

Oracle® Communications IP Service Activator

Brocade IronWare Cartridge Guide

Release 7.2

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This guide provides detailed technical information about the Oracle Communications IP Service Activator Brocade IronWare cartridge, including supported features, device configuration information, and a sample device configuration.

About This Guide

This guide consists of the following sections:

- [Cartridge Overview](#)
- [IP Service Activator Brocade IronWare Cartridge Features](#)
- [Installing the Cartridge](#)
- [Device Configuration](#)

Audience

This guide is intended for network managers and technical consultants responsible for implementing IP Service Activator within a network using Brocade routers.

Related Documents

For more information, see the following documents in the IP Service Activator documentation set:

- See *IP Service Activator Installation Guide* for system requirements and information on installing, upgrading and uninstalling IP Service Activator.
- See *IP Service Activator Administrator's Guide* for information and procedures related the duties a system administrator performs in monitoring and managing IP Service Activator.

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Cartridge Overview

IP Service Activator cartridges enable you to support your existing services, emerging services, and business needs. The cartridges operate in conjunction with the IP Service Activator core product. For more information, see *IP Service Activator Concepts Guide*.

IP Service Activator Brocade IronWare Cartridge Features

The following tables list the features and services supported by the IP Service Activator Brocade IronWare cartridge.

General IP Service Activator Features

Table 1 lists the support for general IP Service Activator features on the Brocade IronWare cartridge.

Table 1 General IP Service Activator Features

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Configuration Protocol Support	Telnet	Yes
Configuration Protocol Support	Secure Shell (SSH)	Yes
Configuration Protocol Support	Simple Network Management Protocol (SNMP)	No
Configuration Protocol Support	Vendor Proprietary	No
Device Discovery	SNMP	Yes
Device Discovery	Discovery Module	No
Device Configuration	Configuration Audit	No
Device Configuration	Command Reissue	Yes
Device Configuration	Auto ID Migration	No
Device Configuration	Save Running Configuration	Yes
Device Configuration	Configuration Version	No
Device Configuration	Configuration Options	No
Device Configuration	Synonyms	Yes
Device Configuration	Command Thresholding	Yes
Device Configuration	Threshold Activated Configuration Control	Yes
Supported Services	Interface Configuration Management	No
Supported Services	Quality of Service (QoS)	Partially

Table 1 (Cont.) General IP Service Activator Features

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Supported Services	Layer 3 Multi Protocol Label Switching (MPLS) VPN	Yes
Supported Services	Point-to-Point Circuit Cross Connect (CCC)	No
Supported Services	Point-to-Point Virtual Leased Line (VLL) Martini	Yes
Supported Services	Virtual Private LAN Service (VPLS)	Yes
Supported Services	Service Assurance Agent (SAA)	No
Supported Services	Netflow	No
Supported Services	Dynamic User VPN	No
Supported Services	IPsec	No
Supported Services	Virtual Routing and Forwarding (VRF)-Aware IPsec	No
Supported Services	Label Switched Path (LSP)	No
Supported Services	Virtual Local Area Network (VLAN)	Yes
Supported Services	Base Configuration Policies	No
Supported Services	Layer 2 QoS	Yes
Supported Services	QoS Attachment	No
Supported Services	VRF Route Maps	No
Supported Services	VPN and IP Multicast Module	No
Supported Services	Configuration Template Manager	Yes
SDK	Service Cartridge Software Development Kit (SDK)	Yes
SDK	Configuration Policy SDK	Yes

Layer 3 MPLS VPN

[Table 2](#) lists the Layer 3 MPLS VPN support on the Brocade IronWare cartridge.

Table 2 Layer 3 MPLS VPN Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Layer 3 MPLS VPN Support	Layer 3 MPLS VPN Support	Yes
Topology	Mesh	Yes
Topology	Hub and Spoke	Yes
Topology	Management	Yes
Addressing	Public IP	Yes
Addressing	Private IP	Yes

