



## Configuring Performance Monitoring

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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](#).

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## 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.

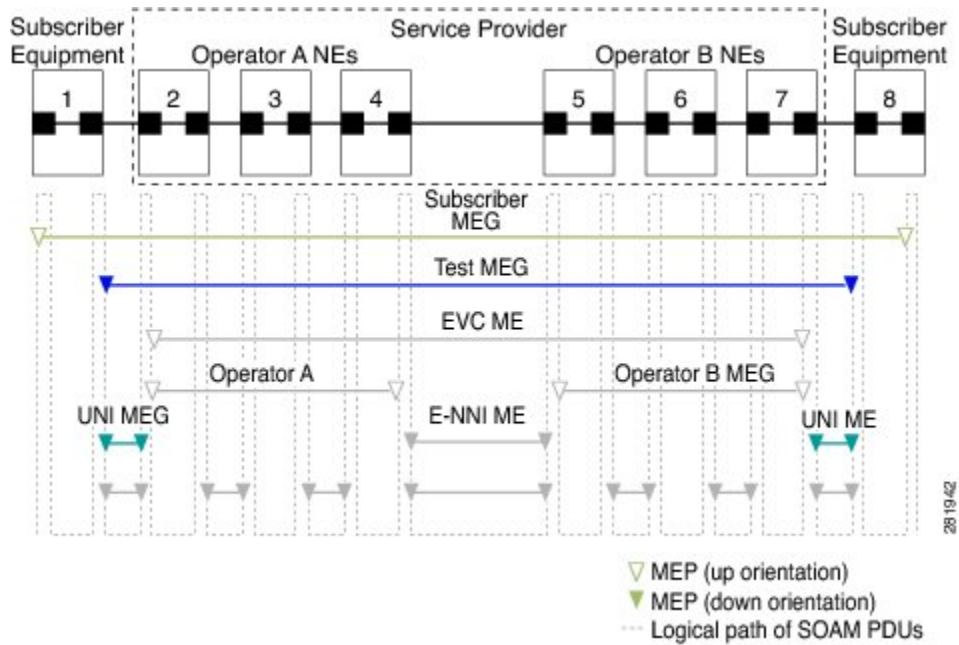


**Note** The frame-delay and frame-delay variation measurement processes are aborted when faults related to continuity and availability occur or when known network topology changes occur.

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 UCS Controller to Configure Performance Monitoring

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>Configure NID</b></p> <p><b>Example:</b> UCS# Configure NID 1</p>	Opens a new session for NID 1.

	Command or Action	Purpose
Step 2	<b>OperationsMepPortType</b>  <b>Example:</b> UCS# <b>OperationsMepPortType</b>	Enters performance monitoring provisioning (PM) mode.
Step 3	<b>OperationsMepPortType {clearMepStats   default   exit  no   setAis   setDM   setLM   setLck   setLinkTrace   setLoopBack   setTst   showAis   showDM   showLM   showLck   showLinkTrace   showLoopBack   showTst   updateDM   updateTst}</b>  <b>Example:</b> UCS (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	Displays the supported configurations for performance monitoring.
Step 4	<b>exit</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The following example shows the supported PM configuration:

```

UCS (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 UCS controller.

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>default</b>{clearMepStats   setAis   setDM   setLM  setLck   setLinkTrace   setLoopBack   setTst   showAis   showDM   showLM   showLck   showLinkTrace   showLoopBack   showTst   updateDM   updateTst  exit}</p> <p><b>Example:</b>  UCS (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> </ul>

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <b>exit</b>—Exits from OperationsMepPortType configuration mode.</li> </ul>
<b>Step 2</b>	<b>exit</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

## Configuring Alarm Information Signal (AIS) on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>setAis {commit   flush   aisConfig   review}</b>  <b>Example:</b> <pre>UCS (OperationsMepPortType) # setAis ?   aisConfig  Enable or Disable AIS request   commit     commit setAis   flush      flush all setAis commands from qu   review     review setAis commands</pre>	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 UCS controller.</li> </ul>
<b>Step 2</b>	<b>setAis aisConfig {aisaction {enable {frameRate {fr1m   fr1s}   disable}   protect {enable   disable} }   mepInstanceinstance_no}</b>  <b>Example:</b> <pre>UCS (OperationsMepPortType) # setAis aisConfig aisaction   enable frameRate fr1m UCS (OperationsMepPortType) # setAis aisConfig aisaction   enable frameRate fr1s UCS (OperationsMepPortType) # setAis aisConfig aisaction   enable protect enable UCS (OperationsMepPortType) # setAis aisConfig   mepInstance 20</pre>	Configures AIS. <ul style="list-style-type: none"> <li>• <b>aisaction</b>—Enables or disables AIS on the UCS controller.</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>mepinstanceinstance_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> UCS(OperationsMepPortType)# <b>setAis review</b>  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	Displays the AIS configuration on the UCS controller.
<b>Step 4</b>	<b>setAiscommit</b>  <b>Example:</b> UCS(OperationsMepPortType)# <b>setAis commit</b>	Sends the AIS configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> UCS(OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure AIS on the US controller:

```

UCS(OperationsMepPortType)# setAis aisConfig aisaction enable frameRate fr1m
UCS(OperationsMepPortType)# setAis aisConfig aisaction enable frameRate fr1s
UCS(OperationsMepPortType)# setAis aisConfig aisaction enable protect enable
UCS(OperationsMepPortType)# setAis review
UCS(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

UCS(OperationsMepPortType)# setAis commit
SetAis_Output.mepResponse = 34537474

SetAis Commit Success!!!
UCS(OperationsMepPortType) #end

```

## Configuring Delay Measurement (DM) on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>setDM {commit   flush   dmConfig   review}</b></p> <p><b>Example:</b></p> <pre>UCS (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 UCS controller.</li> </ul>
Step 2	<p><b>setDM dmConfig {dmaction {enable {calculation {flow   rdtrp}   cast {mutli   uni mepIdmep_Id}   intervalinterval_no   lastNdelay_calc   mode {oneway   twoway}   prioritypriority_no }   disable }   mepInstance instance_no }</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setDM dmConfig dmaction enable calculation flow UCS (OperationsMepPortType) # setDM dmConfig dmaction enable calculation rdtrp UCS (OperationsMepPortType) # setDM dmConfig dmaction enable cast multi UCS (OperationsMepPortType) # setDM dmConfig dmaction enable cast uni mepId 23 UCS (OperationsMepPortType) # setDM dmConfig dmaction enable interval 20 UCS (OperationsMepPortType) # setDM dmConfig dmaction enable lastN 200 UCS (OperationsMepPortType) # setDM dmConfig dmaction enable mode oneway UCS (OperationsMepPortType) # setDM dmConfig dmaction enable mode twoway UCS (OperationsMepPortType) # setDM dmConfig dmaction enable priority 3 UCS (OperationsMepPortType) # setDM dmConfig dmaction enable calculation rdtrp UCS (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 UCS controller.</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. <ul style="list-style-type: none"> <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> </ul> </li> <li>• <b>cast</b>—Specifies transmission mode. <ul style="list-style-type: none"> <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> </ul> </li> <li>• <b>mepIdmep_id</b>—Specifies Peer MEP ID for unicast MAC.</li> <li>• <b>intervalinterval_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. <ul style="list-style-type: none"> <li>• <b>oneway</b>—Specifies mode on 1DM PDU measurement.</li> <li>• <b>twoway</b>—Specifies mode on DMM or DMR PDU.</li> </ul> </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>	<p><b>setDM review</b></p> <p><b>Example:</b> UCS (OperationsMepPortType) # <b>setDM review</b></p> <p>Commands in queue:</p> <pre> 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                     </pre>	<p>Displays the DM configuration on the UCS controller.</p>
<b>Step 4</b>	<p><b>setDMcommit</b></p> <p><b>Example:</b> UCS (OperationsMepPortType) # <b>setDM commit</b></p> <pre> SetDM Commit Success!!!                     </pre>	<p>Sends the DM configuration to the NID.</p>
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b> UCS (OperationsMepPortType) #<b>exit</b></p>	<p>Exits the OperationsMepPortType mode.</p>

**Configuration Example**

The example shows how to configure DM on the UCS controller:

```

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

```

UCS (OperationsMepPortType) # setDM dmConfig dmaction enable priority 3
UCS (OperationsMepPortType) # setDM dmConfig dmaction enable calculation rdtrp
UCS (OperationsMepPortType) # setDM dmConfig mepInstance 1
UCS (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 dmConfig mepInstance 2

UCS (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

UCS (OperationsMepPortType) #end

