



## Configuring Performance Monitoring

---

Performance Monitor is a carrier Ethernet software feature which provides:

- Monitoring delay measurements
- Monitoring loss measurements
- Monitoring ECE
- Monitoring EVC
- Storing the monitored data
- Transferring the monitored data

For information on configuring EVC, see [How to Configure Ethernet Virtual Circuit](#).

For information on configuring MEP, see [Creating MEP Configuration](#).

- [Restrictions for Configuring Performance Monitoring, page 1](#)
- [ITU-T Y.1731 Performance Monitoring in a Service Provider Network, page 1](#)
- [How to Configure Performance Monitoring, page 3](#)

## Restrictions for Configuring Performance Monitoring

- Performance monitoring is not enabled by default for loss measurement (LM), delay measurement (DM), EVC, and ECE.

## ITU-T Y.1731 Performance Monitoring in a Service Provider Network

ITU-T Y.1731 performance monitoring provides standard-based Ethernet performance monitoring that encompasses the measurement of Ethernet frame delay, frame-delay variation, and throughput as outlined in the ITU-T Y.1731 specification and interpreted by the Metro Ethernet Forum (MEF). Service providers offer

service level agreements (SLAs) that describe the level of performance customers can expect for services. This document describes the Ethernet performance management aspect of SLAs.

## Frame Delay and Frame-Delay Variation

The Frame Delay parameter can be used for on-demand OAM measurements of frame delay and frame-delay variation. When a maintenance end point (MEP) is enabled to generate frames with frame-delay measurement (ETH-DM) information, it periodically sends frames with ETH-DM information to its peer MEP in the same maintenance entity. Peer MEPs perform frame-delay and frame-delay variation measurements through this periodic exchange during the diagnostic interval.

An MEP requires the following specific configuration information to support ETH-DM:

- MEG level—MEG level at which the MEP exists
- Priority
- Drop eligibility—marked drop ineligible
- Transmission rate
- Total interval of ETH-DM
- MEF10 frame-delay variation algorithm

A MEP transmits frames with ETH-DM information using the `TxTimeStampf` information element. `TxTimeStampf` is the time stamp for when the ETH-DM frame was sent. A receiving MEP can compare the `TxTimeStampf` value with the `RxTimeef` value, which is the time the ETH-DM frame was received, and calculate one-way delay using the formula  $frame\ delay = RxTimeef - TxTimeStampf$ .

One-way frame-delay measurement (IDM) requires that clocks at both the transmitting MEP and the receiving MEPs are synchronized. Measuring frame-delay variation does not require clock synchronization and the variation can be measured using IDM or a frame-delay measurement message (DMM) and a frame-delay measurement reply (DMR) frame combination.

If it is not practical to have clocks synchronized, only two-way frame-delay measurements can be made. In this case, the MEP transmits a frame containing ETH-DM request information and the `TxTimeStampf` element, and the receiving MEP responds with a frame containing ETH-DM reply information and the `TxTimeStampf` value copied from the ETH-DM request information.

Two-way frame delay is calculated as  $frame\ delay = RxTimeb - TxTimeStampf$ , where `RxTimeb` is the time that the frame with ETH-DM reply information was received. Two-way frame delay and variation can be measured using only DMM and DMR frames.

To allow more precise two-way frame-delay measurement, the MEP replying to a frame with ETH-DM request information can also include two additional time stamps in the ETH-DM reply information:

- `RxTimeStampf`—Time stamp of the time at which the frame with ETH-DM request information was received.
- `TxTimeStampb`—Time stamp of the time at which the transmitting frame with ETH-DM reply information was sent.

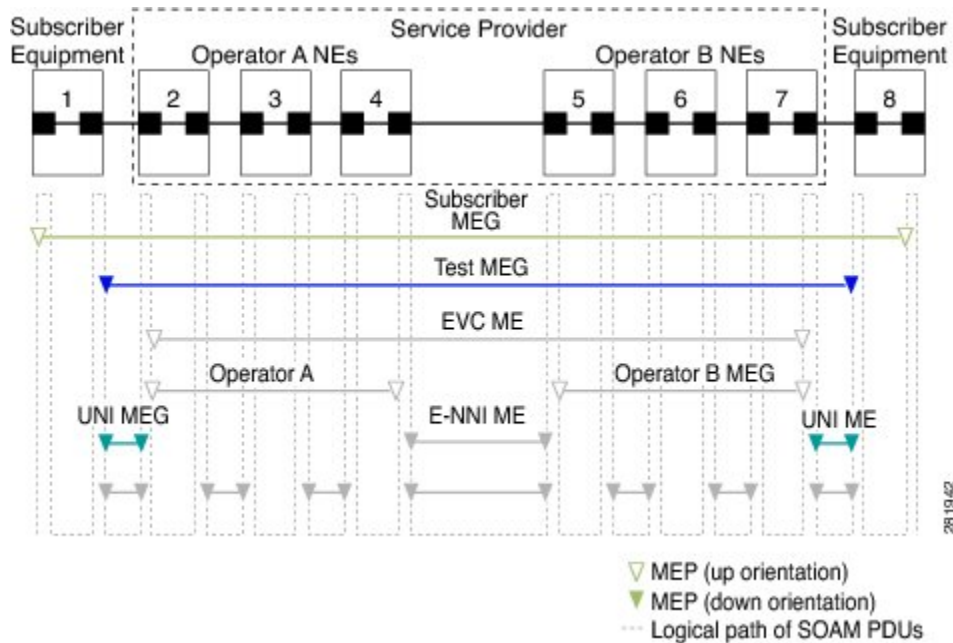


**Note** The frame-delay and frame-delay variation measurement processes are aborted when faults related to continuity and availability occur or when known network topology changes occur.

An MIP is transparent to the frames with ETH-DM information; therefore, an MIP does not require information to support the ETH-DM function.

The figure below shows a functional overview of a typical network in which Y.1731 performance monitoring is used.

**Figure 1: Y.1731 Performance Monitoring**



# How to Configure Performance Monitoring

## Provisioning the Cisco ME 1200 NID to Configure Performance Monitoring

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>OperationsMepPortType</b></p> <p><b>Example:</b> Switch# <b>OperationsMepPortType</b></p>	Enters performance monitoring provisioning (PM) mode.

	Command or Action	Purpose
<b>Step 2</b>	<p><b>OperationsMepPortType</b> {clearMepStats   default   exit  no   setAis   setDM   setLM   setLck   setLinkTrace   setLoopBack   setTst   showAis   showDM   showLM   showLck   showLinkTrace   showLoopBack   showTst   updateDM   updateTst}</p> <p><b>Example:</b>  Switch(OperationsMepPortType)# ?  OperationsMepPortType sub-mode commands:  clearMepStats Clear mep statistics request  default Set a command to its defaults  exit Exit from OperationsMepPortType sub configuration mode  no Negate a command or set its defaults  setAis Enable or Disable AIS request  setDM Enable or Disable delay measurement request  setLM Enable or Disable loss measurement request  setLck Enable or Disable lock signal request  setLinkTrace Enable or Disable linktrace request  setLoopBack Enable/Disable loopback  setTst Enable or Disable test signal request  showAis Show AIS configuration request  showDM Show delay measurement statistics request  showLM Show LM statistics request  showLck Show lock signal current configuration request  showLinkTrace Show linktrace state and current configuration request  showLoopBack Show loopback state and current configuration request  showTst Show test signal statistics and current configuration request  request  updateDM Update DM parameters request  updateTst Update Tst signal request</p>	Displays the supported configurations for performance monitoring.
<b>Step 3</b>	<p><b>exit</b></p> <p><b>Example:</b>  Switch(OperationsMepPortType)# <b>exit</b></p>	Exits the OperationsMepPortType mode.

### Configuration Example

The following example shows the supported PM configuration:

```
Switch(OperationsMepPortType)# ?
OperationsMepPortType sub-mode commands:
clearMepStats Clear mep statistics request
default Set a command to its defaults
exit Exit from OpearationsMepPortType sub configuration mode
no Negate a command or set its defaults
setAis Enable or Disable AIS request
setDM Enable or Disable delay measurement request
setLM Enable or Disable loss measurement request
setLck Enable or Disable lock signal request
setLinkTrace Enable or Disable linktrace request
setLoopBack Enable/Disable loopback
setTst Enable or Disable test signal request
showAis Show AIS configuration request
showDM Show delay measurement statistics request
showLM Show LM statistics request
showLck Show lock signal current configuration request
showLinkTrace Show linktrace state and current configuration request
showLoopBack Show loopback state and current configuration request
showTst Show test signal statistics and current configuration request
updateDM Update DM parameters request
updateTst Update Tst signal request
```

## Configuring Performance Monitoring with Default Configuration

You can set the default performance monitoring configurations on the Cisco ME 1200 NID .