Table 2 (Cont.) Layer 3 MPLS VPN Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Addressing	Unnumbered	No
Addressing	Interface Description	No
VRF Table	VRF Export Map Reference	Yes
VRF Table	VRF Import Map Reference	Yes
VRF Table	VRF DHCP Helper	No
VRF Table	VRF Description	No
VRF Table	VRF Label	No
VRF Table	VRF Route Targets	Yes
VRF Table	VRF Table Name	Yes
VRF Table	VRF Route Distinguisher	Yes
VRF Table	VRF Route Limit (Max Routes)	Yes
VRF Table	External Border Gateway Protocol (EBGP) Multipath Load Sharing	Yes
VRF Table	Enhanced Interior Gateway Routing Protocol (EIGRP) Multipath Load Sharing	No
VRF Table	Internal Border Gateway Protocol (IBGP) Multipath Load Sharing	Yes
VRF Table	EBGP and IBGP (EIGBGP) Multipath Load Sharing	No
VRF Table	IBGP Unequal-cost	No
VRF Table	VRF Import (Max Paths)	No
VRF Table	VRF Target	No
VRF Table	VRF Reduction	Yes
VRF Table	Force Install	Yes
VRF Table	Shareable	Yes
VRF Table	Open Shortest Path First (OSPF) Router ID	No
VRF Table	Interface-less VRF	No
Routing Options	Routing Options	No
Routing Options	Autonomous Systems (AS)	No
Routing Options	Autonomous System Number (ASN) Loops	No
Routing Options	Independent Domain	No
Routing Options	Load Balancing	No
Routing Options	Multipath	No
Routing Options	Multipath Unequal Cost	No

Table 2 (Cont.) Layer 3 MPLS VPN Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Routing Options	Multipath Internal and External Border Gateway Protocol (BGP) paths	No
Static Routing	Static Routing	Yes
Static Routing	Static Global Routes	Yes
Static Routing	Static Local Routes (Redistribution)	Yes
Static Routing	Static Permanent Routes	No
Static Routing	Static Tag Value	No
Static Routing	Static Next Hop IP Address	Yes
Static Routing	Static Next Hop Interface	Yes
Static Routing	Static Next Hop IP and Interface	No
Static Routing	Static Route to Null0	Yes
BGP	BGP Network Statements	Yes
BGP	BGP Aggregate Statements	Yes
eBGP	eBGP	Yes
eBGP	EBGP AS Override	Yes
eBGP	EBGP Site of Origin	Yes
eBGP	Remove Private AS	Yes
eBGP	EBGP Update Source	No
eBGP	EBGP Multihop	Yes
eBGP	EBGP Bidirectional Forwarding Detection (BFD)	No
eBGP	EBGP Allow AS in	Yes
eBGP	EBGP Provider Edge (PE)-Customer Edge (CE) MD5 Authentication	Yes
eBGP	EBGP Local AS	No
eBGP	EBGP Advertise Address Family	No
eBGP	EBGP Local AS No Prepend	No
eBGP	EBGP Neighbor Description	Yes
eBGP	EBGP Soft Reconfiguration	Yes
eBGP	EBGP Router as Next Hop	No
eBGP	EBGP Neighbor weight	No
eBGP	EBGP Filters	No
eBGP	EBGP Prefix Limit	Yes
eBGP	EBGP Prefix Limit Restart	No
eBGP	EBGP Prefix Filters	Yes

Table 2 (Cont.) Layer 3 MPLS VPN Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
eBGP	EBGP Standard Community Attributes	Yes
eBGP	EBGP Extended Community Attributes	Yes
eBGP	EBGP Timers	No
eBGP	Keep Alive	No
eBGP	Hold Timer	No
eBGP	EBGP Neighbor Advertisement Interval	No
eBGP	EBGP Inbound Route Map	Yes
eBGP	EBGP Neighbor Site of Origin (SOO)	No
eBGP	External Route Map	Yes
eBGP	Generated Route Map	Yes
eBGP	EBGP Local Preference	Yes
eBGP	EBGP Site of Origin Route-map	Yes
eBGP	Route Map Name	Yes
eBGP	EBGP Outbound Route Map	Yes
eBGP	External Route Map	Yes
eBGP	EBGP Route Dampening	No
eBGP	Redistribution into BGP	Yes
eBGP	BGP Redistribution Metric and Policy from Connected	Yes
eBGP	BGP Redistribution Metric and Policy from Static	Yes
eBGP	BGP Redistribution Metric and Policy from Routing Information Protocol (RIP)	Yes
eBGP	BGP Redistribution Metric and Policy from OSPF	Yes
eBGP	BGP Redistribution Metric and Policy from EIGRP	No
eBGP	EBGP Neighbor Transport Connection Mode Active/Passive	No
eBGP	EBGP Neighbor Transport PathMTUDiscovery	No
eBGP	EBGP Neighbor Transport Single Session/MultiSession	No
eBGP	EBGP Neighbor	No
eBGP	EBPP Log Updown	No
eBGP	Default Route	Yes

