

Omni Switch 6850E/ 6855 / 9000E

Release 6.4.6.380.R01

The following is a list of issues that have been identified and corrected in AOS software release. This document is intended to be used as a pre-upgrade guide and does not replace the Release Notes which are created for every GA release of software.

Important Notice: For a copy of software release not posted on the Web or if you have any question or concern please contact Alcatel’s Technical Support Department.

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Problems Fixed Between Builds 126 and 167

PR	184858	Build:	6.4.6.126.R01
Summary:	DDM threshold temperature alarm.		
Explanation:	Code changes done to prevent warning message until SFP reads the exact DDM values.		
PR	184393	Build:	6.4.6.126.R01
Summary:	After power cycle the snmp access is allow for few minutes without aaa authentication default I		
Explanation:	Fix done to disallow the access to the snmp server immediately after power cycle, when there is no aaa authentication snmp configuration.		
PR	184016	Build:	6.4.6.126.R01
Summary:	Unable to retrieve entire Mac-address table per port through SNMP		
Explanation:	Fix done to retrieve all the static mac entries on LPS port through the snmp.		
PR	182223	Build:	6.4.6.127.R01
Summary:	OS6850 stack switch has been crashed "tCS_PRB & talpni" task is suspended.		
Explanation:	changes done to drop the ARP packets received on high gig port		
PR	187475	Build:	6.4.6.127.R01
Summary:	Show interfaces link-monitoring statistics command not executing past interface 3/42		
Explanation:	Fix done to handle the proper mip overflow condition to execute the "Show interfaces link-monitoring statistics command" correctly.		
PR	182585	Build:	6.4.6.128.R01
Summary:	Issue with DHCP-snooping		
Explanation:	<p>1. When the NI is powered up, the Chassis supervision sends a NI_UP message to UDP relay application, after this, UDP relay initiates socket communication with the NI and, when this is successful we consider that the NI is ready.</p> <p>2. For incorrect linkagg port entry, we have implemented a method to automatically scan all trusted ports using a timer (runs 240 secs after the application is initialized and during takeover) which are a part of a linkagg and update the linkagg port details in UDP relay CMM context if they are not updated correctly.</p>		
PR	185616	Build:	6.4.6.128.R01
Summary:	Traffic stops while the LED remains lit on OS9702E.		
Explanation:	Rectifying discrepancy in setting speed to 100 in a dual speed SFP		
PR	185994	Build:	6.4.6.128.R01
Summary:	Issues getting the SFP-DUAL-MM 100/1000 SFP to run at 100Mb in a 6850E setup		
Explanation:	Changes done to support 100 Mbps in SFP-DUAL-MM on combo ports		
PR	184284	Build:	6.4.6.128.R01
Summary:	Repeated crash on the stack.		
Explanation:	Fix done to handle power fail interrupts in such a way that it does not cause any abnormal system hang.		

PR	187210	Build:	6.4.6.129.R01
Summary:	OS6850E crashed with suspending tCS_PRB and talpni and rebooted however after rebooting OS6850E work		
Explanation:	we introduce semaphore for the global structure with timeout value 2 , to avoid simultaneous access by more than one task		
PR	188137	Build:	6.4.6.129.R01
Summary:	OS6850E linkagg blocking issue.		
Explanation:	STP Ni and CMM task communication optimised.		
PR	186466	Build:	6.4.6.129.R01
Summary:	Unable to generate the trap 223 on 6850E		
Explanation:	Added debug trap for chassis backup power supply (BPS) state change		
PR	185448	Build:	6.4.6.130.R01
Summary:	ERP ring got blocked due to UDLD flood and switch got crashed with generating PMD file with suspend.		
Explanation:	Prevent UDLD configuration for aggregate port or tagged aggregate port		
PR	187130	Build:	6.4.6.131.R01
Summary:	lanpower cli on port 1/43 is reversed with port 1/44 and vice versa		
Explanation:	Code changes done to mapping the phy port to device channel in proper order		
PR	187370	Build:	6.4.6.132.R01
Summary:	Issue with IGMP membership report on MVRP-registered VLAN		
Explanation:	Updating dynamic vlans information to IPMS.		
PR	188541	Build:	6.4.6.133.R01
Summary:	MED extended power over mdi TLV not advertised on OS6850E		
Explanation:	Fix done to retrieve correct port power and priority info for appropriate PoE controller for 6850E and 6855 switches to perform power negotiation over lldp.		
PR	184369	Build:	6.4.6.133.R01
Summary:	Interface Alias information in swlog event when link goes UP/DOWN		
Explanation:	for the all AOS product which I Code changes for including the interface alias name information in the swlog messages. When port link status changes up/down.		
PR	188695	Build:	6.4.6.134.R01
Summary:	Issue with ip dos anti-spoofing clear command.		
Explanation:	statistics command will not change the configuration status of the switch		
PR	187156	Build:	6.4.6.134.R01
Summary:	Malformed BPDU (wrong length) for default VLAN in XNI modules- BPDU dropped in firewall		
Explanation:	Added a control variable to set the BPDU length on 10Gig ports, to force the length field of the BPDU to be equal the standard length 39.		
PR	185272	Build:	6.4.6.135.R01
Summary:	Port Monitoring Issue.		
Explanation:	Removal of ambiguous message, from show port monitoring file output.		

PR	188684	Build:	6.4.6.135.R01
Summary:	DHCP hanging issue		
Explanation:	Buffer is cleared if its failed to reach CMM socket		
PR	181508	Build:	6.4.6.135.R01
Summary:	ntp server configuration does not store IP Address of NTP server, instead it resolves NTP server.		
Explanation:	Controlling the snapshot of NTP configuration to store the IP address		
PR	187504	Build:	6.4.6.135.R01
Summary:	CPU at 97% with task bcmRx and taUdpRelay hogging the CPU		
Explanation:	DHCP ACK's Will not be flooded in the network by the neighboring Relay agents		
PR	190680	Build:	6.4.6.137.R01
Summary:	Specific "system contact" command raises boot.cfg.1.err on next reboot		
Explanation:	Changes has been made to store string in boot.cfg in double quotes irrespective of special symbols (' ' ? ' ! ' , which will consider as delimiter)		
PR	189730	Build:	6.4.6.138.R01
Summary:	OS6855 allows the command to change mode to OS6850E.		
Explanation:	changes are done to not allow command to change stack mode in 6855.		
PR	190576	Build:	6.4.6.140.R01
Summary:	ip helper dhcp-snooping option-82 command not saved in boot.cfg		
Explanation:	error will be thrown if dhcp-snooping related configurations are done before enabling snooping		
PR	190971	Build:	6.4.6.146.R01
Summary:	"zcSend" CODE 3997698 0x3d0002" error seen in logs and unable to save the configuration		
Explanation:	Merge done in 645R02 for to avoid the webview permanent stuck due to temporary socket errors and hence webview communication with the other tasks will not be affected.		
PR	181549	Build:	6.4.6.147.R01
Summary:	SSH vulnerabilities in OS9800: SSL Version 2 (v2) Protocol Detection which reportedly suffers from s		
Explanation:	Disabled the ssl-v2 support due to vulnerabilities		
PR	190230	Build:	6.4.6.148.R01
Summary:	VRRP tracking commands getting cleared on a stack of OS6850E switches when primary unit reloads.		
Explanation:	Validation of slot availability is avoided during reload and takeover		
PR	189881	Build:	6.4.6.149.R01
Summary:	Issue with time synchronization with NTP on Layer 2 switch		
Explanation:	Changes have been made to set the dispersion value to the sample dispersion value in the case of global variable "ntpAccept" enabled.		

PR	170503	Build:	6.4.6.150.R01
Summary:	dshell is currently in use, try again later; CHASSIS warning unable to post semaphore, 6250 over memo		
Explanation:	Recover dshell for debug purpose		
PR	190900	Build:	6.4.6.153.R01
Summary:	SSH connection to 127.2.X.1 (NIX) is refused		
Explanation:	dshell flag is introduced that will open up the telnet session to the NIs for some time by calling the function "debugTelnetEnable" in dshell, in case the telnet is disabled.		
PR	182755	Build:	6.4.6.154.R01
Summary:	OV traps seen Vs switch logs events discrepancies.		
Explanation:	Rectifying discrepancy of timestamp between OV and the switch.		
PR	192189	Build:	6.4.6.158.R01
Summary:	UNP configuration issue (same command repeated twice in boot.cfg) with OS6850E Stack.		
Explanation:	inIndex is updated with the correct ifIndex value from where the display has to be continued when there is a overflow		
PR	193861	Build:	6.4.6.166.R01
Summary:	Power supply state of NI2 is not correct.		
Explanation:	Code change is done to notify that there is a change in the status of the power supply when the power supply is pulled.		
PR	185998	Build:	6.4.6.152.R01
Summary:	Finisar 10Gig SFP is not working with VFL link however same SFP transceiver is working with non-VFL		
Explanation:	Changes made to support VFLs on 1G/10G Finisar dual speed 1g/10g SFP (FTLX8571D3BCV-AF).		
PR	186908	Build:	6.4.6.147.R01
Summary:	Switch crashing because of vlan name length.		
Explanation:	The size of the data structure that holds the VLAN name was increased to avoid overflow.		
PR	190033	Build:	6.4.6.139.R01
Summary:	NIs on 9700E down, Multiple PMDs generated.		
Explanation:	Increase the slbProbe task priority so that it can compete for CPU attention.		
PR	192062	Build:	6.4.6.154.R01
Summary:	onex_process_aging(862): incoming msg for port 3007, reason 12, mac 0x336092f0, vlanId 0		
Explanation:	onex_pro Debug logs are now correctly controlled and will not dump on the screen.		

PR	191769	Build:	6.4.6.161.R01
Summary:	IfConnectorPresent MIB (ifXTable) displays true value instead of False for LACP aggregate links.		
Explanation:	condition introduced to check for the linkagg and update the value of ifconnector present.		
PR	191795	Build:	6.4.6.144.R01
Summary:	Static route not showing the snapshot but however throwing the message "Static route already exists"		
Explanation:	Including the entry causing mip_overflow in show configuration snapshot ip-routing.		
PR	183591	Build:	6.4.6.129.R01
Summary:	OS9802E: port mapping on port 22, 23, 24 is leaking broadcast into other ports on different NI.		
Explanation:	Proper Port Mapping Validation for GNI-U24 / C-24 Boards in Hardware for specific ports has been modified		
PR	183948	Build:	6.4.6.149.R01
Summary:	Stack crashed due to tCS_PRB and Qos task suspension when QOS is added or deleted.		
Explanation:	When qos is added or deleted switch wont crash.		
PR	184085	Build:	6.4.6.133.R01
Summary:	OS6580 at Alcova ES crashed.		
Explanation:	defense fix to avoid invalid memory access		
PR	185527	Build:	6.4.6.126.R01
Summary:	IGMP general query packet creating loop.		
Explanation:	Fixed the issue with IGMP query getting loopbacked when hash-control non-ucast is enabled.		
PR	185223	Build:	6.4.6.128.R01
Summary:	DHCP Ip helper not working after upgrading the OS6400 to 6.4.5.474.R02.		
Explanation:	cleared the buffer after processing the dying gasp message		
PR	185296	Build:	6.4.6.130.R01
Summary:	TACACS Authorization not working properly when server becomes unreachable and then becomes reachable		
Explanation:	Tacacs authorsiation will be handled properly during the change in server status from unreachable to reachable.		
PR	188063	Build:	6.4.6.129.R01
Summary:	A CLI debug command to control "bcmSwitchL3UcTtlErrToCpu"		
Explanation:	A new debug cli command bcmSwitchL3UcTtlErrToCpu introduced. bcmSwitchL3UcTtlErrToCpu = 0 means IP error packets will not be sent to CPU		
PR	191069	Build:	6.4.6.149.R01
Summary:	How to change the default DNS keyword list for 802.1x CP		
Explanation:	Fix was done for proper handling of disabling the dns keyword list for 802.1x captive portal		

PR **193688** Build: 6.4.6.163.R01
 Summary: ALU branded SFP-GIG-T (triple speed) is not working with 100Mbps / 10Mbps.
 Explanation: Code change done to accept the ALU Branded triple speed copper SFP part number as triple speed SFP.

PR **192562** Build: 6.4.6.158.R01
 Summary: OS9700 Console access is getting freeze when we do "debug show multi-chassis peer-linkagg port"
 Explanation: Changes are done such that session will not freeze after issuing the command "debug show multi-chassis peer-linkagg port"

PR **191740** Build: 6.4.6.166.R01
 Summary: High Memory issue on OS6850.
 Explanation: Code changes are done to free the allocated memory for HIC Svr monitoring packet.

PR **192072** Build: 6.4.6.153.R01
 Summary: SAA shows negative value for Max RTT & Max jitter
 Explanation: Do not update the aggregate record if the latest iteration value is -1.

