Configuring Storm Control

A traffic storm occurs when packets flood the LAN, creating excessive traffic and degrading network performance. The traffic broadcast and multicast suppression (or storm control) feature prevents LAN ports from being disrupted by a broadcast, multicast and unicast traffic storm on physical interfaces.

Restrictions for Configuring Strorm Control

- Storm control cannot be configured per port. It is configured globally on all ports

Information on Storm Control

A broadcast storm occurs when huge amount of broadcast, multicast, or unknown unicast packets flood the LAN, creating excessive traffic and degrading network performance. Errors in the protocol-stack implementation or in the network configuration can also cause a storm. The mechanism to prevent and control such events is known as storm control or broadcast suppression.

Broadcast and Multicast Suppression monitors incoming traffic levels periodically, and compares traffic level with configured storm control policer level or rate. The traffic storm control threshold level is measured based on the traffic rate in bits (or kilobits) per second at which broadcast, multicast, unicast packets are received.

Storm control prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port. Storm control is applicable for physical interfaces and is used to restrict the unicast, broadcast and multicast ingress traffic on the Layer2 interfaces.

How to Configure Storm Control

Provisioning the Cisco ME 1200 NID to Configure Storm Control

DETAILED STEPS

	Command or Action	Purpose
Step 1	**ProvisionStormControl** **Example:** `Switch# ProvisionStormControl`	Enters Storm control provisioning mode.
Step 2	**ProvisionStormControl** {**getStormControlGlobal** | **setStormControlGlobal** | **showStormControl** |**no** | **exit**} **Example:** `Switch(ProvisionStormControl)# ?`	Displays the supported configurations for storm control. • **getStormControlGlobal—**View the configuration, see Retrieving the Storm Control Configuration, on page 5. • **setStormControlGlobal—**Configures storm control, see Configuring Storm Control on the Cisco ME 1200 NID , on page 3. • **showStormControlGlobal—**Displays the configuration, see Displaying the Storm Control Configuration, on page 6. • **no—**Negates the configuration, see Negating Storm Control Configuration and Restoring Defaults, on page 7. • **exit—**Exits the configuration.
Step 3	**exit** **Example:** `Switch(ProvisionStormControl)# exit`	Exits the storm control mode.

Configuration Example

The following example shows the supported storm control configuration:

```
Switch(ProvisionStormControl)# ?
ProvisionStormControl sub-mode commands:
  exit                   Exit from ProvisionStormControl sub configuration mode
  getStormControlGlobal  Storm Control Global Configuration Get Request
  no                     Negate a command or set its defaults
  setStormControlGlobal  Storm Control Global Configuration Set Request
  showStormControl       Display Storm Control Policer properties
```

Configuring Storm Control on the Cisco ME 1200 NID

Before You Begin

- Perform the steps to provision storm control on the Cisco ME 1200 NID.

DETAILED STEPS

	Command or Action	Purpose

Step 1	**setStormControlGlobal** {**commit** | **flush** | **stormControlGlobalConfiguration** | **review**}
	
	Example:
	`Switch(ProvisionStormControl)# setStormControlGlobal ?`
	`  commit  commit setStormControlGlobal`
	`  flush  flush all setStormControlGlobal commands`
	`  from queue`
	`  review  review setStormControlGlobal commands`
	`  stormControlGlobalConfiguration  Storm Control Global Configuration Set`
	`  Request`
		Configures global storm control.
		• **commit—**Sends the storm control configuration to NID.
		• **flush—**Flushes all storm control configuration from the queue.
		• **stormControlGlobalConfiguration—**Sets the storm control configuration globally.
		Note Storm control is configured globally (all ports) and *not* per port.
		• **review—**Displays the configuration.