Table 2 (Cont.) Layer 3 MPLS VPN Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
OSPF	OSPF	Yes
OSPF	OSPF Area	Yes
OSPF	OSPF Area Type	Yes
OSPF	OSPF not-so-stubby area (NSSA) Type 7 Redistribution	No
OSPF	OSPF Maximum Paths	Yes
OSPF	OSPF Cost	Yes
OSPF	OSPF BGP Redistribution Tag	Yes
OSPF	OSPF Distribute In Filter	No
OSPF	OSPF Distribute Out Filter	No
OSPF	OSPF Shortest Path First (SPF) Throttling	Yes
OSPF	OSPF MD5 Authentication	Yes
OSPF	OSPF Summary Addresses	Yes
OSPF	Suppress Advertise	No
OSPF	Tag Value	No
OSPF	Redistribution into OSPF	Yes
OSPF	OSPF Redistribution Metric and Policy from Connected	Yes
OSPF	OSPF Redistribution Metric and Policy from Static	Yes
OSPF	OSPF Redistribution Metric and Policy from RIP	No
OSPF	OSPF Redistribution Metric and Policy from BGP	Yes
OSPF	OSPF Redistribution Metric and Policy from EIGRP	No
OSPF	Default Route	Yes
RIP	RIP	Yes
RIP	RIP Ignore Routes from Source	Yes
RIP	RIP Passive Interface	No
RIP	Redistribution into RIP	Yes
RIP	RIP Redistribution Metric and Policy from Connected	Yes
RIP	RIP Redistribution Metric and Policy from Static	Yes
RIP	RIP Redistribution Metric and Policy from OSPF	No
RIP	RIP Redistribution Metric and Policy from BGP	Yes

Table 2 (Cont.) Layer 3 MPLS VPN Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
RIP	RIP Redistribution Metric and Policy from EIGRP	No
RIP	Default Route	No
EIGRP	EIGRP	No
EIGRP	EIGRP Device ASN	No
EIGRP	EIGRP Site ASN	No
EIGRP	EIGRP Site of Origin	No
EIGRP	EIGRP Route-map Name for SOO	No
EIGRP	EIGRP MD5 Authentication	No
EIGRP	EIGRP Maximum Paths	No
EIGRP	EIGRP Redistribution	No
EIGRP	EIGRP Redistribution Metrics and Policy from Connected	No
EIGRP	EIGRP Redistribution Metrics and Policy from Static	No
EIGRP	EIGRP Redistribution Metrics and Policy from BGP	No
EIGRP	EIGRP Redistribution Metrics and Policy from OSPF	No
EIGRP	EIGRP Redistribution Metrics and Policy from RIP	No

Layer 2 VLL

[Table 3](#) lists the Layer 2 VLL support on the Brocade IronWare cartridge.

Table 3 Layer 2 VLL Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Circuit Cross Connect	Circuit Cross Connect (CCC)	No
Circuit Cross Connect	Asynchronous Transfer Mode (ATM) AAL5	No
Circuit Cross Connect	ATM Cell	No
Circuit Cross Connect	Ethernet	No
Circuit Cross Connect	Ethernet VLAN	No
Circuit Cross Connect	Frame	No
Circuit Cross Connect	High-Level Data Link Control (HDLC)	No
Circuit Cross Connect	Point-to-Point Protocol (PPP)	No
Martini Point-to-Point	ATM AAL5	No
Martini Point-to-Point	ATM Cell	No

Table 3 (Cont.) Layer 2 VLL Support

Area	IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Martini Point-to-Point	Ethernet	Yes
Martini Point-to-Point	Ethernet VLAN	Yes
Martini Point-to-Point	Frame	No
Martini Point-to-Point	Port Based	Yes
Martini Point-to-Point	Port and VLAN Tagged	Yes

VLAN

[Table 4](#) lists the VLAN support on the Brocade IronWare cartridge.