PR **179716** Build: 6.4.6.135.R01
 Summary: Third party GBPTControl frames (DA mac 01:00:0c:cd:cd:d0) tunneled by software in 6.6.3.R01
 Explanation: Implemented CLI command to enable and disable MAC tunneling as below:

Ethernet-service mac-tunneling enable/disable (usage: To enable or disable the mac-tunneling feature).

Show ethernet-service mac-tunneling (usage: To know the status of the mac-tunnel feature like whether the feature is enabled or disabled and applied or not).

In 6.6.X releases the uni profile treatment should be tunnel for following protocols in order to tunnel along with the above command in order to tunnel the DA MAC 01:00:0c:cd:cd:d0

PAGP

UDLD

CDP

VTP

DTP

PVST

VLAN

UPLINK

PR	181724	Build:	6.4.6.129.R01
Summary:	SrcLrn, tOddJob, tSlcAgeTimer, tSlcHgTimer, la_cmm_tick, stpTick & tahw_l2		
Explanation:	As per our analysis the RCA of the issue is currently we have not validating the length of the buffer received for IPC transmission. This result in crash on the system whenever the buffer size is Zero. We have done code changes for validating the length of the buffer before sending to the destination Application.		
PR	188896	Build:	6.4.6.134.R01
Summary:	High CPU on distribution switches and DHCP issue on OS9 core switches		
Explanation:	Fixed the crash issue while trying to resolve the incomplete ARPs		
PR	187480	Build:	6.4.6.133.R01
Summary:	OS6850E unable to certify the switches after the daylight changes are applied.		
Explanation:	Code changes done to perform CERTIFY process successfully when DST is enabled.		
PR	186966	Build:	6.4.6.139.R01
Summary:	Unable to issue command through GUI		
Explanation:	CMM index value is updated from chassis mib when the stacking is disabled-so that the copy working certified from flash-sync applied successfully		
PR	191587	Build:	6.4.6.142.R01
Summary:	IGMP traffic not received, when port security is disabled.		
Explanation:	Receiving IGMP traffic with port-security disabled.		
PR	189534	Build:	6.4.6.137.R01
Summary:	Reachability issue with ERP setup with LACP Linkagg.		
Explanation:	IP Interface Status will be updated for vlans Associated with ERP Linkagg Ports.		
PR	183281	Build:	6.4.6.127.R01
Summary:	Port status is showing as forwarding in spite there is no link connected on the interface.		
Explanation:	When the port physically goes down it should not be displayed in "show spantree active ports" output		
PR	186157	Build:	6.4.6.137.R01
Summary:	Configuration of SHA+AES on OS 9702E to work with whatsapp Gold.		
Explanation:	Code changes done to fix SHA/AES for snmpv3		
PR	185058	Build:	6.4.6.136.R01
Summary:	tDvmp0 ,tCsCSMtask2 and tCS_PRB. These are the tasks suspended and locked.		
Explanation:	Fix to avoid null pointer access		
PR	184739	Build:	6.4.6.134.R01
Summary:	Change the frequency of swlog messages.		
Explanation:	Code changes has been done for changing the frequency of printing low flash messages in swlog.		
PR	184689	Build:	6.4.6.149.R01
Summary:	qos trust Port got shutdown with protocol dhcp-server or dns-reply		
Explanation:	While processing for QOS shutdown, process only first packet of fragmented packet and not all the fragmented packets		

PR	189170	Build:	6.4.6.141.R01
Summary:	Gbic "type" information missing in the Inventory in OV for 6450 & 6850E		
Explanation:	Changes are done to display GBIC type information in OV.		
PR	191588	Build:	6.4.6.153.R01
Summary:	BPDU Shutdown failure: qos user-port link-shutdown bpdu does not seem to shut down the ports		
Explanation:	With this change port shutdown properly.		
PR	189848	Build:	6.4.6.149.R01
Summary:	SFP showing incorrect DDM value.		
Explanation:	Fix done to show proper DDM value		
PR	189990	Build:	6.4.6.165.R01
Summary:	ISFP is flapping in stack of OS6855-U24X.		
Explanation:	Changes done to avoid iSFP flapping in stack of OS6855-U24X.		
PR	192654	Build:	6.4.6.160.R01
Summary:	OS6850-802.1X users did not display in show command.		
Explanation:	Fix done to display all the onex clients information in global display when there are forced authorized ports present.		
Problems Fixed Between Builds 168 and 218			
PR	185794	Build:	6.4.6.168.R01
Summary:	OS 6400 crash issue		
Explanation:	Additional debug addition for crash issue.		
PR	193213	Build:	6.4.6.169.R01
Summary:	port status trap regarding up/down is not working		
Explanation:	Port status trap is set to display at swlog info level when trap is enabled for that port.		
PR	189124	Build:	6.4.6.169.R01
Summary:	Permanent MAC cannot be changed from one vlan to another VLAN in the LPS port		
Explanation:	Fix done to allow to change permanent MAC address from one vlan to another VLAN on the LPS port. And do not change tagged vlan of the LPS port during boot up.		
PR	187081	Build:	6.4.6.169.R01
Summary:	OS 6850 crashed with Stp task suspended.		
Explanation:	Defense validation while handling STP SNMP operations		
PR	191232	Build:	6.4.6.169.R01
Summary:	OS6450: Device physically connected to port 1/4, however its Mac is shown on port trunk port 1/23. M		
Explanation:	Added a recovery mechanism to reopen malfunctioning IPC socket.		
PR	193900	Build:	6.4.6.169.R01
Summary:	LPS query on learn-trap-threshold in OS6850 and OS6400		
Explanation:	Fix done to display the trap-threshold configured value if its not 0.		

PR	180957	Build:	6.4.6.170.R01
Summary:	Duplicate primary and secondary switch were noticed after we reload the entire stack		
Explanation:	Fix done to unblock AOS tasks when unable to write output on to the tty driver's write buffer.		
PR	194186	Build:	6.4.6.170.R01
Summary:	OS6850E: 802.1x issue for IP-Phones using mobile-tag rule.		
Explanation:	Fix done to update the vlan tag in the mac-address table when mobile tag is enabled.		
PR	194026	Build:	6.4.6.171.R01
Summary:	Documentation issue with AoS 6.4.5.R02 & AoS 6.4.6.R01 release Cli guide for "session prompt default		
Explanation:	Added CLI for "session prompt default system-name"		
PR	194408	Build:	6.4.6.172.R01
Summary:	OS9700: Core switch crashed without any apparent reason.		
Explanation:	Defense fix added to avoid null pointer access		
PR	189784	Build:	6.4.6.174.R01
Summary:	Switch memory utilization increases and exceeds threshold.		
Explanation:	Code changes are done to prevent IPC congestion between STP CMM and STP NI		
PR	194004	Build:	6.4.6.175.R01
Summary:	Output of show interface link-monitoring statistics missing few interfaces in all chassis after 3rd input.		
Explanation:	Fix done to avoid MIP overflow		
PR	193384	Build:	6.4.6.176.R01
Summary:	Removing the power from primary, reloaded the entire stack with crash files in few units.		
Explanation:	Code changes done to avoid the display issue in "show stack topology" when stacking cable removed between primary and its neighboring unit (issue only in stack of 8). When the last iteration of neighbor list 1 is reached, ignore the check for last neighbor existence i.e. neighbor [8].Hence the link status for neighbor [8] will be set to link DOWN. When the link state goes up, existing implementation will take care that this gets updated when the reverse link (neighbor list 2) is iterated.		
PR	194636	Build:	6.4.6.178.R01
Summary:	OS9000E-synchronization issue after issuing the "interfaces clear-violation-all" command in AoS 6.4.		
Explanation:	Modified the behavior of show configuration status to sync with cmm configuration status		

PR	193056	Build:	6.4.6.181.R01
Summary:	Issue with ARP inconsistency in MCLag		
Explanation:	To reduce the time taken in processing the ARP_DEL message.		
PR	194353	Build:	6.4.6.181.R01
Summary:	OS6850E crashed with SNMPagt & tCS_PRB tasks		
Explanation:	Code changes done to ensure accessing valid varbind during bulk request		
PR	191728	Build:	6.4.6.182.R01
Summary:	Issue with MC-Lag consistency		
Explanation:	Implementation of ToDo List to process MCM consistency TLVs.		
PR	195369	Build:	6.4.6.182.R01
Summary:	Connectivity issue to devices from one of the 2 OS9000E Core switches in MC-LAG		
Explanation:	Connectivity issues due to arp inconsistency in Mclag is resolved.		
PR	195589	Build:	6.4.6.184.R01
Summary:	OS6850-U24X: Omniswitch crash without any apparent reason.		
Explanation:	Fix done to check the SVLAN ID 0 for Ethernet service.		
PR	195554	Build:	6.4.6.185.R01
Summary:	IP phone getting the IP address after 5 reboots		
Explanation:	Fix done to get the IP address frm Ip phone,.		
PR	195392	Build:	6.4.6.186.R01
Summary:	Memory leak in 6.4.5.442.R02.		
Explanation:	Buffer free is handled properly in all error cases.		
PR	195666	Build:	6.4.6.187.R01
Summary:	In an ERP ring of 3 OS9000E switches, seeing newly added vlans as operational down		
Explanation:	Code changes are done to handle STG state properly for the linkagg's in ERP NI.		
PR	195485	Build:	6.4.6.188.R01
Summary:	OS 6850E stack synchronisation issues		
Explanation:	Code merge done to propagate the value of global variable from primary to secondary when a specific configuration change (like interface admin down or vlan creation etc) is done.Hence when PS is removed (or if primary unit goes down abruptly) and the reload status is displayed as "ALL STACK" in show running-directory then the whole stack will go for reload.		
PR	193396	Build:	6.4.6.189.R01
Summary:	Connectivity issue after configuring the QoS for ingress bandwidth in OS9702E.		
Explanation:	Depth Configuring properly in hardware.		
PR	194561	Build:	6.4.6.190.R01
Summary:	CP user mac-addresses are not learnt however authentication is successful.		
Explanation:	Fix done to add the captive portal authenticated mac addresses in the mac address table.		

PR	197031	Build:	6.4.6.194.R01
Summary:	LBD is not working after switch reload even LBD configuration is present in boot.cfg.		
Explanation:	Code changes has been done to enable the loopback detection in standalone OS97E chassis.		
PR	193462	Build:	6.4.6.194.R01
Summary:	6850: Disable IP interface 10.123.0.1 (captive portal) when 802.1x is not configured, so it won't re		
Explanation:	ARP replies for IP Default CP address 10.123.0.1 is not sent out when 802.1x is not configured.		
PR	196450	Build:	6.4.6.200.R01
Summary:	OS6850-U24X-Mac learning on port instead of Linkagg ID.		
Explanation:	made changes to avoid callback on ports part of linkagg		
PR	196448	Build:	6.4.6.201.R01
Summary:	"ip helper dhcp-snooping option-82 policy" is not available in AOS 6.4.5.R02		
Explanation:	Implemented the "ip helper dhcp-snooping option-82 policy CLI.		
PR	191402	Build:	6.4.6.204.R01
Summary:	mac-address not learnt by the switch due to I2 conflict		
Explanation:	As a workaround, Dual hashing algorithm for better indexing can be enabled via AlcatelDebug.cfg.		
PR	197202	Build:	6.4.6.205.R01
Summary:	Issue with " violation-recovery-time" of a specific port		
Explanation:	Code merge done by correcting the index value for EISNAPPC datastructure with hybrid port value.		
PR	192200	Build:	6.4.6.213.R01
Summary:	When we do flash synchro we notice error message in swlog "CCM_CSM_FLASH_SYNCHRO_RS-appError 24"		
Explanation:	Fix to avoid internal ftp hung issue during flash-synchro causing CVM timeout		
PR	199440	Build:	6.4.6.216.R01
Summary:	Vulnerability in SSLv3 (POODLE / CVE--2014--3566)		
Explanation:	Disable SSLv3 to mitigate POODLE attack		
PR	200212	Build:	6.4.6.217.R01
Summary:	OS6850E-Stack having issues with "copy working certified"		
Explanation:	Code Changes done to avoid the time differences due to DST effect and due to timezone changes which will rectify the failure of certify process when DST is enabled.		
PR	193125	Build:	6.4.6.218.R01
Summary:	New Dual Speed SFP from SOURCEPHOTONICS can't negotiate to speed of 100		
Explanation:	Fix done to correct the default speed while using Dual speed SFP in OS97E & OS6850E		
PR	193617	Build:	6.4.6.191.R01
Summary:	OSPF routes are installed with delay into the routing table		
Explanation:	first packet LSA handling and OSPF LSA length overflow handling		

