	1.05	1.05	0.1
	Morra-1(A)	YES	1.05	1.05	0.1
	Primary-BIOS(A)	YES	9.34	9.34	0.1
	Sideswipe-0(A)	YES	1.02	1.02	0.1
	Sideswipe-1(A)	YES	1.02	1.02	0.1
A99-16X100GE-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A99-16X100GE-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A99-16X100GE-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A99-16X100GE-X-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
A99-24HG-FLEX-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-24HG-FLEX-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0

	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-24HG-FLEX-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-24X10GE-1G-CM	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A99-24X10GE-1G-SE	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A99-24X10GE-1G-TR	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A99-32X100GE-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
A99-32X100GE-DENS	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.12	0.12	0.0
	Grapple-1(A)	YES	0.12	0.12	0.0
	IPU-DDR4(A)	YES	1.08	1.08	0.0

	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.08	0.08	0.0
	Skylynx-1(A)	YES	0.08	0.08	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-32X100GE-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
A99-32X100GE-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
A99-32X100GE-X-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-32X100GE-X-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-32X100GE-X-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	57.04	57.04	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	Grapple-1(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0

	Mixmaster-1(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Skylynx-1(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A99-48X10GE-1G-CM	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Leadfoot-1(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A99-48X10GE-1G-SE	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Leadfoot-1(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A99-48X10GE-1G-TR	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Leadfoot-1(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A99-4HG-FLEX-FC	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	63.03	63.03	0.0
	IPU-DDR4(A)	YES	1.05	1.05	0.0
	Moonracer(A)	YES	0.14	0.14	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skywarp-0(A)	YES	0.11	0.11	0.0
	Skywarp-1(A)	YES	0.11	0.11	0.0
	Sunstreaker(A)	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
A99-4HG-FLEX-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	63.03	63.03	0.0
	IPU-DDR4(A)	YES	1.05	1.05	0.0
	Moonracer(A)	YES	0.14	0.14	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skywarp-0(A)	YES	0.11	0.11	0.0
	Skywarp-1(A)	YES	0.11	0.11	0.0
	Sunstreaker(A)	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
A99-4HG-FLEX-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	63.03	63.03	0.0
	IPU-DDR4(A)	YES	1.05	1.05	0.0
	Moonracer(A)	YES	0.14	0.14	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skywarp-0(A)	YES	0.11	0.11	0.0

	Skywarp-1(A)	YES	0.11	0.11	0.0
	Sunstreaker(A)	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
A99-4X100GE-SE	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-4X100GE-SE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-4X100GE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-4X100GE-TR	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-4X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0

	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-8X100GE-CM	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-8X100GE-SE	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-8X100GE-SE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-8X100GE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-8X100GE-TR	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0

A99-8X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99-RP-F	Aldrin-0-FPGA(A)	YES	1.06	1.06	0.0
	CBC(A)	NO	59.13	59.13	0.0
	Lionheart-FPGA(A)	YES	0.30	0.30	0.0
	Longshot(A)	YES	2.16	2.16	0.0
	Primary-BIOS(A)	YES	33.30	33.30	0.0
	TamFW-Longshot(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.218	7.218	0.0
	Wolfpack-FPGA(A)	YES	0.19	0.19	0.0
A99-RP2-SE	Alpha-FPGA(A)	YES	0.16	0.16	0.0
	CBC-0(A)	NO	35.14	35.14	0.0
	CBC-1(A)	NO	35.14	35.14	0.0
	Cha-FPGA(A)	YES	0.09	0.09	0.0
	IPU-FPGA(A)	YES	0.72	0.72	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.20	0.20	0.0
	Optimus-FPGA(A)	YES	0.12	0.12	0.0
	Primary-BIOS(A)	YES	14.39	14.39	0.0
A99-RP2-TR	Alpha-FPGA(A)	YES	0.16	0.16	0.0
	CBC-0(A)	NO	35.14	35.14	0.0
	CBC-1(A)	NO	35.14	35.14	0.0
	Cha-FPGA(A)	YES	0.09	0.09	0.0
	IPU-FPGA(A)	YES	0.72	0.72	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.20	0.20	0.0
	Optimus-FPGA(A)	YES	0.12	0.12	0.0
	Primary-BIOS(A)	YES	14.39	14.39	0.0
A99-RP3-SE	Aldrin-0-FPGA(A)	YES	1.03	1.03	0.0
	Aldrin-1-FPGA(A)	YES	1.00	1.00	0.0
	Beta-FPGA(A)	YES	0.07	0.07	0.0
	CBC-0(A)	NO	51.12	51.12	0.0
	CBC-1(A)	NO	51.12	51.12	0.0
	IPU-DDR4(A)	YES	0.20	0.20	0.0
	Orion-FPGA(A)	YES	0.23	0.23	0.0
	Primary-BIOS(A)	YES	30.36	30.36	0.0
	Zenith-FPGA(A)	YES	0.10	0.10	0.0
A99-RP3-TR	Aldrin-0-FPGA(A)	YES	1.03	1.03	0.0
	Aldrin-1-FPGA(A)	YES	1.00	1.00	0.0
	Beta-FPGA(A)	YES	0.07	0.07	0.0
	CBC-0(A)	NO	51.12	51.12	0.0
	CBC-1(A)	NO	51.12	51.12	0.0
	IPU-DDR4(A)	YES	0.20	0.20	0.0
	Orion-FPGA(A)	YES	0.23	0.23	0.0
	Primary-BIOS(A)	YES	30.36	30.36	0.0
	Zenith-FPGA(A)	YES	0.10	0.10	0.0
A99-RP3-X-64G	TimingIC-A	YES	7.216	7.216	0.0
A99-RP3-X-SE	TimingIC-A	YES	7.216	7.216	0.0

A99-RP3-X-TR	TimingIC-A	YES	7.216	7.216	0.0
A99-RP3X-TR	Aldrin-0-FPGA(A)	YES	1.00	1.00	0.0
	Aldrin-1-FPGA(A)	YES	32.00	32.00	0.0
	Beta-FPGA(A)	YES	2.02	2.02	0.0
	CBC-0(A)	NO	12.04	12.04	0.0
	CBC-1(A)	NO	51.12	51.12	0.0
	IPU-DDR4(A)	YES	3.03	3.03	0.0
	Orion-FPGA(A)	YES	2.03	2.03	0.0
	Primary-BIOS(A)	YES	35.03	35.03	0.0
	Sigma(A)	YES	3.33	3.33	0.0
	TamFW-Sigma(A)	YES	2.07	2.07	0.0
	Zenith-FPGA(A)	YES	2.07	2.07	0.0
	Aldrin-0-FPGA(A)	YES	1.00	1.00	0.0
	Aldrin-1-FPGA(A)	YES	32.00	32.00	0.0
	Beta-FPGA(A)	YES	2.02	2.02	0.0
	CBC-0(A)	NO	12.04	12.04	0.0
	CBC-1(A)	NO	51.12	51.12	0.0
	IPU-DDR4(A)	YES	3.03	3.03	0.0
	Orion-FPGA(A)	YES	2.03	2.03	0.0
	Primary-BIOS(A)	YES	35.03	35.03	0.0
	Sigma(A)	YES	3.33	3.33	0.0
	TamFW-Sigma(A)	YES	2.07	2.07	0.0
	Zenith-FPGA(A)	YES	2.07	2.07	0.0
A99-RSP-SE	Alpha-FPGA(A)	YES	0.16	0.16	0.0
	CBC(A)	NO	43.03	43.03	0.0
	Cha-FPGA(A)	YES	0.09	0.09	0.0
	IPU-FPGA(A)	YES	0.72	0.72	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.20	0.20	0.0
	Optimus-FPGA(A)	YES	0.12	0.12	0.0
	Primary-BIOS(A)	YES	16.18	16.18	0.0
A99-RSP-TR	Alpha-FPGA(A)	YES	0.16	0.16	0.0
	CBC(A)	NO	43.03	43.03	0.0
	Cha-FPGA(A)	YES	0.09	0.09	0.0
	IPU-FPGA(A)	YES	0.72	0.72	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.20	0.20	0.0
	Optimus-FPGA(A)	YES	0.12	0.12	0.0
	Primary-BIOS(A)	YES	16.18	16.18	0.0
A99-SFC-S	CBC(A)	NO	44.02	44.02	0.0
	IPU-FPGA(A)	YES	0.37	0.37	0.0
	IPU-FSBL(A)	YES	1.100	1.100	0.0
	IPU-Linux(A)	YES	1.100	1.100	0.0
A99-SFC-T	CBC(A)	NO	44.02	44.02	0.0
	IPU-FPGA(A)	YES	0.37	0.37	0.0
	IPU-FSBL(A)	YES	1.100	1.100	0.0
	IPU-Linux(A)	YES	1.100	1.100	0.0
A99-SFC2	CBC(A)	NO	37.20	37.20	0.0
	IPU-FPGA(A)	YES	0.37	0.37	0.0
	IPU-FSBL(A)	YES	1.100	1.100	0.0
	IPU-Linux(A)	YES	1.100	1.100	0.0
A99-SFC3	CBC(A)	NO	49.03	49.03	0.0
	IPU-DDR4(A)	YES	0.25	0.25	0.0
A99-SFC3-S	CBC(A)	NO	44.02	44.02	0.0