```

## Configuring Loss Measurement (LM) on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p>setLM {commit   flush   lmConfig   review}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setLM ?</pre>	<p>Configures loss measurement (LM).</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> </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 UCS controller.</li> </ul>
<p><b>Step 2</b></p>	<pre> setLM LmConfig { lmacction {enable {cast {multi   uni}   flrframe_interval   frameRate {fr10s   fr1m   fr1s   fr6h   fr6m}   mode {dual   single}   prioritypriority_no }   disable }   mepInstanceinstance_no }  <b>Example:</b> UCS (OperationsMepPortType) # setLM lmConfig lmacction enable cast multi UCS (OperationsMepPortType) # setLM lmConfig lmacction enable cast uni UCS (OperationsMepPortType) # setLM lmConfig lmacction enable flr UCS (OperationsMepPortType) # setLM lmConfig lmacction frameRate fr10s UCS (OperationsMepPortType) # setLM lmConfig lmacction enable mode dual UCS (OperationsMepPortType) # setLM lmConfig lmacction enable priority 4 UCS (OperationsMepPortType) # setLM lmConfig mepInstance 1                     </pre>	<p>Sets LM parameters.</p> <ul style="list-style-type: none"> <li>• <b>lmacction</b>—Enables or disables LM on the UCS controller.</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>flrframe_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>prioritypriority_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>mepinstanceinstance_no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<p><b>Step 3</b></p>	<pre> setLM review  <b>Example:</b> UCS (OperationsMepPortType) # setLM review  Commands in queue:                     </pre>	<p>Displays the LM configuration on the UCS controller.</p>

	Command or Action	Purpose
	<pre> 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 </pre>	
<b>Step 4</b>	<p><b>setLMcommit</b></p> <p><b>Example:</b>  UCS (OperationsMepPortType) # <b>setLM commit</b>  SetLM Commit Success!!!</p>	Sends the LM configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b>  UCS (OperationsMepPortType) #<b>exit</b></p>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure LM on the UCS controller:

```

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

UCS (OperationsMepPortType) # setLM commit
SetLM-Output.mepResponse = 0
SetLM Commit Success!!!

UCS (OperationsMepPortType) #end

```

## Configuring Lock Signal on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>setLck {commit   flush   lckConfig   review}</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# setLck ? commit      commit setLck flush      flush all setLck commands from queue lckConfig  Enable or Disable lock signal request review     review setLck commands</pre>	Configures lock signal. <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 UCS controller.</li> </ul>
<b>Step 2</b>	<b>setLck lckConfig {lckaction {enable frameRate {fr1m   fr1s}   disable}   mepInstanceinstance_no}</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# setlck lckConfig lckaction enable frameRate fr1m UCS(OperationsMepPortType)# setlck lckConfig lckaction mepInstance 1</pre>	Sets lock signal parameters. <ul style="list-style-type: none"> <li>• <b>lckaction</b>—Enables or disables lock signal on the UCS controller.</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>mepInstanceinstance_no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<b>setlck review</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# setlck review</pre> <p>Commands in queue:</p> <pre>setLck lckConfig lckAction enable frameRate fr1m setLck lckConfig mepInstance 1</pre>	Displays the lock signal configuration on the UCS controller.
<b>Step 4</b>	<b>setlckcommit</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# setlck commit</pre>	Sends the lock signal configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)#exit</pre>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure lock signal on the UCS controller:

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

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

```
UCS (OperationsMepPortType) # setlck commit
SetLck_Output.mepResponse = 0
SetLck Commit Success!!!UCS (OperationsMepPortType)
UCS (OperationsMepPortType) #end
```

## Configuring LoopBack on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>setLoopBack</b> {commit   flush   loopBackConfig   review}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setLoopBack ?     commit          commit setLoopBack     flush           flush all setLoopBack commands from queue loopBackConfig   Enable/Disable loopback review           review setLoopBack commands</pre>	<p>Configures loopback.</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>loopBackConfig</b>—Enables or disables the loopback configuration.</li> <li>• <b>review</b>—Displays the configuration on the UCS controller.</li> </ul>
<b>Step 2</b>	<p><b>setLoopBack loopBackConfig</b> {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}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable cast multi UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable cast uni destination macAddress mac1 UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable cast unidestination mepId 3 UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable count 345</pre>	<p>Sets loopback parameters.</p> <ul style="list-style-type: none"> <li>• <b>lbaction</b>—Enables or disables loop back on the UCS controller.</li> <li>• <b>enable</b>—Enables loop back trace configuration.</li> <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> </ul>

