Multicast Vlan Register

Multicast Vlan Register (MVR) allows a subscriber on a device port to register/ unregister subscription of the multicast stream on the network-wide multicast VLAN. For example, television channels over a service provider network. It allows a single multicast VLAN to be shared on the network while subscribers remain in separate VLANs. The MVR group address required by the subscriber thus forms the VLAN trunk. To select the expected group address for an MVR VLAN requires cooperation from an IPMC profile. MVR has the following three kinds of port roles.

- Source ports indicate where the multicasting servers are located. Source ports are also known as Uplink ports.

- Receiver ports indicate where the multicast listeners are located. Receiver ports are also known as Downlink ports.

- Inactive ports denote that MVR operations on the designated ports are disabled.

A switch port may be a source port, a receiver port, or an inactive port in an MVR VLAN per system, and it must stay in the same port role for multiple MVR VLANs.

IPMC Profile

IPMC provides IPMC profile, an access control on registration. IPMC profile manages permissions in multicast registration for group tables. An IPMC profile provides the rules for specific group addresses to decide whether or not the multicast registration should happen. The concept of an IPMC profile is similar to that of an ACL that gives permission by checking the given rules in a specific order. An IPMC profile is constructed with address range rules where the first matching condition takes effect.

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Configuring IPMC and MVR Global administration

SUMMARY STEPS

1. **IPMCMVR**
2. **setIPMC-MVRglobal**
3. **setIPMC-MVRglobal setIPMC-MVRglobalreq** {**IPMC** | **MVR** }
4. **setIPMC-MVRglobal review**
5. **setIPMC-MVRglobal commit**
6. **setIPMC-MVRglobal exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**setIPMC-MVRglobal** **Example:** `switch(IPMC_MVR)# setIPMC-MVRglobal`	Enters IPMC and MVR global configuration mode.

Step 3	**setIPMC-MVRglobal setIPMC-MVRglobalreq** {**IPMC** | **MVR** }
	
	Example:
	`switch(IPMC_MVR)# setIPMC-MVRglobal`
	`        switch(IPMC_MVR)# ssetIPMC-MVRglobal setIPMC-MVRglobalreq`
	`        switch(IPMC_MVR)# ssetIPMC-MVRglobal setIPMC-MVRglobalreq IPMC enable`
	`        switch(IPMC_MVR)# ssetIPMC-MVRglobal setIPMC-MVRglobalreq MVR enable`
		• **IPMC—** Enabling IPMC status makes the IPMC global configuration to make an entry in the NID. You can either enable or disable IPMC configuration at the NID.
		
		• **MVR—** Enabling MVR status makes the MVR global configuration to make an entry in the NID. You can either enable or disable IPMC configuration at the NID.

Step 4	**setIPMC-MVRglobal review** **Example:** `switch(IPMC_MVR)# setIPMC-MVRglobal review`	Displays IPMC or MVR configuration in the queue.
Step 5	**setIPMC-MVRglobal commit** **Example:** `switch(IPMC_MVR)# setIPMC-MVRglobal commit`	Sends IPMC or MVR configuration to the NID.
Step 6	**setIPMC-MVRglobal exit** **Example:** `switch(IPMC_MVR)# setIPMC-MVRglobal exit`	Exists IPMC and MVR global configuration mode..

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Creating IP Multicaste Entry Range

SUMMARY STEPS

1. **IPMCMVR**
2. **setIPMCentryrange**
3. **setIPMCentryrange setprofilerangereq** { **end-address** | **entry-name** | **start-address** | **status** }
4. **setIPMCentryrange review**
5. **setIPMCentryrange commit**
6. **setIPMCentryrange exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**setIPMCentryrange** **Example:** `switch(IPMC_MVR)# setIPMCentryrange`	Enters IPMC entry range configuration mode.