	IPU-DDR4(A)	YES	0.25	0.25	0.0
A99-SFC3-T	CBC(A)	NO	44.02	44.02	0.0
	IPU-DDR4(A)	YES	0.25	0.25	0.0
A9903-20HG-PEC	QDD_1_0	NO	61.23	61.23	0.0
	QDD_1_12	NO	61.23	61.23	0.0
	QDD_1_16	NO	61.23	61.23	0.0
	QDD_1_4	NO	61.23	61.23	0.0
	QDD_1_8	NO	61.23	61.23	0.0
	TimingIC-B-1	YES	7.216	7.216	0.0
A9903-8HG-PEC	TimingIC-B-1	YES	7.216	7.216	0.0
A99L-4X100GE-SE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99L-4X100GE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99L-4X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99L-8X100GE-SE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99L-8X100GE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A99L-8X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0

	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-1600W-AC	PO-PriMCU(A)	NO	17.137	17.137	0.0
A9K-1600W-DC	PO-PriMCU(A)	NO	1.09	1.09	0.0
A9K-16X100GE-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-16X100GE-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-16X100GE-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-20HG-FLEX-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_0	NO	61.23	61.23	0.0
	QDD_0_12	NO	61.23	61.23	0.0
	QDD_0_19	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	QDD_0_8	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Trailbreaker-1(A)	YES	0.24	0.24	0.0
	Windcharger-0(A)	YES	0.08	0.08	0.0
	Windcharger-1(A)	YES	0.08	0.08	0.0
A9K-20HG-FLEX-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0

```
                    Primary-BIOS(A)           YES    25.30     25.30      0.0
                    QDD_0_0                   NO     61.23     61.23      0.0
                    QDD_0_12                  NO     61.23     61.23      0.0
                    QDD_0_19                  NO     61.23     61.23      0.0
                    QDD_0_7                   NO     61.23     61.23      0.0
                    QDD_0_8                   NO     61.23     61.23      0.0
                    Sunstreaker(A)            YES     0.14      0.14      0.0
                    TAMFW-Sunstreaker(A)      YES     2.65      2.65      0.0
                    TimingIC-A                YES     7.216     7.216     0.0
                    TimingIC-B                YES     7.216     7.216     0.0
                    Trailbreaker-0(A)         YES     0.24      0.24      0.0
                    Trailbreaker-1(A)         YES     0.24      0.24      0.0
                    Windcharger-0(A)          YES     0.08      0.08      0.0
                    Windcharger-1(A)          YES     0.08      0.08      0.0
--------------------------------------------------------------------------------
A9K-20HG-FLEX-TR    Aldrin-FPGA(A)            YES     1.05      1.05      0.0
                    CBC(A)                    NO     58.09     58.09      0.0
                    IPU-DDR4(A)               YES     1.18      1.18      0.0
                    Primary-BIOS(A)           YES    25.30     25.30      0.0
                    QDD_0_0                   NO     61.23     61.23      0.0
                    QDD_0_12                  NO     61.23     61.23      0.0
                    QDD_0_19                  NO     61.23     61.23      0.0
                    QDD_0_7                   NO     61.23     61.23      0.0
                    QDD_0_8                   NO     61.23     61.23      0.0
                    Sunstreaker(A)            YES     0.14      0.14      0.0
                    TAMFW-Sunstreaker(A)      YES     2.65      2.65      0.0
                    TimingIC-A                YES     7.216     7.216     0.0
                    TimingIC-B                YES     7.216     7.216     0.0
                    Trailbreaker-0(A)         YES     0.24      0.24      0.0
                    Trailbreaker-1(A)         YES     0.24      0.24      0.0
                    Windcharger-0(A)          YES     0.08      0.08      0.0
                    Windcharger-1(A)          YES     0.08      0.08      0.0
--------------------------------------------------------------------------------
A9K-24X10GE-1G-CM   CBC(A)                    NO     47.03     47.03      0.1
                    IPU-FPGA(A)               YES     1.90      1.90      0.1
                    IPU-FSBL(A)               YES     1.113     1.113     0.1
                    IPU-Linux(A)              YES     1.113     1.113     0.1
                    Leadfoot-0(A)             YES     1.00      1.00      0.1
                    Lewis(A)                  YES     1.11      1.11      0.1
                    Primary-BIOS(A)           YES    18.34     18.34      0.1
--------------------------------------------------------------------------------
A9K-24X10GE-1G-SE   CBC(A)                    NO     47.03     47.03      0.1
                    IPU-FPGA(A)               YES     1.90      1.90      0.1
                    IPU-FSBL(A)               YES     1.113     1.113     0.1
                    IPU-Linux(A)              YES     1.113     1.113     0.1
                    Leadfoot-0(A)             YES     1.00      1.00      0.1
                    Lewis(A)                  YES     1.11      1.11      0.1
                    Primary-BIOS(A)           YES    18.34     18.34      0.1
--------------------------------------------------------------------------------
A9K-24X10GE-1G-TR   CBC(A)                    NO     47.03     47.03      0.1
                    IPU-FPGA(A)               YES     1.90      1.90      0.1
                    IPU-FSBL(A)               YES     1.113     1.113     0.1
                    IPU-Linux(A)              YES     1.113     1.113     0.1
                    Leadfoot-0(A)             YES     1.00      1.00      0.1
                    Lewis(A)                  YES     1.11      1.11      0.1
                    Primary-BIOS(A)           YES    18.34     18.34      0.1
--------------------------------------------------------------------------------
A9K-400G-DWDM-TR    CBC(A)                    NO     42.04     42.04      0.0
                    CFP2-0                    NO      5.54      5.54      0.1
                    CFP2-1                    NO      5.54      5.54      0.1
                    Doran(A)                  YES     1.05      1.05      0.0
                    ETNA-0                    NO      3.78      3.78      0.1
                    ETNA-1                    NO      3.78      3.78      0.1
                    Frenzy(A)                 YES    49.00     49.00      0.0
```