Table 4 VLAN Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
VLAN (TLS L2 Site)	No
Tagged VLAN	No
Untagged VLAN	No
VLAN Module	Yes
Tagged VLAN	Yes
Untagged VLAN	Yes
Queue-in-Queue VLAN	Yes
vlanDefinitions	Yes
VLAN State	Yes
VLAN Media (Type): Ethernet	Yes
Maximum Transmission Unit (MTU)	Yes
Security Association Identifier (SAID)	Yes
vlanInterface	Yes
Tagged VLAN: Encapsulation Type	Yes
Encapsulation Type: dot1 q	Yes
Encapsulation Type: isl	Yes
Tagged VLAN: Switchport No Negotiate	Yes
Tagged VLAN: Native VLAN	Yes
Tagged VLAN: VLAN Range	Yes
Untagged VLAN	Yes
Queue-in-Queue VLAN	Yes

Virtual Private LAN Service

[Table 5](#) lists the virtual private LAN service (VPLS) support on the Brocade IronWare cartridge.

Table 5 VPLS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
VPLS (TLS L2-Site)	Yes
Port Based	Yes
Port and VLAN Tagged	Yes

Quality of Service

Table 6 lists the Quality of Service (QoS) support on the Brocade IronWare cartridge.

Table 6 QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Layer 3 Qos Support	Partially
Access Rule Support	No
Inbound Access Rule Support	No
Outbound Access Rule Support	No
Logging	No
Suppress Management Traffic Terms	No
Named Access Control List (ACL) Support	No
Numbered ACL Support	No
Guarantees Supported	No
Limits Supported	No
Access Rule Classification Criteria	No
Access Rule Classification Based on Source IPv4 Address	No
Access Rule Classification Based on Destination IPv4 Address	No
Access Rule Classification Based on Source IP Port	No
Access Rule Classification Based on Destination IP Port	No
Access Rule Classification Based on IP Protocol	No
Access Rule Classification Based on DiffServ Codepoints	No
Access Rule Classification Based on IPv4 Precedence Codepoints	No
Access Rule Classification Based on IPv4 Type of Service (TOS) Codepoints	No
Access Rule Classification Based on URL	No
Access Rule Classification Based on Multipurpose Internet Mail Extensions (MIME) Type	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Access Rule Classification Based on Application Protocol	No
Access Rule Classification Based on Application Type	No
Access Rule Classification Based on Domain Name	No
Access Rule Classification Based on 802.1p User Priority	No
Access Rule Classification Based on MPLS EXP Value	No
Access Rule Classification Based on Transmission Control Protocol (TCP) Flag Values	No
Access Rule Classification Based on Internet Control Message Protocol (ICMP) Flag Values	No
Access Rule Classification Based on Fragments	No
Access Rule Classification Based on Input Interface Traffic	No
Access Rule Classification Based on VLAN Traffic	No
Access Rule Classification Based on Port Traffic	No
Access Rule Classification Based on Sub Application	No
Traffic Classification Rules	No
Inbound Traffic Classification Rule Support	No
Outbound Traffic Classification Rule Support	No
Named ACL Support	No
Traffic Classification Rule Criteria	
Traffic Classification Based on Source Media Access Control (MAC) Address	No
Traffic Classification Based on Destination MAC Address	No
Traffic Classification Based on Source IPv4 Address	No
Traffic Classification Based on Destination IPv4 Address	No
Traffic Classification Based on Source IP Port	No
Traffic Classification Based on Destination IP Port	No
Traffic Classification Based on IP Protocol	No
Traffic Classification Based on all DiffServ Code Points	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Traffic Classification Based on IPv4 Precedence Codepoints	No
Traffic Classification Based on IPv4 TOS Codepoints	No
Traffic Classification Based on URL	No
Traffic Classification Based on MIME Type	No
Traffic Classification Based on Application Protocol	No
Traffic Classification Based on Application Type	No
Traffic Classification Based on Domain Name	No
Traffic Classification Based on 802.1p User Priority	No
Traffic Classification Based on MPLS EXP Value	No
Traffic Classification Based on TCP Flag Bits	No
Traffic Classification Based on ICMP Flag Values	No
Traffic Classification Based on Fragments	No
Traffic Classification Marking	No