PR	197425	Build:	6.4.6.215.R01
Summary:	Randomly switches losses the SSH and Console access to the switch		
Explanation:	Forcefully deleting sftp task after waiting for certain time at sshd task		
PR	195956	Build:	6.4.6.194.R01
Summary:	LACP configuration lost instead of UDLD after software updating		
Explanation:	Now the configurations of LACP can be done prior to the UDLD configurations.		
PR	195083	Build:	6.4.6.182.R01
Summary:	OpenSSL vulnerablity CVE-2014-0224 and CVE-2014-0160		
Explanation:	OpenSSL vulnerablity CVE-2014-0224 and CVE-2014-0160 has been handled.		
PR	196326	Build:	6.4.6.190.R01
Summary:	WCCP configuration get enabled after the reload		
Explanation:	WCCP configuration are proper after reload		
PR	199015	Build:	6.4.6.211.R01
Summary:	BFD interfaces goes down due to high CPU; will not re-establish automatically.		
Explanation:	BFD sessions are getting re-established once the CPU usage becomes normal		
PR	182718	Build:	6.4.6.194.R01
Summary:	Max command lengths are 250 for accounting and 259 for authorization		
Explanation:	The argument max length as per Tacacs+ packet format can support max of 255, thus if the argument length is more than 255, it is truncated to 255, so that accounting is succeeded.		
PR	191570	Build:	6.4.6.180.R01
Summary:	L3 slow path CPU processed packets caused network instability (CPU running at 100% utilization)		
Explanation:	By default ip packets with options won't be trapped to CPU. Only when IPV6 interface is present or ipv6 multicast is enabled, ip packets with options will be trapped to CPU.		
PR	193117	Build:	6.4.6.174.R01
Summary:	768 VPA limit is not enforced in CLI		
Explanation:	Code changes done to log message while creating more than 768 VPA.		
PR	191676	Build:	6.4.6.172.R01
Summary:	OS6850 switch crashed with suspended tasks: tCS_PRB and talpni		
Explanation:	Defensive check added.		
PR	193612	Build:	6.4.6.168.R01
Summary:	Write memory flash synchronization and show configuration snapshot command output issue with OS9700		
Explanation:	Sflow Display Commands will not increase memory utilization		
PR	194018	Build:	6.4.6.174.R01
Summary:	Need to add ? show qos statistics? and ? show qos config? Command in the show tech-support files.		
Explanation:	Added ?show qos statistics? and ?show qos config? commands in tech-support (layer3) log files.		

PR	194646	Build:	6.4.6.181.R01
Summary:	Multiple issues with DHCP Snooping and IP helper		
Explanation:	If dhcp offer packet is received in client vlan by a relay agent, it will be dropped. In this specific customer scenario, since the gateway is made another switch instead of relay agent, offer packet is routed by that switch and sent to relay agent in client vlan. As a work around for this scenario, if allowRoutedReplyOnClientPort is set to 1, offer packet will not dropped if it is received on client vlan.		
PR	194549	Build:	6.4.6.179.R01
Summary:	"ip helper dhcp-snooping bypass option-82-check enable" is lost after a reload		
Explanation:	Added "ip helper dhcp-snooping bypass option-82-check enable" cli after dhcp snooping enable/disable in snapshot		
PR	199162	Build:	6.4.6.211.R01
Summary:	DHCP NAK packet not sent by switch acting as DHCP server		
Explanation:	On NAKing the client do subnet broadcast, when there is no relay agent.		
PR	181179	Build:	6.4.6.174.R01
Summary:	Reference PR# 173309: dhcpd server does not propagate global scope:		
Explanation:	DHCP options given in global scope will now be applied to local scope also.		
PR	185576	Build:	6.4.6.173.R01
Summary:	OS 6850 crash observed (reference to PR#182942)		
Explanation:	Defensive fix has been added to validate data portion of bcm packet.		
PR	190094	Build:	6.4.6.179.R01
Summary:	ARP packets dropped before reaching CPU on NI1		
Explanation:	ARP Packets wont be dropped.		
PR	192263	Build:	6.4.6.190.R01
Summary:	End user policy is violated when port-security is configured on all the ports.		
Explanation:	End-user profile check is added in LPS source learning.		
PR	198536	Build:	6.4.6.210.R01
Summary:	IS-IS state is stuck in "INIT" between AOS and other device		
Explanation:	Changes made to bring Interoperability in isis		
PR	195257	Build:	6.4.6.183.R01
Summary:	DHCP offer packet is not forwarded by OS6450 udp relay		
Explanation:	Per vlan rtr mac destined changes		
PR	196307	Build:	6.4.6.189.R01
Summary:	XON-XOFF protocol gets enabled after reboot		
Explanation:	Fix done to disabling the session XON-XOFF protocol by default.		
PR	194868	Build:	6.4.6.178.R01
Summary:	OS6400 : Lanpower stops working, no logs reported. Available watts shows 0 in IpDumpData () output.		
Explanation:	Fix done to display the correct watts available in IpDumpData().		

PR **197568** Build: 6.4.6.214.R01
 Summary: Multicast rp-candidate issue with OS6850E.
 Explanation: PIM-Bootstrap fragmentation issues fixed

Problems Fixed Between Builds 219 and 278

PR **188374** Build: 6.4.6.222.R01
 Summary: duplicate line appear in boot.cfg file
 Explanation: Changes done to prevent MIP overflow in ethernet service and interfaces modules.

PR **197847** Build: 6.4.6.222.R01
 Summary: OS9702E HIGH CPU noticed due to SrcLrn Task.
 Explanation: In OS6850E high cpu seen for the top task is 'SrcLrn' task.- increased the to do expiry from 1 sec to 3 sec.

PR **198586** Build: 6.4.6.224.R01
 Summary: OpenSSH version upgrade query. OS6850E.
 Explanation: CVE-2010-5107, CVE-2011-5000, CVE-2010-4755 : Vulnerabilities for OpenSSH 5.0

PR **201123** Build: 6.4.6.224.R01
 Summary: OS6850E: error NI[3/0]: Field 56 in table config is NULL.
 Explanation: Invalid Error wont be thrown in QoS log.

PR **199983** Build: 6.4.6.224.R01
 Summary: OS9700 10G NI is not working properly.
 Explanation: Debug provided to track the events during the issue

PR **188382** Build: 6.4.6.224.R01
 Summary: Detach in HW in not re initializing the NI properly after a crash, vlan port bitmap is missing
 Explanation: Ni re-initialization is handled properly after a sudden crash .

PR **199642** Build: 6.4.6.224.R01
 Summary: OS9702E crashed when issued ?slcDumpEvtLog? and crash reason ?Exception in interrupt context?
 Explanation: Fix done to avoid the crash while dumping the "slcDumpEvtLog" from the dshell.

PR **201124** Build: 6.4.6.225.R01
 Summary: OS6855 power supply trap not proper issue
 Explanation: Changes done to send psOperable trap when we insert power supply to the unit and power supply is working.

PR **200234** Build: 6.4.6.226.R01
 Summary: LLDP traps are generated by the 6850E switches
 Explanation: Code changes has been done to avoid the traps which are generated by processing Special LLDP packets.

PR	201367	Build:	6.4.6.227.R01
Summary:	PIM SM routing stops after re-convergence in STP ring		
Explanation:	Multicast Traffic loss during the STP convergence is fixed. Multicast source movement from one port to another port will create a proper h/w entry.		
PR	201241	Build:	6.4.6.228.R01
Summary:	OS6850E: Issue with ISSU upgrade from 6.4.6.167.R01 to 6.4.6.218.R01.		
Explanation:	During ISSU takeover happens successfully.		
PR	197294	Build:	6.4.6.229.R01
Summary:	OS6850 crashed with Memory dump file		
Explanation:	Code change to avoid NULL pointer access.		
PR	201431	Build:	6.4.6.229.R01
Summary:	Issue with assigning IPV6 static Route.		
Explanation:	IPV6 static route is configured with proper interface and works fine on reload.		
PR	198594	Build:	6.4.6.229.R01
Summary:	Error while issuing "write-memory flash synchro" on stack of OS6850E.		
Explanation:	Set longCommandStatus as complete after auto sync.		
PR	198572	Build:	6.4.6.230.R01
Summary:	Error "ntpGetResponse: Error 4 (No data available), final pkt"		
Explanation:	Bug fix for NTP peer creation and deletion issue. On NTP peer definition, if passive association exists already with peer, remove this association and instead create an active peering association with same peer. Also fixed the problem in passive peer deletion.		
PR	198801	Build:	6.4.6.230.R01
Summary:	Loop back Detection feature is not working in OS9000E on Slot-8		
Explanation:	Fix done for proper slot check while configuring LBD		
PR	199609	Build:	6.4.6.230.R01
Summary:	OS6850E erp-ring <num> enable command missing after the reboot issue		
Explanation:	erp-ring <num> enable command is exists after reload. No Error will be thrown in boot.cfg.err file		
PR	201269	Build:	6.4.6.230.R01
Summary:	OS6850E VRRP IP address is not reachable after NI takeover		
Explanation:	No ping loss for VRRP IP on takeover		
PR	199127	Build:	6.4.6.231.R01
Summary:	DHCP relay issue on MC-LAG with multi-net configuration.		
Explanation:	Relay agent takes the primary vip-address IP configured to the Vlan.		
PR	191506	Build:	6.4.6.232.R01
Summary:	Source Learning task, re-engineering needed due to issue faced under PR 190033		
Explanation:	Code changes has been done to reconnect the socket in case of broken pipe between NI and CMM		

PR	192052	Build:	6.4.6.233.R01
Summary:	OS6450: Need to know TACACS server status in the Omni switch.		
Explanation:	Tacacs server down messages will be logged in swlog		
PR	201763	Build:	6.4.6.237.R01
Summary:	OS6850E switch crashed tCS_PRB & SNMPagt task suspended.		
Explanation:	Check the pointer value is valid or not while dumping last 10 SNMP traps to PMD.		
PR	201881	Build:	6.4.6.238.R01
Summary:	NTP Vulnerability query - CVE-2014-9293 CVE-2014-9294 CVE-2014-9295 CVE-2014-9296 CVE-2013-5211		
Explanation:	Code changes done to fix NTP vulnerabilities CVE-2014-9295 & CVE-2013-5211. Other vulnerabilities (CVE-2014-9293,CVE-2014-9294,CVE-2014-9296) do not affect AOS.		
PR	201931	Build:	6.4.6.240.R01
Summary:	Broadcast traffic from other vlans received on the OS6850E mobile port where default vlan restore is		
Explanation:	Fix done to delete the port bit map of the mobile vlan in the hardware when the port becomes as a fixed port from the mobile port.		
PR	203188	Build:	6.4.6.247.R01
Summary:	IGMP General Membership Queries getting sent to queue 0 instead of 4.		
Explanation:	Send IGMP General Membership Queries to queue 4		
PR	203807	Build:	6.4.6.253.R01
Summary:	IGMP group messages dropped on mobile/802.1x ports		
Explanation:	After reload, IGMP report packet on mobile port will be learnt properly		
PR	204191	Build:	6.4.6.254.R01
Summary:	boot.cfg.1.err is created after reboot when user password-policy cannot-contain-username enable is a		
Explanation:	Fix the CLI save format for "user password-policy cannot-contain-username enable"		
PR	204064	Build:	6.4.6.255.R01
Summary:	DHCP Server configuration modified after reload		
Explanation:	Update boot.cfg when default vrf is removed from dhcp-server		
PR	204114	Build:	6.4.6.256.R01
Summary:	The command "show ip bgp policy prefix-list" fails to display the output once in every 3 times.		
Explanation:	Fix the display issue with "show ip bgp policy prefix-list" CLI output		
PR	203334	Build:	6.4.6.258.R01
Summary:	100% CPU with task vstkcmm after OS6850 NI takeover		
Explanation:	Fix high CPU seen in vstkcmm on repeated takeover		
PR	204021	Build:	6.4.6.259.R01
Summary:	"OID not increasing" error is noticed while SNMP walk is performed to fetch ERP port status.		
Explanation:	Fix done to avoid the error "OID not increasing" noticed during SNMP walk to fetch ERP port status.		