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>default</b> {<b>clearMepStats</b>   <b>setAis</b>   <b>setDM</b>   <b>setLM</b>   <b>setLck</b>   <b>setLinkTrace</b>   <b>setLoopBack</b>   <b>setTst</b>   <b>showAis</b>   <b>showDM</b>   <b>showLM</b>   <b>showLck</b>   <b>showLinkTrace</b>   <b>showLoopBack</b>   <b>showTst</b>   <b>updateDM</b>   <b>updateTst</b>   <b>exit</b>}</p> <p><b>Example:</b> Switch(OperationsMepPortType)# <b>default</b> ?</p> <pre> clearMepStats  Clear mep statistics request exit           Exit from OpearationsMepPortType sub configuration mode setAis         Enable or Disable AIS request setDM         Enable or Disable delay measurement request setLM         Enable or Disable loss measurement request setLck        Enable or Disable lock signal request  setLinkTrace  Enable or Disable linktrace request setLoopBack   Enable/Disable loopback setTst        Enable or Disable test signal request  showAis       Show AIS configuration request showDM        Show delay measurement statistics request showLM        Show LM statistics request showLck       Show lock signal current configuration request showLinkTrace Show linktrace state and current configuration request showLoopBack  Show loopback state and current configuration request showTst       Show test signal statistics and current configuration request updateDM      Update DM parameters request updateTst     Update Tst signal request </pre>	<p>Sets the default configuration.</p> <ul style="list-style-type: none"> <li>• <b>clearMepStats</b>—Clears MEP statistics.</li> <li>• <b>setAis</b>—Enables or disables AIS.</li> <li>• <b>setDM</b>—Enables or disables delay measurement.</li> <li>• <b>setLM</b>—Enables or disables loss measurement.</li> <li>• <b>setLck</b>—Enables or disables lock signals</li> <li>• <b>setLinkTrace</b>—Enables or disables link traces.</li> <li>• <b>setLoopBack</b>—Enables or disables loopback</li> <li>• <b>setTst</b>—Enables or disables the test signal.</li> <li>• <b>showAis</b>—Displays AIS configuration request.</li> <li>• <b>showDM</b>—Displays delay measurement statistics.</li> <li>• <b>showLM</b>—Displays loss measurement statistics.</li> <li>• <b>showLck</b>—Displays current configured loss signals.</li> <li>• <b>showLinkTrace</b>—Displays current configured link trace state.</li> <li>• <b>showLoopBack</b>—Displays current configured loopback state.</li> <li>• <b>showTst</b>—Displays current configured test signals statistics.</li> <li>• <b>updateDM</b>—Updates the delay measurement parameters.</li> <li>• <b>updateTst</b>—Updates test signal parameters.</li> <li>• <b>exit</b>—Exits from OperationsMepPortType configuration mode.</li> </ul>

	Command or Action	Purpose
<b>Step 2</b>	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType)# <b>exit</b>	Exits the OperationsMepPortType mode.

## Configuring Alarm Information Signal (AIS) on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>setAis {commit   flush   aisConfig   review}</b>  <b>Example:</b> Switch(OperationsMepPortType)# <b>setAis ?</b> aisConfig Enable or Disable AIS request commit commit setAis flush flush all setAis commands from qu review review setAis commands	Configures alarm information signal (AIS). <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>aisConfig</b>—Enables or disables the AIS configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID.</li> </ul>
<b>Step 2</b>	<b>setAis aisConfig {aisaction {enable {frameRate {fr1m   fr1s}   disable}   protect {enable   disable} }   mepInstanceinstance-no}</b>  <b>Example:</b> Switch(OperationsMepPortType)# <b>setAis aisConfig aisaction enable frameRate fr1m</b> Switch(OperationsMepPortType)# <b>setAis aisConfig aisaction enable frameRate fr1s</b> Switch(OperationsMepPortType)# <b>setAis aisConfig aisaction enable protect enable</b> Switch(OperationsMepPortType)# <b>setAis aisConfig mepInstance 20</b>	Configures AIS. <ul style="list-style-type: none"> <li>• <b>aisaction</b>—Enables or disables AIS on the Cisco ME 1200 NID .</li> <li>• <b>enable</b>—Enables lock signal configuration.</li> <li>• <b>disable</b>—Disables lock signal configuration.</li> <li>• <b>frameRate</b>—Indicates the frame rate.</li> <li>• <b>fr1m</b>—Indicates the frame rate is 1 f/m.</li> <li>• <b>fr1s</b>—Indicates the frame rate is 1 f/s.</li> <li>• <b>mepinstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>

	Command or Action	Purpose
<b>Step 3</b>	<b>setAis review</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>setAis review</b>  Commands in queue: enable     setAis aisConfig aisAction enable protect fr1s       setAis aisConfig aisAction enable frameRate fr1m       setAis aisConfig aisAction enable frameRate setAis aisConfig mepInstance 20	Displays the AIS configuration on the Cisco ME 1200 NID .
<b>Step 4</b>	<b>setAiscommit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>setAis commit</b>	Sends the AIS configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

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

```
Switch(OperationsMepPortType) # setAis aisConfig aisaction enable frameRate fr1m
Switch(OperationsMepPortType) # setAis aisConfig aisaction enable frameRate fr1s
Switch(OperationsMepPortType) # setAis aisConfig aisaction enable protect enable
Switch(OperationsMepPortType) # setAis review
Switch(OperationsMepPortType) # setAis aisConfig mepInstance 20

Commands in queue:
    setAis aisConfig aisAction enable protect enable
    setAis aisConfig aisAction enable frameRate fr1s
    setAis aisConfig aisAction enable frameRate fr1m
    setAis aisConfig mepInstance 20

Commands in queue:
    Commands in queue:
    setAis aisConfig mepInstance 2

Switch(OperationsMepPortType) # setAis commit
SetAis Output.mepResponse = 34537474

SetAis Commit Success!!!
Switch(OperationsMepPortType) #end
```

## Configuring Delay Measurement (DM) on the Cisco ME 1200 NID

### Before You Begin

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

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>setDM {commit   flush   dmConfig   review}</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setDM ?   commit      commit setDM   dmConfig    Enable or Disable delay measurement   request   flush       flush all setDM commands from queue   review      review setDM commands</pre>	<p>Configures delay measurement.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>dmConfig</b>—Enables or disables the delay measurement configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<p><b>setDM dmConfig {dmaction {enable {calculation {flow   rdtrp}   cast {mutli   uni mepId mep-Id }   interval interval-no   lastN delay-calc   mode {oneway   twoway}   priority priority-no }   disable }   mepInstance instance-no }</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setDM dmConfig dmaction enable calculation flow Switch(OperationsMepPortType)# setDM dmConfig dmaction enable calculation rdtrp Switch(OperationsMepPortType)# setDM dmConfig dmaction enable cast multi Switch(OperationsMepPortType)# setDM dmConfig dmaction enable cast uni mepId 23 Switch(OperationsMepPortType)# setDM dmConfig dmaction enable interval 20 Switch(OperationsMepPortType)# setDM dmConfig dmaction enable lastN 200 Switch(OperationsMepPortType)# setDM dmConfig dmaction enable mode oneway Switch(OperationsMepPortType)# setDM dmConfig dmaction enable mode twoway Switch(OperationsMepPortType)# setDM dmConfig dmaction enable priority 3 Switch(OperationsMepPortType)# setDM dmConfig dmaction enable calculation rdtrp Switch(OperationsMepPortType)# setDM dmConfig mepInstance 1</pre>	<p>Sets DM parameters</p> <ul style="list-style-type: none"> <li>• <b>dmaction</b>—Enables or disables DM on the Cisco ME 1200 NID .</li> <li>• <b>enable</b>—Enables delay measurement configuration.</li> <li>• <b>disable</b>—Disables delay measurement configuration.</li> <li>• <b>calculation</b>—Calculates delay.</li> <li>• <b>flow</b>—Two-way delay is calculated as round trip symmetrical flow. Far end resistance time is subtracted.</li> <li>• <b>rdtrp</b>—Two-way delay is calculated as round trip delay. Far end resistance time is <i>not</i> subtracted.</li> <li>• <b>cast</b>—Specifies transmission mode.</li> <li>• <b>multi</b>—Specifies OAM protocol data units (PDU) transmission with multicast MAC.</li> <li>• <b>uni</b>—Specifies OAM protocol data units (PDU) transmission with unicast MAC. The MAC is procured from the peer MEP MAC database.</li> <li>• <b>mepId mep-id</b>—Specifies Peer MEP ID for unicast MAC.</li> <li>• <b>interval interval-no</b>—Specifies the interval time between the PDU transmission in ms. The valid range is from 0 to 65535. The minimum value is 10ms.</li> <li>• <b>lastN</b>—Specifies the latest N delays for calculation. The valid range is from 10 to 2000.</li> <li>• <b>mode</b>—Specifies the mode of delay measurement.</li> <li>• <b>oneway</b>—Specifies mode on 1DM PDU measurement.</li> <li>• <b>twoway</b>—Specifies mode on DMM or DMR PDU.</li> </ul>