	Command or Action	Purpose
	<pre>UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable dei enable UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable interval 20 UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable priority 7 UCS (OperationsMepPortType) # setLoopBack loopbackConfig lbaction enable size 1400 UCS (OperationsMepPortType) # setLoopBack loopbackConfig mepInstance 125</pre>	<ul style="list-style-type: none"> <li>• <b>macAddress</b><i>target_MAC</i>—Specifies the MAC address for LT in MEP.</li> <li>• <b>mepId</b><i>mep_id</i>—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</b><i>count_no</i>—Specifies the number of loop back PDU sent in a single loop test .</li> <li>• <b>interval</b><i>interval_no</i>—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</b><i>priority_no</i>—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</b> <i>frames</i>—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</b><i>instance_no</i>—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>UCS (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     setLoopBack loopBackConfig lbAction enable interval 20     setLoopBack loopBackConfig lbAction enable priority 7     setLoopBack loopBackConfig lbAction enable size 1400     setLoopBack loopBackConfig mepInstance 125</pre>	<p>Displays the loop back configuration on the UCS controller.</p>
<p><b>Step 4</b></p>	<p><b>setlckcommit</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setloopback commit</pre>	<p>Sends the loop back configuration to the NID.</p>

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

### Configuration Example

The example shows how to configure loop back on the UCS controller:

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

UCS (OperationsMepPortType) # setsetloopback commit
SetLoopBack_Output.mepResponse = 34275330

SetLoopBack Commit Success!!!
UCS (OperationsMepPortType) #end
```

## Configuring Link Trace on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>setLinkTrace {commit   flush   linkTrace   review}</b>	Configures link trace.



	Command or Action	Purpose
	<p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setLinkTrace ? commit      commit setLinkTrace flush       flush all setLinkTrace commands from             queue linkTrace   Enable or Disable linktrace request review      review setLinkTrace commands</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>linkTrace</b>—Enables or disables the link trace configuration.</li> <li>• <b>review</b>—Displays the configuration on the UCS controller.</li> </ul>
<p><b>Step 2</b></p>	<p><b>setLinkTrace linkTrace {ltAction {enable {destination {macAddresstarget_MAC   mepIdmep_id}   prioritypriority_no   ttltl_time disable}}   mepInstanceinstance_no}</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable destination macAddress mac1 UCS (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable destination mepId 3 UCS (OperationsMepPortType) # setlinkTrace linkTrace ltkaction enable priority 2 UCS (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 UCS controller.</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>macAddresstarget_MAC</b>—Specifies the link trace MAC address for LT in MEP.</li> <li>◦ <b>mepIdmep_id</b>—Specifies Peer MEP ID for link trace. The valid range is from 0 to 8191.</li> </ul> </li> <li>• <b>prioritypriority_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>ttltl_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>mepInstanceinstance_no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<p><b>Step 3</b></p>	<p><b>setLinkTrace review</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setlinkTrace review</pre>	<p>Displays the link trace configuration on the UCS controller.</p>
<p><b>Step 4</b></p>	<p><b>setlckcommit</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setlinkTrace commit</pre>	<p>Sends the link trace configuration to the NID.</p>
<p><b>Step 5</b></p>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) #exit</pre>	<p>Exits the OperationsMepPortType mode.</p>

### Configuration Example

The example shows how to configure link trace on the UCS controller:

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

UCS (OperationsMepPortType) # setlinkTrace commit
SetLinkTrace_Output.mepResponse = 34340866

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

## Configuring Test Signal on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>setTst</b> {commit   flush   tstConfig   review}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setTst ? commit      commit setTst flush      flush all setTst commands from queue review      review setTst commands tstConfig  Enable or Disable test signal request</pre>	<p>Configures test 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>tstConfig</b>—Enables or disables the test signal configuration.</li> <li>• <b>review</b>—Displays the configuration on the UCS controller.</li> </ul>
<b>Step 2</b>	<p><b>setTst tstConfig</b> {dei {enable   disable}   mepIdmep_Id   mepInstancemep_instance   pattern {allOne   allZero   oneZero}   prioritypriority_no   ratebit_rate   sequence {enable   disable}   size frames}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # setTst tstConfig dei enable UCS (OperationsMepPortType) # setTst tstConfig mepid</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>mepIdmep_instance</b>—Specifies Peer MEP ID. The valid range is from 0 to 8191.</li> </ul>

	Command or Action	Purpose
	<pre> 2 UCS (OperationsMepPortType) # setTst tstConfig mepinstance 2 UCS (OperationsMepPortType) # setTst tstConfig pattern allOne UCS (OperationsMepPortType) # setTst tstConfig pattern allZero UCS (OperationsMepPortType) # setTst tstConfig sequence enable UCS (OperationsMepPortType) # setTst tstConfig rate 400 UCS (OperationsMepPortType) # setTst tstConfig size 45 </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>priority</b><i>priority_no</i>—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>ratebit_rate</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 frames</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> UCS (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 </pre>	Displays the test signal configuration on the UCS controller.
<b>Step 4</b>	<p><b>setTstcommit</b></p> <p><b>Example:</b></p> <pre> UCS (OperationsMepPortType) # setTst commit </pre>	Sends the link trace configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre> UCS (OperationsMepPortType) #exit </pre>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to configure test signal on the UCS controller:

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

UCS (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

UCS (OperationsMepPortType) # setTst commit
SetTst_Output.mepResponse = 34471938
SetTst Commit Success!!!
UCS (OperationsMepPortType) #end
```