	IPU-FPGA(A)	YES	1.97	1.97	0.1
	IPU-FSBL(A)	YES	1.103	1.103	0.1
	IPU-Linux(A)	YES	1.103	1.103	0.1
	Martell(A)	YES	1.03	1.03	0.0
	Meldun(A)	YES	1.07	1.07	0.1
	Primary-BIOS(A)	YES	8.51	8.51	0.1
A9K-400GE-LSP	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	63.03	63.03	0.0
	IPU-DDR4(A)	YES	1.05	1.05	0.0
	Moonracer(A)	YES	0.14	0.14	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skywarp-0(A)	YES	0.11	0.11	0.0
	Skywarp-1(A)	YES	0.11	0.11	0.0
	Sunstreaker(A)	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A9K-48X10GE-1G-CM	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Leadfoot-1(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A9K-48X10GE-1G-SE	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Leadfoot-1(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A9K-48X10GE-1G-TR	CBC(A)	NO	47.03	47.03	0.1
	IPU-FPGA(A)	YES	1.90	1.90	0.1
	IPU-FSBL(A)	YES	1.113	1.113	0.1
	IPU-Linux(A)	YES	1.113	1.113	0.1
	Leadfoot-0(A)	YES	1.00	1.00	0.1
	Leadfoot-1(A)	YES	1.00	1.00	0.1
	Lewis(A)	YES	1.11	1.11	0.1
	Primary-BIOS(A)	YES	18.34	18.34	0.1
A9K-4HG-FLEX-FC	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	63.03	63.03	0.0
	IPU-DDR4(A)	YES	1.05	1.05	0.0
	Moonracer(A)	YES	0.14	0.14	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skywarp-0(A)	YES	0.11	0.11	0.0
	Skywarp-1(A)	YES	0.11	0.11	0.0
	Sunstreaker(A)	YES	0.15	0.15	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
A9K-4HG-FLEX-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	63.03	63.03	0.0
	IPU-DDR4(A)	YES	1.05	1.05	0.0
	Moonracer(A)	YES	0.14	0.14	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skywarp-0(A)	YES	0.11	0.11	0.0
	Skywarp-1(A)	YES	0.11	0.11	0.0
	Sunstreaker(A)	YES	0.15	0.15	0.0

```
                    TAMFW-Sunstreaker(A)       YES     2.65      2.65      0.0
                    TimingIC-A                 YES     7.216     7.216     0.0
                    TimingIC-B                 YES     7.216     7.216     0.0
--------------------------------------------------------------------------------
A9K-4HG-FLEX-TR     Aldrin-FPGA(A)             YES     1.05      1.05      0.0
                    CBC(A)                     NO     63.03     63.03      0.0
                    IPU-DDR4(A)                YES     1.05      1.05      0.0
                    Moonracer(A)               YES     0.14      0.14      0.0
                    Primary-BIOS(A)            YES    25.30     25.30      0.0
                    Skywarp-0(A)               YES     0.11      0.11      0.0
                    Skywarp-1(A)               YES     0.11      0.11      0.0
                    Sunstreaker(A)             YES     0.15      0.15      0.0
                    TAMFW-Sunstreaker(A)       YES     2.65      2.65      0.0
                    TimingIC-A                 YES     7.216     7.216     0.0
                    TimingIC-B                 YES     7.216     7.216     0.0
--------------------------------------------------------------------------------
A9K-4X100GE         CBC(A)                     NO     46.06     46.06      0.1
                    IPU-FPGA(A)                YES     1.90      1.90      0.1
                    IPU-FSBL(A)                YES     1.113     1.113     0.1
                    IPU-Linux(A)               YES     1.113     1.113     0.1
                    Morra-0(A)                 YES     1.05      1.05      0.1
                    Primary-BIOS(A)            YES     9.34      9.34      0.1
                    Sideswipe-0(A)             YES     1.02      1.02      0.1
--------------------------------------------------------------------------------
A9K-4X100GE-SE      CBC(A)                     NO     38.23     38.23      0.0
                    Dalla(A)                   YES     1.09      1.09      0.0
                    IPU-FPGA(A)                YES     1.99      1.99      0.0
                    IPU-FSBL(A)                YES     1.113     1.113     0.0
                    IPU-Linux(A)               YES     1.113     1.113     0.0
                    Meldun-0(A)                YES     1.07      1.07      0.0
                    Meldun-1(A)                YES     1.07      1.07      0.0
                    Primary-BIOS(A)            YES     8.51      8.51      0.0
                    CBC(A)                     NO     38.23     38.23      0.0
                    Dalla(A)                   YES     1.09      1.09      0.0
                    IPU-FPGA(A)                YES     1.99      1.99      0.0
                    IPU-FSBL(A)                YES     1.113     1.113     0.0
                    IPU-Linux(A)               YES     1.113     1.113     0.0
                    Meldun-0(A)                YES     1.07      1.07      0.0
                    Meldun-1(A)                YES     1.07      1.07      0.0
                    Primary-BIOS(A)            YES     8.51      8.51      0.0
--------------------------------------------------------------------------------
A9K-4X100GE-SE-TAA  CBC(A)                     NO     38.23     38.23      0.0
                    Dalla(A)                   YES     1.09      1.09      0.0
                    IPU-FPGA(A)                YES     1.99      1.99      0.0
                    IPU-FSBL(A)                YES     1.113     1.113     0.0
                    IPU-Linux(A)               YES     1.113     1.113     0.0
                    Meldun-0(A)                YES     1.07      1.07      0.0
                    Meldun-1(A)                YES     1.07      1.07      0.0
                    Primary-BIOS(A)            YES     8.51      8.51      0.0
--------------------------------------------------------------------------------
A9K-4X100GE-TAA     CBC(A)                     NO     38.23     38.23      0.0
                    Dalla(A)                   YES     1.09      1.09      0.0
                    IPU-FPGA(A)                YES     1.99      1.99      0.0
                    IPU-FSBL(A)                YES     1.113     1.113     0.0
                    IPU-Linux(A)               YES     1.113     1.113     0.0
                    Meldun-0(A)                YES     1.07      1.07      0.0
                    Meldun-1(A)                YES     1.07      1.07      0.0
                    Primary-BIOS(A)            YES     8.51      8.51      0.0
--------------------------------------------------------------------------------
A9K-4X100GE-TR      CBC(A)                     NO     38.23     38.23      0.0
                    Dalla(A)                   YES     1.09      1.09      0.0
                    IPU-FPGA(A)                YES     1.99      1.99      0.0
                    IPU-FSBL(A)                YES     1.113     1.113     0.0
                    IPU-Linux(A)               YES     1.113     1.113     0.0
```

	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-4X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-4X100GE-TR-V2	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-8HG-FLEX-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_0	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Windcharger-0(A)	YES	0.08	0.08	0.0
A9K-8HG-FLEX-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_0	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	TimingIC-A	YES	7.216	7.216	0.0
	TimingIC-B	YES	7.216	7.216	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Windcharger-0(A)	YES	0.08	0.08	0.0
A9K-8HG-FLEX-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	QDD_0_0	NO	61.23	61.23	0.0
	QDD_0_7	NO	61.23	61.23	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0

```
                   TimingIC-A                YES     7.216     7.216     0.0
                   TimingIC-B                YES     7.216     7.216     0.0
                   Trailbreaker-0(A)         YES     0.24      0.24      0.0
                   Windcharger-0(A)          YES     0.08      0.08      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-CM     CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
                   Meldun-0(A)               YES     1.07      1.07      0.0
                   Meldun-1(A)               YES     1.07      1.07      0.0
                   Primary-BIOS(A)           YES     8.51      8.51      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-L-SE   CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
                   Meldun-0(A)               YES     1.07      1.07      0.0
                   Meldun-1(A)               YES     1.07      1.07      0.0
                   Primary-BIOS(A)           YES     8.51      8.51      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-L-TAA  CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
                   Meldun-0(A)               YES     1.07      1.07      0.0
                   Meldun-1(A)               YES     1.07      1.07      0.0
                   Primary-BIOS(A)           YES     8.51      8.51      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-L-TR   CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
                   Meldun-0(A)               YES     1.07      1.07      0.0
                   Meldun-1(A)               YES     1.07      1.07      0.0
                   Primary-BIOS(A)           YES     8.51      8.51      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-SE     CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
                   Meldun-0(A)               YES     1.07      1.07      0.0
                   Meldun-1(A)               YES     1.07      1.07      0.0
                   Primary-BIOS(A)           YES     8.51      8.51      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-SE-TAA CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
                   Meldun-0(A)               YES     1.07      1.07      0.0
                   Meldun-1(A)               YES     1.07      1.07      0.0
                   Primary-BIOS(A)           YES     8.51      8.51      0.0
-------------------------------------------------------------------------------
A9K-8X100GE-TAA    CBC(A)                    NO     38.23     38.23      0.0
                   Dalla(A)                  YES     1.09      1.09      0.0
                   IPU-FPGA(A)               YES     1.99      1.99      0.0
                   IPU-FSBL(A)               YES     1.113     1.113     0.0
                   IPU-Linux(A)              YES     1.113     1.113     0.0
```

	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-8X100GE-TR	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-8X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-8X100GE-X-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-8X100GE-X-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-8X100GE-X-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	48.09	48.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.09	1.09	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	21.43	21.43	0.0
	Scamper(A)	YES	0.23	0.23	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
A9K-8X100GE-X2-CM	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0

	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A9K-8X100GE-X2-SE	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A9K-8X100GE-X2-TR	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	Grapple-0(A)	YES	0.15	0.15	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Mixmaster-0(A)	YES	0.13	0.13	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Skylynx-0(A)	YES	0.12	0.12	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
A9K-8X100GELSE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-8X100GELTR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9K-MOD200-CM	Blaster(A)	YES	1.27	1.27	0.1
	CBC(A)	NO	39.09	39.09	0.1
	IPU-FPGA(A)	YES	1.97	1.97	0.1
	IPU-FSBL(A)	YES	1.103	1.103	0.1
	IPU-Linux(A)	YES	1.103	1.103	0.1
	Primary-BIOS(A)	YES	8.51	8.51	0.1
A9K-MOD200-SE	Blaster(A)	YES	1.27	1.27	0.1
	CBC(A)	NO	39.09	39.09	0.1
	IPU-FPGA(A)	YES	1.97	1.97	0.1
	IPU-FSBL(A)	YES	1.103	1.103	0.1
	IPU-Linux(A)	YES	1.103	1.103	0.1
	Primary-BIOS(A)	YES	8.51	8.51	0.1
A9K-MOD200-TR	Blaster(A)	YES	1.27	1.27	0.1
	CBC(A)	NO	39.09	39.09	0.1
	IPU-FPGA(A)	YES	1.97	1.97	0.1
	IPU-FSBL(A)	YES	1.103	1.103	0.1
	IPU-Linux(A)	YES	1.103	1.103	0.1
	Primary-BIOS(A)	YES	8.51	8.51	0.1
A9K-MOD400-CM	Blaster(A)	YES	1.27	1.27	0.1
	CBC(A)	NO	39.09	39.09	0.1