PR	204275	Build:	6.4.6.260.R01
Summary:	Multicast stream not forwarded after the firewall fail-over / Source Failover		
Explanation:	Ensure multicast forwarding when source moves from agg to normal		
PR	204890	Build:	6.4.6.265.R01
Summary:	[TYPE1] Ipv4 multicast traffic not forwarding after toggling static linkagg		
Explanation:	Ensure multicast forwarding by updating L2MC bitmap when source movement from or to LINKAGG		
PR	203508	Build:	6.4.6.266.R01
Summary:	I2 C error messages seen in OS 6855 switch		
Explanation:	Fix high cpu by increase the read delay incrementally in steps when temperature sensor i2c read failures		
PR	205339	Build:	6.4.6.268.R01
Summary:	Unable to enable the loopback detection on the slot number 9 to 16		
Explanation:	Enable the loopback detection configuration on the slot number 9 to 16		
PR	202371	Build:	6.4.6.241.R01
Summary:	DTLS Vulnerability query - CVE-2014-3571 CVE-2015-0206		
Explanation:	Fixed open ssl vulnerabilities CVE-2014-3571 CVE-2015-0206.		
PR	198323	Build:	6.4.6.232.R01
Summary:	OS6850: LACP problem with hub in between LACP peers		
Explanation:	Code changes done to attach the port properly when primary NI goes down (with hub in between links)		
PR	198473	Build:	6.4.6.231.R01
Summary:	High Memory utilization seen on OS9000E with slcMsgHandler task holding the memory		
Explanation:	Made the changes to free the allocated memory and added the debug to trace the places wherever memory is allocating and freeing.		
PR	198819	Build:	6.4.6.222.R01
Summary:	MAC address learnt though 802.1x state is Captive-portal CP In-Progress.		
Explanation:	Fix done to synchronize the onex and mac table during mac move on different ports with different vlan.		
PR	200620	Build:	6.4.6.222.R01
Summary:	LLDPDU crashing the switch 6855-14		
Explanation:	Code changes done to avoid switch crashing while processing the LLDP packets.		
PR	202567	Build:	6.4.6.243.R01
Summary:	OS6855 power supply trap is not proper when Power supply is removed		
Explanation:	New trap for insertion and removal of power supply		
PR	199662	Build:	6.4.6.233.R01
Summary:	Failover failed with "NI 2 DOWN, Excessive wait for Takeover Ack" and "		
Explanation:	Code changes done to handle NI takeover timeout properly for primary NI.		

PR	197778	Build:	6.4.6.235.R01
Summary:	OS6850E interface goes down and up when the other end switch is rebooting.		
Explanation:	New FPGA version to avoid bringing PHY out of reset to prevent link flapping during switch reboot		
PR	197501	Build:	6.4.6.245.R01
Summary:	OS6450 showing many lbdProcessMsg:459 messages in swlogs		
Explanation:	Setting appropriate debug level for LDB switch log message		
PR	204237	Build:	6.4.6.260.R01
Summary:	Unable to display serial number of external Power supply in stack from OV2500 inventory page.		
Explanation:	Display serial number of Back up Power supply in secondary and idle units		
PR	204879	Build:	6.4.6.267.R01
Summary:	6850E stack - ERP not converging		
Explanation:	Code changes done to update the ERP ring id properly when NI went down in order to converge the ERP.		
PR	199151	Build:	6.4.6.219.R01
Summary:	OS9702E running on the code 6.4.5.528 crashed.		
Explanation:	Dump lat 10 SNMP traps to PMD to aid crash debugging.		
PR	200684	Build:	6.4.6.223.R01
Summary:	Link flapping noticed for the ports of OS6850E switches on NMS.		
Explanation:	Fix done to avoid high CPU in SAA		
PR	198917	Build:	6.4.6.224.R01
Summary:	high cpu noticed when we poll the device from OV		
Explanation:	Introduction of debug variable to control the healthMonDeviceTrap generated from switch when CPU crosses threshold limits.		
PR	201947	Build:	6.4.6.251.R01
Summary:	MAC movement in one VLAN flushing MAC in all VLANs when using 802.1x		
Explanation:	Fix done to avoid the onex and SL table mismatch in case of client is getting moved from supplicant to non-supp and again non-suppliant with diff vlan on diff ports		
PR	199092	Build:	6.4.6.224.R01
Summary:	OS9000E (6.4.5.569.R02), mac address displayed in two different ports in the CP table (aaa-device al		
Explanation:	Code changes has been done to update the current timer correctly in case of CP authentication		

Problems Fixed Between Builds 279 and 302

PR	205639	Build:	6.4.6.282.R01
Summary:	OS6850E - Port-Security issue		
Explanation:	Changes to drop ARP based on LPS state		

PR	205761	Build:	6.4.6.288.R01
Summary:	"+++ IpGetBackupPowerOnLine: 48v Invalid" message seen on OS6855-14 after code upgrade to 6.4.6.218.		
Explanation:	Prevent warning message on 48V if proper POE PS is connected to OS6855-14/OS6855-24/OS6855-P14		
PR	205580	Build:	6.4.6.288.R01
Summary:	DHCP client not getting ip address from DHCP server when traffic is through GRE tunnel.		
Explanation:	Send GRE with DHCP packet to udp relay context in IPEDR		
PR	205756	Build:	6.4.6.289.R01
Summary:	Auth server down: 802.1x user-name and MAC not updated on user authentication. Server reachable fails		
Explanation:	Fix the inconsistency between 802.1x table and source learning when deleting context		
PR	205524	Build:	6.4.6.289.R01
Summary:	Intermittent ping loss in 802.1x non-supplciant when Auth-server Down UNP policy.		
Explanation:	Do not reauthenticate non supplicants until server reachable when authserv down		
PR	207966	Build:	6.4.6.299.R01
Summary:	Switch crashed with the task Onex and tcs_prb suspended.		
Explanation:	Code changes done to avoid onex crash during re-authentication of non-supplciant devices classified under auth server timeout policy.		
PR	208280	Build:	6.4.6.300.R01
Summary:	OS6850E remote stack crash every time when `show saa statistics aggregate?` command is used.		
Explanation:	Changes done to avoid SAA crash due to "show saa statistics aggregate" command.		

Problems Fixed Between Builds 303 and 339

PR	208573	Build:	6.4.6.303.R01
Summary:	Request to include SNMP information in tech-support logs.		
Explanation:	Added 'Show user' and 'Show snmp statistics' information in tech_support.log		
PR	208269	Build:	6.4.6.303.R01
Summary:	802.1x Auth-Server Dwn- server may be reachable message seen though server is unreachable		
Explanation:	Attempt reauthentication for supplicant only when server is reachable		
PR	207442	Build:	6.4.6.306.R01
Summary:	6855 SLB servers availability and status incorrect		
Explanation:	Changes done to fix SLB TCP probe issue. Server status will move from "In Service" to "No Answer" when server is stopped.		
PR	209655	Build:	6.4.6.307.R01
Summary:	XFP information is not seen in OV inventory report.		
Explanation:	Code changes done to display the XFP information in OV inventory report.		

PR	208997	Build:	6.4.6.308.R01
Summary:	OSPF status changes due to BFD		
Explanation:	BFD ECHO packets are dropped because enabling ?qos port monitor? sets wrong QOS flags. Because of this, OSPF neighbor ship breaks.		
PR	210227	Build:	6.4.6.309.R01
Summary:	OS6850E Learned Port Security Issue.		
Explanation:	Corrected error seen in sending LPS config on a stack of 8		
PR	210091	Build:	6.4.6.311.R01
Summary:	"NI 3 is not ready yet. Try it later!" message is appeared on console prompt.		
Explanation:	Code changes done to properly detect/report errors when IPC failure occurs in Multi-Chassis.		
PR	210193	Build:	6.4.6.312.R01
Summary:	AOS forces to "flush" the mac-address of an authenticated successful user When moving between the 802		
Explanation:	Code changes done to handle proper mac move		
PR	210087	Build:	6.4.6.312.R01
Summary:	3x6850E: 802.1X High CPU and crash on Unit-1 of stack		
Explanation:	Changes done to prevent onex crash in case of congestion		
PR	210402	Build:	6.4.6.313.R01
Summary:	IPMS, delay between IGMP join and first multicast packet is very high		
Explanation:	Although PR description talks about the delay between the client sending report and the client getting the first source packet, issue can be narrowed down in a simpler way. Assume switch connected to a client and querier. The time taken for the multicast enabled switch to process the IPMS report packet from client and send it to the querier port is high.		
	The introduction of reactor sockets changed the way a packet was handled in IPMS CMM. It was simple with 6.4.4 without reactor sockets, but in 6.4.6, we have 2 extra timers involved which was causing delay. With the current code, report packet is processed in CMM in the same tick as the Q-Disp, but the switch only sends out the packet to the querier when one of the timers expires.		
PR	209842	Build:	6.4.6.315.R01
Summary:	OS6850E: High CPU in the switch due to tSrcLrn.		
Explanation:	Corrected issue seen in sending Bulk LPS config through TDo list		
PR	210917	Build:	6.4.6.316.R01
Summary:	RIPv1 packets trigger high CPU utilization even if MDC is enabled		
Explanation:	RIPv1 packets are not trapped to CPU when MDC drop-all enabled		
PR	210883	Build:	6.4.6.316.R01
Summary:	qosipmsipv4rate variable setting is not working via AlcatelDebug.cfg		
Explanation:	Changes done to use qosipmsipv4rate in AlcatelDebug.cfg effectively.		
PR	210836	Build:	6.4.6.316.R01
Summary:	NI ports are not ready due to mcmCmm task in 9702		
Explanation:	Code changes done to bring NI ports up after CMM goes through unexpected reboot.		

PR	210157	Build:	6.4.6.317.R01
Summary:	High CPU due to source learning task.		
Explanation:	Corrected issue in todo list timer handling		
PR	210000	Build:	6.4.6.317.R01
Summary:	High CPU due to SaaCMM		
Explanation:	Code changes done to correct high CPU due to todo list		
PR	210131	Build:	6.4.6.317.R01
Summary:	High CPU due to 'SaaCmm' task.		
Explanation:	Changes done to clean up reactor code		
PR	210970	Build:	6.4.6.318.R01
Summary:	Accounting configuration are getting lost after the reboot.		
Explanation:	After reboot, accounting configurations are displayed properly.		
PR	210864	Build:	6.4.6.319.R01
Summary:	OS6850E has LDAP crashed with the PMD files.		
Explanation:	Avoid switch crash by fixing the data access exception in ldap authentication.		
PR	210499	Build:	6.4.6.321.R01
Summary:	802.1x authentication issue		
Explanation:	Ensured PC MAC is removed from onex context when EAP LOGOFF is received.		
PR	211822	Build:	6.4.6.322.R01
Summary:	Error file created when enable swlog appid <> level debug3		
Explanation:	"-VRF" is removed from the app-name for all the applications like ospf,bgp,ipmrm,iprm,vrrp,pim and rip		
PR	211507	Build:	6.4.6.326.R01
Summary:	False traps after enabling the debug command to send traps to NMS.		
Explanation:	Fix done to send traps out of the switch when the switch was reloaded with "no aaa authentication default" and later configured with "aaa authentication default".		
PR	207936	Build:	6.4.6.327.R01
Summary:	OSPF issue between OS9702E switches and IBM z servers.		
Explanation:	This IBM server is unique because it 2 interfaces in active-standby and although only one interface is OSPF active, both interface addresses are sent in router LSA as TRANSIT routes.		
	<p>When the transit route which is not part of OSPF is the first entry in the router LSA, our switch compares this address with its own neighbor table and rejects the whole LSA because of which one of the routes is not installed in the routing table. If the transit route to which we have a neighbor entry is present as the first entry of the packet from neighbor, we parse the LSA correctly and install the route without any issues.</p>		
PR	212038	Build:	6.4.6.328.R01
Summary:	Write memory flash synchro is not working on 6850E		
Explanation:	Correction for flash synchronisation failure due to Daylight Savings Time settings.		

PR **209469** Build: 6.4.6.329.R01
 Summary: OS6450: info messages memPartAlloc
 Explanation: Handling DHCP packets with no end options on trust ports

PR **212344** Build: 6.4.6.331.R01
 Summary: Error file created when enable swlog appid <802.1x> level debug3
 Explanation: 802.1x appid saved as onex in swlog

PR **211780** Build: 6.4.6.332.R01
 Summary: aaa authentication issue since lost the connectivity
 Explanation: Code changes done to prevent packet drops in IPNI.

PR **208103** Build: 6.4.6.335.R01
 Summary: Multicast group life time expire issue
 Explanation: Audit and Reset the CPU/HighGig Ports to default in "asic" usage /Hardware if set due to Port Mapping configuration.

PR **212653** Build: 6.4.6.336.R01
 Summary: OS6850E: User got deleted after the upgrade the switch to OS_6.4.6.334.R01
 Explanation: Software version 645R02 uses the file ?userTable5? for saving user details in the flash, similarly 646.334.R01 uses userTable7. There is a difference in userTable structures used in userTable5 and userTable7 as there were new features requiring modification in userTable structure. There was an issue in code while copying userTable5 to userTable7 when doing an upgrade from 645 to 646.334.R01. This is corrected and user details are now copied correctly from userTable5 to userTable7.

While upgrading the switch software from 645R02 to 646.334.R01, userTables(if any) in ?/flash/network? Directory other than userTable5 needs to be removed for proper migration of users from 645R02 to 646.334.R01.