## Viewing Alarm Information Signal (AIS) on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>showAis</b> {commit   flush   mepRequest   review}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # showAis ? commit      commit showAis flush       flush all showAis commands from queue  mepRequest  Show AIS configuration request review      review showAis commands</pre>	<p>Displays alarm information signal 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 alarm configuration.</li> <li>• <b>review</b>—Displays the configuration on the UCS controller.</li> </ul>
<b>Step 2</b>	<p><b>showAis mepRequest</b> {all   mepInstanceinstance_no}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # showAis mepRequest all UCS (OperationsMepPortType) # showAis mepRequest mepInstance 120</pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays AIS configuration for all MEPs on the UCS controller.</li> <li>• <b>mepInstanceinstance_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>showAis review</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>showAis review</b>  Commands in queue: showAis mepRequest all showAis mepRequest mepInstance 120	Displays the configuration on the UCS controller.
<b>Step 4</b>	<b>showAis commit</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>showAis commit</b>	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to display the AIS on the UCS controller:

```

UCS (OperationsMepPortType) # showAis mepRequest all
UCS (OperationsMepPortType) # showAis mepRequest mepInstance 120
UCS (OperationsMepPortType) # showAis review

Commands in queue:
    showAis mepRequest all
    showAis mepRequest mepInstance 120

UCS (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.frls = 'frls'
ShowAis_Output.aisInfo.mepInst[0].config.protect.t = 1
ShowAis_Output.aisInfo.mepInst[0].config.protect.u.enable = 'enable'

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

```

## Viewing Delay Measurement (DM) Statistics on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>showDM {commit   flush   mepRequest   review}</b>  <b>Example:</b> <pre>UCS(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 UCS controller.</li> </ul>
<b>Step 2</b>	<b>showDM mepRequest {all   mepInstanceinstance_no}</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# showDM mepRequest all UCS(OperationsMepPortType)# showDM mepRequest mepInstance 100</pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays DM configuration for all MEPs on the UCS controller.</li> <li>• <b>mepInstanceinstance_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>UCS(OperationsMepPortType)# showDM review Commands in queue: showDM mepRequest all showDM mepRequest all showDM mepRequest mepInstance 100</pre>	Displays the configuration on the UCS controller.
<b>Step 4</b>	<b>showDM commit</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# showDM commit</pre>	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)#exit</pre>	Exits the OperationsMepPortType mode.

**Configuration Example**

The example shows how to display the delay measurement statistics on the UCS controller:

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

UCS(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!!!

