

OSPF Area Entry

Area ID, Area Type, Metric

Setting	Description	Factory Default
Area ID	Define the areas that this L3 switch/router connects to.	0.0.0.0
Area Type	Define the area type, Stub Area or NSSA.	Normal
Metric	Define the metric value.	0

OSPF Area Table

Shows the current OSPF area table in the L3 switch/router.

OSPF Interface Settings

OSPF Interface Settings

OSPF Interface Setting Entry

Interface Name:

Area ID:

Router Priority: (0 ~ 255)

Hello Interval: (1 ~ 65535)

Dead Interval: (1 ~ 65535)

Auth Type:

Auth Key: (up to 8 characters)

MD5 Key ID: (1 ~ 255)

Metric: (1 ~ 65535)

OSPF Interface Table

All	Interface Name	IP Address	Area ID	State	Priority	Hello	Dead	Auth Type	Auth Key	MD5 Key ID	Metric
<input type="checkbox"/>											

Before using OSPF, we have to assign an interface for each area. Also the detailed information of the interface can be defined in this section. See the details in the following descriptions:

OSPF Interface Setting Entry

Configuration details

Setting	Description	Factory Default
Interface Name	Define the interface name.	N/A
Area ID	Define the Area ID.	N/A
Router Priority	Define the L3 switch/router’s priority.	1
Hello Interval	Hello packets are packets that an OSPF process sends to its OSPF neighbors to maintain connectivity with those neighbors. The hello packets are sent at a configurable interval (in seconds). The value of all hello intervals must be the same within a network.	10
Dead Interval	The dead interval is also a configurable interval (in seconds), and defaults to four times the value of the hello interval.	40
Auth Type	OSPF authentication allows the flexibility to authenticate OSPF neighbors. Users can enable authentication to exchange routing update information in a secure manner. OSPF authentication can either be none, simple, or MD5. However, authentication is not necessary to be set. If it is set, all L3 switches / routers on the same segment must have the same password and authentication method.	None

Auth Key	Authentication key means the clear-text password when using "Simple" method of the authentication type or MD5 encrypted password when using MD5 of authentication type.	N/A
MD5 Key ID	MD5 authentication provides higher security than plain text authentication. This method uses the MD5 to calculate a hash value from the contents of the OSPF packet and the authentication key. This hash value is transmitted in the packet, along with a key ID.	1
Metric	Manually set Metric / Cost of OSPF.	1

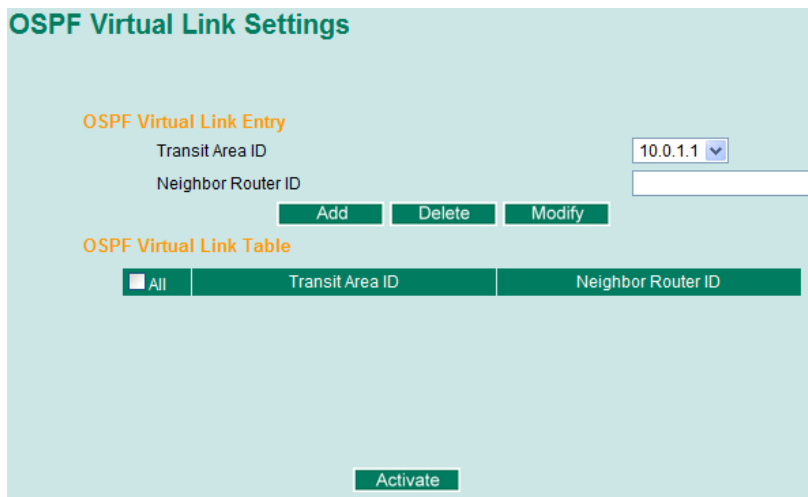
OSPF Interface Table

Shows the current OSPF interface table in a list.

Area ID, Area Type, Metric

Setting	Description	Factory Default
Area ID	Define the areas that this L3 switch/router connects to.	0.0.0.0
Area Type	Define the area type, Stub Area or NSSA.	Normal
Metric	Define the metric value.	0

OSPF Virtual Link Settings



All areas in an OSPF autonomous system must be physically connected to the backbone area (Area 0.0.0.0). However, this is impossible in some cases. For those cases, users can create a virtual link to connect to the backbone through a non-backbone area and also use virtual links to connect two parts of a partitioned backbone through a non-backbone area.