Step 3	**setIPMCentryrange setprofilerangereq** { **end-address** | **entry-name** | **start-address** | **status** }
	
	Example:
	`switch(IPMC_MVR)# setIPMCentryrange`
	`        switch(IPMC_MVR)# setIPMCentryrange`
	`setprofilerangereq`
	`        switch(IPMC_MVR)# setIPMCentryrange`
	`setprofilerangereq end-address`
	`        switch(IPMC_MVR)# setIPMCentryrange`
	`setprofilerangereq entry-name`
	`        switch(IPMC_MVR)# setIPMCentryrange`
	`setprofilerangereq start address`
	`        switch(IPMC_MVR)# setIPMCentryrange`
	`setprofilerangereq status`
		• **end-address—** Enter a valid IPv4 or IPv6 address for multi cast end address range.
		
		• **start-address—** Enter a valid IPv4 or IPv6 address for multi cast start address range.
		
		• **entry-name—** Enter IPMC range entry name. The length of the name should not exceed 16 character.
		
		• **status—** Enabling status makes the multicast range configuration to make an entry in the NID. You can either enable or disable multicast range configuration.

Step 4	**setIPMCentryrange review** **Example:** `switch(IPMC_MVR)# setIPMCentryrange review`	Displays IPMC entry range configuration in the queue.

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	Command or Action	Purpose
Step 5	**setIPMCentryrange commit** **Example:** `switch(IPMC_MVR)# setIPMCentryrange commit`	Sends IPMC entry range configuration to the NID.
Step 6	**setIPMCentryrange exit** **Example:** `switch(IPMC_MVR)# setIPMCentryrange exit`	Exists IPMC entry range configuration mode.

Configuring IPMC Profile

SUMMARY STEPS

1. **IPMCMVR**
2. **setprofileIPMC**
3. **setprofileIPMC setIPMCprofileConfig {description | profile-name | range-profile { range-name | range-rules { deny-logDisable | deny-logEnable | permit-logDisable | permit-logDisable} } | status }**
4. **setprofileIPMC review**
5. **setprofileIPMC commit**
6. **setprofileIPMC exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `Switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**setprofileIPMC** **Example:** `Switch(IPMC_MVR)# setprofileIPMC`	Enters IPMC profile configuration mode.

Step 3	**setprofileIPMC setIPMCprofileConfig {description	profile-name	range-profile { range-name	range-rules { deny-logDisable	deny-logEnable	permit-logDisable	permit-logDisable} }	status }**
								
								Example:
								`Switch(IPMC_MVR)# setprofileIPMC`
								`        Switch(IPMC_MVR)# setprofileIPMC`
									• **description—** Enter a brief description about the profile.
									
									• **profile-name—** Enter a profile name.
									
									• **range-profile—** Enter name and rule for IPMC profile.
									
									    • **range-name—** Enter a range name. The character of range name should be 16.

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	Command or Action	Purpose

	`setIPMCprofileConfig`
	`        Switch(IPMC_MVR)# setprofileIPMC`
	`setIPMCprofileConfig description`
	`        Switch(IPMC_MVR)# setprofileIPMC`
	`setIPMCprofileConfig profile-name`
	`        Switch(IPMC_MVR)# setprofileIPMC`
	`setIPMCprofileConfig range-profile`
	`        Switch(IPMC_MVR)# setprofileIPMC`
	`setIPMCprofileConfig status`
		• **range-rules—** Enter a range rules for IPMC profile.
		
		    • **deny-logDisable —** Deny matching addresses.
		
		    • **deny-logEnable —** Deny matching addresses and Log when matching.
		
		    • **permit-logDisable —** Permit matching addresses.
		
		    • **permit-logDisable —** Permit matching addresses and Log when matching.
		
		• **status—** Enabling status makes the multicast range configuration to make an entry in the NID. You can either enable or disable multicast range configuration.
		
		Note To configure IPMC Profile, it is mandatary to configure **entry-name** and **range-name** parameters.

Step 4	**setprofileIPMC review** **Example:** `Switch(IPMC_MVR)# setprofileIPMC review`	Displays IPMC profile in the queue.
Step 5	**setprofileIPMC commit** **Example:** `Switch(IPMC_MVR)# setprofileIPMC commit`	Sends IPMC profile configuration to the NID.
Step 6	**setprofileIPMC exit** **Example:** `Switch(IPMC_MVR)# setprofileIPMC exit`	Exists IPMC profile configuration mode.