UCS(OperationsMepPortType) # end

```

## Viewing Loss Measurement (LM) Statistics on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the controller.

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>showLM {commit   flush   mepRequest   review}</b>  <b>Example:</b> <pre>UCS (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 UCS controller.</li> </ul>
Step 2	<b>showLM mepRequest {all   mepInstanceinstance_no}</b>  <b>Example:</b> <pre>UCS (OperationsMepPortType) # showLM mepRequest all UCS (OperationsMepPortType) # showLM mepRequest mepInstance 100</pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays LM statistics for all MEPs on the UCS controller.</li> <li>• <b>mepInstanceinstance_no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
Step 3	<b>showLM review</b>  <b>Example:</b> <pre>UCS (OperationsMepPortType) # showLM review Commands in queue: showLM mepRequest all showLM mepRequest mepInstance 100</pre>	Displays the configuration on the UCS controller.
Step 4	<b>showLM commit</b>  <b>Example:</b> <pre>UCS (OperationsMepPortType) # showLM commit</pre>	Sends the configuration to the NID.
Step 5	<b>exit</b>  <b>Example:</b> <pre>UCS (OperationsMepPortType) #exit</pre>	Exits the OperationsMepPortType mode.

## Configuration Example

The example shows how to display the loss measurement statistics on the UCS controller:

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

CCommands in queue:
showLM mepRequest all
showLM mepRequest mepInstance 100

UCS (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!!!

UCS(OperationsMepPortType)# exit
```

## Viewing Lock Signal on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>showlck</b> {commit   flush   mepRequest   review}</p> <p><b>Example:</b></p> <pre>UCS(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 UCS controller.</li> </ul>
Step 2	<p><b>showlck mepRequest</b> {all   mepInstance <i>instance_no</i>}</p> <p><b>Example:</b></p> <pre>UCS(OperationsMepPortType)# showlck mepRequest all UCS(OperationsMepPortType)# showlck mepRequest mepInstance 20</pre>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays lock signal configuration for all MEPs on the UCS controller.</li> <li>• <b>mepInstance <i>instance_no</i></b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
Step 3	<p><b>showlck review</b></p> <p><b>Example:</b></p> <pre>UCS(OperationsMepPortType)# showlck review Commands in queue: showLck mepRequest all showLck mepRequest mepInstance 20</pre>	<p>Displays the configuration on the UCS controller..</p>

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

### Configuration Example

The example shows how to display the lock signal on the UCS controller:

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

```
Commands in queue:
  showLck mepRequest all
  showLck mepRequest mepInstance 20
```

```
UCS (OperationsMepPortType) # showlck commit
SetLck_Output.mepResponse = 0
```

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

## Viewing Loopback State on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the controller.

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>showLoopBack {commit   flush   mepRequest   review}</b>  <b>Example:</b>  UCS (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	Display loopback information. <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 UCS controller.</li> </ul>

	Command or Action	Purpose
Step 2	<b>showLoopBack mepRequest {all   mepInstanceinstance_no}</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>showLoopBack mepRequest all</b> UCS (OperationsMepPortType) # <b>showLoopBack mepRequest mepInstance 30</b>	<ul style="list-style-type: none"> <li>• <b>all</b>—Displays loopback configuration for all MEPs on the UCS controller.</li> <li>• <b>mepInstanceinstance_no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
Step 3	<b>showLoopBack review</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>showLoopBack review</b>  Commands in queue: showLoopBack mepRequest all showLoopBack mepRequest mepInstance 30	Displays the configuration on the UCS controller.
Step 4	<b>showLoopBack commit</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>showLoopBack commit</b>	Sends the configuration to the NID.
Step 5	<b>exit</b>  <b>Example:</b> UCS (OperationsMepPortType) # <b>exit</b>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to display the loop back state on the controller:

```

UCS (OperationsMepPortType) # showLoopBack mepRequest all
UCS (OperationsMepPortType) # showLoopBack mepRequest mepInstance 30
UCS (OperationsMepPortType) # showLoopBack review

Commands in queue:
    showLoopBack mepRequest all
    showLoopBack mepRequest mepInstance 30

UCS (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
UCS (OperationsMepPortType) # exit
```

## Viewing Link Trace State on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### 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>UCS (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 UCS controller.</li> </ul>
<b>Step 2</b>	<p><b>showLinkTrace mepRequest</b> {all   mepInstanceinstance_no}</p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # showLinkTrace mepRequest all UCS (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 UCS controller.</li> <li>• <b>mepInstanceinstance_no</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>UCS (OperationsMepPortType) # showLinkTrace review</pre> <p>Commands in queue:</p> <pre>showLinkTrace mepRequest all showLinkTrace mepRequest mepInstance 120</pre>	<p>Displays the configuration on the UCS controller.</p>
<b>Step 4</b>	<p><b>showLinkTrace commit</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # showLinkTrace 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>UCS (OperationsMepPortType) #exit</pre>	<p>Exits the OperationsMepPortType mode.</p>

## Configuration Example

The example shows how to display the link trace state on the UCS controller:

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

Commands in queue:
    showLinkTrace mepRequest all
    showLinkTrace mepRequest mepInstance 40

UCS (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!!!