PR **211954** Build: 6.4.6.339.R01
 Summary: OS6850 show active policy list showing empty lines

Problems Fixed Between Builds 340 and 361

PR **212714** Build: 6.4.6.340.R01
 Summary: OS6850E: stack crashed due to DHCP/UDP flooding.
 Explanation: The splx() which frees the networking semaphore gets stuck with UdpRly when the task tries to send out a packet, along with ARP activity in the switch. We make sure that splx() is called successfully in all cases thus ensuring system stability.

PR **212552** Build: 6.4.6.341.R01
 Summary: Open SSL CVE-2015-1794, CVE-2015-3193, CVE-2015-3194, CVE-2015-3195, CVE-2015-3196
 Explanation: Code changes done to overcome the OpenSSL vulnerability - CVE-2015-3195.

PR **212954** Build: 6.4.6.342.R01
 Summary: "csCsmMainTimerSet : CmmState = 14 time = 15000" messages are seen in the swlog file.
 Explanation: Info messages moved to systrace.

PR	213614	Build:	6.4.6.344.R01
Summary:	show aaa switch-access priv-mask results in memory leak in AAA		
Explanation:	Memory is released in AAA module.		
PR	210911	Build:	6.4.6.344.R01
Summary:	LACP BPDUs received on UNI trigger linkagg flapping		
Explanation:	Cancelling rate limit for LACP packets in NNI ports.		
PR	209640	Build:	6.4.6.347.R01
Summary:	static dhcp binding entry over written to dynamic entry when client receives an ip dynamically on the table.		
Explanation:	If the client can successfully acquire an IP address, and when the DHCP snooping enabled device writes a binding entry, if a static entry for the same client is already present, do not replace the static entry with the dynamic entry.		
PR	213908	Build:	6.4.6.349.R01
Summary:	MIB polling to alaDot1xDeviceStatusVlan has no data retrieved for non-suppllicant CP pass.		
PR	214144	Build:	6.4.6.350.R01
Summary:	Debug commands effecting the running configuration status		
Explanation:	Code changes done to display configuration status properly.		
PR	213721	Build:	6.4.6.350.R01
Summary:	OS6855:False SFP alarms on down ports		
Explanation:	Code changes done to display SFP DDM values only when link is up.		
PR	212185	Build:	6.4.6.353.R01
Summary:	ClearPass Captive portal webpage loaded with delay due to concurrent sessions are not allowed.		
Explanation:	Avoided the delay in Web Page redirection for BYOD users.		
PR	210741	Build:	6.4.6.353.R01
Summary:	IGMP General Membership Queries are sent on non-PRIMARY linkagg ports in case non-unicast hashing enabled		
Explanation:	An IPMS enabled switch would trap IGMP query packets to CPU, save few parameters and flood the packet back in the same VLAN. When non-unicast hashing is enabled, the same behavior applies except for the fact that packets going out of a linkagg can also go through non-primary ports depending on the packet parameters using RAW mode. With current implementation, Q-Driver only supports sending non-unicast packets over primary ports of linkagg in RAW mode and this leads to a problem where selective non-unicast packets are dropped		
PR	213699	Build:	6.4.6.354.R01
Summary:	OS6850E: Unable to execute the ssh session from the codenomicon tool.		
Explanation:	Code changes to prevent system crash while processing malformed ssh packets.		
PR	213416	Build:	6.4.6.355.R01
Summary:	clarification 9702e - info on UNP webview page		
Explanation:	Authentication timestamp is displayed in date and time format.		

Problems Fixed Between Builds 362 and 380

PR	215437	Build:	6.4.6.362.R01
Summary:	OS6850E connected to OS6900 makes port moving into LIST state		
Explanation:	Now we won't delete the source port bit map of UNI profiles so that port does not move into LIST state.		
PR	216102	Build:	6.4.6.363.R01
Summary:	Need to know reason for the error message - STP error stpCMM_linkAggVpaUpdate – 6.4.6.340.R01		
Explanation:	Now when configuring a ERP ring port as LACP port, the logged messages will be of info type.		
PR	217337	Build:	6.4.6.364.R01
Summary:	Query on vulnerabilities CVE-2016-2107 and CVE-2016-2108		
PR	215625	Build:	6.4.6.365.R01
Summary:	PIM DENSE mode stop forwarding traffic after a few manual fiber link remove and reinsertion went to pause state		
Explanation:	Code changes done to prevent race condition when SFP is plugged in/ pulled out in 6855..		
PR	218061	Build:	6.4.6.366.R01
Summary:	OS6850E: Query on "show running-directory" and "show configuration status"		
Explanation:	Changes made in the running configuration field from synchronized to not-synchronized when vlan commands are given.		
PR	217477	Build:	6.4.6.366.R01
Summary:	IGMP not working on 6850E after reboot		
Explanation:	Any failure in programming the rules should have been logged in QOS NI but the buffer for logging was filled with statistics information. So, made code changes to make sure the statistics information were not logged by default as INFO. Moved the logs to DEBUG1. We will have to increase logging level to DEBUG1 to check statistics logs.		
PR	218577	Build:	6.4.6.367.R01
Summary:	OS6850E: Query on "show running-directory" and "show configuration status"		
Explanation:	For all vrrp commands, "show running-directory" shows synchronized for 'running-configuration' eventhough "show configuration status" shows the configuration are different. Code changes has been done such that the configuration change will be reflected properly in show running-directory.		
PR	215727	Build:	6.4.6.368.R01
Summary:	CMM Crashed in 9800 switch.		
Explanation:	Code changes done to send Trap to NMS when CMM/NI crashes due to Processor parity error.		
PR	218252	Build:	6.4.6.369.R01
Summary:	OS6850E - Bad SAA statistics for the same destination IP over a linkagg		
Explanation:	Software improvising for handling SAA IP ping packets on different Nis		

PR **216404** Build: 6.4.6.369.R01
 Summary: OS9700 - loop not detected in MC-LAG and crashed.
 Explanation: Defensive fix to avoid deadlock condition when primary of MCLAG tries to send the received ARP information to the peer chassis when the socket communication is not ready

PR **217194** Build: 6.4.6.370.R01
 Summary: OS6855 reboots when AlcatelDebug.cfg file is present in working and certified directories.
 Explanation: Code changes done to check the maximum cell limit for low water mark and dyncell.

PR **219634** Build: 6.4.6.371.R01
 Summary: OS6850E stack - IP service is not consistent after takeover
 Explanation: IP service is not consistent after takeover. Code changes are done in such a way to bring the IP service status back to its previous state, after takeover.

PR **219567** Build: 6.4.6.372.R01
 Summary: OS6855 switch crashed if bgp is configured
 Explanation: cli does not support the community option "no-adv" for the command "ip bgp policy route-map com-out 1 community no-adv". So cli regenerated after removing the community option "no-adv".

PR **219354** Build: 6.4.6.374.R01
 Summary: OS9702: Interface configuration of aclman are deleted when CMM takeover command is issued
 Explanation: aclman.cfg will be parsed only by the primary CMM or when secondary becomes primary.

PR **217478** Build: 6.4.6.375.R01
 Summary: ERP ring loop after switch reboot, probably RPL node
 Explanation: Defense check added to drop the ERP SIGNAL fail packet if it is coming from own switch(neighbouring port)

PR **220221** Build: 6.4.6.376.R01
 Summary: The OS6850-48X crashed due to Debug exception has occurred due to tNiSup&Prb PC : 0x37e5c4 task.
 Explanation: Code changes done to avoid crash in NI Supervision and Prober module.

PR **218263** Build: 6.4.6.378.R01
 Summary: 6850E - fiber hybrid port not coming up after reboot
 Explanation: Fix for the fiber link issue on combo port.

Under Verification:

PR **198147** Build: 6.4.6.220.R01
 Summary: Multicast loss for 1 sec if the client sends leave message in the IPMS.
 Explanation: Reduced delay in processing and egressing out the IGMP Leave Packets in software

PR **199875** Build: 6.4.6.249.R01
 Summary: Power supply Display issue-show power shows AC instead of DC supply
 Explanation: Corrected the power supply type display issue

PR	198476	Build:	6.4.6.250.R01
Summary:	OS9702E HIGH CPU_IPMEM		
Explanation:	Fix high cpu in ipmem due to timers		
PR	201216	Build:	6.4.6.251.R01
Summary:	802.1x having issues with Random clients		
Explanation:	Fix done to avoid the onex and SL table mismatch in case of client is getting moved from supplicant to non-supp and vice versa with the same vlan.		
PR	184682	Build:	6.4.6.251.R01
Summary:	Linkagg issue in a Vlan stacking configuration		
Explanation:	Packets with Double tags egressing out of uni port across Ni will not be losing inner tag .		
PR	203222	Build:	6.4.6.258.R01
Summary:	802.1x table entry is not deleted though MAC entry is deleted.		
Explanation:	Fix to remove non-supplciant captive portal entry on timer expiry		
PR	203221	Build:	6.4.6.258.R01
Summary:	Radius Accounting Interim updates are not sent in irregular intervals.		
Explanation:	Code changes done to send the radius accounting packets properly for all clients.		
PR	202351	Build:	6.4.6.262.R01
Summary:	OS6400 crash with 'memPartAlloc: block too big - 4136 in partition 0x5622c4' messages		
Explanation:	Code change done to fix high memory issue in taSTP task		
PR	198350	Build:	6.4.6.277.R01
Summary:	High CPU noticed in UNIT 1 in the stack of 5 switches due to the task ?UdpRly?		
Explanation:	Code change has been done to check the interface status before processing the dhcp packet.		
PR	204988	Build:	6.4.6.279.R01
Summary:	Ping is not working when LPS is enabled.		
Explanation:	Fixed source learning IPC reactor socket communication failure		
PR	205239	Build:	6.4.6.280.R01
Summary:	6850E stack : DHCP clients are no longer able to get dhcp address after rebooting unit-2		
Explanation:	Revert back to default VRF when processing over on non-default VRF		
PR	204698	Build:	6.4.6.283.R01
Summary:	"Trunk Destroy Failed!! Slot1 unit:0" were seen for the linkagg ports in swlog of OS6850E.		
Explanation:	Code changes done to learn mac address properly without throwing the message "Trunk Destroy Failed!!".		
PR	205738	Build:	6.4.6.285.R01
Summary:	OS9000E: Crashed with AAA and tDrclpmrm0 tasks suspended.		
Explanation:	Defensive check added to prevent IPMRM crash when deleting skip list		

PR	204755	Build:	6.4.6.285.R01
Summary:	Impact analysis on your products with CVE-2015-0291 t1_lib.c in OpenSSL 1.0.2.		
Explanation:	OpenSSL Vulnerability - CVE-2015-0287,CVE-2015-0289,CVE-2015-0292,CVE-2015-0209,CVE-2015-0288		
PR	205086	Build:	6.4.6.285.R01
Summary:	ARP table is not getting updated.		
Explanation:	(a) when ip loopback0 interface is removed it is not getting removed from ipni route list, (b) this is removed (b) while checking whether an ip is part of local interface, the AOS special condition of loopback0 == interface ip is not taken care properly, modified the same.		
PR	205494	Build:	6.4.6.286.R01
Summary:	SLB is not working properly when we use TCP probe.		
Explanation:	Fixed SLB probe socket state issue		
PR	205223	Build:	6.4.6.289.R01
Summary:	MAC address table and 802.1x table inconsistency issue		
Explanation:	Code changes done to update the SL CMM data base properly when LPS enabled.		
PR	207326	Build:	6.4.6.293.R01
Summary:	System throws an error during bootup		
Explanation:	Avoid Source learning bootup errors on console		
PR	207332	Build:	6.4.6.296.R01
Summary:	AAA info AAA Unknown		
Explanation:	Code changes done to update the Radius Interim-update messages properly in swlogs.		
PR	208318	Build:	6.4.6.304.R01
Summary:	PSU LED turns Amber, when one of the PS is turned OFF/ON.		
Explanation:	code changes done to avoid wrong PSU LED status on removal/insertion of PS.		
PR	209005	Build:	6.4.6.305.R01
Summary:	Request to change the order of outputs in tech-support log file.		
Explanation:	Added 'Show user' and 'Show snmp statistics' information to tech_support.log		
PR	209107	Build:	6.4.6.310.R01
Summary:	OS6850E stack suspended with		
Explanation:	Ipmem (1226ec00) @ 100 SUSPEND lckd=0 ME DS stk 1226ec00-1226ad80 Code changes done to fix Ipmem crash during double takeover.		
PR	210264	Build:	6.4.6.312.R01
Summary:	Show mac-address table not showing correctly in Stack of 8		
Explanation:	Show mac address table command displays the correct output.		

