Cisco Nexus 9508-R Spine & Leaf

The IP fabric for media solution consists of a flexible spine and leaf architecture or a single modular switch topology. The solution uses Cisco Nexus 9000 Series switches in conjunction with the Cisco non-blocking multicast (NBM) algorithm (an intelligent traffic management algorithm) and with or without the Cisco Data Center Network Manager (DCNM) Media Controller. Using open APIs, the Cisco DCNM Media Controller can integrate with various broadcast controllers. The solution provides a highly reliable (zero drop multicast), highly visible, highly secure, and highly available network.

Spine-Leaf Topology with DCNM Media Controller

Spine-leaf topology with DCNM Media Controller—Flexible architecture for large-scale deployments typically seen in an IP studio.

DEVICES & FIMWARE PACKAGE

UCSC-C240-M4S	3.0(3c)
Cisco DCNM	10.4 IPFM
Nexus 9236C	7.0(3)I7(2)
Nexus 93180YC-EX	7.0(3)I7(2)
Nexus 9508-R	7.0(3)F3(3)
Nexus 9272C	7.0(3)I7(2)
GV Convergent	1.4
GV Node	1.3.1 LA
IPG-3901	2.2.1
IPG-3901 (with TICO)	1.3.9
IPG-4901	1.0
KMX-3901-IN-IP	9.0
iControl	7.3
Tektronix SPG8000A	Firmware Version: 2.5.90
Tektronix SPG8000A	PTP Firmware Version: R2.3.0

RELATED DOCUMENTATION

Ref#	Description
REFERENCE	**Tektronix SPG8000A Master Sync / Clock Reference Generator Release 2.5** http://download.tek.com/manual/SPG8000A-Release-Notes-for-Firmware-Version-2.5-077122204.pdf
REFERENCE	**Cisco Nexus 9500 NX-OS Release Notes, Release 7.0(3)F3(3)** https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9500/sw/7x/release/notes/703F33_nxos_rn.html
REFERENCE	**Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)I7(2)** https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/release/notes/70372_nxos_rn.html
REFERENCE	**Cisco DCNM Release Notes, Release 10.4(2)** https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/10_4_2/release_notes/b_dcnm_release_notes_10_4_2.pdf
REFERENCE	**Cisco UCS C-Series Software, Release 3.0(3)** https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/release/notes/b_UCS_C-Series_Release_Notes_3_0_3.html

KNOWN BUGS & LIMITATIONS

Ref#	Description
LIMITATIONS	**Validation test plan has been executed using ST2022-6 encapsulation profile. ST2022-6 does not require PTP.**
LIMITATIONS	**Communication between each switch and DCNM shall be done using Out-of-Band communications. In-Band communication is not supported on this release.**
LIMITATIONS	**On a switch boot up the host discovery could take up to 3 to 5 sec per policies.**

INTEROP-214	**Cisco Leaf Port oversubscription by Unicast**
	`To prevent a port from being oversubscribed by a Unicast flow, per flow type QoS needs to be configured on the Leaf switches.`
	
	https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/white-paper-c11-738605.html
	
	`! Create an ACL matching unicast traffic`
	!Apply the service policy on all interfaces on all switches in the fabric
	
	interface ethernet 1/1-54
	
	service-policy type qos input pmn-qos **no-stat**

INTEROP-219	**Cisco Missing flows after leaf switch reboot** `To prevent communication issues between network and DCNM, out-of-band communication shall be use.`

INTEROP-265	**Cisco PTP nxos 7.0(3)I7(2) UNSTABLE**
	`With a large amount of PTP slaves PTP can have issues sending sync packets to downstream due to credit not available.`
	
	`NOTE:  This issue is resolved in the Cisco patch, CSCvi30251, for the Nexus 7.0(3)I7(2) switch firmware.`