OSPF Virtual Link Entry

Configuration details

Setting	Description	Factory Default
Transit Area ID	Define the areas that this L3 switch/router connects to.	N/A
Neighbor Router ID	Define the neighbor L3 switch/route's ID.	N/A

OSPF Virtual Link Table

Shows the current OSPF virtual link table.

OSPF Area Aggregation Settings

OSPF Area Aggregation Settings

OSPF Aggregation Entry

Area ID: 10.0.1.1

Network Address:

Network Mask:

OSPF Aggregation Table

<input type="checkbox"/> All	Area ID	Network Address	Network Mask
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Each of OSPF areas which consist of a set of interconnected subnets and traffic across areas is handled by routers attached to two or more areas, known as Area Border Routers (ABRs). With OSPF aggregation function, users can combine groups of routes with common addresses into a single routing table entry. The function is used to reduce the size of routing tables.

OSPF Aggregation Entry

Configuration details

Setting	Description	Factory Default
Area ID	Select the Area ID that you want to configure.	N/A
Network Address	Fill in the network address in the area.	N/A
Network Mask	Fill in the network mask.	N/A

OSPF Aggregation Table

Shows the current OSPF aggregation table.

OSPF Neighbor Table

OSPF Neighbor Table

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Index	Neighbor ID	Priority	State	Address	Interface
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Shows the current OSPF neighbor table.

OSPF Database Table

OSPF Database Table

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Index	Area ID	Database Type	Link State ID	Advertised Router	Route
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Shows the current OSPF database table.

Gateway Redundancy

VRRP Settings

VRRP Settings

VRRP Enable
 Enable

VRRP Interface Setting Entry
 Enable

Virtual IP

Virtual Router ID (1~255)

Priority (1~254)

Preemption Mode Enable

Modify

VRRP Interface Table

	Interface Name	IP Address	VLAN ID	VRRP Enable	VRRP Status	Virtual IP	Virtual Router ID	Priority	Preemption Mode
<input type="checkbox"/>	LAN_A	10.0.1.1	10	Disabled	Init	0.0.0.0	0	100	Enabled
<input type="checkbox"/>	LAN_B	10.0.2.1	20	Disabled	Init	0.0.0.0	0	100	Enabled

Activate

The Virtual Router Redundancy Protocol (VRRP) feature can solve the static configuration problem. VRRP enables a group of routers to form a single virtual router with a virtual IP address. The LAN clients can then be configured with the virtual router’s virtual IP address as their default gateway. The virtual router is the combination of a group of routers, and also known as a VRRP group.

Enable

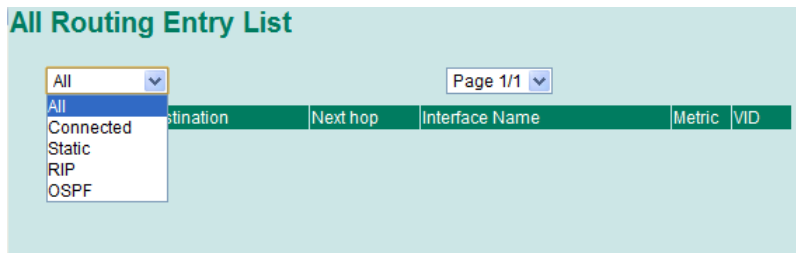
Setting	Description	Factory Default
Enable	Checkmark the checkbox to enable the VRRP.	N/A

VRRP Interface Setting Entry

Setting	Description	Factory Default
Enable	Determines to enable the VRRP entry or not.	Disabled
Virtual IP	L3 switches / routers in the same VRRP group must have the identical virtual IP address like VRRP ID. This virtual IP address must belong to the same address range as the real IP address of the interface.	0.0.0.0
Virtual Router ID	Virtual Router ID is used to assign a VRRP group. The L3 switches / routers, which operate as master / backup, should have the same ID. Moxa L3 switches / routers support one virtual router ID for each interface. The usable range of ID is 1 to 255.	0
Priority	Determines priority in a VRRP group. The priority value range is 1 to 255 and the 255 is the highest priority. If several L3 switches / routers have the same priority, the router with higher IP address has the higher priority. The usable range is “1 to 255”.	100
Preemption Mode	Determines whether a backup L3 switch / router will take the authority of master or not.	Enabled

Routing Table

The **Routing Table** page shows all routing entries used by the Moxa Layer 3 switch.