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                    IPU-FPGA(A)               YES     1.97      1.97      0.1
                    IPU-FSBL(A)               YES     1.103     1.103     0.1
                    IPU-Linux(A)              YES     1.103     1.103     0.1
                    Primary-BIOS(A)           YES     8.51      8.51      0.1
--------------------------------------------------------------------------------
A9K-MOD400-SE       Blaster(A)                YES     1.27      1.27      0.1
                    CBC(A)                    NO     39.09     39.09      0.1
                    IPU-FPGA(A)               YES     1.97      1.97      0.1
                    IPU-FSBL(A)               YES     1.103     1.103     0.1
                    IPU-Linux(A)              YES     1.103     1.103     0.1
                    Primary-BIOS(A)           YES     8.51      8.51      0.1
--------------------------------------------------------------------------------
A9K-MOD400-TR       Blaster(A)                YES     1.27      1.27      0.1
                    CBC(A)                    NO     39.09     39.09      0.1
                    IPU-FPGA(A)               YES     1.97      1.97      0.1
                    IPU-FSBL(A)               YES     1.103     1.103     0.1
                    IPU-Linux(A)              YES     1.103     1.103     0.1
                    Primary-BIOS(A)           YES     8.51      8.51      0.1
--------------------------------------------------------------------------------
A9K-MPA-1X100GE     CFP2-DCO-0                NO     38.26887  38.26887   0.1
                    CFP2-DCO-B0-0             NO     38.26887  38.26887   0.1
                    Springer                  YES     1.04      1.04      0.1
--------------------------------------------------------------------------------
A9K-MPA-1X200GE     CFP2-DCO-0                NO     38.26887  38.26887   0.1
                    CFP2-DCO-B0-0             NO     38.26887  38.26887   0.1
                    Springer                  YES     1.04      1.04      0.1
--------------------------------------------------------------------------------
A9K-MPA-1X40GE      Sage                      YES     1.03      1.03      0.1
--------------------------------------------------------------------------------
A9K-MPA-20X10GE     Skyquake                  YES     1.16      1.16      0.1
--------------------------------------------------------------------------------
A9K-MPA-20X1GE      Gambit                    YES     1.01      1.01      0.1
--------------------------------------------------------------------------------
A9K-MPA-2X100GE     CFP2-DCO-0                NO     38.26887  38.26887   0.1
                    CFP2-DCO-1                NO     38.26887  38.26887   0.1
                    CFP2-DCO-B0-0             NO     38.26887  38.26887   0.1
                    CFP2-DCO-B0-1             NO     38.26887  38.26887   0.1
                    Springer                  YES     1.04      1.04      0.1
--------------------------------------------------------------------------------
A9K-MPA-2X10GE      Rogue                     YES     1.06      1.06      0.1
--------------------------------------------------------------------------------
A9K-MPA-2X40GE      Sage                      YES     1.03      1.03      0.1
--------------------------------------------------------------------------------
A9K-MPA-32X1GE      Antman                    YES     1.09      1.09      0.1
--------------------------------------------------------------------------------
A9K-MPA-4X10GE      Rogue                     YES     1.06      1.06      0.1
--------------------------------------------------------------------------------
A9K-MPA-8X10GE      Pixie                     YES     1.09      1.09      0.1
--------------------------------------------------------------------------------
A9K-MPA20X10GE-CM   Skyquake                  YES     1.16      1.16      0.1
--------------------------------------------------------------------------------
A9K-MPA2X100GE-CM   CFP2-DCO-0                NO     38.26887  38.26887   0.1
                    CFP2-DCO-1                NO     38.26887  38.26887   0.1
                    CFP2-DCO-B0-0             NO     38.26887  38.26887   0.1
                    CFP2-DCO-B0-1             NO     38.26887  38.26887   0.1
                    Springer                  YES     1.04      1.04      0.1
--------------------------------------------------------------------------------
A9K-RSP5-SE         Aldrin-0-FPGA(A)          YES     1.06      1.06      0.0
                    Beta-FPGA(A)              YES     0.07      0.07      0.0
                    CBC(A)                    NO     53.10     53.10      0.0
                    IPU-DDR4(A)               YES     0.20      0.20      0.0
                    Orion-FPGA(A)             YES     0.23      0.23      0.0
                    Primary-BIOS(A)           YES    31.36     31.36      0.0
                    Zenith-FPGA(A)            YES     0.10      0.10      0.0
```

A9K-RSP5-TR	Aldrin-0-FPGA(A)	YES	1.06	1.06	0.0
	Beta-FPGA(A)	YES	0.07	0.07	0.0
	CBC(A)	NO	53.10	53.10	0.0
	IPU-DDR4(A)	YES	0.20	0.20	0.0
	Orion-FPGA(A)	YES	0.23	0.23	0.0
	Primary-BIOS(A)	YES	31.36	31.36	0.0
	Zenith-FPGA(A)	YES	0.10	0.10	0.0
A9K-RSP5-X-64G	TimingIC-A	YES	7.216	7.216	0.0
A9K-RSP5-X-SE	TimingIC-A	YES	7.216	7.216	0.0
A9K-RSP5-X-TR	TimingIC-A	YES	7.216	7.216	0.0
A9K-RSP5X-TR	Aldrin-0-FPGA(A)	YES	51.00	51.00	0.0
	Beta-FPGA(A)	YES	2.02	2.02	0.0
	CBC(A)	NO	14.04	14.04	0.0
	IPU-DDR4(A)	YES	3.03	3.03	0.0
	Orion-FPGA(A)	YES	2.03	2.03	0.0
	Primary-BIOS(A)	YES	35.03	35.03	0.0
	Sigma(A)	YES	3.33	3.33	0.0
	TamFW-Sigma(A)	YES	2.07	2.07	0.0
	Zenith-FPGA(A)	YES	2.07	2.07	0.0
	Aldrin-0-FPGA(A)	YES	51.00	51.00	0.0
	Beta-FPGA(A)	YES	2.02	2.02	0.0
	CBC(A)	NO	14.04	14.04	0.0
	IPU-DDR4(A)	YES	3.03	3.03	0.0
	Orion-FPGA(A)	YES	2.03	2.03	0.0
	Primary-BIOS(A)	YES	35.03	35.03	0.0
	Sigma(A)	YES	3.33	3.33	0.0
	TamFW-Sigma(A)	YES	2.07	2.07	0.0
	Zenith-FPGA(A)	YES	2.07	2.07	0.0
A9K-RSP880-LT-SE	Aldrin-FPGA(A)	YES	1.11	1.11	0.0
	Alpha-FPGA(A)	YES	0.05	0.05	0.0
	CBC(A)	NO	50.03	50.03	0.0
	IPU-FPGA(A)	YES	0.20	0.20	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.07	0.07	0.0
	Optimus-FPGA(A)	YES	0.05	0.05	0.0
	Primary-BIOS(A)	YES	17.41	17.41	0.0
A9K-RSP880-LT-TR	Aldrin-FPGA(A)	YES	1.11	1.11	0.0
	Alpha-FPGA(A)	YES	0.05	0.05	0.0
	CBC(A)	NO	50.03	50.03	0.0
	IPU-FPGA(A)	YES	0.20	0.20	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.07	0.07	0.0
	Optimus-FPGA(A)	YES	0.05	0.05	0.0
	Primary-BIOS(A)	YES	17.41	17.41	0.0
A9K-RSP880-SE	Alpha-FPGA(A)	YES	0.16	0.16	0.0
	CBC(A)	NO	34.39	34.39	0.0
	Cha-FPGA(A)	YES	0.09	0.09	0.0
	IPU-FPGA(A)	YES	0.72	0.72	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.20	0.20	0.0
	Optimus-FPGA(A)	YES	0.12	0.12	0.0
	Primary-BIOS(A)	YES	10.69	10.69	0.0

A9K-RSP880-TR	Alpha-FPGA(A)	YES	0.16	0.16	0.0
	CBC(A)	NO	34.39	34.39	0.0
	Cha-FPGA(A)	YES	0.09	0.09	0.0
	IPU-FPGA(A)	YES	0.72	0.72	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Omega-FPGA(A)	YES	0.20	0.20	0.0
	Optimus-FPGA(A)	YES	0.12	0.12	0.0
	Primary-BIOS(A)	YES	10.69	10.69	0.0
A9K-TEST_LSQ_DX1	Aldrin-FPGA(A)	YES	1.05	1.05	0.0
	CBC(A)	NO	58.09	58.09	0.0
	IPU-DDR4(A)	YES	1.18	1.18	0.0
	Primary-BIOS(A)	YES	25.30	25.30	0.0
	Sunstreaker(A)	YES	0.14	0.14	0.0
	TAMFW-Sunstreaker(A)	YES	2.65	2.65	0.0
	Trailbreaker-0(A)	YES	0.24	0.24	0.0
	Windcharger-0(A)	YES	0.08	0.08	0.0
A9KL-4X100GE-SE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9KL-4X100GE-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
A9KL-4X100GE-TR-TAA	CBC(A)	NO	38.23	38.23	0.0
	Dalla(A)	YES	1.09	1.09	0.0
	IPU-FPGA(A)	YES	1.99	1.99	0.0
	IPU-FSBL(A)	YES	1.113	1.113	0.0
	IPU-Linux(A)	YES	1.113	1.113	0.0
	Meldun-0(A)	YES	1.07	1.07	0.0
	Meldun-1(A)	YES	1.07	1.07	0.0
	Primary-BIOS(A)	YES	8.51	8.51	0.0
ASR-9006-AC	CBC(A)	NO	7.105	7.105	0.0
ASR-9006-AC-V2	CBC(A)	NO	7.105	7.105	0.0
ASR-9006-FAN	CBC(A)	NO	5.04	5.04	0.0
ASR-9006-FAN-V2	CBC(A)	NO	5.05	5.05	0.0
ASR-9010-AC	CBC(A)	NO	7.105	7.105	0.0
ASR-9010-AC-V2	CBC(A)	NO	7.105	7.105	0.0
ASR-9010-FAN	CBC(A)	NO	4.03	4.03	0.0
ASR-9010-FAN-V2	CBC(A)	NO	29.12	29.12	0.0
ASR-9901-LC	CBC(A)	NO	55.07	55.07	0.1
	Gamora-FPGA(A)	YES	0.36	0.36	0.1

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                    IPU-FPGA(A)               YES     1.10      1.10      0.1
                    IPU-FSBL(A)               YES     1.104     1.104     0.1
                    IPU-Linux(A)              YES     1.104     1.104     0.1
                    Primary-BIOS(A)           YES    23.23     23.23      0.1
-------------------------------------------------------------------------------