Step 2	**setStormControlGlobal stormControlGlobalConfiguration {broadcast** {**bc-enabled** {**enable** | **disable**} | **level** *level-bps* | **mode** {**bps** | **kbps**}} | **multicast** {**level** *level-bps* | **mc-enabled** {**enable** | **disable**} | **mode** {**bps** | **kbps**}} | **unicast** {**level** *level-bps* | **uc-enabled** {**enable** | **disable**} | **mode** {**bps** | **kbps**}}}
	
	Example:
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast level 64`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast mode kps`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast bc-enabled enable`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration mulicast level 8`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration mulicast mode bps`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast mc-enabled disable`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration unicast level 16`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration unicast uc-enabled disable`
	`Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration unicast mode bps`
		• **broadcast—**Sets police broadcast frames.
		• **multicast—**Sets police multicast frames.
		• **unicast—**Sets police unicast frames.
		• **bc-enabled—**Sets broadcast policer rate.
		• **mc-enabled—**Sets multicast policer rate.
		• **uc-enabled—**Sets unicast policer rate.
		• **level** *level-bps***—**Configure policer rate or level. Allowed values are 1,2,4,8,16,32,64,128,256,512 (bps/kbps) and 1024 kbps.
		• **mode—**Sets the mode in bps or kbps
		• **bps—**Configures policer rate in bps.
		• **kbps—**Configures policer rate in kbps.
		• **disable—**Disables the storm control configuration.
		• **enable—**Enables the storm control configuration.

	Command or Action	Purpose

Step 3	**setStormControlGlobal review**
	
	Example:
	`Switch(ProvisionStormControl)# setStormControlGlobal review`
	
	`Commands in queue:`
	`setStormControlGlobal stormControlGlobalConfiguration broadcast bc-enabled enable`
	`setStormControlGlobal stormControlGlobalConfiguration broadcast level 64`
	`setStormControlGlobal stormControlGlobalConfiguration broadcast mode bps`
	`setStormControlGlobal stormControlGlobalConfiguration unicast uc-enabled enable`
	`setStormControlGlobal stormControlGlobalConfiguration unicast level 16`
	`setStormControlGlobal stormControlGlobalConfiguration unicast mode kbps`
	`setStormControlGlobal stormControlGlobalConfiguration multicast mc-enabled enable`
	`setStormControlGlobal stormControlGlobalConfiguration multicast mode bps`
	`setStormControlGlobal stormControlGlobalConfiguration unicast level 8`
		Displays the storm control configuration.

Step 4	**setStormControlGlobalcommit** **Example:** `Switch(ProvisionStormControl)# setStormControlGlobal commit`	Sends the storm control configuration to the NID.
Step 5	**exit** **Example:** `Switch(ProvisionStormControl)# exit`	Exits the storm control mode.

Configuration Example

The example shows how to configure storm control on the Cisco ME 1200 NID :

```
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast
 level 64
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast
 mode kps
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast
 bc-enabled enable
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration mulicast
 level 8
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration mulicast
 mode bps
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration broadcast
 mc-enabled disable
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration unicast
 level 16
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration unicast
 uc-enabled disable
Switch(ProvisionStormControl)# setStormControlGlobal stormControlGlobalConfiguration unicast
 mode bps
Switch(ProvisionStormControl)# setStormControlGlobal review

Commands in queue:
```

```
        setStormControlGlobal stormControlGlobalConfiguration broadcast bc-enabled enable
        setStormControlGlobal stormControlGlobalConfiguration broadcast level 64
        setStormControlGlobal stormControlGlobalConfiguration broadcast mode bps
        setStormControlGlobal stormControlGlobalConfiguration unicast uc-enabled enable
        setStormControlGlobal stormControlGlobalConfiguration unicast level 16
        setStormControlGlobal stormControlGlobalConfiguration unicast mode kbps
        setStormControlGlobal stormControlGlobalConfiguration multicast mc-enabled enable
        setStormControlGlobal stormControlGlobalConfiguration multicast mode bps
        setStormControlGlobal stormControlGlobalConfiguration unicast level 8

Switch(ProvisionStormControl)# setStormControlGlobal commit
SetStormControlGlobal Commit Success!!!
Switch(ProvisionStormControl)#end
```

Retrieving the Storm Control Configuration

Before You Begin

- Perform the steps to provision storm control on the Cisco ME 1200 NID.