PR	210580	Build:	6.4.6.313.R01
Summary:	OS6850E LLDP messages in the logs		
Explanation:	Code changes done so that the warning messages are not logged in the swlog when valid LLDP packets are send		
PR	211379	Build:	6.4.6.323.R01
Summary:	OS6850E switch crashed with tOddJob task		
Explanation:	Defensive fix done to avoid crash during buffer creation.		
PR	211443	Build:	6.4.6.327.R01
Summary:	DHCP Snooping leaking issue on 6400		
Explanation:	AOS uses PROTOCOL_PKT_CONTROL register in third party to control behavior of DHCP packets. A DHCP packet when received by a snooping enabled switch should get trapped to CPU with the settings in this register, and without snooping enabled DHCP packets are mirrored to CPU. In the customers case, with DHCP snooping enabled, the hardware entries were not programmed for DHCP snooping so packets were being mirrored, as if snooping was not enabled in hardware.		
PR	212060	Build:	6.4.6.333.R01
Summary:	OS6850E-P48: High CPU due to "tPim0" task		
Explanation:	debugs added		
PR	210609	Build:	6.4.6.338.R01
Summary:	OS6850E POE Restarts when powerdraw from the POE port exceeds the classification		
Explanation:	Fix done to disable the class setting by default. In case needed, it can be enabled by global variable in AlcatelDebug.cfg		
PR	212609	Build:	6.4.6.339.R01
Summary:	SNMP walk failure du to OID ordering failure		
Explanation:	Code changes done to fix OID ordering failure.		
PR	212706	Build:	6.4.6.339.R01
Summary:	.p priority is lost for IGMP frames in a QinQ envirovement setup		
Explanation:	When a IPMS Query packet is received in a multicast enabled switch, it is trapped to CPU and flooded back in the same VLAN. When received through a NNI port with a .1q priority stamped, it is trapped to the CPU and when flooding back to UNI ports (with SAP profile as TRANSLATE), Q-Driver does not copy the priority from the SVLAN to the CVLAN.		
PR	210869	Build:	6.4.6.343.R01
Summary:	OS6850E: Switch crash		
Explanation:	Memory is freed in AAA module		
PR	210587	Build:	6.4.6.345.R01
Summary:	OS6850E: Switch crashes for the codenomicon test case ID 3583.		

PR	210239	Build:	6.4.6.347.R01
Summary:	Bogus DHCP packet to customer dhcp server.		
Explanation:	Root Cause Analysis: When a DHCP client is enabled on a switch, the variable "dhcpInfoFromServer.serverIp" should hold the IP address of the server which leased IP address to the switch. Assume DHCP snooping is enabled, and the DHCP client interface in switch gets IP from Server A, and other clients using the snooping service from the switch gets IP from DHCP server B, after some time, the DHCP client in the switch sends its own DHCP request to the Server B, instead of Server A which originally leased the IP address to our switch. This is because, when any ACK packet (from any server) is received, we update the "dhcpInfoFromServer.serverIp", so the server IP address can change for any/all transactions. Solution details: Code change to make sure that only the ACK received for the DHCP address of the switch is used to change the "dhcpInfoFromServer.serverIp".		
PR	211453	Build:	6.4.6.348.R01
Summary:	OS6850 ethernet-service nni command missing in configuration		
Explanation:	All the commands are displayed properly in the configuration snapshot		
PR	214760	Build:	6.4.6.358.R01
Summary:	OS6850E: Trap value decoding		
Explanation:	Code changes were done to add the missing bitmaps in the object syntax.		
PR	211127	Build:	6.4.6.319.R01
Summary:	OS6850 crashed with tCS_PRB and Stp task suspending.		
Explanation:	Defense fix while handling STP SNMP operations		
PR	198841	Build:	6.4.6.238.R01
Summary:	BGP route for multi-hop neighbor learnt correctly but IPRM shows incorrect gateway for this route.		
Explanation:	BGP route for multi-hop neighbor learnt correctly and IPRM shows correct gateway for this route.		
PR	201948	Build:	6.4.6.251.R01
Summary:	MAC address learnt though 802.1x state is Captive-portal CP In-Progress.		
Explanation:	Fix the mac-address table inconsistency after continuous mac move		
PR	202046	Build:	6.4.6.238.R01
Summary:	NTPD Vulnerability: ntpd version 4.2.7 and previous versions allow attackers to overflow several buses.		
Explanation:	Code changes done to fix NTP vulnerabilities CVE-2014-9295 & CVE-2013-5211. Other vulnerabilities do not affect AOS.		

PR	203577	Build:	6.4.6.261.R01
Summary:	Secondary unit of a stack is rebooting after a hard takeover.		
Explanation:	Fix the flash sync flags between primary and secondary unit		
PR	214605	Build:	6.4.6.359.R01
Summary:	OS6850E Switch restarting after enabling PIM-SM onThird party with suspended task tPim0		
Explanation:	We prevent invalid memory access when a group in range of (232.0.0.0/8) SSM is received.		
PR	181004	Build:	6.4.6.337.R01
Summary:	Switch crash while enabling mobile tag.		
Explanation:	Fix for preventing crash while enabling mobile tag		
PR	209400	Build:	6.4.6.324.R01
Summary:	OS6850E-48X 6.4.5.608.R02 standalone switch we are receiving the below error		
Explanation:	Error: Couldn't get bu Errors were displayed because there were no available buffers in Q-Driver to send out LLDP context. These buffers were occupied by BCMrx task to send out STP packets through HiGig in a standalone box.		
PR	212850	Build:	6.4.6.339.R01
Summary:	The command "qos port x/y default classification 802.1p" is not removed from the configuration when		
Explanation:	By default the traffic classification is by dscp for the ports, and hence when the classification is changed to 802.1p/tos the config will be reflected in qos snapshot . When the same port is configured with svlan and tagged with a UNI/NNI , default classification will be 802.1p . However still the default config will be shown in 'show configuration snapshot qos' due to mismatch in the Return handling.		
PR	212652	Build:	6.4.6.336.R01
Summary:	OS6850E: user got deleted after upgrade the switch to OS_6.4.6.334.R01		
Explanation:	Software version 645R02 uses the file ?userTable5? For saving user details in the flash, similarly 646.334.R01 uses userTable7. There is a difference in user Table structures used in userTable5 and userTable7 as there were new features requiring modification in user Table structure. There was an issue in code while copying userTable5 to userTable7 when doing an upgrade from 645 to 646.334.R01. This is corrected and user details are now copied correctly from userTable5 to userTable7. While upgrading the switch software from 645R02 to 646.334.R01, user Tables(if any) in ?/flash/network? Directory other than userTable5 needs to be removed for proper migration of users from 645R02 to 646.334.R01.		
PR	206012	Build:	6.4.6.282.R01
Summary:	Port change resulting in ARP relearning, post which MAC not updated in hardware.		
Explanation:	Refer Source learning LPS table to process ARP		
PR	205391	Build:	6.4.6.292.R01
Summary:	4xOS6850E-P48 Link flapping on stacks running code 6.4.6.218 R01		
Explanation:	Set appropriate debug level for link up/down message in swlog if trap is not enabled		

Known Issues:

None

New Features:**1. Configuration File Management****Hosted AOS SW Release:** 6.4.6.167.R01**Introduction:**

The configuration file management feature is to modify the configuration file label corresponding to the directory it resides, without affecting any functionality. Earlier when configuration file is retrieved from working and certified directories of Omni switch, they all have the same label as in old directory in the beginning of file regardless if you retrieve the file in working or certified directory. So after retrieving, it's difficult to find from where the configuration file belongs. The operations of existing configuration file management system:

While performing certify and/or synchronization or restoration process in Omni switch the configuration file of source directory will be copied to the destination directory based on the below conditions.

- a) If the configuration file doesn't exist in the destination directory.
- b) The file exists but differs in size and/or time stamp.

If any of the above condition is true, the configuration file will be copied to the destination directory and the timestamp of source directory configuration file will be re-applied on the copied configuration file in destination directory.

After the source configuration file contents copied to destination configuration file, the label in destination configuration file will be modified and the time stamps of source configuration file will be re applied.

Platforms Supported:

Omni Switch 6850E, Omni Switch 6855, Omni Switch 9000E

Command Usage:

While executing the commands in the below table configuration file header should be updated showing the directory it is located and re-apply the source directory configuration file timestamp.

Command	Process Involved
copy working certified	certify process
copy flash-synchro	certify and flash synchronization
copy working certified flash-synchro	certify and flash synchronization
write memory flash-synchro	Save configuration, certify and flash synchronization
copy certified working	Restoring process
show running-directory	Synchronization status

Table 1 - Commands involved in verifying the implementation

Expected Outcome:

After issuing certify/synchronization commands mentioned in table 1, the process should complete without any errors and the label inside the boot.cfg file of certified directory should contain certified directory in the label.

Sample output:

```
!=====!  
! File: /flash/certified/boot.cfg           !  
!=====!
```

After issuing commands for restoring the files (mentioned in table 1), the process should complete without any errors and the label inside the boot.cfg file of working directory should be remain unchanged.

Sample output:

```
!=====!  
! File: /flash/working/boot.cfg           !  
!=====!
```

There should not be any functional impact on existing synchronization status determining logic.

Sample output:

```
Topo (A1) _DUT1 - - >> show running-directory  
CONFIGURATION STATUS  
Running CMM           : PRIMARY,  
CMM Mode              : DUAL CMMs,  
Current CMM Slot      : 1,  
Running configuration : WORKING,  
Certify/Restore Status : CERTIFIED  
SYNCHRONIZATION STATUS  
Flash between CMMs    : SYNCHRONIZED,  
Running Configuration : SYNCHRONIZED,  
Stacks Reload on Takeover : PRIMARY ONLY
```

Limitations:

None

2. Multicast Dynamic Control (MDC)

Platforms: OS6850E, OS6855-U24X, OS9E

Hosted AOS SW Release: 6.4.6.218.R01

In AOS, IPv4 and IPv6 multicast protocols are by default always copied to CPU. The high CPU usually impacts the normal operations of the Omni Switch protocols such as LACP, ERP.

In Order to resolve this high CPU issue, this feature is introduced to control the processing of the IPv4 multicast protocols.

The processing of all IPv6 multicast protocols is globally controlled by the presence of an IPv6 Interface.

- If no IPv6 interface configured
All protocols in the ff02:0: /32 ranges are transparently forwarded and not copied to CPU.
- If at least one IPv6 interface configured

All protocol packets in the ff02:0: /32 ranges are copied to CPU on all vlans irrespective on which vlan IPV6 interface is enabled.

IGMP packets are copied to CPU based on the global ipms status. When IPMS is globally enabled, IGMP packets are copied to CPU. When IPMS is globally disabled, IGMP packets are not copied to CPU.

MLD packets are copied to CPU based on the global ipms status. When IPMS is globally enabled, MLD packets are copied to CPU. When IPMS is globally disabled, MLD packets are not copied to CPU.

RIPV1 packets are not trapped to CPU when MDC drop-all enabled

Command Usage:

1. To enable/disable global multicast dynamic-control status
ip multicast dynamic-control status [{enable|disable}]

Guidelines: By default this status is disabled. If it is enabled, IPv4 multicast well-known protocol packets alone will be trapped to CPU and the other multicast packets will be dropped. Well-known IPv4 protocols are given below in Note section

2. To enable/disable multicast dynamic-control drop-all status
ip multicast dynamic-control drop-all status [{enable|disable}]

Guidelines: By default this status is disabled. If it is enabled, all ipv4 multicast packets including ipv4 multicast well-known protocol packets will be dropped.

Note:

- Drop-all status can be enabled only after enabling global dynamic control status.
- Below are the well-known IPv4 multicast protocol packets,

OSPF:	224.0.0.5/32 + IP protocol 89
OSPF:	224.0.0.6/32 + IP protocol 89
VRRP:	224.0.0.18/32 + IP protocol 112
RIPv2:	224.0.0.9 + UDP port 520
PIM:	224.0.0.13/32
DVMRP:	224.0.0.4/32

Examples

```
ip multicast dynamic-control status enable
ip multicast dynamic-control status disable
```

```
ip multicast dynamic-control drop-all status enable
ip multicast dynamic-control drop-all status disable
ip multicast status enable
ip multicast status disable
ipv6 multicast status enable
ipv6 multicast status disable
```

```
->show ip multicast
Status                = enabled,
Querying              = enabled,
Proxying              = disabled,
Spoofing              = disabled,
Zapping              = disabled,
Querier Forwarding    = disabled,
Flood Unknown         = disabled,
Dynamic control status = disabled,
Dynamic control drop-all status = disabled,
```

```

Buffer Packet          = disabled,
Version                = 2,
Robustness             = 7,
Query Interval (seconds) = 125,
Query Response Interval (tenths of seconds) = 100,
Last Member Query Interval (tenths of seconds) = 10,
Unsolicited Report Interval (seconds) = 1,
Router Timeout (seconds) = 90,
Source Timeout (seconds) = 30,
Max-group              = 0,
Max-group action       = none
Helper-address         = 0.0.0.0

```

```

->show configuration snapshot ipms
! IPMS:
ip multicast dynamic-control status enable
ip multicast dynamic-control drop-all status enable

```

Limitations

- The proposed solution does not address the DOS attack concern
- Injecting a high rate of well-known protocol on a port will still cause a high CPU.
- Dynamic-Control “drop-all” feature should not be enabled if a routing protocol or VRRP is configured on the Omni-Switch as protocol packet will be dropped.