Marking DiffServ Code Points	No
Marking IPv4 IP Precedence	No
Marking IPv4 TOS	No
Marking 802.1p User Priority	No
Marking: MPLS Experimental Bit	No
Marking: Topmost MPLS Experimental Bit	No
Discard Class	No
Trust Type	No
Traffic Policing Rules	No
Inbound Traffic Policing Rule Support	No
Outbound Traffic Policing Rule Support	No
Policing Rule: Named ACL Support	No
Policing Rule Classification Criteria	No
Policing Classification Based on Source MAC Address	No
Policing Classification Based on Destination MAC Address	No
Policing Classification Based on Source IPv4 Address	No
Policing Classification Based on Destination IPv4 Address	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Policing Classification Based on Source IP Port	No
Policing Classification Based on Destination IP Port	No
Policing Classification Based on IP Protocol	No
Policing Classification Based on all DiffServ Code Points	No
Policing Classification Based on IPv4 Precedence Codepoints	No
Policing Classification Based on IPv4 TOS Codepoints	No
Policing Classification Based on URL	No
Policing Classification Based on MIME Type	No
Policing Classification Based on Application Protocol	No
Policing Classification Based on Application Type	No
Policing Classification Based on Domain Name	No
Policing Classification Based on 802.1p User Priority	No
Policing Classification Based on MPLS EXP value	No
Policing Classification Based on TCP Flags	No
Policing Classification Based on ICMP Flag values	No
Policing Classification Based on Fragments	No
Policing Rule Marking Actions	No
Policing: Marking DiffServ Code Points	No
Policing: Marking IPv4 IP Precedence	No
Policing: Marking IPv4 TOS	No
Policing: Marking 802.1p User Priority	No
Policing: Marking: MPLS Experimental Bit	No
Policing: Marking Topmost MPLS Experimental Bit	No
Standard Per Hop Behaviour (PHB) Group Support	No
PHB Weighted Round Robin (WRR)	No
PHB WRR Inbound	No
PHB WRR Outbound	No
PHB Priority Queuing (PQ)	No
PHB Priority Queuing Inbound	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
PHB Priority Queuing Outbound	No
PHB Weighted Fair Queuing (WFQ)	No
PHB WFQ Inbound	No
PHB WFQ Outbound	No
PHB-WFQ Class-based Queuing Support	No
PHB-WFQ Discard Eligibility Marking	No
PHB-WFQ Priority Queuing Percentage Bandwidth Support	No
PHB-WFQ Low Priority Queue Percentage Bandwidth Support	No
PHB-WFQ Per-queue Weighted Random Early Detection (WRED) Support	No
PHB-WFQ Per-queue Tail Drop Limits	No
PHB Congestion Avoidance: WRED	No
PHB Inbound WRED	No
PHB Outbound WRED	No
PHB WRED: Differentiated Services Code Point (DSCP) Support	No
PHB WRED: IPv4 Precedence	No
PHB WRED: Parameters	No
PHB WRED: Min Threshold	No
PHB WRED: Max Threshold	No
PHB WRED: Weight Factor	No
PHB WRED: Exponential Weight Constant	No
PHB: Explicit Congestion Notification	No
PHB Rate Limiting	No
PHB Inbound Rate Limiting	No
PHB Outbound Rate Limiting	No
PHB Rate Limit Average	No
PHB Rate Limit Burst Rate	No
PHB Rate Limit Burst Interval	No
PHB Frame Relay Fragmentation (FRF)	No
PHB FRF.12	No
PHB Frame Relay Traffic Shaping (FRTS)	No
PHB FRTS - Committed Information Rate (CIR)	No
PHB FRTS - MINCIR	No
PHB FRTS - Committed Burst (BC)	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
PHB FRTS - Excess Burst (BE)	No
PHB Inbound CIR	No
PHB Inbound MINCIR	No
PHB Inbound BC	No
PHB Inbound BE	No
PHB Backwards Explicit Congestion Notification (BECN)	No
PHB Forward Explicit Congestion Notification (FECN)	No
PHB Frame Relay Hold-Queue Depth	No
PHB ATM Traffic Shaping	No
PHB Outbound ATM Traffic Shaping	No
PHB Inbound ATM Traffic Shaping	No
PHB ATM Service Classes	No
PHB ATM Service Class - Unspecified Bit Rate (UBR)	No
PHB ATM Service Class - Constant Bit Rate (CBR)	No
PHB ATM Service Class - Real Time (RT) Variable Bit Rate (VBR)	No
PHB ATM Service Class - Non-Real Time (NRT) VBR	No
PHB ATM Service Class - Available Bit Rate (ABR)	No
PHB ATM Service Class - VC-Class Map Generation	No
PHB ATM Service Class - VC-Class Map Explicit Naming	No
PHB ATM Hold-Queue Depth	No
PHB ATM TX-Ring Limit Support	No
Modular Quality of Service Command-Line Interface (MQC)-PHB Support	No