	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <b>priority</b> <i>priority-no</i>—Priority in case of tagged OAM. In the EVC domain this is the COS-ID. The valid range is from 0 to 7.</li> <li>• <b>mepinstance</b> <i>instance-no</i>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<b>setDM review</b>  <b>Example:</b> Switch (OperationsMepPortType) # <b>setDM review</b>  Commands in queue: setDM dmConfig dmAction enable mode oneWay setDM dmConfig dmAction enable interval 10 setDM dmConfig dmAction enable lastN 20 setDM dmConfig dmAction enable calculation flow rdtrp setDM dmConfig dmAction enable calculation setDM dmConfig dmAction enable priority 2 setDM dmConfig dmAction enable calculation flow rdtrp setDM dmConfig dmAction enable calculation setDM dmConfig dmAction enable cast multi setDM dmConfig dmAction enable cast uni mepId 23 setDM dmConfig dmAction enable interval 20 setDM dmConfig dmAction enable priority 3 setDM dmConfig mepInstance 2	Displays the DM configuration on the Cisco ME 1200 NID.
<b>Step 4</b>	<b>setDMcommit</b>  <b>Example:</b> Switch (OperationsMepPortType) # <b>setDM commit</b>  SetDM Commit Success!!!	Sends the DM configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch (OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

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

```
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable calculation flow
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable calculation rdtrp
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable cast multi
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable cast uni mepId 23
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable interval 20
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable lastN 200
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable mode oneway
Switch (OperationsMepPortType) # setDM dmConfig dmaction enable mode twoway
```

```

Switch(OperationsMepPortType) # setDM dmConfig dmaction enable priority 3
Switch(OperationsMepPortType) # setDM dmConfig dmaction enable calculation rdtrp
Switch(OperationsMepPortType) # setDM dmConfig mepInstance 1
Switch(OperationsMepPortType) # setDM review

Commands in queue:
setDM dmConfig dmAction enable mode oneWay
setDM dmConfig dmAction enable interval 10
setDM dmConfig dmAction enable lastN 20
setDM dmConfig dmAction enable calculation flow
setDM dmConfig dmAction enable calculation rdtrp
setDM dmConfig dmAction enable priority 2
setDM dmConfig dmAction enable calculation flow
setDM dmConfig dmAction enable calculation rdtrp
setDM dmConfig dmAction enable cast multi
setDM dmConfig dmAction enable cast uni mepId 23
setDM dmConfig dmAction enable interval 20
setDM dmConfig dmAction enable priority 3
setDM dmConfig mepInstance 2

Switch(OperationsMepPortType) # setDM commit
DM.dmConfig.mepInstance = 119
DM.dmConfig.dmAction.t = 1
DM.dmConfig.dmAction.u.enable.priority = 4
DM.dmConfig.dmAction.u.enable.cast.t = 2
DM.dmConfig.dmAction.u.enable.cast.u.multi = 'any <b z="1">test</b> element'
DM.dmConfig.dmAction.u.enable.mode.t = 2
DM.dmConfig.dmAction.u.enable.mode.u.twoWay = 'any <b z="1">test</b> element'
DM.dmConfig.dmAction.u.enable.calculation.t = 2
DM.dmConfig.dmAction.u.enable.calculation.u.flow = 'any <b z="1">test</b> elemen
t'
DM.dmConfig.dmAction.u.enable.interval = 42689
DM.dmConfig.dmAction.u.enable.lastN = 1573
DM.dmConfig.mepInstance = 119
DM.dmConfig.dmAction.t = 1
DM.dmConfig.dmAction.u.enable.priority = 0
DM.dmConfig.dmAction.u.enable.cast.t = 1
DM.dmConfig.dmAction.u.enable.cast.u.uni.mepId = 23
DM.dmConfig.dmAction.u.enable.mode.t = 1
DM.dmConfig.dmAction.u.enable.mode.u.oneWay = 'one-way'
DM.dmConfig.dmAction.u.enable.calculation.t = 1
DM.dmConfig.dmAction.u.enable.calculation.u.rdtrp = 'rdtrp'
DM.dmConfig.dmAction.u.enable.interval = 42689
DM.dmConfig.dmAction.u.enable.lastN = 1573
SetDM-Output.mepResponse = 0

Switch(OperationsMepPortType) #end

```

## Configuring Loss Measurement (LM) on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>setLM {commit   flush   lmConfig   review}</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>setLM ?</b>	Configures loss measurement (LM). <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> </ul>

	Command or Action	Purpose
	<pre> commit      commit setLM lmConfig    Enable or Disable loss measurement request flush       flush all setLM commands from queue review      review setLM commands                     </pre>	<ul style="list-style-type: none"> <li>• <b>lmConfig</b>—Enables or disables the loss measurement configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<p><b>Step 2</b></p>	<pre> setLM LmConfig { lmaction {enable {cast {multi   uni}   flr frame-interval   frameRate {fr10s   fr1m   fr1s   fr6h   fr6m}   mode {dual   single}   priority priority-no }   disable }   mepInstance instance-no }  Example:  Switch(OperationsMepPortType) # setLM lmConfig lmaction enable cast multi Switch(OperationsMepPortType) # setLM lmConfig lmaction enable cast uni Switch(OperationsMepPortType) # setLM lmConfig lmaction enable flr Switch(OperationsMepPortType) # setLM lmConfig lmaction frameRate fr10s Switch(OperationsMepPortType) # setLM lmConfig lmaction enable mode dual Switch(OperationsMepPortType) # setLM lmConfig lmaction enable priority 4 Switch(OperationsMepPortType) # setLM lmConfig mepInstance 1                     </pre>	<p>Sets LM parameters.</p> <ul style="list-style-type: none"> <li>• <b>lmaction</b>—Enables or disables LM on the Cisco ME 1200 NID .</li> <li>• <b>enable</b>—Enables loss measurement configuration.</li> <li>• <b>disable</b>—Disables loss measurement configuration.</li> <li>• <b>cast</b>—Specifies transmission mode.</li> <li>• <b>multi</b>—Specifies OAM protocol data units (PDU) transmission with multicast MAC.</li> <li>• <b>uni</b>—Specifies OAM protocol data units (PDU) transmission with unicast MAC. The MAC is procured from the peer MEP MAC database.</li> <li>• <b>flr frame-interval</b>—Specifies the frame loss ratio interval time. The valid range is from 0 to 99.</li> <li>• <b>frameRate</b>—Specifies the LM frame rate. <ul style="list-style-type: none"> <li>◦ <b>fr10s</b> —Specifies the frame rate as 10 f/s.</li> <li>◦ <b>fr1m</b> —Specifies the frame rate as 1 f/min.</li> <li>◦ <b>fr1s</b> —Specifies the frame rate as 1 f/s.</li> <li>◦ <b>fr6h</b> —Specifies the frame rate as 6 f/hour.</li> <li>◦ <b>fr6m</b> —Specifies the frame rate as 6 f/min.</li> </ul> </li> <li>• <b>mode</b>—Specifies the mode of delay measurement.</li> <li>• <b>dual</b>—Specifies dual LM mode on CCM PDU.</li> <li>• <b>single</b>—Specifies single LM mode on LMM or LMR PDU.</li> <li>• <b>priority priority-no</b>—Priority in case of tagged OAM. In the EVC domain this is the COS-ID. The valid range is from 0 to 7.</li> <li>• <b>mepinstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>

	Command or Action	Purpose
<b>Step 3</b>	<b>setLM review</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>setLM review</b>  Commands in queue: setLM lmConfig lmAction enable cast multi  setLM lmConfig lmAction enable cast uni setLM lmConfig lmAction enable flr 2 setLM lmConfig lmAction enable frameRate fr10s setLM lmConfig lmAction enable mode dual  setLM lmConfig lmAction enable priority 4	Displays the LM configuration on the Cisco ME 1200 NID .
<b>Step 4</b>	<b>setLMcommit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>setLM commit</b> SetLM Commit Success!!!	Sends the LM configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

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

```
Switch(OperationsMepPortType) # setLM lmConfig lmaction enable cast multi
Switch(OperationsMepPortType) # setLM lmConfig lmaction enable cast uni
Switch(OperationsMepPortType) # setLM lmConfig lmaction enable flr
Switch(OperationsMepPortType) # setLM lmConfig lmaction frameRate fr10s
Switch(OperationsMepPortType) # setLM lmConfig lmaction enable mode dual
Switch(OperationsMepPortType) # setLM lmConfig lmaction enable priority 4
Switch(OperationsMepPortType) # setLM lmConfig mepInstance 1
Switch(OperationsMepPortType) # setLM review

Commands in queue:
    setLM lmConfig lmAction enable cast multi
    setLM lmConfig lmAction enable cast uni
    setLM lmConfig lmAction enable flr 2
    setLM lmConfig lmAction enable frameRate fr10s
    setLM lmConfig lmAction enable mode dual
    setLM lmConfig lmAction enable priority 4

Switch(OperationsMepPortType) # setLM commit

Switch(OperationsMepPortType) #end
```