3. DHCP SERVER PER VRF

Platforms: OS6850E, OS6855-U24X, OS9E

Hosted AOS SW Release: 6.4.6.218.R01

The internal DHCP server was initially only supported on the default VRF. Now, the internal DHCP server can be supported on multiple VRFs, including the default VRF. The switch still supports a single instance for the internal DHCP server that is unaware of the VRFs. This means the DHCP scopes are common for all VRFs. A new command is implemented to configure the VRFs on which the internal DHCP server is active, also giving flexibility to include or exclude the default VRF. By default, the internal DHCP server is only active on the default VRF.

Command Usage

1. To enable/disable/restart internal DHCP server
-> dhcp-server {enable | disable | restart}

Guidelines

This command controls the single internal DHCP server instance and impacts all configured VRFs.

2. To include a given VRF in the internal DHCP server
-> dhcp-server vrf {default | vrfname}

Guidelines

The command checks the given VRF name exists.
To add multiple VRFs, invoke the command for each VRF.
The command “dhcp-server vrf default” is optional as the internal DHCP server is by default active on the default VRF.

3. To exclude a given VRF from the internal DHCP server
-> dhcp-server no vrf {default |vrfname}

Guidelines

To add multiple VRFs, invoke the command for each VRF.

4. To display the configuration of Internal DHCP Server.

-> show dhcp-server config

Guidelines

The command displays:

- The global status of the internal DHCP server
- The list of VRFs on which the internal DHCP server is active

Examples

Enable Internal DHCP Server on Default VRF

```
-> dhcp-server enable
-> show dhcp-server config
    DHCP-SERVER Status: Enabled
    VRF                  : default
```

Note: When DHCP server is disabled, the default VRF is not displayed. This will be displayed only if default VRF is explicitly configured

```
-> dhcp-server disable
-> show dhcp-server config
    DHCP-SERVER Status: Disabled
    VRF                  :
-> dhcp-server vrf default
-> show dhcp-server config
    DHCP-SERVER Status: Enabled
    VRF                  : default
```

Enable Internal DHCP Server on VRF “default” and “abc”

```
-> vrf abc
-> dhcp-server vrf abc
-> dhcp-server enable

-> show dhcp-server config
    DHCP-SERVER Status: Enabled
    VRF                  : default, abc
```

Enable Internal DHCP Server on VRF “default”, “abc” and “xyz”

```
-> vrf abc
-> vrf xyz
-> dhcp-server vrf abc
-> dhcp-server vrf xyz
-> dhcp-server enable

-> show dhcp-server config
    DHCP-SERVER Status: Enabled
    VRF                  : default, abc, xyz
```

Enable Internal DHCP Server on VRF “abc” only

```
-> vrf abc
-> vrf xyz
-> dhcp-server vrf abc
```



```
-> dhcp-server no vrf default
-> dhcp-server enable

-> show dhcp-server config
  DHCP-SERVER Status: Enabled
  VRF                  : abc
```

Limitations

- The MAX_VRF count supported on hardware dictates the choice of VRF on which the Internal DHCP Server can be activated.
- Enabling Internal DHCP Server on VRF <vrfname> takes precedence over DHCP relay and hence DHCP relay would not work on this VRF

4. DHCP Snooping Global Mode

Platforms: OS6850E, OS6855, OS9000E

Hosted AOS SW Release: 646.278.R01

In order to have the DHCP snooping feature operational, the hardware must first identify DHCP packet and trap such packet to CPU for software processing.

Currently, the hardware identifies a DHCP packet as follow:

- Source UDP port = 67 and Destination UDP port = 68
Or
- Source UDP port = 68 and Destination UDP port = 67

These hardware settings are optimized for all the DHCP snooping use cases, and have the property that any DHCP transactions between a Relay Agent Router and the DHCP Server using a source and destination UDP port 67 are transparently forwarded by hardware. This allows a L2 switch or L3 router in the path between the Relay Agent Router and the DHCP server to be configured with DHCP snooping and still forward the DHCP Relay message.

However, these settings do not allow the detection of a DHCP rogue server that may be connected on a DHCP snooping switch in the path between the Relay Agent Router and the actual DHCP server. One important function of the DHCP snooping feature is to discard DHCP Reply received on client ports. In this specific case, the rogue DHCP server will reply with both source and destination UDP port 67 to the Relay Agent and Reply will be transparently forwarded by hardware.

In this new AOS release, a new hardware mode is configurable to also identify DHCP packet with source and destination UDP port 67.

This is only configurable with a debug variable “debug set udpGblSbUturn 3” in the AlcatelDebug.cfg.

In this mode, DHCP packet with source and destination UDP port 67 will be processed by software and bridged or routed accordingly.

Usage:

```
In AlcatelDebug.cfg
debug set udpGblSbUturn { 0 | 3}
```

Recommendation:

It is still recommended to only use the default mode (udpGblSbUturn=0) as the new mode will add extra load on the system as all DHCP packets will be processed.

As workaround for the rogue DHCP rogue server issue, it is recommended to use the “qos user-port filter dhcp-server” or “qos user-port shutdown dhcp-server” feature to protect the switch against DHCP reply on the ports configured on the “qos port group UserPorts”

Limitations:

None

5. SSH PORT

Platforms: OS6850E, OS9000E, OS6855

Hosted AOS SW Release: 646.278.R01

In the existing implementation, AOS uses the default SSH TCP port (port 22) to establish an SSH session.

With the new implementation, when the user configures the TCP port number for SSH session, it will be saved in the switch file “/flash/network/sshConfig.cfg”. In order to use the configured port number while establishing the SSH session, the switch must be rebooted.

While the switch boots up, if the file “/flash/network/sshConfig.cfg” exists, it will be parsed to read the TCP port number that should be used to establish the SSH session, otherwise the default SSH TCP port shall be used.

Usage

Command to configure TCP-PORT number for establishing SSH Session.

```
ssh tcp-port <port-number>
```

<port-number >in the range 0-65535

Example: ssh tcp-port 35

Note: Well-known reserved TCP port numbers and the IP ports which are internally used in AOS are excluded in assigning to SSH TCP port.

Limitations

- Switch must be rebooted after configuring the TCP port number so as to use the configured TCP port number when establishing SSH sessions.
- Well-known reserved TCP port numbers(ports 20,21,23,25,69,80,161,389,443) and the IP ports which are internally used(defined in system_ipport.sh) are excluded in assigning to SSH TCP port. Error will be thrown when these ports are tried to be configured for SSH port.

6. Support for Telnet and SSH Clients within every VRF

Platforms: OS9702E, OS6850E, OS6855-U24X

Hosted AOS SW Release: 646.302.R01

This feature 'Support for Telnet and SSH clients in VRF' will allow telnet and SSH sessions from clients within every vrf instance to the reachable Telnet and SSH server. All the Telnet and SSH Clients should be configured in non-default VRF, while AOS will support Telnet and SSH server should be configured in default VRF.

Usage**To take telnet/ssh session from the VRF instance:**

Maximum number of telnet session is 4 across the entire VRF instance at a time.

For Telnet:

```
Topo(A2)_DUT2-->>
Topo(A2)_DUT2-->> vrf three1
three1::Topo(A2)_DUT2-->> telnet 3.3.3.2
Trying 3.3.3.2...
Connected to 3.3.3.2.
Escape character is '^]'.
login : admin
password :
```

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S1_stack_6850E-->

For SSH:

Maximum number of SSH session is 1 across the entire VRF instance at a time.

```
three1::Topo(A2)_DUT2-->>
three1::Topo(A2)_DUT2-->> ssh 3.3.3.2
login as: admin
admin's password for keyboard-interactive method:
```

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S1_stack_6850E-->

To take telnet/ssh session by using the command vrf *vrfname* telnet/ssh x.x.x.x**For Telnet:**

Maximum number of telnet session 4 across the entire VRF instance at a time.

```

Topo(A2)_DUT2-->> vrf three1 telnet 3.3.3.2
Trying 3.3.3.2...
Connected to 3.3.3.2.
Escape character is '^]'.
login : admin
password :

```

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S1_stack_6850E-->

For SSH:

Maximum number of SSH session 1 across all the VRF instance at a time

```

Topo(A2)_DUT2-->>
Topo(A2)_DUT2-->> vrf three1 ssh 3.3.3.2
login as: admin
admin's password for keyboard-interactive method:

```

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S1_stack_6850E-->

7. Extended Support for 12 VRF sessions in OS6855-U24X

Platforms: OS6855-U24X

Hosted AOS SW Release: 646.302.R01

This Feature is to extend the parallel VRF sessions to 12 from current limit of 8 in an OS6855-U24x platform. Refer VRF in OS6850E network config or switch management guide for additional details about VRF and its detail.

Usage:

To create a non-default VRF
vrf *vrfname*

To Configure interfaces on the created vrf
ip interface *interface_name* address *ip_address* mask *mask* vlan *vlan_id*

To Display the created vrf and configuration

```
show vrf
```

To Delete the created vrf
no vrf *vrfname*

Examples:

```
cli>vrf one1
cli>vrf two2
2:cli>ip interface vrfone address 100.1.1.1/24 vlan 100
2:cli>ip interface vrftwo address 101.1.1.1/24 vlan 101
2:cli>show vrf
```

```
Virtual Routers  Protocols
-----
default          RIP OSPF BGP
one1
two2
```

```
2:cli>no vrf one1
2:cli>no vrf two2
```

```
cli>show vrf
```

```
Virtual Routers  Protocols
-----
default          RIP OSPF BGP
```

Limitation:

There will be a increase in memory usage after creating maximum vrfs and loading all the protocols while verifying for load testing.

8. Monitoring Inter-Stack Connections

Platforms: OS6850E,OS6855-U24X

Hosted AOS SW Release: 646.302.R01

In the existing implementation, there are no CLI commands to monitor the status and statistics of Stacking interfaces. The requirement is to provide the ability for the user to monitor the status and statistics/counters of the stacking links (if the product is stackable) in addition to normal user interfaces using the below CLI Commands

Following new CLI commands are introduced to store the stacking ports details.

```
show stacking interfaces
show stacking interfaces status
show stacking interfaces counters
show stacking interfaces counters errors
```

Usage

To display general interface information for the stacking ports
show stacking interfaces

To display interface counters information (for example, unicast, broadcast, and multi-cast packets received or transmitted) for the stacking ports

show stacking interfaces counters

To display interface error frame information (for example, CRC errors, transit errors, and receive errors) for the stacking ports

show stacking interfaces counters errors

To display the interface line settings (for example, speed, and mode) for the stacking ports

show stacking interfaces status

To display the interface line settings (for example, speed, and mode) information for the specific stack port entered in the command

show stacking interfaces <slot/port> status

To display interface counter information (for example, unicast, packets received/transmitted) for the specific stack port entered in the command

show stacking interfaces <slot/port> counters

To display interface error frame information (for example, CRC errors, transit errors, and receive errors) for the specific stack port entered in the command.

show stacking interfaces <slot/port> counters errors

This command will clear the counter statistics related to the stack port specified in the command

stacking interfaces <slot/port> no I2 statistics

Examples

-> **show stacking interfaces**

```
Slot/Port 1/51 :
Operational Status   : down,
Last Time Link Changed : TUE JUL 28 19:04:01 ,
Number of Status Change: 0,
Type                 : Stacking,
BandWidth (Megabits) : - ,          Duplex          : -,
Rx                   :
Bytes Received       :          0, Unicast Frames :          0,
Broadcast Frames:    0, M-cast Frames :          0,
UnderSize Frames:    0, OverSize Frames:          0,
Lost Frames         :          0, Error Frames :          0,
CRC Error Frames:    0, Alignments Err :          0,
Tx                   :
Bytes Xmitted       :          0, Unicast Frames :          0,
Broadcast Frames:    0, M-cast Frames :          0,
UnderSize Frames:    0, OverSize Frames:          0,
Lost Frames         :          0, Collided Frames:          0,
Error Frames        :          0
Slot/Port 1/52 :
Operational Status   : up,
```