MQC-PHB Classification Criteria	No
Traffic Classification Explicit ACL Number Specification	No
Traffic Classification Explicit ACL Name Specification	No
Traffic Classification Based on Source MAC Address	No
Traffic Classification Based on Destination MAC Address	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
Traffic Classification Based on Source IPv4 Address	No
Traffic Classification Based on Destination IPv4 Address	No
Traffic Classification Based on Source IP Port	No
Traffic Classification Based on Destination IP Port	No
Traffic Classification Based on IP Protocol	No
Traffic Classification Based on all DiffServ Code Points	No
Traffic Classification Based on URL	No
Traffic Classification Based on MIME Type	No
Traffic Classification Based on Application Protocol	No
Traffic Classification Based on MPLS EXP Value	No
Traffic Classification Based on ATM Cell Loss Priority	No
Traffic Classification - Nested Class Map	No
Traffic Classification Match Any Support	No
Traffic Classification Exclude Option	No
Traffic Classification Based on TCP Flag Bits	No
Traffic Classification Based on ICMP Flag Values	No
Traffic Classification Based on IPv4 IP Precedence	No
Traffic Classification Based on Fragments	No
Traffic Classification Routing Table Protocol (RTP) Protocol Port	No
Compound Traffic Classification	No
Low Latency Queuing (LLQ)	No
LLQ Inbound	No
LLQ Outbound	No
LLQ Absolute Bandwidth Support	No
LLQ Percentage Bandwidth Support	No
LLQ Percentage Remaining Bandwidth Support	No
LLQ Device Default Bandwidth	No
LLQ Burst Support	No
Class Based Weighted Fair Queue (CBWFQ)	No
CBWFQ Inbound	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
CBWFQ Outbound	No
CBWFQ Absolute Bandwidth Support	No
CBWFQ Percentage Bandwidth Support	No
CBWFQ Remaining Percentage Bandwidth Support	No
CBWFQ Queue Limit Support	No
Fair-queue Flow Queue-limit Default	No
Fair-queue Flow Queue-limit Limit	No
CBWFQ Max Reserved Bandwidth	No
MQC-PHB Default WFQ	No
MQC-PHB Default WFQ Inbound	No
MQC-PHB Default WFQ Outbound	No
MQC-PHB Default Reserved Bandwidth Control	No
MQC-PHB Single Rate Policing	No
MQC-PHB Single Rate Policing Inbound	No
MQC-PHB Single Rate Policing Outbound	No
MQC-PHB Single Rate Policing Absolute Rate	No
MQC-PHB Single Rate Policing Percent Rate	No
Default Committed Burst Size (CBS)	No
Default Excess Burst Size (EBS)	No
MQC-PHB Two Rate Policing	No
MQC-PHB Two Rate Policing Inbound	No
MQC-PHB Two Rate Policing Outbound	No
MQC-PHB Two Rate Policing Absolute Rate	No
MQC-PHB Two Rate Policing Percent Rate	No
MQC-PHB Policing Actions	No
MQC-PHB Policing: Drop	No
MQC-PHB Policing: Set IPv4 IP Precedence	No
MQC-PHB Policing: Set DiffServ Code Points	No
MQC-PHB Policing: Set MPLS Exp	No
MQC-PHB Policing: Set FR DE	No
MQC-PHB Policing: Set ATM CLP	No
MQC-PHB Shaping Support	No
MQC-PHB Shaping: Inbound	No
MQC-PHB Shaping: Outbound	No
MQC-PHB Shaping: Default Shaping	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
MQC-PHB Shaping: Shape Average	No
MQC-PHB Shaping: Shape Peak	No
MQC-PHB Shaping: Default Bc	No
MQC-PHB Shaping: Default Be	No
MQC-PHB Maximum Number of Shaping Buffers	No
MQC-PHB: FRTS Support	No
MQC-PHB: FRTS Inbound	No
MQC-PHB: FRTS Outbound	No
MQC-PHB: FRTS MINCIR	No
MQC-PHB: FRTS BECN	No
MQC-PHB: FRTS FECN	No
MQC-PHB Marking Support	No
MQC-PHB Marking Inbound	No
MQC-PHB Marking Outbound	No
MQC-PHB Marking: DiffServ Code Point Support	No
MQC-PHB Marking: MPLS Experimental Bit Support	No
MQC-PHB Marking TopMost MPLS EXP Support	No
MQC-PHB Marking Frame Relay Discard Eligibility Bit Support	No
MQC-PHB Marking ATM Cell Loss Priority Support	No
MQC-PHB Marking IPv4 IP Precedence	No
MQC-PHB Marking IPv4 TOS	No
MQC-PHB Marking IPv4 Discard Class	No
MQC-PHB Marking Trust Type	No
MQC-PHB Congestion Avoidance	No
MQC-PHB Inbound Congestion Avoidance	No
MQC-PHB Outbound Congestion Avoidance	No
Tail Drop Limit	No
Tail Drop Default	No
MQC-PHB WRED Device Default Parameters	No
MQC-PHB WRED IP Precedence Support	No
MQC-PHB WRED DSCP Support	No
MQC-PHB Nesting Support	No
MQC-PHB Inbound Nesting	No