## Configuring Lock Signal on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>setLck</b> {commit   flush   lckConfig   review}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setLck ? commit      commit setLck flush       flush all setLck commands from queue lckConfig   Enable or Disable lock signal request review      review setLck commands</pre>	<p>Configures lock signal.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>lckConfig</b>—Enables or disables the lock signal configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 .</li> </ul>
<b>Step 2</b>	<p><b>setLck lckConfig</b> {lckaction {enable frameRate {fr1m   fr1s}   disable}   mepInstance <i>instance-no</i>}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setlck lckConfig lckaction enable frameRate fr1m Switch(OperationsMepPortType)# setlck lckConfig lckaction mepInstance 1</pre>	<p>Sets lock signal parameters.</p> <ul style="list-style-type: none"> <li>• <b>lckaction</b>—Enables or disables lock signal on the Cisco ME 1200 NID .</li> <li>• <b>enable</b>—Enables lock signal configuration.</li> <li>• <b>frameRate</b>—Configures the frame rate. <ul style="list-style-type: none"> <li>◦ <b>fr1m</b>—Specifies frame rate as 1 f/m.</li> <li>◦ <b>fr1s</b>—Specifies frame rate as 1 f/s.</li> </ul> </li> <li>• <b>disable</b>—Disables lock signal configuration.</li> <li>• <b>mepInstance <i>instance-no</i></b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<p><b>setlck review</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setlck review</pre> <p>Commands in queue:</p> <pre>setLck lckConfig lckAction enable frameRate fr1m setLck lckConfig mepInstance 1</pre>	<p>Displays the lock signal configuration on the Cisco ME 1200 NID .</p>
<b>Step 4</b>	<p><b>setlckcommit</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setlck commit</pre>	<p>Sends the lock signal configuration to the NID.</p>

	Command or Action	Purpose
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure lock signal on the Cisco ME 1200 NID :

```
Switch(OperationsMepPortType) # setlck lckConfig lckaction enable frameRate frm1
Switch(OperationsMepPortType) # setlck lckConfig lckaction mepInstance 1
Switch(OperationsMepPortType) # setlck review
```

```
Commands in queue:
    setLck lckConfig lckAction enable frameRate frm1
    setLck lckConfig mepInstance 1
```

```
Switch(OperationsMepPortType) # setlck commit
SetLck-Output.mepResponse = 0
SetLck Commit Success!!!
Switch(OperationsMepPortType) #end
```

## Configuring LoopBack on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>setLoopBack {commit   flush   loopBackConfig   review}</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>setLoopBack ?</b> commit                   commit setLoopBack flush                   flush all setLoopBack commands from queue loopBackConfig   Enable/Disable loopback review                review setLoopBack commands	Configures loopback. <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>loopBackConfig</b>—Enables or disables the loopback configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<b>setLoopBack loopBackConfig {lbAction {enable {cast {multi   uni {destination {macAddress target-MAC   mepid mep-id} } }   count count-no   dei {enable   disable}   interval interval   priority priority-no   size bytes}   disable}   mepInstance instance-no}</b>	Sets loopback parameters. <ul style="list-style-type: none"> <li>• <b>lbaction</b>—Enables or disables loop back on the Cisco ME 1200 NID .</li> <li>• <b>enable</b>—Enables loop back trace configuration.</li> </ul>

	Command or Action	Purpose
	<p><b>Example:</b></p> <pre>Switch(-OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable cast multi Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable cast uni destination macAddress mac1 Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable cast unidestination mepId 3 Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable count 345 Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable dei enable Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable interval 20 Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable priority 7 Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable size 1400 Switch(OperationsMepPortType)# setLoopBack loopbackConfig mepInstance 125</pre>	<ul style="list-style-type: none"> <li>• <b>cast</b>—Specifies the type of loop back configuration.</li> <li>• <b>multi</b>—Specifies OAM protocol data units (PDU) transmission with multicast MAC.</li> <li>• <b>uni</b>—Specifies OAM protocol data units (PDU) transmission with unicast MAC. The MAC is procured from the peer MEP MAC database.</li> <li>• <b>destination</b>—Specifies the target peer MEP.</li> <li>• <b>macAddress target-MAC</b>—Specifies the MAC address for LT in MEP.</li> <li>• <b>mepId mep-id</b>—Specifies Peer MEP ID. The valid range is from 0 to 8191.</li> <li>• <b>dei</b>—Specifies drop eligible indicator for tagged OAM.</li> <li>• <b>enable</b>—Enables drop eligible indicator configuration.</li> <li>• <b>disable</b>—Disables drop eligible indicator configuration.</li> <li>• <b>count count-no</b>—Specifies the number of loop back PDU sent in a single loop test .</li> <li>• <b>interval interval-no</b>—Specifies the interval time between the PDU transmission in ms. The valid range is from 0 to 65535. The minimum value is 10ms.</li> <li>• <b>priority priority-no</b>—Specifies the priority for tagged OAM. In EVC domain, it indicates the COS-ID. The valid range is from 0 to 7.</li> <li>• <b>size frames</b>—Specifies the number of bytes. The valid range is from 1 to 1400.</li> <li>• <b>disable</b>—Disables loop back configuration.</li> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<p><b>Step 3</b></p>	<p><b>setloopback review</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setloopback review Commands in queue:   setLoopBack loopBackConfig lbAction enable cast multi   setLoopBack loopBackConfig lbAction enable cast uni destination macAddress mac1   setLoopBack loopBackConfig lbAction enable cast uni destination mepId 3   setLoopBack loopBackConfig lbAction enable count 345   setLoopBack loopBackConfig lbAction enable dei enable</pre>	<p>Displays the loop back configuration on the Cisco ME 1200 NID .</p>

	Command or Action	Purpose
	<pre> setLoopBack loopBackConfig lbAction enable interval 20 setLoopBack loopBackConfig lbAction enable priority 7 setLoopBack loopBackConfig lbAction enable size 1400 setLoopBack loopBackConfig mepInstance 125 </pre>	
<b>Step 4</b>	<p><b>setlckcommit</b></p> <p><b>Example:</b> Switch(OperationsMepPortType)# <b>setloopback commit</b></p>	Sends the loop back configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b> Switch(OperationsMepPortType)# <b>exit</b></p>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure loop back on the Cisco ME 1200 NID :

```

Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable cast multi
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable cast uni destination
  macAddress mac1
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable cast unidestination
  mepId 3
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable count 345
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable dei enable
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable interval 20
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable priority 7
Switch(OperationsMepPortType)# setLoopBack loopbackConfig lbaction enable size 1400
Switch(OperationsMepPortType)# setLoopBack loopbackConfig mepInstance 125
Switch(OperationsMepPortType)# setsetloopback review

Commands in queue:
  setLoopBack loopBackConfig lbAction enable cast multi
  setLoopBack loopBackConfig lbAction enable cast uni destination macAddre
ss mac1
  setLoopBack loopBackConfig lbAction enable cast uni destination mepId 3
  setLoopBack loopBackConfig lbAction enable cast uni destination mepId 3
  setLoopBack loopBackConfig lbAction enable count 345
  setLoopBack loopBackConfig lbAction enable dei enable
  setLoopBack loopBackConfig lbAction enable interval 20
  setLoopBack loopBackConfig lbAction enable priority 7
  setLoopBack loopBackConfig lbAction enable size 1400

Switch(OperationsMepPortType)# setsetloopback commit
SetLoopBack-Output.mepResponse = 34275330

SetLoopBack Commit Success!!!
Switch(OperationsMepPortType)#end

```



# Configuring Link Trace on the Cisco ME 1200 NID

## Before You Begin

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

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>setLinkTrace</b> {commit   flush   linkTrace   review}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setLinkTrace ? commit      commit setLinkTrace flush      flush all setLinkTrace commands from            queue linkTrace  Enable or Disable linktrace request review     review setLinkTrace commands</pre>	<p>Configures link trace.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>linkTrace</b>—Enables or disables the link trace configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<p><b>setLinkTrace linkTrace</b> {ltAction {enable {destination {macAddress target-MAC   mepId mep-id}   priority priority-no   ttl ttl-time disable}}   mepInstance instance-no}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setlinkTrace linkTrace ltkaction enable destination macAddress mac1 Switch(OperationsMepPortType)# setlinkTrace linkTrace ltkaction enable destination mepId 3 Switch(OperationsMepPortType)# setlinkTrace linkTrace ltkaction enable priority 2 Switch(OperationsMepPortType)# setlinkTrace linkTrace ltkaction enable ttl 3</pre>	<p>Sets link trace parameters.</p> <ul style="list-style-type: none"> <li>• <b>ltaction</b>—Enables or disables link trace on the Cisco ME 1200 NID.</li> <li>• <b>enable</b>—Enables link trace configuration.</li> <li>• <b>destination</b>—Specifies the target peer MEP. <ul style="list-style-type: none"> <li>◦ <b>macAddress target-MAC</b>—Specifies the link trace MAC address for LT in MEP.</li> <li>◦ <b>mepId mep-id</b>—Specifies Peer MEP ID for link trace. The valid range is from 0 to 8191.</li> </ul> </li> <li>• <b>priority priority-no</b>—Specifies the priority for tagged OAM. In EVC domain, it indicates the COS-ID. The valid range is from 0 to 7.</li> <li>• <b>ttl ttl-time</b>—Specifies the time to live. The valid range is from 1 to 999.</li> <li>• <b>disable</b>—Disables link trace signal configuration.</li> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>