Last Time Link Changed : TUE JUL 28 19:04:01,
 Number of Status Change: 0,
 Type : Stacking,
 BandWidth (Megabits) : 10000, Duplex : Full,
 Rx :
 Bytes Received : 103100016, Unicast Frames : 85856,
 Broadcast Frames: 0, M-cast Frames : 12,
 UnderSize Frames: 0, OverSize Frames: 0,
 Lost Frames : 0, Error Frames : 0,
 CRC Error Frames: 0, Alignments Err : 0,
 Tx :
 Bytes Xmitted : 3883702, Unicast Frames : 45872,
 Broadcast Frames: 1948, M-cast Frames : 813,
 UnderSize Frames: 0, OverSize Frames: 0,
 Lost Frames : 0, Collided Frames: 0,
 Error Frames : 0

-> show stacking interfaces status

Slot/ AutoNego Speed Duplex
 Port (Mbps)

```
-----+-----+-----+-----
1/51 - - -
1/52 - 10000 Full
3/27 - 10000 Full
3/28 - - -
```

-> show stacking interfaces counters

1/52,
 InOctets = 108040828, OutOctets = 4065016,
 InUcastPkts = 89957, OutUcastPkts = 48056,
 InMcastPkts = 12, OutMcastPkts = 868,
 InBcastPkts = 0, OutBcastPkts = 2006,
 InPauseFrames = 0, OutPauseFrames = 0,
 Sampling Interval 5 seconds
 InPkts/s = 28, OutPkts/s = 16,
 InBits/s = 268016, OutBits/s = 9720

3/27,
 InOctets = 4012826, OutOctets = 108129633,
 InUcastPkts = 48045, OutUcastPkts = 89945,
 InMcastPkts = 868, OutMcastPkts = 12,
 InBcastPkts = 2006, OutBcastPkts = 0,
 InPauseFrames = 0, OutPauseFrames = 0,
 Sampling Interval 5 seconds
 InPkts/s = 16, OutPkts/s = 29,
 InBits/s = 9840, OutBits/s = 270352

-> show stacking interfaces counters errors

1/52,


```
IfInErrors      =          0,
Undersize pkts =          0, Oversize pkts =          0
```

->stacking interfaces 1/27 no I2 statistics

show stacking interfaces 1/27 counters

```
1/27,
InOctets      =          0, OutOctets      =          0,
InUcastPkts  =          0, OutUcastPkts  =          0,
InMcastPkts  =          0, OutMcastPkts  =          0,
InBcastPkts  =          0, OutBcastPkts  =          0,
InPauseFrames =          0, OutPauseFrames =          0,
Sampling Interval 5 seconds
InPkts/s     =          0, OutPkts/s     =          0,
InBits/s     =          0, OutBits/s     =          0
```

Limitations

We cannot ideally verify the error count directly. For stacking links, error counters will increase only in scenarios where the packets transmitted internally are corrupted by chance.

9. Bypass DNS lookup by NTP on boot-up

Platforms Supported: OS9702E, OS6850E, OS6855

Hosted AOS SW Release: 6.4.6.302.R01

If DNS server is configured in the network, NTP will do a DNS lookup and convert the name into IP address. This allows NTP server to be configured as a name or IP address. Earlier, variable by name ntpSkipDNSLookUp was introduced that could be set using the AlcatelDebug.cfg which when set to "1" makes NTP to skip/bypass the DNS lookup and use the configured IP address. Currently this has been enhanced such that without requiring setting of any variable either through debug flag or through CLI NTP module ignores DNS lookup failure during boot up & retries once the system is ready.

Usage:

NA as this is the default behavior

Limitations:

None

10. SNMPv3 Dual Password – different auth and private passwords

Platforms Supported: OS6850E, OS9700E, OS6855

Hosted AOS SW Release: 646.331.R01

Introduction:

Existing AOS implementation allows configuration of only one password for any user created in the switch. For a SNMPv3 user with authentication/encryption enabled, hash key computed from this password is used for both authentication as well as encryption of SNMPv3 frames.

This new feature facilitates configuring a SNMPv3 user with different passwords for authentication and encryption of SNMPv3 frames.

User creation CLI command is enhanced such that there will be an additional option to configure privacy password for SNMPv3 users. The configured “password” will be used for authentication and “priv-password” will be used for encryption of SNMPv3 frames.

If SNMPv3 user is created without configuring “priv-password”, then existing “password” parameter shall be used for both authentication and encryption of SNMPv3 frames.

The “priv-password” token shall be accepted only when SNMPv3 encryption is configured by the user in the same command. If SNMP encryption is not configured and “priv-password” is configured, then CLI command shall be rejected with error.

A new file “userPrivPasswordTable” will be created in “/flash/network” directory to store the privacy password details of a user. When user creation is done with privacy password configured, the user name and hash key of this password will be updated in “/flash/network/userPrivPasswordTable” file. The password will be hashed with the hash algorithm chosen by the user during user configuration. SNMP Epilogue database will also be updated with user configured privacy password details.

When SNMPv3 user is created without privacy password configured, no entry will be made in the “userPrivPasswordTable”. User password will be used for authentication and encryption of SNMPv3 frames.

Usage:

Command to configure privacy password for a user.

```
user <username> password <user_password> read-write all sha+aes priv-password
<priv_password>
```

Minimum length for priv-password is 8 and Maximum length for priv-password is 30 characters.

Example:

```
user test password xxxxxx read-write all md5+des priv-password yyyyyy
user test1 password xxxxxx read-write all md5+aes priv-password yyyyyy
user test2 password xxxxxx read-write all sha+aes priv-password yyyyyy
user test3 password xxxxxx read-write all sha+des priv-password yyyyyy
```

Creates a SNMPv3 user with authentication/encryption. The configured ‘password’ shall be used for authentication and ‘priv-password’ shall be used for encryption of SNMPv3 frames sent/received in the switch. ‘priv-password’ will be an optional parameter and if user creation/modification is done without this optional key word, then existing “password” itself shall be used for authentication as well as encryption.

```
-> user test password alcatel123 read-write all sha priv-password alcatel123
ERROR: Priv Password configuration allowed only for users with SNMP encryption level.
```

Limitations:

- Password policy will not be applicable for the new optional parameter “priv-password”
- Password prompting with “password-prompt” option will not be available for “priv-password”.
- Existing “auth password” will be used for both authentication and encryption, if the optional parameter “priv-password” is not configured for a user.
- Privacy encryption is applicable only for SNMP transactions. Other switch access methods such as telnet, ssh, ftp, webview etc uses only authentication.
- When the SNMP authentication/ encryption algorithm (security level) for an existing user with privacy password configured is changed, then previously configured privacy password will not be used with

the new SNMP security level. Privacy password need to be re-configured when SNMP security level is changed for an existing user.

- NMS must use AOS supported encryption algorithm for successful encrypted transactions

11. Router-Guard

Platforms Supported: OS6850E, OS9E, OS6855

Hosted AOS SW Release: 646.380.R01

Introduction:

The router-guard feature has been introduced as an enhancement to IPv4/v6 multicast switching. This enhancement is expected to address the issue which occurs when a client device sends a multicast group-specific query. In general when a group specific query is received, the packet is sent to the other customer ports and will reduce the member's life to limited interval and wait for a response. When switch sees no response and drops the specific multicast stream for all customers on the switch.

Normally client devices do not send group-specific queries, however this can occur when a customer incorrectly wires a LAN switch port on their Pace/Actiontec device running an IGMP Proxy. The requirement is to avoid processing the router packets.

The Router Guard feature allows you to designate a specified port only as a multicast host port and not as a multicast router port. Any port can become a multicast router port if the switch receives one of the multicast router control packets, such as IGMP general query, PIM hello, or CGMP hello. When a port becomes a multicast router port, all multicast traffic (both known and unknown source traffic) is sent to all multicast router ports. With router-guard feature enabled, multicast router control packets received on this port are not processed.

- A Router Guard command applies a user policy globally, to a vlan, to an access port or trunk port.
- The Router Guard feature does not require IGMP snooping to be enabled.
- Router Guard is typically used in access switches connected to end-user boxes in Ethernet-to-home deployment scenarios.
- The following packet types are not processed if they are received on a port that has Router Guard enabled: IGMP query messages, IPv4 PIMv2 messages, IGMP PIM messages (PIMv1), IGMP DVMRP messages

Usage:

Command to configure router-guard feature.

```
ip multicast router-guard {enable/disable}
```

```
ip multicat vlan <vid> router-guard {enable/disable}
```

```
ip multicast port <port-num> router-guard {enable/disable}
```

```
ipv6 multicast router-guard {enable/disable}
```

```
ipv6 multicat vlan <vid> router-guard {enable/disable}
```

```
ipv6 multicast port <port-num> router-guard {enable/disable}
```

```
show ip multicast
```

```
show ip multicast vlan <vid>
```

The command “*ip multicast router-guard*” resets back to the default configuration. By default, ip/ipv6 router-guard is disabled for a switch.

(Port level configuration takes higher priority, vlan level configuration takes second priority whereas global takes the least when global/vlan/port level configurations are combined)

Example 1:

```
ip multicast router-guard enable
ip multicat vlan 50 router-guard disable
ip multicast port 1/1 router-guard enable
```

Consider port 1/1 belongs to vlan 50. At this case other ports belonging to vlan 50 excluding port 1/1 processes multicast control packets and port 1/1 do not process control packets like IP multicast group specific queries.

Example 2:

```
ipv6 multicast router-guard disable
ipv6 multicast vlan 50 router-guard enable
ipv6 multicast port 1/1 router-guard disable
```

Consider port 1/1 belongs to vlan 50. At this case other ports belonging to vlan 50 excluding port 1/1 does not process multicast control packets and port 1/1 processes control packets like IP multicast group specific queries

Limitations:

- Multicast routing configuration and router-guard feature are mutually exclusive and the feature works only for IP/IPv6 multicast switching
- Global level router-guard configuration can only be enabled in a switch where IPMS is disabled. This is because, the IGMP query packets from IGMP querying device fails to get processed when router-guard is enabled globally and thus IGMP membership reports fails to travel to querying device. Hence the router-guard feature has to be enabled at port level at each client connected port in case IPMS is enabled for the switch
- The above description applies for vlan level router-guard and IPMS combination. In multicast switching since router-guard configuration at vlan level applies to both client and source/ router connected port, the switch fails to forward the IGMP/ICMPv6 membership reports as it fails to process the query packet from the IGMP querying device. This can be tackled by disabling the router-guard at port level on the port connected to the querying device.
- The group specific queries through the other ports where router-guard is disabled can limit the lifetime of the group belonging to the router-guard enabled port (this happens when the router-guard enabled port and router-guard disabled port contains same multicast group)
- On CPU hike, when LACP port associated on the Linkagg flaps, router guard configuration may fail to act. In this case multicast configuration has to be toggled to retain functionality.

New Hardware:

1. Dual-Speed Ethernet Transceivers

Platforms: OS6850E, OS9700E

Dual speed SFP optical transceiver with following specifications tested for support.

SFP-DUAL-MM

Dual-Speed SFP Optical Transceiver

Connector	Type LC
Standards Supported	802.3z, 802.3ah, SFP MSA
Connections Supported	100Base-FX, 1000Base-LX
Fiber Type	MMF
Wavelength	1310 nm
Average Power Output	100Base-FX: -20 to -14 dBm 1000Base-LX: -11.5 to -3 dBm
Receiver Sensitivity	100Base-FX: -28 dBm 1000Base-LX: -22 dBm
Transmission Distance	550 m at 1000 Mbps 2 km at 100 Mbps
Operating Temperature	0°C to 70°C

Digital Diagnostic Monitoring Not Supported.

OS6855 Memory Utilization for Routing

The below table details the memory utilization as a percentage of total memory on the OS6855 product range:

OS6855 / OS6855U24X Default Memory	80%
Standalone 6855-U24X with 100 VLAN + 100 802.1q VLAN + 10 LACP (Link Aggregation) with no Routing	83%

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Loading BGP, OSPF and PIM protocol	85%
------------------------------------	-----

The below table gives the additional memory utilization for various Routing Configurations:

Each Additional VRF	1%
Addition of Protocols (OSPF / BGP / PIM)	1%
Addition of 1500 Routes	1%

Recommended System Limits:

VRF	Routes	L2 MAC
12	1K	2K
10	2K	2K
8	4K	2K
6	6K	4K
4	8K	4K
2	10K	8K

Overall memory utilization: To be restricted below 94% to allow stable system operation.

Downgrade Instruction

As part of the 646.338.R01 Maintenance Release, format for storing Switch User Data has been modified. Existing user data will automatically be migrated to this new format upon upgrade. Any new user configuration or modification of existing user information is updated in this new format. Upon downgrade to earlier releases, any changes (addition or modification) of users done will be lost. There will be no impact on the user data which existed before the upgrade.