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Configuring MVR Global

SUMMARY STEPS

1. **IPMCMVR**
2. **setglobalMVRConfig**
3. **setglobalMVRConfig setMVRglobalconfig** {**VLAN-Name** | **channel-name** | **frame** { **priority** | **tagged** } | **igmp-address** | **last-member-query-interval** | **mode** { **compatible** | **dynamic**} **vlan-id status**}
4. **setglobalMVRConfig review**
5. **setglobalMVRConfig commit**
6. **setglobalMVRConfig exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**setglobalMVRConfig** **Example:** `switch(IPMC_MVR)# setglobalMVRConfig`	Enters MVR global configuration mode.

Step 3	**setglobalMVRConfig setMVRglobalconfig** {**VLAN-Name** | **channel-name** | **frame** { **priority** | **tagged** } | **igmp-address** | **last-member-query-interval** | **mode** { **compatible** | **dynamic**} **vlan-id status**}
	
	Example:
	`switch(IPMC_MVR)# setglobalMVRConfig`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig VLAN-Name`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig channel-name`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig frame`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig igmp-address`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig last-member-query-interval`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig mode`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig vlan-id`
	`        switch(IPMC_MVR)# setglobalMVRConfig setMVRglobalconfig status`
		• **VLAN-Name—** Enter MVR multicast VLAN name .
		• **frame—**
		  • **Priority—** Enter interface CoS priority. Configurable values are 0-7.
		  • **tagged—** Enabling frame status makes the IGMP/MLD frames configuration to make an entry in the NID. You can either enable or disable tagged configuration at the NID. .
		• **igmp-address—** Enter a valid IPv4 unicast address.
		• **last-member-query-interval—** Enter a last member query interval in tenths of seconds. The configurable value range is 0 - 31744.
		• **mode—**
		  • **compatible—** Select enable or disable for compatible interface mode.
		  • **dynamic—** Select enable or disable for dynamic interface mode.

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Command or Action	Purpose
	• **vlan-id—** Enter a MVR Multicast vlan id. The valid range is 1-4095. • **Status—** Enabling status makes the MVR global configuration to make an entry in the NID. You can either enable or disable MVR global configuration. **Note** To configure MVR GLOBAL, it is mandatary to configure **vlan-name** and **vlan-id** parameters while configuring profile. **Note** There is a particular **vlan-name** for the corresponding **vlan-id** as stored in ME1200 NID. You can not configure if **vlan-name** and **vlan-id** mismatches as previously configured value.
Step 4 **setglobalMVRConfig review** **Example:** `switch(IPMC_MVR)# setglobalMVRConfig review`	Displays MVR global configuration in the queue.
Step 5 **setglobalMVRConfig commit** **Example:** `switch(IPMC_MVR)# setglobalMVRConfig commit`	Sends MVR global configuration to the NID.
Step 6 **setglobalMVRConfig exit** **Example:** `switch(IPMC_MVR)# setglobalMVRConfig exit`	Exists the MVR global configuration mode..

Configuring MVR Port

SUMMARY STEPS

1. **IPMCMVR**
2. **setMVRportconfig**
3. **setMVRportconfig setmvrportConfigReq** {**VLAN-name** | **immediate-leave** | **port-number** | **type** | **status** }
4. **setMVRportconfig review**
5. **setMVRportconfig commit**
6. **setMVRportconfig exit**

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DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**setMVRportconfig** **Example:** `switch(IPMC_MVR)# setMVRportconfig`	Enters MVR port configuration mode.

Step 3	**setMVRportconfig setmvrportConfigReq {VLAN-name | immediate-leave | port-number | type |status }**
	
	Example:
	`switch(IPMC_MVR)# setMVRportconfig`
	`        switch(IPMC_MVR)# setMVRportconfig`
	`setmvrportConfigReq`
	`        switch(IPMC_MVR)# setMVRportconfig`
	`setmvrportConfigReq VLAN-name`
	`        switch(IPMC_MVR)# setMVRportconfig`
	`setmvrportConfigReq immediate-leave`
	`        switch(IPMC_MVR)# setMVRportconfig`
	`setmvrportConfigReq port-number`
	`        switch(IPMC_MVR)# setMVRportconfig`
	`setmvrportConfigReq status`
		• **VLAN-name—** Enter previously configured MVR multicast VLAN name.
		