	Command or Action	Purpose
<b>Step 3</b>	<b>setLinkTrace review</b>  <b>Example:</b> Switch (OperationsMepPortType) # <b>setlinkTrace review</b>	Displays the link trace configuration on the Cisco ME 1200 NID .
<b>Step 4</b>	<b>setlckcommit</b>  <b>Example:</b> Switch (OperationsMepPortType) # <b>setlinkTrace commit</b>	Sends the link trace configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch (OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure link trace on the Cisco ME 1200 NID :

```
Switch (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable destination macAddress mac1
Switch (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable destination mepId 3
Switch (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable priority 2
Switch (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable ttl 3
Switch (OperationsMepPortType) # setlinkTrace review
```

```
Switch (OperationsMepPortType) # setlinkTrace commit
SetLinkTrace-Output.mepResponse = 34340866

SetLinkTrace Commit Success!!!
Switch (OperationsMepPortType) #end
```

## Configuring Test Signal on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>setTst {commit   flush   tstConfig   review}</b>	Configures test signal.

	Command or Action	Purpose
	<p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setTst ? commit      commit setTst flush      flush all setTst commands from queue review      review setTst commands tstConfig  Enable or Disable test signal request</pre>	<ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>tstConfig</b>—Enables or disables the test signal configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID.</li> </ul>
<b>Step 2</b>	<p><b>setTst tstConfig {dei {enable   disable}   mepId <i>mep-Id</i>   mepInstance <i>mep-instance</i>   pattern {allOne   allZero   oneZero}   priority <i>priority-no</i>   rate <i>bit-rate</i>   sequence {enable   disable}   size <i>frames</i>}</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# setTst tstConfig dei enable Switch(OperationsMepPortType)# setTst tstConfig mepid 2 Switch(OperationsMepPortType)# setTst tstConfig mepinstance 2 Switch(OperationsMepPortType)# setTst tstConfig pattern allOne Switch(OperationsMepPortType)# setTst tstConfig pattern allZero Switch(OperationsMepPortType)# setTst tstConfig sequence enable Switch(OperationsMepPortType)# setTst tstConfig rate 400 Switch(OperationsMepPortType)# setTst tstConfig size 45</pre>	<p>Sets test signal parameters.</p> <ul style="list-style-type: none"> <li>• <b>dei</b>—Specifies drop eligible indicator for tagged OAM.</li> <li>• <b>enable</b>—Enables drop eligible indicator configuration.</li> <li>• <b>disable</b>—Disables drop eligible indicator configuration.</li> <li>• <b>mepId <i>mep-instance</i></b>—Specifies Peer MEP ID. The valid range is from 0 to 8191.</li> <li>• <b>mepInstance <i>instance-no</i></b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> <li>• <b>priority <i>priority-no</i></b>—Specifies the priority for tagged OAM. In EVC domain, it indicates the COS-ID. The valid range is from 0 to 7.</li> <li>• <b>pattern</b> —Specifies the sequence number is test PDU.</li> <li>• <b>allOne</b>—Specifies the test pattern to all one.</li> <li>• <b>allZero</b>—Specifies the test pattern to all zero.</li> <li>• <b>oneZero</b>—Specifies the test pattern to one zero.</li> <li>• <b>rate <i>bit-rate</i></b>—Specifies the test frame transmission rate in Megabits per second. The valid range is from 1 to 1518.</li> <li>• <b>sequence</b>—Enables or disables the sequence in test PDU.</li> <li>• <b>size <i>frames</i></b>—Specifies the test pattern size in frames. The valid range is from 1 to 1518.</li> </ul>
<b>Step 3</b>	<p><b>setTst review</b></p> <p><b>Example:</b></p> <pre>Switch(-OperationsMepPortType)# setTst review Commands in queue: setTst tstConfig dei enable setTst tstConfig mepId 2 setTst tstConfig mepInstance 2 setTst tstConfig pattern allOne setTst tstConfig pattern allZero setTst tstConfig priority 5 setTst tstConfig pattern allZero</pre>	<p>Displays the test signal configuration on the Cisco ME 1200 NID .</p>

	Command or Action	Purpose
	<pre>setTst tstConfig rate 400 setTst tstConfig size 45</pre>	
<b>Step 4</b>	<p><b>setTstcommit</b></p> <p><b>Example:</b> Switch(OperationsMepPortType)# <b>setTst commit</b></p>	Sends the link trace configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b> Switch(OperationsMepPortType)# <b>exit</b></p>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure test signal on the Cisco ME 1200 NID :

```
Switch(OperationsMepPortType)# setTst tstConfig dei enable
Switch(OperationsMepPortType)# setTst tstConfig mepid 2
Switch(OperationsMepPortType)# setTst tstConfig mepinstance 2
Switch(OperationsMepPortType)# setTst tstConfig pattern allOne
Switch(OperationsMepPortType)# setTst tstConfig pattern allZero
Switch(OperationsMepPortType)# setTst tstConfig rate 400
Switch(OperationsMepPortType)# setTst tstConfig sequence enable
Switch(OperationsMepPortType)# setTst tstConfig size 45

Switch(OperationsMepPortType)# setTst review
Commands in queue:
  setTst tstConfig dei enable
  setTst tstConfig mepId 2
  setTst tstConfig mepInstance 2
  setTst tstConfig pattern allOne
  setTst tstConfig pattern allZero
  setTst tstConfig priority 5
  setTst tstConfig pattern allZero
  setTst tstConfig rate 400
  setTst tstConfig size 45

Switch(OperationsMepPortType)# setTst commit
SetTst-Output.mepResponse = 34471938
SetTst Commit Success!!!
Switch(OperationsMepPortType)#end
```

## Viewing Alarm Information Signal (AIS) on the Cisco ME 1200 NID

### Before You Begin

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

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>showAis {commit   flush   mepRequest   review}</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType)# showAis ? commit      commit showAis flush       flush all showAis commands from queue  mepRequest  Show AIS configuration request review      review showAis commands</pre>	Displays alarm information signal configuration. <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the alarm configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
Step 2	<b>showAis mepRequest {all   mepInstance instance-no}</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType)# showAis mepRequest all Switch(OperationsMepPortType)# showAis mepRequest mepInstance 120</pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays AIS configuration for all MEPs on the Cisco ME 1200 NID .</li> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
Step 3	<b>showAis review</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType)# showAis review  Commands in queue: showAis mepRequest all showAis mepRequest mepInstance 120</pre>	Displays the configuration on the Cisco ME 1200 NID.
Step 4	<b>showAis commit</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType)# showAis commit</pre>	Sends the configuration to the NID.
Step 5	<b>exit</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType)# exit</pre>	Exits the OperationsMepPortType mode.

## Configuration Example

The example shows how to display the AIS on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType)# showAis mepRequest all
Switch(OperationsMepPortType)# showAis mepRequest mepInstance 120
Switch(OperationsMepPortType)# showAis review

Commands in queue:
showAis mepRequest all
showAis mepRequest mepInstance 120

Switch(OperationsMepPortType)# showAis commit
Ais_Output.aisInfo.mepInst[0].config.mepInstance = 100
```