DETAILED STEPS

	Command or Action	Purpose

Step 1	**getStormControlGlobal** {**commit** | **flush** | **getStormControlGlobalRequest** | **review**}
	
	Example:
	`Switch(ProvisionStormControl)#getStormControlGlobal getStormControlGlobalRequest`
	`Switch(ProvisionStormControl)#getStormControlGlobal review`
	`Switch(ProvisionStormControl)#getStormControlGlobal commit`
		Retrieve the storm control configuration.
		• **getStormControlGlobalRequest—**Request storm control configuration properties.
		• **commit—**Sends the storm control configuration to NID.
		• **flush—**Flushes all storm control configuration from the queue.
		• **review—**Displays the configuration.

Step 2	**exit** **Example:** `Switch(ProvisionStormControl)# exit`	Exits the storm control mode.

Configuration Example

The example shows how to retrieve the configuration on the ME1200:

```
Switch(ProvisionStormControl)#getStormControlGlobal getStormControlGlobalRequest
Switch(ProvisionStormControl)#getStormControlGlobal review
Commands in queue:
        getStormControlGlobal getStormControlGlobalRequest
        getStormControlGlobal getStormControlGlobalRequest
```

```
Switch(ProvisionStormControl)# getStormControlGlobal commmit
Switch(ProvisionStormControl)# end
```

Displaying the Storm Control Configuration

Before You Begin

- Perform the steps to provision storm control on the Cisco ME 1200 NID.

DETAILED STEPS

	Command or Action	Purpose

Step 1	**showStormControl** {**commit** | **flush** | **showStormControlReq** | **review**}
	
	Example:
	`Switch(ProvisionStormControl)#showStormControl showStormControlReq`
	`Switch(ProvisionStormControl)#showStormControl review`
	`Switch(ProvisionStormControl)#showStormControl commit`
		Displays the storm control configuration.
		• **showStormControlReq—**Displays storm control policer properties.
		• **commit—**Sends the show storm control configuration to NID.
		• **flush—**Flushes all show storm control configuration from the queue.
		• **review—**Displays the show storm configuration.

Step 2	**exit** **Example:** `Switch(ProvisionStormControl)# exit`	Exits the storm control mode.

Configuration Example

The example shows how to view the configuration:

```
Switch(ProvisionStormControl)#showStormControl showStormControlReq
Switch(ProvisionStormControl)#showStormControl review

Commands in queue:
        showStormControl showStormControlReq
Switch(ProvisionStormControl)#showStormControl commit

ShowStormControl_Output.stormControlGlobalConfiguration.broadcast.bc_enabled = true
ShowStormControl_Output.stormControlGlobalConfiguration.broadcast.level = 1024000
ShowStormControl_Output.stormControlGlobalConfiguration.broadcast.mode.t = 2
ShowStormControl_Output.stormControlGlobalConfiguration.broadcast.mode.u.kbps = 'kbps'
ShowStormControl_Output.stormControlGlobalConfiguration.multicast.mc_enabled = true
ShowStormControl_Output.stormControlGlobalConfiguration.multicast.level = 512000
ShowStormControl_Output.stormControlGlobalConfiguration.multicast.mode.t = 2
ShowStormControl_Output.stormControlGlobalConfiguration.multicast.mode.u.kbps = 'kbps'
ShowStormControl_Output.stormControlGlobalConfiguration.unicast.uc_enabled = true
ShowStormControl_Output.stormControlGlobalConfiguration.unicast.level = 1000
ShowStormControl_Output.stormControlGlobalConfiguration.unicast.mode.t = 2
ShowStormControl_Output.stormControlGlobalConfiguration.unicast.mode.u.kbps = 'kbps'
ShowStormControl Commit Success!!!
```

```
Switch(ProvisionStormControl)# exit
```

Negating Storm Control Configuration and Restoring Defaults

Note Following are the default values for storm control:

- broadcast
  - bc-enabled
  - level = 1
  - mode = bps
- multicast
  - mc-enabled
  - level = 1
  - mode = bps
- unicast
  - uc-enabled
  - level = 1
  - mode = bps

Before You Begin

- Perform the steps to provision storm control on the Cisco ME 1200 NID.