ASR-9901-RP         CBC(A)                    NO     54.11     54.11      0.1
                    Drax-FPGA(A)              YES     0.38      0.38      0.1
                    IPU-FPGA(A)               YES     2.05      2.05      0.1
                    IPU-FSBL(A)               YES     1.104     1.104     0.1
                    IPU-Linux(A)              YES     1.104     1.104     0.1
                    Primary-BIOS(A)           YES    22.27     22.27      0.1
-------------------------------------------------------------------------------
ASR-9902            FAN-CBC(A)                NO     61.25     61.25      0.0
-------------------------------------------------------------------------------
ASR-9902-LC         Aldrin-FPGA(A)            YES     1.05      1.05      0.0
                    CBC(A)                    NO     17.03     17.03      0.0
                    Chromia(A)                YES     0.14      0.14      0.0
                    IPU-DDR4(A)               YES     1.17      1.17      0.0
                    Primary-BIOS(A)           YES    34.30     34.30      0.0
                    Skywarp-0(A)              YES     0.11      0.11      0.0
                    Skywarp-1(A)              YES     0.11      0.11      0.0
                    Sunstreaker(A)            YES     0.15      0.15      0.0
                    TAMFW-Sunstreaker(A)      YES     2.65      2.65      0.0
-------------------------------------------------------------------------------
ASR-9903            FAN-CBC(A)                NO     61.25     61.25      0.0
-------------------------------------------------------------------------------
ASR-9903-LC         Aldrin-0-FPGA(A)          YES     1.05      1.05      0.0
                    CBC(A)                    NO     60.12     60.12      0.0
                    Harpoon-0(A)              YES     0.11      0.11      0.0
                    Harpoon-1(A)              YES     0.11      0.11      0.0
                    IPU-DDR4(A)               YES     1.25      1.25      0.0
                    Metalmaster-0(A)          YES     0.02      0.02      0.0
                    Metalmaster-1(A)          YES     0.02      0.02      0.0
                    Primary-BIOS(A)           YES    34.30     34.30      0.0
                    QDD_1_0                   NO     61.23     61.23      0.0
                    QDD_1_12                  NO     61.23     61.23      0.0
                    QDD_1_16                  NO     61.23     61.23      0.0
                    QDD_1_4                   NO     61.23     61.23      0.0
                    QDD_1_8                   NO     61.23     61.23      0.0
                    Scattershot(A)            YES     0.14      0.14      0.0
                    Sunstreaker(A)            YES     0.14      0.14      0.0
                    Supernaut(A)              YES     0.14      0.14      0.0
                    TAMFW-Sunstreaker(A)      YES     2.65      2.65      0.0
                    TimingIC-A                YES     7.216     7.216     0.0
                    TimingIC-B-0              YES     7.216     7.216     0.0
                    Warstar-0(A)              YES     0.02      0.02      0.0
                    Warstar-1(A)              YES     0.02      0.02      0.0
-------------------------------------------------------------------------------
ASR-9903-PXC800G-LC Harpoon-0(A)              YES     0.11      0.11      0.0
                    Harpoon-1(A)              YES     0.11      0.11      0.0
-------------------------------------------------------------------------------
ASR-9904-AC         CBC(A)                    NO      7.105     7.105     0.0
-------------------------------------------------------------------------------
ASR-9904-FAN        CBC(A)                    NO     31.06     31.06      0.0
-------------------------------------------------------------------------------
ASR-9906            CBC(A)                    NO      7.105     7.105     0.0
-------------------------------------------------------------------------------
ASR-9906-FAN        CBC(A)                    NO     56.01     56.01      0.0
                    PSOC(A)                   NO      2.06      2.06      0.0
-------------------------------------------------------------------------------
ASR-9910            CBC(A)                    NO      7.105     7.105     0.0
-------------------------------------------------------------------------------
ASR-9910-FAN        CBC(A)                    NO     45.02     45.02      0.0
                    PSOC(A)                   NO      2.06      2.06      0.0
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ASR-9912-AC	CBC(A)	NO	7.105	7.105	0.0
ASR-9912-FAN	CBC(A)	NO	31.06	31.06	0.0
ASR-9912-SFC220	CBC(A)	NO	37.20	37.20	0.0
	IPU-FPGA(A)	YES	0.37	0.37	0.0
	IPU-FSBL(A)	YES	1.100	1.100	0.0
	IPU-Linux(A)	YES	1.100	1.100	0.0
ASR-9922-AC	CBC-0(A)	NO	7.105	7.105	0.0
	CBC-1(A)	NO	7.105	7.105	0.0
ASR-9922-FAN	CBC(A)	NO	29.12	29.12	0.0
ASR-9922-FAN-V2	CBC(A)	NO	40.07	40.07	0.0
	PSOC(A)	NO	2.06	2.06	0.0
ASR-9922-FAN-V3	CBC(A)	NO	40.07	40.07	0.0
	PSOC(A)	NO	2.06	2.06	0.0
PWR-1.6KW-AC	PriMCU(A)	NO	17.20	17.20	0.0
PWR-1.6KW-DC	PriMCU(A)	NO	1.03	1.03	0.0
PWR-2KW-DC-V2	DT-PriMCU(A)	NO	6.03	6.03	0.12
	DT-Sec54vMCU(A)	NO	6.02	6.02	0.12
	DT-Sec5vMCU(A)	NO	6.03	6.03	0.12
	EM-PriMCU(A)	NO	3.12	3.12	0.12
	EM-Sec54vMCU(A)	NO	3.21	3.21	0.12
	EM-Sec5vMCU(A)	NO	3.20	3.20	0.12
PWR-3KW-AC-V2	DT-PriMCU(A)	NO	6.02	6.02	1.0
	DT-Sec54vMCU(A)	NO	6.02	6.02	1.0
	DT-Sec5vMCU(A)	NO	6.04	6.04	1.0
	EM-Sec54vMCU(A)	NO	3.12	3.12	0.21
	EM-Sec5vMCU(A)	NO	3.18	3.18	0.21
PWR-3KW-HVDC	DT-PriMCU(A)	NO	2.02	2.02	1.0
	DT-Sec54vMCU(A)	NO	2.02	2.02	1.0
	DT-Sec5vMCU(A)	NO	2.03	2.03	1.0
PWR-4.4KW-DC-V3	AB-Pri0MCU(A)	NO	3.02	3.02	0.1
	AB-Pri1MCU(A)	NO	3.02	3.02	0.1
	AB-Sec054vMCU(A)	NO	3.04	3.04	0.1
	AB-Sec154vMCU(A)	NO	3.04	3.04	0.1
	AB-Sec5vMCU(A)	NO	3.06	3.06	0.1
	DT-Pri0MCU(A)	NO	3.01	3.01	0.1
	DT-Pri1MCU(A)	NO	3.01	3.01	0.1
	DT-Sec054vMCU(A)	NO	3.01	3.01	0.1
	DT-Sec154vMCU(A)	NO	3.01	3.01	0.1
	DT-Sec5vMCU(A)	NO	3.02	3.02	0.1
PWR-6KW-AC-V3	AB-Pri0MCU(A)	NO	3.02	3.02	0.1
	AB-Pri1MCU(A)	NO	3.02	3.02	0.1
	AB-Sec054vMCU(A)	NO	3.02	3.02	0.1
	AB-Sec154vMCU(A)	NO	3.02	3.02	0.1
	AB-Sec5vMCU(A)	NO	3.05	3.05	0.1
	DT-Pri0MCU(A)	NO	4.02	4.02	0.1
	DT-Pri1MCU(A)	NO	4.02	4.02	0.1
	DT-Sec054vMCU(A)	NO	4.03	4.03	0.1
	DT-Sec154vMCU(A)	NO	4.03	4.03	0.1
	DT-Sec5vMCU(A)	NO	4.04	4.04	0.1

Supported Hardware

The following table lists the supported hardware components on the Cisco ASR 9000 Series Router and the minimum required software versions. For more information, see the *Firmware Support* section.

All hardware features are supported on Cisco IOS XR Software, subject to the memory requirements specified in the section.

For information on the end-of-sale and end-of-life dates for the Cisco ASR 9000 Series Router hardware, refer to the End-of-Life and End-of-Sale Notices page.

Table 4: Cisco ASR 9000 Series Aggregation Services Router Supported Hardware and Minimum Software Requirements

Cisco ASR 9000 Series Aggregation Services Router - Route Switch Processor Cards		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
A9K-RSP5-X-SE	ASR 9000 Series Route Switch Processor 5 for Service Edge, Premium	Release 7.6.2
A9K-RSP5-X-TR	ASR 9000 Series Route Switch Processor 5 for Packet Transport, Premium	Release 7.6.2
A9K-RSP5-SE	ASR 9000 Route Switch Processor 5 for Service Edge	Release 6.5.15
A9K-RSP5-TR	ASR 9000 Route Switch Processor 5 for Packet Transport	Release 6.5.15
A9K-RSP880-LT-SE	Cisco ASR 9000 Series Aggregation Services Router RSP880-Lite, Service Edge Optimized	Release 6.4.1
A9K-RSP880-LT-TR	Cisco ASR 9000 Series Aggregation Services Router RSP880-Lite, Packet Transport Optimized	Release 6.4.1
A99-RSP-SE	Cisco ASR 9000 Series Aggregation Services Router RSP4-S, Service Edge Optimized for ASR 9910 from Release 6.0.1.	Release 6.2.1
A99-RSP-TR	Cisco ASR 9000 Series Aggregation Services Router RSP4-S, Packet Transport Optimized for ASR 9910 from Release 6.0.1.	Release 6.2.1
A99-RSP-SE	Cisco ASR 9000 Series Aggregation Services Router RSP4-S, Service Edge Optimized for ASR 9906 from Release 6.3.1.	Release 6.3.1
A99-RSP-TR	Cisco ASR 9000 Series Aggregation Services Router RSP4-S, Packet Transport Optimized for ASR 9906 supported from Release 6.3.1	Release 6.3.1
A9K-RSP880-SE	ASR9K Route Switch Processor with 880G/slot and 32 GB for Service Edge	Release 6.1.2
A9K-RSP880-TR	ASR9K Route Switch Processor with 880G/slot and 16 GB for Packet Transport	Release 6.1.2
Cisco ASR 9000 Series Aggregation Services Router - Route Processor Cards		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**

A99-RP3-X-SE	ASR 9900 Route Processor 3 for Service Edge, Premium	Release 7.6.2
