

# OcNOS® Service-Provider (SP) Software Feature Summary

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## Features on OcNOS SP Release

The table below lists the software features in the OcNOS SP 4.0 Release. Note, the following mentioned features are only indicative and the detail feature list may vary. Please refer to Feature Matrix for complete feature list on supported ODM platforms.

### SP 4.0: Technical Specifications – NOS Software Features

OCNOS-SP FEATURE	SPECIFICATION
Layer 2 Switching	<ul style="list-style-type: none"> <li>• VLAN</li> <li>• VLAN Translation</li> <li>• Q-in-Q</li> <li>• L2PT</li> <li>• STP</li> <li>• Multiple Spanning Tree Protocol (MSTP)</li> <li>• Rapid Spanning Tree (RSTP)</li> <li>• LLDP v2</li> <li>• Link Aggregation</li> <li>• MC-LAG Active/Standby support as attachment circuit for VPWS Pseudowire Redundancy</li> <li>• Static MAC Address Assignment</li> <li>• BPDU Protect</li> <li>• Root Guard</li> <li>• MAC Learning Disable</li> <li>• Port-based Authentication with RADIUS Server</li> <li>• Port Security</li> </ul>
Layer 3 Routing	<ul style="list-style-type: none"> <li>• Ethernet ARP</li> <li>• Transmission of IP Datagrams over Ethernet</li> <li>• Congestion Control in IP/TCP Networks</li> <li>• IP Broadcast</li> <li>• IP Broadcast in the Presence of Subnets</li> <li>• IP Subnetting</li> <li>• Classless Inter-Domain Routing (CIDR)</li> <li>• Requirements for IP Version 4 Routers</li> <li>• Route Redistribution across RIP, OSPF and BGP</li> <li>• VLAN Routing</li> <li>• URPF</li> <li>• BGP</li> <li>• RIP</li> <li>• OSPF</li> <li>• ISIS</li> <li>• BFD</li> <li>• VRRPv3</li> </ul>

OCNOS-SP FEATURE	SPECIFICATION
Multi-Protocol Label Switch (MPLS)	<ul style="list-style-type: none"> <li>• Label Distribution Protocol (LDP)</li> <li>• Resource Reservation Protocol [Traffic Engineering] (RSVP-TE)</li> <li>• Layer 2 VPN (VPWS and VPLS)</li> <li>• Layer 3 VPN</li> <li>• 6PE/VPE</li> <li>• LSP Stitching</li> <li>• MPLS OAM</li> <li>• MPLS Diffserv</li> <li>• MPLS Label Switching Router (LSR) MIB</li> <li>• MPLS Forwarding Equivalence Class to Next Hop Label Forwarding Entry (FEC-To-NHLFE) MIB</li> <li>• MPLS PW and LSP Traffic Statistics</li> <li>• MPLS Label Stack Encoding</li> <li>• Time To Live (TTL) Processing MPLS Networks</li> <li>• RSVP Shared Risk Link-Group (SRLG) support</li> </ul>
Carrier Ethernet	<ul style="list-style-type: none"> <li>• Connectivity Fault Management (CFM)               <ul style="list-style-type: none"> <li>- CFM over L2 Bridge with xSTP</li> <li>- CFM over VPWS</li> </ul> </li> <li>• Ethernet Ring Protection Switching (ERPS)               <ul style="list-style-type: none"> <li>- ERPS over CFM on Provider/Customer domain</li> <li>- Sub-ring support (Multiple ring and ladder topologies)</li> <li>- Support of multiple ERP Instances on single ring</li> </ul> </li> </ul>
VxLAN with EVPN	<ul style="list-style-type: none"> <li>• EVPN for VXLAN</li> <li>• EVPN Multihoming for VXLAN</li> <li>• VxLAN QoS</li> <li>• VxLAN support over SVI interface</li> </ul>
Multicast Features	<ul style="list-style-type: none"> <li>• PIM</li> <li>• IGMP</li> <li>• Consideration for MLD Snooping Switches</li> </ul>
Quality of Service (QoS)	<ul style="list-style-type: none"> <li>• DiffServ Field in IPv4/IPv6 Headers</li> <li>• Assign matching traffic flow to a specific queue</li> <li>• 1/2/3 Level queuing hierarchy</li> <li>• L2 and L3 QoS</li> <li>• Shaping per queue, per port</li> <li>• Multiple hardware queues per port</li> <li>• WFQ/SP Scheduling Per Queue</li> <li>• WRED</li> <li>• 802.1p remarking</li> <li>• Classification based on interface, ACL, DSCP, IP precedence, 802.1p, and VLAN,</li> <li>• Trust IEEE 802.1p/DSCP</li> <li>• Police Rate (SRTCM/TRTCM)</li> <li>• Minimum and Maximum Bandwidth Per Queue</li> <li>• Service Queuing (Mapping services to specific vlans and shaping each vlan based traffic)</li> </ul>