All Routing Entry List

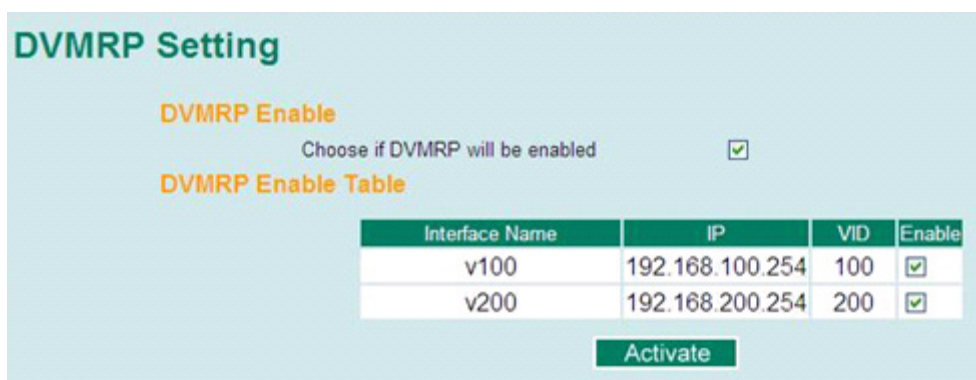
Setting	Description	Factory Default
All	Show all routing rules	N/A
Connected	Show connected routing rules	N/A
Static	Show static routing rules	N/A
RIP	Show RIP exchanged routing rules	N/A
OSPF	Show OSPF exchanged routing rules	N/A

Distance Vector Multicast Routing Protocol (DVMRP)

Distance Vector Multicast Routing Protocol (DVMRP) is used to build multicast delivery trees on a network. When a layer 3 switch receives a multicast packet, DVMRP will provide a routing table for the relevant multicast group, and include distance information on the number of devices between the router and the packet destination. The multicast packet will then be forwarded through the Layer 3 switch interface specified in the multicast routing table.

DVMRP Settings

The **DVMRP** page is used to set up the DVMRP table for Moxa Layer 3 switches.



DVMRP Enable

Enable or disable DVMRP globally.

NOTE Two different multicast routing protocols can NOT both be enabled on the same Moxa Layer 3 switch. Only either DVMRP or PIM-DM can be enabled, not both.

DVMRP Enable Table

Enable or Disable the DVMRP by selected interface.

DVMRP Routing Entry List

Index	Type	Destination	Next hop	Interface Name	VID	Cost	Expire Time
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Shows the current DVMRP Routing Entry List

DVMRP Neighbors List

Index	Neighbor IP	Interface Name	VID	Expire Time	Hold Time
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Shows the current DVMRP neighbors list

DVMRP Multicast Routing Entry List

Index	Multicast Group	Source	Upstream Neighbor	Interface Name	VID	Expire Time	Left Time	Downstream interface VID
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Shows the current DVMRP Multicast Routing Entry List

Protocol Independent Multicast, Dense Mode (PIM-DM)

Protocol Independent Multicast (PIM) is a method of forwarding traffic to multicast groups over the network using any pre-existing unicast routing protocol, such as RIP or OSPF, set on routers within a multicast network. PIM Dense Mode (PIM-DM) protocol will flood multicast traffic on the network and revise the multicast routing table based on the responses.

PIM-DM Settings

The **PIM-DM** page is used to set up the PIM-DM table for Moxa Layer 3 switch.

PIM-DM Setting

PIM-DM Enable
Choose if PIM-DM will be enabled

PIM-DM Enable Table

Interface Name	IP	VID	Enable
v100	192.168.100.254	100	<input checked="" type="checkbox"/>
v200	192.168.200.254	200	<input checked="" type="checkbox"/>

Activate

PIM-DM Enable

Enable or Disable PIM-DM protocol globally.

NOTE Two different multicast routing protocols can NOT both be enabled on the same Moxa Layer 3 switch. Only either DVMRP or PIM-DM can be enabled, not both.

PIM-DM Enable Table

Enable or Disable the PIM-DM by selected interface.

PIM-DM Neighbors List

PIM-DM Neighbors List

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Index	Neighbor IP	Interface Name	VID	Left Time
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Shows the current PIM-DM Neighbors List

PIM-DM Multicast Routing Entry List

PIM-DM Multicast Routing Entry List

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Index	Multicast Group	Source	Upstream Neighbor	Incoming Interface Name	VID	Left Time	Downstream interface VID
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Shows the current PIM-DM Multicast Routing Entry List