DETAILED STEPS

	Command or Action	Purpose

Step 1	**no** {**getStormControlGlobal** | **setStormControlGlobal** | **showStormControl** | **exit**}
	
	Example:
	`Switch(ProvisionStormControl)# no ?`
	`  exit                 Exit from ProvisionStormControl`
	` sub configuration mode`
	`  getStormControlGlobal  Storm Control Global Configuration Get Request`
	`  setStormControlGlobal  Storm Control Global Configuration Set Request`
	`  showStormControl       Display Storm Control Policer`
		Negates storm control configurations.
		• **getStormControlGlobal—**View the configuration.
		• **setStormControlGlobal—**Sets the configuration.
		• **showStormControl—**Displays the configuration.
		• **exit—**Exits from ProvisionStormControl mode.

	Command or Action	Purpose
	properties	
Step 2	**exit** **Example:** `Switch(ProvisionStormControl)# exit`	Exits the storm control mode.

Configuration Example

The following example is a sample output for negation:

```
Switch(ProvisionStormControl)#showStormControl review
Commands in queue:
showStormControl showStormControlReq

Switch(ProvisionStormControl)#no showStormControl showStormControlReq
Switch(ProvisionStormControl)#showStormControl review
No commands in queue

Switch(ProvisionStormControl)#setStormControlGlobal review
Commands in queue:
setStormControlGlobal stormControlGlobalConfiguration broadcast bc-enabled enable
setStormControlGlobal stormControlGlobalConfiguration broadcast level 64
setStormControlGlobal stormControlGlobalConfiguration broadcast level 128

Switch(ProvisionStormControl)#no setStormControlGlobal stormControlGlobalConfiguration
broadcast level 64
Switch(ProvisionStormControl)#stormControlGlobal review
Commands in queue:
setStormControlGlobal stormControlGlobalConfiguration broadcast bc-enabled enable
setStormControlGlobal stormControlGlobalConfiguration broadcast level 128
```

Deleting the NTP Configuration

Before You Begin

- Perform the steps to provision NTP on the Cisco ME 1200 NID.

DETAILED STEPS

	Command or Action	Purpose

Step 1	**deleteNtpConfig** {**commit** | **flush** | **ntpDeleteConfig** | **review**}
	
	Example:
	
	`Switch(NtpPortType)# deleteNtpConfig ?`
	`  commit  commit deleteNtpConfig`
	`  flush  flush all deleteNtpConfig commands from queue`
		Removes the storm control configuration.
		• **commit—**Sends the NTP configuration to NID.
		• **flush—**Flushes all NTP configuration from the queue.
		• **ntpDeleteConfig—**Deletes the NTP configuration request on the Cisco ME 1200 NID.
		• **review—**Displays the configuration.

	Command or Action	Purpose
	`ntpDeleteConfig  delete NTP config request` `review  review deleteNtpConfig commands`	

Step 2	**ntpDeleteConfig** { **ntpEnable** | **ntpServerNo***server-num* }
	
	Example:
	
	`Switch(NtpPortType)# deleteNtpConfig ntpDeleteConfig ntpEnable`
	`Switch(NtpPortType)# deleteNtpConfig ntpDeleteConfig ntpServer 1`
		• **ntpEnable—**Disables the NTP configuration.
		• **ntpServerNo—**Disables the NTP server.
		• *server-num***—**Specifies the NTP server. The valid range is from 1 to 5.

Step 3	**exit** **Example:** `Switch(NtpPortType)# exit`	Exits the NTP mode.