UCS (OperationsMepPortType) # end
```

## Viewing Test Signal Statistics on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>showTst {commit   flush   mepRequest   review}</b>  <b>Example:</b> <pre>UCS(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>	Displays test signal statistics. <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 UCS controller.</li> </ul>
<b>Step 2</b>	<b>showTst mepRequest {all   mepInstanceinstance_no}</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# showTst mepRequest all UCS(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 UCS controller.</li> <li>• <b>mepInstanceinstance_no</b>—Indicates the MEP instance. The valid values are from 1 to 128.</li> </ul>
<b>Step 3</b>	<b>showTst review</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# showTst review  Commands in queue: showTst mepRequest all showTst mepRequest mepInstance 50</pre>	Displays the configuration on the UCS controller.
<b>Step 4</b>	<b>showTstcommit</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)# showTst commit</pre>	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> <pre>UCS(OperationsMepPortType)#exit</pre>	Exits the OperationsMepPortType mode.

**Configuration Example**

The example shows how to display the test signal statistics on the UCS controller:

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

Commands in queue:
showTst mepRequest all
showTst mepRequest mepInstance 50

UCS(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!!!

UCS (OperationsMepPortType) # end
    
```

## Updating Delay Measurement (DM) on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>updateDM {commit   flush   updateDmConfig   review}</b></p> <p><b>Example:</b></p> <pre> UCS (OperationsMepPortType) # updateDM ?   commit          commit updateDM   flush           flush all updateDM commands from   queue   review          review updateDM commands   updateDmConfig Update DM parameters request                     </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> <li>• <b>review</b>—Displays the configuration on the UCS controller.</li> </ul>
Step 2	<p><b>updateDM updateDmConfig {mepInstanceinstance_no   update {overflowReset {keep   reset}   synchronized {enable   disable}   txMode {proprietary   standardize}   unit {ns   us}}}</b></p> <p><b>Example:</b></p> <pre> UCS (OperationsMepPortType) # updateDM updateDmConfig mepInstance 100 UCS (OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep UCS (OperationsMepPortType) # updateDM updateDmConfig update overflowReset reset UCS (OperationsMepPortType) # updateDM updateDmConfig update synchronized enable                     </pre>	<p>Updates DM parameters.</p> <ul style="list-style-type: none"> <li>• <b>mepInstanceinstance_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 on the UCS controller.</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> </ul>

	Command or Action	Purpose
	<pre>UCS (OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep UCS (OperationsMepPortType) # updateDM updateDmConfig update txMode proprietary UCS (OperationsMepPortType) # updateDM updateDmConfig update txMode standardize UCS (OperationsMepPortType) # updateDM updateDmConfig update unit ns UCS (OperationsMepPortType) # updateDM updateDmConfig update unit us</pre>	<ul style="list-style-type: none"> <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>UCS (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</pre>	Displays the configuration on the UCS controller.
<b>Step 4</b>	<p><b>updateDM commit</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # updateDM commit</pre>	Sends the configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) #exit</pre>	Exits the OperationsMepPortType mode.



### Configuration Example

The example shows how to update the delay measurement parameters on the UCS controller:

```
UCS (OperationsMepPortType) # updateDM updateDmConfig mepInstance 100
UCS (OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep
UCS (OperationsMepPortType) # updateDM updateDmConfig update overflowReset reset
UCS (OperationsMepPortType) # updateDM updateDmConfig update synchronized enable
UCS (OperationsMepPortType) # updateDM updateDmConfig update overflowReset keep
UCS (OperationsMepPortType) # updateDM updateDmConfig update txMode proprietary
UCS (OperationsMepPortType) # updateDM updateDmConfig update txMode standardize
UCS (OperationsMepPortType) # updateDM updateDmConfig update unit ns
UCS (OperationsMepPortType) # updateDM updateDmConfig update unit us
UCS (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

UCS (OperationsMepPortType) # updateDM commit
UCS (OperationsMepPortType) # end
```