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Management	<ul style="list-style-type: none"> <li>• Two-way Active Measurement Protocol (TWAMP)</li> <li>• Role based CLI management and access</li> <li>• CLI access via console, telnet and SSH</li> <li>• Authentication using TACAS+/RADIUS Client</li> <li>• Extended ping and traceroute</li> <li>• SNMP v1, v2, and v3</li> <li>• DHCP client</li> <li>• DHCP relay</li> <li>• NTP Client</li> <li>• Syslog</li> <li>• File Upload/Download using FTP/TFTP/SFTP/SCP</li> <li>• Management VRF</li> <li>• Ansible</li> <li>• Yang</li> <li>• NETCONF</li> <li>• Upgrade Mechanism from ONIE prompt using onie nos install and from OcNOS shell using sys-update</li> <li>• Zero Touch Provisioning (ZTP) (with IPv4)</li> <li>• ACL Support over Management, VTY and Loopback</li> <li>• License Server</li> <li>• sFlow</li> <li>• Debounce Timer</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Secure interface login and password</li> <li>• Control Plane Policing (CoPP)</li> <li>• Storm control</li> <li>• Flow control</li> <li>• Access Control Lists (ACLs) based on               <ul style="list-style-type: none"> <li>- IP/Port/IP-ProtocolType/MAC/Ethertype</li> <li>- TCP Flags, Protocol type, IP fragment flags, DSCP, CoS, IP Precedence, VLAN</li> <li>- Rule Prioritization and re-sequence</li> <li>- On-Fly modification</li> </ul> </li> </ul>
Hardware Monitoring Features	<ul style="list-style-type: none"> <li>• Switched port analyzer (SPAN)</li> <li>• Remote switched port analyzer (RSPAN)</li> <li>• Load Balancing</li> <li>• TCAM space monitoring</li> <li>• Chassis Monitoring               <ul style="list-style-type: none"> <li>- Temperature monitor</li> <li>- Fan control</li> <li>- CPU load monitoring</li> <li>- Board information (EEPROM)</li> <li>- Fan and PSU FRU information</li> </ul> </li> <li>• Digital Diagnostics Monitoring               <ul style="list-style-type: none"> <li>- Temperature monitor</li> <li>- Power Monitoring(Power, Current, Voltage)</li> </ul> </li> </ul>

OCNOS-SP FEATURE	SPECIFICATION
Timing and Synchronization	<ul style="list-style-type: none"> <li>• SyncE (G.8262)</li> <li>• ESMC (G.8264)</li> <li>• G.8275.1 (T-BC)</li> <li>• G.8275.1 (T-GM) with antenna compensation</li> <li>• G.8273.2 (T-BC-P, T-BC-A)</li> <li>• G.8273.2 (T-GM) with antenna compensation</li> </ul>
Subinterface	<ul style="list-style-type: none"> <li>• Support for sub-interface for EVPN services</li> <li>• Support for L3 Sub-Interface</li> </ul>
Segment Routing	<ul style="list-style-type: none"> <li>• OSPF extensions for Segment-Routing</li> <li>• ISIS extensions for Segment-Routing</li> <li>• LDP and SR interworking</li> <li>• SR Mapping server</li> <li>• Segment-Routing Policy (Traffic Engineering)</li> <li>• Segment-routing OAM (LSP Ping/Traceroute) for MPLS dataplane</li> <li>• Topology Independent Fast Reroute using Segment Routing</li> </ul>
BGP-LS	<ul style="list-style-type: none"> <li>• BGP Link state distribution (OSPF)</li> <li>• BGP Link state distribution (ISIS)</li> <li>• BGP Link state distribution for OSPF-SR</li> <li>• BGP Link state distribution for ISIS-SR</li> </ul>
PCEP (Path Computation Element Protocol)	<ul style="list-style-type: none"> <li>• Support for Path Computation Element Protocol</li> <li>• Support for Stateful PCE</li> <li>• PCEP Extensions for Segment Routing</li> </ul>
OLT Support	<ul style="list-style-type: none"> <li>• XGS-PON Support</li> <li>• Multiple OLT Support</li> <li>• ONU Provisioning (Manual and Automatic modes)</li> <li>• 1:1 VLAN</li> <li>• N:1 VLAN</li> <li>• Bandwidth allocation, Traffic Shaping and QoS</li> <li>• DHCP L2 relaying with Option-82</li> <li>• ACL support for PON Network Traffic</li> <li>• PON and NNI statistics</li> <li>• ONU Auto Finding</li> <li>• FEC Enable/Disable</li> <li>• TC Layer Encryption</li> <li>• Rogue ONU Detection</li> </ul>

## For more information

For more information about the OcNOS Service Provider Solution, contact your IP Infusion sales representative.

### ABOUT IP INFUSION

IP Infusion, a leader in disaggregated networking solutions, delivers enterprise and carrier-grade software solutions allowing network operators to reduce network costs, increase flexibility, and to deploy new features and services quickly. IP Infusion is headquartered in Santa Clara, Calif., and is a wholly owned and independently operated subsidiary of ACCESS CO., LTD. Additional information can be found at <http://www.ipinfusion.com>

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