		• **immediate-leave—** Enabling immediate leave implements immediate leave capability of the designated port.
		
		• **type—**
		　　• **receiver—** Define if you want to configure the port as receiver.
		　　• **Source—** Define if you want to configure the port as a source .
		
		• **port-number—** Enter the targeted interface .
		
		• **status—** Enabling status makes MVR port configuration to make an entry in the NID. You can either enable or disable MVR port configuration.
		
		Note To configure MVR Port, it is mandatary to configure **vlan-name** and **port-number** parameters .

Step 4	**setMVRportconfig review** **Example:** `switch(IPMC_MVR)# setMVRportconfig review`	Displays MVR port configuration in the queue.
Step 5	**setMVRportconfig commit** **Example:** `switch(IPMC_MVR)# setMVRportconfig commit`	Sends MVR port configuration to the NID.
Step 6	**setMVRportconfig exit** **Example:** `switch(IPMC_MVR)# setMVRportconfig exit`	Exists MVR port configuration mode.

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Viewing IPMC and MVR Global configuration

SUMMARY STEPS

1. **IPMCMVR**
2. **getIPMC-MVRglobal**
3. **getIPMC-MVRglobal getIPMC-MVRglobalreq**
4. **getIPMC-MVRglobal review**
5. **setIPMC-MVRglobal commit**
6. **setIPMC-MVRglobal exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**getIPMC-MVRglobal** **Example:** `switch(IPMC_MVR)# setIPMC-MVRglobal`	Enters IPMC and MVR global configuration mode.

Step 3	**getIPMC-MVRglobal getIPMC-MVRglobalreq**
	
	Example:
	`switch(IPMC_MVR)# getIPMC-MVRglobal`
	`      switch(IPMC_MVR)# getIPMC-MVRglobal`
	`getIPMC-MVRglobalreq`
		Retrieves IPMC and MVR information using get command.

Step 4	**getIPMC-MVRglobal review** **Example:** `switch(IPMC_MVR)# getIPMC-MVRglobal review`	Displays IPMC or MVR configuration in the queue.
Step 5	**setIPMC-MVRglobal commit** **Example:** `switch(IPMC_MVR)# getIPMC-MVRglobal commit`	Sends IPMC or MVR configuration to the NID.
Step 6	**setIPMC-MVRglobal exit** **Example:** `switch(IPMC_MVR)# setIPMC-MVRglobal exit`	Exists IPMC and MVR global configuration mode..

Viewing IPMC Entry Range

SUMMARY STEPS

1. **IPMCMVR**
2. **getIPMCentryrange**
3. **getIPMCentryrange getprofilerangereq entry-name**
4. **setIPMCentryrange review**
5. **setIPMCentryrange commit**
6. **getIPMCentryrange exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**getIPMCentryrange** **Example:** `switch(IPMC_MVR)# getIPMCentryrange`	Enters IPMC entry range configuration mode.

Step 3	**getIPMCentryrange getprofilerangereq entry-name**
	
	Example:
	`switch(IPMC_MVR)# getIPMCentryrange`
	`        switch(IPMC_MVR)# getIPMCentryrange`
	`getprofilerangereq`
		• **entry-name—** Enter IPMC range entry name. The length of the name should not exceed 16 character.

Step 4	**setIPMCentryrange review** **Example:** `switch(IPMC_MVR)# getIPMCentryrange review`	Displays IPMC entry range configuration in the queue.
Step 5	**setIPMCentryrange commit** **Example:** `switch(IPMC_MVR)# getIPMCentryrange commit`	Sends IPMC entry range configuration to the NID.
Step 6	**getIPMCentryrange exit** **Example:** `switch(IPMC_MVR)# setIPMCentryrange exit`	Exists IPMC entry range configuration mode.

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Viewing IPMC Profile

SUMMARY STEPS

1. **IPMCMVR**
2. **getprofileIPMC**
3. **getprofileIPMC getIPMCprofileconfigreq profile-name**
4. **getprofileIPMC review**
5. **getprofileIPMC commit**
6. **setprofileIPMC exit**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**getprofileIPMC** **Example:** `switch(IPMC_MVR)# getprofileIPMC`	Enters IPMC profile configuration mode.