A99-RP3-X-TR	ASR 9900 Route Processor 3 for Packet Transport, Premium	Release 7.6.2
A99-RP3-SE	ASR 9900 Route Processor 3 for Service Edge	Release 6.5.15
A99-RP3-TR	ASR 9900 Route Processor 3 for Packet Transport	Release 6.5.15
A99-RP2-SE	ASR Route Processor 32 GB for Service Edge	Release 6.1.2
A99-RP2-TR	ASR Route Processor 16 GB for Packet Transport	Release 6.1.2
Cisco ASR 9901 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9901	Cisco ASR 9000 Series Aggregation Services Router 2-RU Fixed Port	Release 6.4.1
ASR-9901-FAN	Cisco ASR 9000 Series Aggregation Services Router 2-RU Fixed Port Fan Tray	Release 6.4.1
A9K-1600W-AC	Cisco ASR 9000 Series Aggregation Services Router 2-RU 1600W AC Power Module	Release 6.4.1
A9K-1600W-DC	Cisco ASR 9000 Series Aggregation Services Router 2-RU 1600W DC Power Module	Release 6.4.1
Cisco ASR 9902 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9902	Cisco ASR 9902 2RU Chassis with fixed ports	Release 7.4.1
A99-RP-F	Cisco ASR 9900 Fixed Chassis Route Processor	Release 7.1.3
ASR-9902-4P-KIT	Cisco ASR 9902 4-Post Mounting Kit for 19-Inch and 23-Inch Rack	Release 7.4.1
ASR-9902-4P-KIT-L	ASR 9902 4-Post Mounting Kit for 19 & 23 inch Rack – Long	Release 7.4.1
ASR-9902-2P-KIT	Cisco ASR 9902 2-Post Mounting Kit for 19-Inch and 23-Inch Rack	Release 7.4.1
ASR-9902-CAB-MGMT	Cisco ASR 9902 Cable Management	Release 7.4.1
ASR-9902-FILTER	Cisco ASR 9902 Air Filter	Release 7.4.1
ASR-9902-FAN	Cisco ASR 9902 Fan Tray	Release 7.4.1
Cisco ASR 9903 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9903	Cisco ASR 9903 Compact High-Performance Router with fixed ports and PEC (Port Expansion Card) slot.	Release 7.1.3

A99-RP-F	Cisco ASR 9900 Fixed Chassis Route Processor	Release 7.1.3
ASR-9903-FAN	Cisco ASR 9903 Router Fan Tray	Release 7.1.3
ASR-9903-4P-KIT	ASR 9903 4-Post Mounting Kit for 19-inch Rack	Release 7.1.3
ASR-9903-CAB-MGMT	ASR 9903 Cable Management Brackets	Release 7.1.3
ASR-9903-FILTER	ASR 9903 Air Filter	Release 7.1.3
Cisco ASR 9904 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9904	Cisco ASR 9000 Series Aggregation Services Router 4-Slot 2 Line Card Slot Chassis, 6 RU	Release 6.1.2
ASR-9904-AC	Cisco ASR 9000 Series Aggregation Services Router 4-Slot 2 Line Card Slot AC Chassis w/ PEM V2	Release 6.1.2
ASR-9904-DC	Cisco ASR 9000 Series Aggregation Services Router 4-Slot 2 Line Card Slot DC Chassis w/ PEM V2	Release 6.1.2
ASR-9904-FAN	Cisco ASR 9000 Series Aggregation Services Router 4-Slot Fan Tray	Release 6.1.2
ASR-9904-FILTER	Cisco ASR 9000 Series Aggregation Services Router 4-Slot Filter	Release 6.1.2
ASR-9904-BAFFLE	Cisco ASR 9000 Series Aggregation Services Router 4-Slot Baffle	Release 6.1.2
Cisco ASR 9912 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9912	Cisco ASR 9000 Series Aggregation Services Router 12-Slot 10 Line Card Slot Chassis	Release 6.1.2
ASR-9912-AC	Cisco ASR 9000 Series Aggregation Services Router 12-Slot 10 Line Card Slot AC Chassis w/ PEM V2	Release 6.1.2
ASR-9912-DC	Cisco ASR 9000 Series Aggregation Services Router 12-Slot 10 Line Card Slot DC Chassis w/ PEM V2	Release 6.1.2
A99-SFC3	Cisco ASR 9900 Switch Fabric Card 3	Release 6.5.15
A99-SFC2	Cisco ASR 9000 Fabric Card	Release 6.1.2
ASR-9912-FAN	Cisco ASR 9000 Series Aggregation Services Router 12-Slot Fan Tray	Release 6.1.2
Cisco ASR 9922 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9922	Cisco ASR 9922 20 Line Card Slot Chassis, 44 RU	Release 6.1.2

ASR-9922-AC	Cisco ASR 9000 Series Aggregation Services Router 22-Slot 20 Line Card Slot AC Chassis w/ PEM V2	Release 6.1.2
ASR-9922-DC	Cisco ASR 9000 Series Aggregation Services Router 22-Slot 20 Line Card Slot DC Chassis w/ PEM V2	Release 6.1.2
A99-SFC3	Cisco ASR 9900 Switch Fabric Card 3	Release 6.5.15
A99-SFC2	Cisco ASR 9000 Fabric Card	Release 6.1.2
ASR-9922-FAN-V3	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Fan Tray version 3	Release 6.5.15
ASR-9922-FLTR-CV2	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Air Filter with Media, Center	Release 6.1.2
ASR-9922-FLTR-LR	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Air Filter with Media, Left & Right	Release 6.1.2
ASR-9922-RP-FILR	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Route Processor Filler	Release 6.1.2
ASR-9922-FAN-V2	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Version 2 Fan Tray	Release 6.1.2
Cisco ASR 9006 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9006-SYS	Cisco ASR 9000 Series Aggregation Services Router 6-Slot System	Release 6.1.2
ASR-9006-AC-V2	Cisco ASR 9000 Series Aggregation Services Router 6-Slot AC Chassis Version 2	Release 6.1.2
ASR-9006-DC-V2	Cisco ASR 9000 Series Aggregation Services Router 6-Slot DC Chassis Version 2	Release 6.1.2
ASR-9006-FAN	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Fan Tray	Release 6.1.2
ASR-9006-DOOR	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Door Kit	Release 6.1.2
ASR-9006-FILTER	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Air Filter	Release 6.1.2
Cisco ASR 9906 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9906	Cisco ASR 9000 Series Aggregation Services Router 6-Slot chassis	Release 6.3.1
ASR-9906-FAN	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Fan Tray	Release 6.3.1
ASR-9906-FILTER	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Fan Filter	Release 6.3.1
A99-SFC3-T	ASR 9906 Switch Fabric Card	Release 6.5.15

A99-SFC-T	ASR 9906 Switch Fabric Card 3	Release 6.3.1
Cisco ASR 9010 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9010-SYS	Cisco ASR 9000 Series Aggregation Services Router 10-Slot System	Release 6.1.2
ASR-9010-AC-V2	Cisco ASR 9000 Series Aggregation Services Router 10-Slot AC Chassis Version 2	Release 6.1.2
ASR-9010-DC-V2	Cisco ASR 9000 Series Aggregation Services Router 10-Slot DC Chassis Version 2	Release 6.1.2
ASR-9010-FAN	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Fan Tray	Release 6.1.2
ASR-9010-DOOR	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Door Kit	Release 6.1.2
ASR-9010-2P-KIT	Cisco ASR 9000 Series Aggregation Services Router 2 Post Mounting Kit	Release 6.1.2
ASR-9010-2P-KIT	Cisco ASR 9000 Series Aggregration Services Router 4 Post Mounting Kit	Release 6.1.2
ASR-9010-FILTER	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Air Filter	Release 6.1.2
Cisco ASR 9910 Router		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
ASR-9910	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) System	Release 6.2.1
ASR-9910-FAN	Cisco ASR 9000 Series Aggregation Services Router 10-Slot(9910) Fan Tray	Release 6.2.1
ASR-9910-ACC-KIT	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Accessory Kit	Release 6.2.1
ASR-9910-4P-KIT	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) 4 Post Rack Mounting Kit	Release 6.2.1
ASR-9910-2P-KIT	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) 2 Post Rack Mounting Kit	Release 6.2.1
ASR-9910-AIRREF	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Air Reflector	Release 6.2.1
ASR-9910-FILTER	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Air Filter	Release 6.2.1

A99-SFC-S	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Switch Fabric Card	Release 6.2.1
A99-SFC3-S	ASR 9910 Switch Fabric Card 3	Release 6.5.15
Cisco ASR 9000 Series Aggregation Services Router - Power Modules		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
PWR-2KW-DC-V2	Cisco ASR 9000 Series Aggregation Services Router 2KW DC Power Module, version 2	Release 6.1.2
PWR-3KW-AC-V2	Cisco ASR 9000 Series Aggregation Services Router 3KW AC Power Module, version 2	Release 6.1.2
A9K-AC-PEM-V2	Cisco ASR 9000 Series Aggregation Services Router AC Power Entry Module Version 2	Release 6.1.2
A9K-DC-PEM-V2	Cisco ASR 9000 Series Aggregation Services Router DC Power Entry Module Version 2	Release 6.1.2
A9K-PEM-V2-FILR	Cisco ASR 9000 Series Aggregation Services Router Power Entry Module Version 2 Filler	Release 6.1.2
A9K-AC-PEM-V3	Cisco ASR 9000 Series Aggregation Services Router AC Power Enclosure Module Version 3	Release 6.1.2
A9K-DC-PEM-V3	Cisco ASR 9000 Series Aggregation Services Router DC Power Enclosure Module Version 3	Release 6.1.2
PWR-6KW-AC-V3	Cisco ASR 9000 Series Aggregation Services Router 6kW AC Power Module Version 3	Release 6.1.2
PWR-4.4KW-DC-V3	Cisco ASR 9000 Series Aggregation Services Router 4.4kW DC Power Module Version 3	Release 6.1.2
PWR-1.6KW-AC	ASR 9900 Fixed Chassis AC Power Supply	Release 7.1.25
PWR-1.6KW-DC	ASR 9900 Fixed Chassis DC Power Supply	Release 7.1.25
Cisco ASR 9000 Series Aggregation Services Router - Line Cards		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
A9K-4HG-FLEX-SE	ASR 9000 400GE Combo Service Edge Line Card - 5th Generation	Release 7.4.1
A9K-4HG-FLEX-TR	ASR 9000 400GE Combo Packet Transport Line Card - 5th Generation	Release 7.4.1