```

ShowAis_Output.aisInfo.mepInst[0].config.frameRate.t = 2
ShowAis_Output.aisInfo.mepInst[0].config.frameRate.u.fr1s = 'fr1s'
ShowAis_Output.aisInfo.mepInst[0].config.protect.t = 1
ShowAis_Output.aisInfo.mepInst[0].config.protect.u.enable = 'enable'

showAis Commit Success!!!
Switch(OperationsMepPortType)# end

```

## Viewing Delay Measurement (DM) Statistics on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>showDM {commit   flush   mepRequest   review}</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# showDM ? commit      commit showDM flush       flush all showDM commands from queue mepRequest  Show delay measurement statistics request review      review showDM commands </pre>	Displays delay measurement (DM). <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<b>showDM mepRequest {all   mepInstance instance-no}</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# showDM mepRequest all Switch(OperationsMepPortType)# showDM mepRequest mepInstance 100 </pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays DM configuration for all MEPs on the Cisco ME 1200 NID .</li> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<b>showDM review</b>  <b>Example:</b> <pre> Switch(OperationsMepPortType)# showDM review Commands in queue: showDM mepRequest all showDM mepRequest all showDM mepRequest mepInstance 100 </pre>	Displays the configuration on the Cisco ME 1200 NID .
<b>Step 4</b>	<b>showDM commit</b>  <b>Example:</b> <pre> Switch(OperationsMepPortType)# showDM commit </pre>	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> <pre> Switch(OperationsMepPortType)# exit </pre>	Exits the OperationsMepPortType mode.

## Configuration Example

The example shows how to display the delay measurement statistics on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType)# showDM mepRequest all
Switch(OperationsMepPortType)# showDM mepRequest mepInstance 100
Switch(OperationsMepPortType)# showDM review
Commands in queue:
    showDM mepRequest all
    showDM mepRequest all
    showDM mepRequest mepInstance 100

Switch(OperationsMepPortType)# showDM commit
ShowDM_Output.dmInfo.mepInst[0].config.mepInstance = 98
ShowDM_Output.dmInfo.mepInst[0].config.priority = 7
ShowDM_Output.dmInfo.mepInst[0].config.cast.t = 1
ShowDM_Output.dmInfo.mepInst[0].config.cast.u.uni.mepId = 106
ShowDM_Output.dmInfo.mepInst[0].config.mode.t = 2
ShowDM_Output.dmInfo.mepInst[0].config.mode.u.twoWay = 'two-way'
ShowDM_Output.dmInfo.mepInst[0].config.txMode.t = 1
ShowDM_Output.dmInfo.mepInst[0].config.txMode.u.standardize = 'standardize'
ShowDM_Output.dmInfo.mepInst[0].config.calculation.t = 1
ShowDM_Output.dmInfo.mepInst[0].config.calculation.u.rdtrp = 'rdtrp'
ShowDM_Output.dmInfo.mepInst[0].config.interval = 10
ShowDM_Output.dmInfo.mepInst[0].config.lastN = 10
ShowDM_Output.dmInfo.mepInst[0].config.unit.t = 2
ShowDM_Output.dmInfo.mepInst[0].config.unit.u.us = 'micro seconds'
ShowDM_Output.dmInfo.mepInst[0].config.synchronized.t = 2
ShowDM_Output.dmInfo.mepInst[0].config.synchronized.u.disable = 'Disable'
ShowDM_Output.dmInfo.mepInst[0].config.overflowReset.t = 1
ShowDM_Output.dmInfo.mepInst[0].config.overflowReset.u.keep = 'keep'
ShowDM_Output.dmInfo.mepInst[0].state.mepInstance = 106
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.tx = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.rxTimeout = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.rx = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.rxError = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.avgTotal = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.avgLastN = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.min = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.max = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.avgVariationTotal = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.avgVariationLastN = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.minVar = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.maxVar = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.F_to_N.overflow = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.tx = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.rxTimeout = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.rx = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.rxError = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.avgTotal = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.avgLastN = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.min = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.max = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.avgVariationTotal = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.avgVariationLastN = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.minVar = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.maxVar = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.oneWay.N_to_F.overflow = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.tx = 793
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.rxTimeout = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.rx = 793
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.rxError = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.avgTotal = 17
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.avgLastN = 17
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.min = 17
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.max = 18
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.avgVariationTotal = 0
```

```

ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.avgVariationLastN = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.minVar = 0
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.maxVar = 1
ShowDM_Output.dmInfo.mepInst[0].state.mode.twoWay.overflow = 0
showDM Commit Success!!!

Switch(OperationsMepPortType)# end

```

## Viewing Loss Measurement (LM) Statistics on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>showLM {commit   flush   mepRequest   review}</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# showLM ? commit      commit showLM flush      flush all showLM commands from queue mepRequest Show LM statistics request review      review showLM commands </pre>	Displays loss measurement configuration. <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID.</li> </ul>
<b>Step 2</b>	<b>showLM mepRequest {all   mepInstance instance-no}</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# showLM mepRequest all Switch(OperationsMepPortType)# showLM mepRequest mepInstance 100 </pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays LM statistics for all MEPs on the Cisco ME 1200 NID.</li> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<b>showLM review</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# showLM review Commands in queue: showLM mepRequest all showLM mepRequest mepInstance 100 </pre>	Displays the configuration on the Cisco ME 1200 NID.
<b>Step 4</b>	<b>showLM commit</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# showLM commit </pre>	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b>  <pre> Switch(OperationsMepPortType)# exit </pre>	Exits the OperationsMepPortType mode.



### Configuration Example

The example shows how to display the loss measurement statistics on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType)# showLM mepRequest all
Switch(OperationsMepPortType)# showLM mepRequest mepInstance 100
Switch(OperationsMepPortType)# showLM review

CCommands in queue:
  showLM mepRequest all
  showLM mepRequest mepInstance 100

Switch(OperationsMepPortType)# showLM commit
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.mepInstance = 98
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.priority = 7
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.cast.t = 2
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.cast.u.multi = 'multi'
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.mode.t = 2
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.mode.u.single = 'single'
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.frameRate.t = 3
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.frameRate.u.frls = 'frls'
ShowLM_Output.lossMeasurentInfo.mepInst[0].config.flr = 5
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.mepInstance = 98
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.tx = 137
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.rx = 137
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.nearCount = 0
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.farCount = 1105217
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.nearRatio = 0
ShowLM_Output.lossMeasurentInfo.mepInst[0].state.farRatio = 94
showLM Commit Success!!!

Switch(OperationsMepPortType)# exit
```

## Viewing Lock Signal on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>showlck</b> {commit   flush   mepRequest   review}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# showAis ?   commit      commit showLck   flush       flush all showLck commands from queue    mepRequest  Show lock signal current configuration   request   review      review showLck commands</pre>	<p>Displays lock signal information.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>

	Command or Action	Purpose
Step 2	<b>showlck mepRequest {all   mepInstance instance-no}</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>showlck mepRequest all</b> Switch(OperationsMepPortType) # <b>showlck mepRequest mepInstance 20</b>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays lock signal configuration for all MEPs on the Cisco ME 1200 NID .</li> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
Step 3	<b>showlck review</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>showlck review</b> Commands in queue: showLck mepRequest all showLck mepRequest mepInstance 20	Displays the configuration on the Cisco ME 1200 NID .
Step 4	<b>setlck commit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>showlck commit</b>	Sends the configuration to the NID.
Step 5	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to display the lock signal on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType) # showlck mepRequest all
Switch(OperationsMepPortType) # showlck mepRequest mepInstance 20
Switch(OperationsMepPortType) # showlck review

Commands in queue:
showLck mepRequest all
showLck mepRequest mepInstance 20

Switch(OperationsMepPortType) # showlck commit
SetLck-Output.mepResponse = 0

SetLck Commit Success!!!
Switch(OperationsMepPortType) # end
```

## Viewing Loopback State on the Cisco ME 1200 NID

### Before You Begin

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

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>showLoopBack</b> {<b>commit</b>   <b>flush</b>   <b>mepRequest</b>   <b>review</b>}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# <b>showLoopBack</b> ?   commit      commit showLoopBack   flush       flush all showLoopBack commands from   queue   mepRequest  Show loopback state and current   configuration request   review      review showLoopBack commands</pre>	<p>Display loopback information.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
Step 2	<p><b>showLoopBack mepRequest</b> {<b>all</b>   <b>mepInstance</b> <i>instance-no</i>}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# <b>showLoopBack mepRequest</b> <b>all</b> Switch(OperationsMepPortType)# <b>showLoopBack mepRequest</b> <b>mepInstance</b> 30</pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays loopback configuration for all MEPs on the Cisco ME 1200 NID.</li> <li>• <b>mepInstance</b> <i>instance-no</i>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
Step 3	<p><b>showLoopBack review</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# <b>showLoopBack review</b></pre> <p>Commands in queue:</p> <pre>showLoopBack mepRequest all showLoopBack mepRequest mepInstance 30</pre>	<p>Displays the configuration on the Cisco ME 1200 NID .</p>
Step 4	<p><b>showLoopBack commit</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# <b>showLoopBack commit</b></pre>	<p>Sends the configuration to the NID.</p>
Step 5	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# <b>exit</b></pre>	<p>Exits the OperationsMepPortType mode.</p>

## Configuration Example

The example shows how to display the loop back state on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType)# showLoopBack mepRequest all
Switch(OperationsMepPortType)# showLoopBack mepRequest mepInstance 30
Switch(OperationsMepPortType)# showLoopBack review
```

```
Commands in queue:
  showLoopBack mepRequest all
  showLoopBack mepRequest mepInstance 30
```

```
Switch(OperationsMepPortType)# showLoopBack commit
```

```

ShowLoopBack_Output.loopbackInfo.mepInst[0].config.mepInstance = 100
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.dei.t = 2
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.dei.u.disable = 'DEI Disable'
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.priority = 7
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.cast.t = 2
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.cast.u.multi = 'MULTI'
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.count = 10
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.size = 70
ShowLoopBack_Output.loopbackInfo.mepInst[0].config.interval = 1
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.mepInstance = 32
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.transactionId = 11
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.txLBM.upper = 0
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.txLBM.lower = 10
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.reply[0].rcvMac = '00-3A-99-FD-47-2F'
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.reply[0].received.upper = 0
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.reply[0].received.lower = 10
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.reply[0].outOfOrder.upper = 0
ShowLoopBack_Output.loopbackInfo.mepInst[0].state.reply[0].outOfOrder.lower = 0