Table 6 (Cont.) QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
MQC-PHB Outbound Nesting	No
MQC-PHB Header Compression	No
MQC-PHB RTP Header Compression Support	No
MQC-PHB TCP Header Compression Support	No

Layer 2 QoS

Table 7 lists the Layer 2 QoS support on the Brocade IronWare cartridge.

Table 7 Layer 2 QoS Support

IP Service Activator Feature	Supported on Brocade IronWare Cartridge
catOSPolicyRule Configuration Policy	No
Policing Rule IP Classification Criteria	No
Classification Based on Trust Type	No
Classification Based on DiffServ Code Point	No
Classification Based on Source IPv4 Address	No
Classification Based on Destination IPv4 Address	No
Policing Rule MAC Classification Criteria	No
Classification Based on Trust Type	No
Classification Based on DiffServ Code Point	No
Classification Based on Source MAC Address	No
Classification Based on Destination MAC Address	No
Policing Rule IPX Classification Criteria	No
Classification Based on Trust Type	No
Classification Based on DiffServ Code Point	No
Classification Based on Source MAC Address	No
Classification Based on Destination MAC Address	No
Classification Based on Protocol	No
Classification Based on Source IPX Address	No
Classification Based on Destination IPX Address	No
rate-limit Configuration Policy	Yes
qosCosAttachment Configuration Policy	No

Unsupported Features

The following features are not supported with the IP Service Activator Brocade IronWare cartridge:

- Service Assurance
- Netflow
- DU VPN
- LSP
- IPsec
- VRF-Aware IPsec
- VRF and IP Multicast
- VRF Route Maps
- Interface Configuration Management
- Base Configuration Policies

Brocade Hardware and Software

For complete information on the Brocade platforms supported with the IP Service Activator Brocade IronWare cartridge, see *IP Service Activator Installation Guide*.

Operating Systems

For complete information on the supported operating systems for the Brocade IronWare cartridge, see *IP Service Activator Installation Guide*.

Installing the Cartridge

For cartridge installation procedures, see *IP Service Activator Installation Guide*.

Installing Configuration Policies

IP Service Activator supports extensible configuration policies that are visible through the UI. The configuration policies include one CFG file and one or more compressed HTML files.

For the configuration policy installation procedure, see *IP Service Activator Installation Guide*.

Device Configuration

To configure Brocade devices, see the Brocade documentation:

<http://www.brocade.com/data-center-best-practices/resource-center/index.page>

Supported Authentication Methods

The IP Service Activator Brocade IronWare cartridge supports *Telnet with TACACS+* authentication method on all devices.

Sample Configuration

Following is a sample Brocade IronWare cartridge configuration:

```

!
ip vrf IPSA_1:191548
rd 1:191548
route-target export 1:196660
route-target import 1:196660
import map importMap
export map exportMap
!
ip route vrf IPSA_1:191548 192.168.100.0/24 192.168.15.2
!
interface ethernet 2/15
enable
ip vrf forwarding IPSA_1:191548
ip address 192.168.15.1/24
!
router bgp
local-as 1
address-family ipv4 unicast vrf IPSA_1:191548
exit-address-family
!

```

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