A99-4HG-FLEX-SE	ASR 9900 400GE Combo Service Edge Line Card - 5th Generation	Release 7.4.1
A99-4HG-FLEX-TR	ASR 9900 400GE Combo Packet Transport Line Card - 5th Generation	Release 7.4.1
A9903-8HG-PEC	ASR 9903 800G Multi-rate Port Expansion Card	Release 7.4.1

A99-10X400GE-X-SE	ASR 9900 4T Service Edge Line Card - 5th Generation	Release 7.3.1
A99-10X400GE-X-TR	ASR 9900 4T Packet Transport Line Card - 5th Generation	Release 7.3.1
A9903-20HG-PEC	ASR 9903 2T Multi-rate Port Expansion Card	Release 7.1.3
A99-32X100GE-X-SE	ASR 9000 32-Port 100GE QSFP28/QSFP+ Service Edge optimized Line Card - 5th Generation	Release 7.1.15
A99-32X100GE-X-TR	ASR 9000 32-Port 100GE QSFP28/QSFP+ Packet Transport optimized Line Card - 5th Generation	Release 7.1.15
A9K-20HG-FLEX-SE A9K-20HG-FLEX-TR	ASR 9000 2T Combo Line Card - 5th Generation	Release 7.1.15
A9K-8HG-FLEX-SE A9K-8HG-FLEX-TR	ASR 9000 800G Combo Line Card - 5th Generation	Release 7.1.15
A9K-16X100GE-TR	ASR 9000 16-port 100GE QSFP TR line card	Release 6.5.15
A99-32X100GE-TR	ASR 9900 32-port 100GE QSFP TR line card	Release 6.5.15
A99-48X10GE-1G-SE	ASR 9000 48 port dual rate 10G/1G Service Edge line card	Release 6.5.2
A99-48X10GE-1G-TR	ASR 9000 48 port dual rate 10G/1G Transport Optimised line card	Release 6.5.2
A99-16X100GE-X-SE	ASR 9900 16-port 100GE QSFP SE	Release 6.5.3
A9K-48X10GE-1G-CM	ASR 9000 48-port dual-rate 10G/1G Consumption Model line card	Release 6.4.1
A9K-24X10GE-1G-CM	ASR 9000 24-port dual-rate 10G/1G Consumption Model line card	Release 6.4.1
A9K-4X100GE	ASR 9000 4-port 100-Gigabit Ethernet Line Card	Release 6.4.1
A9K-48X10GE-1G-SE	ASR9000 48-port dual-rate 10G/1G service edge–optimized line card	Release 6.3.2
A9K-48X10GE-1G-TR	ASR9000 48-port dual-rate 10G/1G packet transport–optimized line card	Release 6.3.2
A9K-24X10GE-1G-SE	ASR9000 24-port dual-rate 10G/1G service edge–optimized line card	Release 6.3.2
A9K-24X10GE-1G-TR	ASR9000 24-port dual-rate 10G/1G packet transport–optimized line card	Release 6.3.2
A99-8X100GE-SE	ASR 9900 8-port 100GE Service Edge optimized	Release 6.1.2
A99-8X100GE-TR	ASR 9900 8-port 100GE Packet Transport optimized	Release 6.1.2
A99-8X100GE-CM	ASR 9900 8-port 100GE Consumption Model	Release 6.1.2
A99-12X100GE	Cisco ASR 9000 Series Aggregation Services Router 12-Port 100-Gigabit Ethernet Line Card	Release 6.1.2
A99-12X100GE-CM	Cisco ASR 9000 Series Aggregation Services Router 12-port 100GE Ethernet Line card CM	Release 6.1.2

A9K-8X100GE-CM	Cisco ASR 9000 Series Aggregation Services Router 8-Port 100-Gigabit Ethernet, Consumption Model Optimized with CPAK	Release 6.1.2
A9K-8X100GE-SE	Cisco ASR 9000 Series Aggregation Services Router 8-Port 100-Gigabit Ethernet, Service Edge Optimized	Release 6.1.2
A9K-8X100GE-TR	Cisco ASR 9000 Series Aggregation Services Router 8-Port 100-Gigabit Ethernet, Packet Transport Optimized	Release 6.1.2
A9K-4X100GE-SE	Cisco ASR 9000 Series Aggregation Services Router 4--Port 100-Gigabit Ethernet, Service Edge Optimized	Release 6.1.2
A9K-4X100GE-TR	Cisco ASR 9000 Series Aggregation Services Router 4-Port 100-Gigabit Ethernet, Packet Transport Optimized	Release 6.1.2
Cisco ASR 9000 Series Aggregation Services Router - Modular Line Cards		
Part Number	Cisco ASR 9000 Series Aggregation Services Router 200 Gigabit Modular Line Card, Packet Transport Optimized Cisco ASR 9000 Series Aggregation Services Router 200 Gigabit Modular Line Card, Service Edge Optimized	**Support Initially Provided in IOS XR 64 bit Release**
A9K-MOD200-TR A9K-MOD200-SE	Cisco ASR 9000 Modular 400G Consumption Model Line Card	Release 6.3.1
A9K-MOD400-CM	Cisco ASR 9000 Series Aggregation Services Router 400 Gigabyte Modular Line Card, Service Edge Optimized	Release 6.2.1
A9K-MOD400-SE	Cisco ASR 9000 Series Aggregation Services Router 400 Gigabyte Modular Line Card, Packet Transport Optimized	Release 6.2.1
A9K-MOD400-TR	Cisco ASR 9000 Series Aggregation Services Router 200 Gigabit Modular Line Card, Packet Transport Optimized Cisco ASR 9000 Series Aggregation Services Router 200 Gigabit Modular Line Card, Service Edge Optimized	Release 6.2.1
Cisco ASR 9000 Series Aggregation Services Router - Modular Port Adapters (MPAs)		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
A9K-MPA-1X200GE	Cisco ASR 9000 1-port 200-Gigabit Ethernet MPA, requires CFP2-DCO optics	Release 6.6.2
A9K-MPA-32X1GE	Cisco ASR 9000 32-port 1-Gigabit Ethernet MPA with MACSec	Release 6.6.2
A9K-MPA20X10GE-CM	Cisco ASR 9000 20x10GE Consumption Model MPA	Release 6.5.1
A9K-MPA2X100GE-CM	Cisco ASR 9000 2x100GE Consumption Model MPA	Release 6.5.1
A9K-MPA-1X100GE	Cisco ASR 9000 Series Aggregation Services Router 1-port 100-Gigabit Modular Port Adapter	Release 6.3.1

A9K-MPA-2X100GE	Cisco ASR 9000 Series Aggregation Services Router 2-port 100-Gigabit Modular Port Adapter	Release 6.2.2
A9K-MPA-20x10GE	20-Port 10-Gigabit Ethernet Modular Port Adapter with SFP+	Release 6.2.1
A9K-MPA-8X10GE	Cisco ASR 9000 Series Aggregation Services Router 8-port 10GE Modular Port Adapter	Release 6.3.2
A9K-MPA-4X10GE	Cisco ASR 9000 Series Aggregation Services Router 4-port 10GE Modular Port Adapter	Release 6.2.1
A9K-MPA-20X1GE	Cisco ASR 9000 Series Aggregation Services Router 20-port 1GE Modular Port Adapter	Release 6.2.1
A9K-MPA-2X40GE	Cisco ASR 9000 Series Aggregation Services Router 2-port 40GE Modular Port Adapter	Release 6.3.1
Cisco Digital Pluggable Optical Modules		
CFP2-WDM-DET-1HL=	200G, 100G, WDM Digital CFP2 pluggable Licensed for 100G only – TOF	Release 6.6.2
CFP2-WDM-D-1HL=	200G, 100G, WDM Digital CFP2 pluggable Licensed for 100G only – NON TOF	Release 6.6.2
Cisco ASR 9000v Satellite Shelf		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
A9KV-V2-DC-A=	Cisco ASR 9000v Satellite Shelf Version 2 DC power ANSI chassis	Release 6.2.1
A9KV-V2-DC-E=	Cisco ASR 9000v Satellite Shelf Version 2 DC power chassis	Release 6.2.1
A9KV-V2-AC=	Cisco ASR 9000v Satellite Shelf AC power chassis	Release 6.2.1
A9KV-V2-FAN=	Cisco ASR 9000v Satellite Shelf Version 2 Fan Tray	Release 6.2.1
Cisco NCS 5000 Satellite Shelf		
Part Number	**Description**	**Support Initially Provided in IOS XR 64 bit Release**
NCS-5001	Cisco NCS 5001 Series Router	Release 6.2.1
NCS-5002	Cisco NCS 5002 Series Router	Release 6.2.1
NCS-5001-ACSR	Cisco NCS 5001 Router Accessory Kit	Release 6.2.1
NCS-5002-ACSR	Cisco NCS 5002 Router Accessory Kit	Release 6.2.1
NCS-5001-FN-BK	Cisco NCS 5001 Router Fan Back to Front AirFlow	Release 6.2.1
NCS-5002-FN-BK	Cisco NCS 5002 Router Fan Back to Front AirFlow	Release 6.2.1

NCS-5001-FLT-BK	Cisco NCS 5001 Air Filter Back to Front Airflow	Release 6.2.1
NCS-5002-FLT-BK	Cisco NCS 5002 Air Filter Back to Front Airflow	Release 6.2.1
NCS-5001-FN-FR	Cisco NCS 5001 Fan Front to Back Airflow	Release 6.2.1
NCS-5002-FN-FR	Cisco NCS 5002 Fan Front to Back Airflow	Release 6.2.1
NCS-5001-FLT-FR	Cisco NCS 5001 Air Filter Front to Back Airflow	Release 6.2.1
NCS-5002-FLT-FR	Cisco NCS 5002 Air Filter Front to Back Airflow	Release 6.2.1

Important Notes

- Repetitive Smart Licensing evaluation expired warning messages are displayed on the console every hour, but no functionality impact is observed on the device. To stop these repetitive messages, you should register the device again with a new registration token.
- From IOS XR Release 7.0, 1st and 2nd generation of Ethernet ASR 9000 line cards are not supported.
- Country-specific laws, regulations, and licenses—In certain countries, use of these products may be prohibited and subject to laws, regulations, or licenses, including requirements applicable to the use of the products under telecommunications and other laws and regulations; customers must comply with all such applicable laws in the countries in which they intend to use the products.
- Exceeding Cisco testing—If you intend to test beyond the combined maximum configuration tested and published by Cisco, contact your Cisco Account Team or Technical Support representative to discuss how to engineer a large-scale configuration for your purpose.
- Installing a Line Card—For a fully populated Line Card with cable optics, maintenance time required for card replacement is higher. For more information about Line Card installation and removal, refer to the *Cisco ASR 9000 Aggregation Services Router Ethernet Line Card Installation Guide*.
- The Cisco ASR 9000 Series Router running IOS XR software version 7.8.1 supports Cisco Cloud Native BNG Control Plane, Version 2022.04.0.
- For ZTP, In Cisco IOS XR Release 7.3.1 and earlier, the system accepts the device sending **user-class = "exr-config"**; however starting Cisco IOS XR Release 7.3.2 and later, you must use only **user-class = "xr-config"**.

  In Cisco IOS XR Release 7.3.2 and later, use:

```
host cisco-rp0 {
   hardware ethernet e4:c7:22:be:10:ba;
   fixed-address 172.30.12.54;
   if exists user-class and option user-class = "iPXE" {
      filename = "http://172.30.0.22/boot.ipxe";
   } elsif exists user-class and option user-class = "xr-config" {
      filename = "http://172.30.0.22/scripts/cisco-rp0_ztp.sh";
   }
}
```

Supported Transceiver Modules

To determine the transceivers that Cisco hardware device supports, refer to the Transceiver Module Group (TMG) Compatibility Matrix tool.

Supported Modular Port Adapters

For the compatibility details of Modular Port Adapters (MPAs) on the line cards, see the datasheet of that specific line card.

Production Software Maintenance Updates (SMUs)

A production SMU is a SMU that is formally requested, developed, tested, and released. Production SMUs are intended for use in a live network environment and are formally supported by the Cisco TAC and the relevant development teams. Software bugs identified through software recommendations or Bug Search Tools are not a basis for production SMU requests.

For information on production SMU types, refer the Production SMU Types section of the *IOS XR Software Maintenance Updates (SMUs)* guide.

Upgrading Cisco IOS XR Software

Cisco IOS XR Software is installed and activated from modular packages, allowing specific features or software patches to be installed, upgraded, or downgraded without affecting unrelated processes. Software packages can be upgraded or downgraded on all supported card types, or on a single card (node).

Software packages are installed from Route Processor Module (RPM) files that contain one or more software components.

The upgrade document is available along with the software images.

Note If you have mLACP/ICCP Redundancy Model setup, ensure that you upgrade the active and standby nodes to the same IOS XR version while upgrading to a newer version of the ASR 9000 router.

Related Documentation

The most current Cisco ASR 9000 router documentation is located at the following URL:

https://www.cisco.com/c/en/us/td/docs/iosxr/asr-9000-series-routers.html

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