Switch (OperationsMepPortType) # exit

```

## Viewing Link Trace State on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>showLinkTrace</b> {commit   flush   mepRequest   review}</p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showLinkTrace ? commit      commit showLinkTrace flush      flush all showLinkTrace commands from queue mepRequest Show linktrace state and current configuration request review      review showLinkTrace commands </pre>	<p>Displays link trace configuration.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<p><b>showLinkTrace mepRequest</b> {all   mepInstance <i>instance-no</i>}</p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showLinkTrace mepRequest all Switch(OperationsMepPortType)# showLinkTrace mepRequest mepInstance 40 </pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays link trace state configuration for all MEPs on the Cisco ME 1200 NID .</li> <li>• <b>mepInstance <i>instance-no</i></b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<p><b>showLinkTrace review</b></p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showLinkTrace review  Commands in queue: showLinkTrace mepRequest all showLinkTrace mepRequest mepInstance 120 </pre>	<p>Displays the configuration on the Cisco ME 1200 NID</p>

	Command or Action	Purpose
Step 4	<b>showLinkTrace commit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>showLinkTrace commit</b>	Sends the configuration to the NID.
Step 5	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to display the link trace state on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType) # showLinkTrace mepRequest all
Switch(OperationsMepPortType) # showLinkTrace mepRequest mepInstance 40
Switch(OperationsMepPortType) # showLinkTrace review
```

Commands in queue:

```
showLinkTrace mepRequest all
showLinkTrace mepRequest mepInstance 40
```

```
Switch(OperationsMepPortType) # showLinkTrace commit
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].config.mepInstance = 100
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].config.priority = 7
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].config.mepId = 101
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].config.macAddress = '00-00-00-00-00-00'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].config.ttl = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].transactionId = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].ttl = 0
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].mode.t = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].mode.u.MEP = 'MEP'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].direction.t = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].direction.u.DOWN = 'DOWN'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].forwarded.t = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].forwarded.u.NO = 'Not
forwarded'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].relay = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].lastMac = '00-3A-99-FD-4A-53'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[0].reply[0].nextMac = '00-3A-99-FD-47-2F'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].transactionId = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].ttl = 0
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].mode.t = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].mode.u.MEP = 'MEP'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].direction.t = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].direction.u.DOWN = 'DOWN'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].forwarded.t = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].forwarded.u.NO = 'Not
forwarded'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].relay = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].lastMac = '00-3A-99-FD-4A-53'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[1].reply[0].nextMac = '00-3A-99-FD-47-2F'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].transactionId = 3
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].ttl = 0
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].mode.t = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].mode.u.MEP = 'MEP'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].direction.t = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].direction.u.DOWN = 'DOWN'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].forwarded.t = 2
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].forwarded.u.NO = 'Not
forwarded'
```

```

ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].relay = 1
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].lastMac = '00-3A-99-FD-4A-53'
ShowLinkTrace_Output.linkTraceInfo.mepInst[0].state[2].reply[0].nextMac = '00-3A-99-FD-47-2F'

showLinkTrace Commit Success!!!

Switch(OperationsMepPortType)# end

```

## Viewing Test Signal Statistics on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>showTst</b> {<b>commit</b>   <b>flush</b>   <b>mepRequest</b>   <b>review</b>}</p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showTst ? commit      commit showTst flush      flush all showTst commands from queue mepRequest Show test signal statistics and current             configuration request review      review showTst commands </pre>	<p>Displays test signal statistics.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>mepRequest</b>—Displays the configuration.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<p><b>showTst mepRequest</b> {<b>all</b>   <b>mepInstance</b> <i>instance-no</i>}</p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showTst mepRequest all Switch(OperationsMepPortType)# showTst mepRequest mepInstance 50 </pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays test signal statistics configuration for all MEPs on the Cisco ME 1200 NID.</li> <li>• <b>mepInstance</b> <i>instance-no</i>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<p><b>showTst review</b></p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showTst review  Commands in queue: showTst mepRequest all showTst mepRequest mepInstance 50 </pre>	<p>Displays the configuration on the Cisco ME 1200 NID .</p>
<b>Step 4</b>	<p><b>showTstcommit</b></p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# showTst commit </pre>	<p>Sends the configuration to the NID.</p>
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre> Switch(OperationsMepPortType)# exit </pre>	<p>Exits the OperationsMepPortType mode.</p>

### Configuration Example

The example shows how to display the test signal statistics on the Cisco ME 1200 NID:

```
Switch(OperationsMepPortType)# showTst mepRequest all
Switch(OperationsMepPortType)# showTst mepRequest mepInstance 120
Switch(OperationsMepPortType)# showTst review

Commands in queue:
  showTst mepRequest all
  showTst mepRequest mepInstance 50

Switch(OperationsMepPortType)# showTst commit
ShowTst_Output.tstInfo.mepInst[0].config.mepInstance = 100
ShowTst_Output.tstInfo.mepInst[0].config.dei.t = 2
ShowTst_Output.tstInfo.mepInst[0].config.dei.u.disable = 'Disable'
ShowTst_Output.tstInfo.mepInst[0].config.priority = 7
ShowTst_Output.tstInfo.mepInst[0].config.mepId = 101
ShowTst_Output.tstInfo.mepInst[0].config.rate = 1000
ShowTst_Output.tstInfo.mepInst[0].config.size = 64
ShowTst_Output.tstInfo.mepInst[0].config.pattern.t = 1
ShowTst_Output.tstInfo.mepInst[0].config.pattern.u.allZero = 'all-zero'
ShowTst_Output.tstInfo.mepInst[0].config.sequence.t = 1
ShowTst_Output.tstInfo.mepInst[0].config.sequence.u.enable = 'Enable'
ShowTst_Output.tstInfo.mepInst[0].config.Tx.t = 1
ShowTst_Output.tstInfo.mepInst[0].config.Tx.u.enable = 'Enable'
ShowTst_Output.tstInfo.mepInst[0].config.Rx.t = 1
ShowTst_Output.tstInfo.mepInst[0].config.Rx.u.enable = 'Enable'
ShowTst_Output.tstInfo.mepInst[0].state.txFrameCount.upper = 0
ShowTst_Output.tstInfo.mepInst[0].state.txFrameCount.lower = 241803
ShowTst_Output.tstInfo.mepInst[0].state.rxFrameCount.upper = 0
ShowTst_Output.tstInfo.mepInst[0].state.rxFrameCount.lower = 0
ShowTst_Output.tstInfo.mepInst[0].state.rxRate = 0
ShowTst_Output.tstInfo.mepInst[0].state.testTime = 162
  showTst Commit Success!!!

Switch(OperationsMepPortType)# end
```

## Updating Delay Measurement (DM) on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>updateDM</b> {commit   flush   updateDmConfig   review}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# updateDM ?   commit          commit updateDM   flush           flush all updateDM commands from   queue</pre>	<p>Updates delay measurement (DM).</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>updateDmConfig</b>—Updates the delay measurement parameters.</li> </ul>

	Command or Action	Purpose
	<pre>review          review updateDM commands updateDmConfig Update DM parameters request</pre>	<ul style="list-style-type: none"> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<p><b>updateDM updateDmConfig {mepInstance <i>instance-no</i>   update {overflowReset {keep   reset}   synchronized {enable   disable}   txMode {proprietary   standardize}   unit {ns   us}}}</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType) # updateDM updateDmConfig mepInstance 100 Switch(OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep Switch(OperationsMepPortType) # updateDM updateDmConfig update overflowReset reset Switch(OperationsMepPortType) # updateDM updateDmConfig update synchronized enable Switch(OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep Switch(OperationsMepPortType) # updateDM updateDmConfig update txMode proprietary Switch(OperationsMepPortType) # updateDM updateDmConfig update txMode standardize Switch(OperationsMepPortType) # updateDM updateDmConfig update unit ns Switch(OperationsMepPortType) # updateDM updateDmConfig update unit us</pre>	<p>Updates DM parameters.</p> <ul style="list-style-type: none"> <li>• <b>mepInstance <i>instance-no</i></b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> <li>• <b>update</b>—Updates DM parameters for all MEPs on the Cisco ME 1200 NID.</li> <li>• <b>overflowReset</b>—Reset all delay Measurement results on total delay counters.</li> <li>• <b>keep</b>—Retains all delay Measurement results.</li> <li>• <b>reset</b>—Resets all delay Measurement results.</li> <li>• <b>synchronized</b>—Synchronizes near end and far end time intervals.</li> <li>• <b>enable</b>—Enables synchronization of near and far end time interval.</li> <li>• <b>disable</b>—Disables synchronization of near and far end time interval.</li> <li>• <b>txMode</b>—Sets the Tx mode.</li> <li>• <b>proprietary</b>—Sets the proprietary delay measurement parameters .</li> <li>• <b>standardize</b>—Sets the Y.1731 standards to transmit 1DM/DMR delay measurement parameters.</li> <li>• <b>unit</b>—Sets the delay in units.</li> <li>• <b>ns</b>—Specifies nanoseconds.</li> <li>• <b>us</b>—Sets microseconds.</li> </ul>
<b>Step 3</b>	<p><b>updateDM review</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType) # updateDM review Commands in queue: updateDM updateDmConfig mepInstance 1 updateDM updateDmConfig update overflowReset keep updateDM updateDmConfig update overflowReset reset updateDM updateDmConfig update synchronized enable updateDM updateDmConfig update txMode proprietary updateDM updateDmConfig update txMode standardize</pre>	<p>Displays the configuration on the ME 1200 NID .</p>