Step 3	**getprofileIPMC getIPMCprofileconfigreq profile-name**
	
	Example:
	`switch(IPMC_MVR)# getprofileIPMC`
	`        switch(IPMC_MVR)# getprofileIPMC`
	`getIPMCprofileConfigreq`
	`        switch(IPMC_MVR)# getprofileIPMC`
	`getIPMCprofileConfigreq profile-name`
		• **profile-name—** Enter a profile name.

Step 4	**getprofileIPMC review** **Example:** `switch(IPMC_MVR)# getprofileIPMC review`	Displays IPMC profile in the queue.
Step 5	**getprofileIPMC commit** **Example:** `switch(IPMC_MVR)# getprofileIPMC commit`	Sends IPMC profile configuration to the NID.
Step 6	**setprofileIPMC exit** **Example:** `switch(IPMC_MVR)# getprofileIPMC exit`	Exists IPMC profile configuration mode.

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Viewing MVR Global Configuration

SUMMARY STEPS

1. **IPMCMVR**
2. **getglobalMVRConfig**
3. **getglobalMVRConfig getMVRglobalconfig VLAN-Name**
4. **getglobalMVRConfig review**
5. **getglobalMVRConfig commit**
6. **getglobalMVRConfig exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**getglobalMVRConfig** **Example:** `switch(IPMC_MVR)# getglobalMVRConfig`	Enters MVR global configuration mode.

Step 3	**getglobalMVRConfig getMVRglobalconfig VLAN-Name**
	
	Example:
	`switch(IPMC_MVR)# getglobalMVRConfig`
	`        switch(IPMC_MVR)# getglobalMVRConfig`
	`getMVRglobalconfig`
	`        switch(IPMC_MVR)# getglobalMVRConfig`
	`getMVRglobalconfig VLAN-Name`
		• **VLAN-Name—** Enter MVR multicast VLAN name .

Step 4	**getglobalMVRConfig review** **Example:** `switch(IPMC_MVR)# getglobalMVRConfig review`	Displays MVR global configuration in the queue.
Step 5	**getglobalMVRConfig commit** **Example:** `switch(IPMC_MVR)# getglobalMVRConfig commit`	Sends MVR global configuration to the NID.
Step 6	**getglobalMVRConfig exit** **Example:** `switch(IPMC_MVR)# setglobalMVRConfig exit`	Exists the MVR global configuration mode.

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Viewing MVR Port Configuration

SUMMARY STEPS

1. **IPMCMVR**
2. **getMVRportconfig**
3. **getMVRportconfig getmvrportConfigReq {VLAN-name | port-number }**
4. **getMVRportconfig review**
5. **getMVRportconfig commit**
6. **getMVRportconfig exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**IPMCMVR** **Example:** `switch#IPMCMVR`	Enters Cisco MVR template services mode.
Step 2	**getMVRportconfig** **Example:** `switch(IPMC_MVR)# getMVRportconfig`	Enters MVR port configuration mode.

Step 3	**getMVRportconfig getmvrportConfigReq {VLAN-name | port-number }**
	
	Example:
	`switch(IPMC_MVR)# getMVRportconfig`
	`        switch(IPMC_MVR)# getMVRportconfig`
	`getmvrportConfigReq`
	`        switch(IPMC_MVR)# getMVRportconfig`
	`getmvrportConfigReq VLAN-name`
	`        switch(IPMC_MVR)# getMVRportconfig`
	`getmvrportConfigReq port-number`
		• **VLAN-name—** Enter previously configured MVR multicast VLAN name.
		
		• **port-number—** Enter the targeted interface .

Step 4	**getMVRportconfig review** **Example:** `switch(IPMC_MVR)# getMVRportconfig review`	Displays MVR port configuration in the queue.
Step 5	**getMVRportconfig commit** **Example:** `switch(IPMC_MVR)# getMVRportconfig commit`	Sends MVR port configuration to the NID.
Step 6	**getMVRportconfig exit** **Example:** `switch(IPMC_MVR)# getMVRportconfig exit`	Exists MVR port configuration mode.

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