	Command or Action	Purpose
	<pre> updateDM updateDmConfig update txMode standardize updateDM updateDmConfig update unit ns updateDM updateDmConfig update unit us </pre>	
<b>Step 4</b>	<p><b>updateDM commit</b></p> <p><b>Example:</b> Switch(OperationsMepPortType) # <b>updateDM commit</b></p>	Sends the configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b> Switch(OperationsMepPortType) # <b>exit</b></p>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to update the delay measurement parameters on the Cisco ME 1200 NID:

```

Switch(OperationsMepPortType) # updateDM updateDmConfig mepInstance 100
Switch(OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep
Switch(OperationsMepPortType) # updateDM updateDmConfig update overflowReset reset
Switch(OperationsMepPortType) # updateDM updateDmConfig update synchronized enable
Switch(OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep
Switch(OperationsMepPortType) # updateDM updateDmConfig update txMode proprietary
Switch(OperationsMepPortType) # updateDM updateDmConfig update txMode standardize
Switch(OperationsMepPortType) # updateDM updateDmConfig update unit ns
Switch(OperationsMepPortType) # updateDM updateDmConfig update unit us
Switch(OperationsMepPortType) # updateDM review
Commands in queue:
  updateDM updateDmConfig mepInstance 1
  updateDM updateDmConfig update overflowReset keep
  updateDM updateDmConfig update overflowReset reset
  updateDM updateDmConfig update synchronized enable
  updateDM updateDmConfig update txMode proprietary
  updateDM updateDmConfig update txMode standardize
  updateDM updateDmConfig update txMode standardize
  updateDM updateDmConfig update unit ns
  updateDM updateDmConfig update unit us

Switch(OperationsMepPortType) # updateDM commit
Switch(OperationsMepPortType) # end

```

## Updating Test Signal Parameters on the Cisco ME 1200 NID

### Before You Begin

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

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>updateTst {commit   flush   updateTstConfig   review}</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType) # updateTst ?   commit          commit updateTst   flush           flush all updateTst commands from   queue   review          review updateTst commands   updateTstConfig Update Tst signal request</pre>	Updates the test signal parameters. <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>updateTstConfig</b>—Updates the test signal parameters.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
<b>Step 2</b>	<b>updateTst updateTstConfig {mepInstance instance-no   update {Rx   Tx} {enable   disable}}</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType) # updateTst updateTstConfig mepInstance 100 Switch(OperationsMepPortType) # updateTst updateTstConfig update Rx enable Switch(OperationsMepPortType) # updateTst updateTstConfig update Tx enable</pre>	<ul style="list-style-type: none"> <li>• <b>mepInstance instance-no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> <li>• <b>update</b>—Updates DM parameters for all MEPs.</li> <li>• <b>Rx</b>—Sets the Rx mode.</li> <li>• <b>Tx</b>—Sets the Tx mode.</li> <li>• <b>enable</b>—Enables the mode.</li> <li>• <b>disable</b>—Disables the mode.</li> </ul>
<b>Step 3</b>	<b>updateTst review</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType) # updateTst review Commands in queue:   updateTst updateTstConfig mepInstance 2   updateTst updateTstConfig update Rx enable   updateTst updateTstConfig update Tx enable   updateTst updateTstConfig update Tx enable</pre>	Displays the configuration on the Cisco ME 1200 NID .
<b>Step 4</b>	<b>updateTst commit</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType) # updateTst commit</pre>	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> <pre>Switch(OperationsMepPortType) # exit</pre>	Exits the OperationsMepPortType mode.

## Configuration Example

The example shows how to update the test signal parameters on the Cisco ME 1200 NID :

```
Switch(OperationsMepPortType) # updateTst updatetstConfig mepInstance 100
Switch(OperationsMepPortType) # updateTst updatetstConfig update Rx enable
```

```
Switch(OperationsMepPortType)# updateTst updatetstConfig update Tx enable

Switch(OperationsMepPortType)# updateTst review
Commands in queue:
  updateTst updateTstConfig mepInstance 2
  updateTst updateTstConfig update Rx enable
  updateTst updateTstConfig update Tx enable
  updateTst updateTstConfig update Tx enable

Switch(OperationsMepPortType)# updateTst commit
Switch(OperationsMepPortType)# end
```

## Clearing MEP Statistics on the Cisco ME 1200 NID

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>clearMepStats</b> {commit   flush   clearStats   review}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# clearMepStats ?   clearStats  Clear mep statistics request   commit      commit clearMepStats   flush       flush all clearMepStats commands from queue   review      review clearMepStats commands</pre>	<p>Clears the MEP statistics.</p> <ul style="list-style-type: none"> <li>• <b>commit</b>—Sends the configuration to NID.</li> <li>• <b>flush</b>—Flushes all configuration from the queue.</li> <li>• <b>clearStats</b>—Clears the MEP statistics.</li> <li>• <b>review</b>—Displays the configuration on the Cisco ME 1200 NID .</li> </ul>
Step 2	<p><b>clearMepStats cleatStats</b> {mepInstance <i>instance-no</i>   StatsType {DM   LM   TST}}</p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# clearMepStats clearStats mepInstance 25 Switch(OperationsMepPortType)# clearMepStats clearStats statstype DM</pre>	<ul style="list-style-type: none"> <li>• <b>mepInstance</b> <i>instance-no</i>—Indicates the MEP instance. The valid values are from 1 to 128.</li> <li>• <b>Statstype</b>—Indicates the protocol type.</li> <li>• <b>DM</b>—Specifies the delay measurement statistics.</li> <li>• <b>LM</b>—Specifies the loss measurement statistics.</li> <li>• <b>TST</b>—Specifies the test signal statistics.</li> </ul>
Step 3	<p><b>clearMepStats review</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# clearMepStats review</pre> <p>Commands in queue:</p> <pre>clearMepStats clearStats mepInstance 23</pre>	<p>Displays the configuration on the Cisco ME 1200 NID .</p>
Step 4	<p><b>clearMepStats commit</b></p> <p><b>Example:</b></p> <pre>Switch(OperationsMepPortType)# clearMepStats commit</pre>	<p>Sends the configuration to the NID.</p>

	Command or Action	Purpose
Step 5	<b>exit</b>  <b>Example:</b> Switch(OperationsMepPortType)# <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to clear the MEP statistics on the Cisco ME 1200 NID :

```
Switch(OperationsMepPortType)# clearMepStats clearStats mepInstance 25
Switch(OperationsMepPortType)# clearMepStats clearStats statstype DM
Switch(OperationsMepPortType)# clearMepStats review
```

```
Commands in queue:
clearMepStats clearStats mepInstance 23
```

```
Switch(OperationsMepPortType)# clearMepStats commit
Switch(OperationsMepPortType)#end
```

## Negating Performance Monitoring Configuration and Restoring Defaults

### Before You Begin

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

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>no ?</b>  <b>Example:</b> Switch(OperationsMepPortType)# <b>no ?</b>  clearMepStats Clear mep statistics request exit Exit from OperationsMepPortType sub configuration mode setAis Enable or Disable AIS request setDM Enable or Disable delay measurement request setLM Enable or Disable loss measurement request setLck Enable or Disable lock signal request setLinkTrace Enable or Disable linktrace request setLoopBack Enable/Disable loopback setTst Enable or Disable test signal request showAis Show AIS configuration request showDM Show delay measurement statistics request showLM Show LM statistics request showLck Show lock signal current configuration request showLinkTrace Show linktrace state and current configuration request showLoopBack Show loopback state and current configuration request showTst Show test signal statistics and current configuration request updateDM Update DM parameters request	Negates the commands and sets the default configuration.

	Command or Action	Purpose
	<code>updateTst</code> Update Tst signal request	
<b>Step 2</b>	<b>exit</b>  <b>Example:</b> <code>Switch(OperationsMepPortType)# exit</code>	Exits the OperationsMepPortType mode.