## Updating Test Signal Parameters on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>updateTst {commit   flush   updateTstConfig   review}</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # updateTst ? commit          commit updateTst flush           flush all updateTst commands from queue review         review updateTst commands updateTstConfig Update Tst signal request</pre>	<p>Updates the test signal parameters.</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>updateTstConfig</b>—Updates the test signal parameters.</li> <li>• <b>review</b>—Displays the configuration on the UCS controller.</li> </ul>
Step 2	<p><b>updateTst updateTstConfig {mepInstanceinstance_no   update {Rx   Tx} {enable   disable}}</b></p> <p><b>Example:</b></p> <pre>UCS (OperationsMepPortType) # updateTst updatetstConfig mepInstance 100 UCS (OperationsMepPortType) # updateTst updatetstConfig</pre>	<ul style="list-style-type: none"> <li>• <b>mepInstanceinstance_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> </ul>

	Command or Action	Purpose
	<pre>update Rx enable UCS (OperationsMepPortType) # updateTst updatetstConfig update Tx enable</pre>	<ul style="list-style-type: none"> <li>• <b>enable</b>—Enables the mode.</li> <li>• <b>disable</b>—Disables the mode.</li> </ul>
<b>Step 3</b>	<p><b>updateTst review</b></p> <p><b>Example:</b>  UCS (OperationsMepPortType) # <b>updateTst review</b>  Commands in queue:  updateTst updateTstConfig mepInstance 2  updateTst updateTstConfig update Rx enable  updateTst updateTstConfig update Tx enable  updateTst updateTstConfig update Tx enable</p>	Displays the configuration on the UCS controller.
<b>Step 4</b>	<p><b>updateTst commit</b></p> <p><b>Example:</b>  UCS (OperationsMepPortType) # <b>updateTst commit</b></p>	Sends the configuration to the NID.
<b>Step 5</b>	<p><b>exit</b></p> <p><b>Example:</b>  UCS (OperationsMepPortType) #<b>exit</b></p>	Exits the OperationsMepPortType mode.

### Configuration Example

The example shows how to update the test signal parameters on the UCS controller:

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

UCS (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

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

## Clearing MEP Statistics on the UCS Controller

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>clearMepStats</b> {commit   flush   clearStats   review}</p> <p><b>Example:</b></p> <pre>UCS(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 UCS controller.</li> </ul>
Step 2	<p><b>clearMepStats clearStats</b> {mepInstanceinstance_no   StatsType {DM   LM   TST}}</p> <p><b>Example:</b></p> <pre>UCS(OperationsMepPortType)# clearMepStats clearStats   mepInstance 25 UCS(OperationsMepPortType)# clearMepStats clearStats   statstype DM</pre>	<ul style="list-style-type: none"> <li>• <b>mepInstanceinstance_no</b>—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>UCS(OperationsMepPortType)# clearMepStats review</pre> <p>Commands in queue:</p> <pre>clearMepStats clearStats mepInstance 23</pre>	<p>Displays the configuration on the UCS controller.</p>
Step 4	<p><b>clearMepStats commit</b></p> <p><b>Example:</b></p> <pre>UCS(OperationsMepPortType)# clearMepStats commit</pre>	<p>Sends the configuration to the NID.</p>
Step 5	<p><b>exit</b></p> <p><b>Example:</b></p> <pre>UCS(OperationsMepPortType)#exit</pre>	<p>Exits the OperationsMepPortType mode.</p>

**Configuration Example**

The example shows how to clear the MEP statistics on the UCS controller:

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

Commands in queue:
clearMepStats clearStats mepInstance 23
```

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

## Negating Performance Monitoring Configuration and Restoring Defaults

### Before You Begin

- Perform the steps to provision performance monitoring on the UCS controller.

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<p><b>no ?</b></p> <p><b>Example:</b> UCS (OperationsMepPortType) # <b>no ?</b></p> <pre>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 updateTst     Update Tst signal request</pre>	Negates the commands and sets the default configuration.
Step 2	<p><b>exit</b></p> <p><b>Example:</b> UCS (OperationsMepPortType) #<b>exit</b></p>	Exits the OperationsMepPortType mode.

## Verifying Performance Monitoring

Use the **show perf-mon** commands to verify the Performance Monitoring status on the UCS controller.

```
show perf-mon {current | interval-id unit instanceinstance_id | interval-info | id unit} {feature {dm | ece | evc | lm}}
```

- This command displays the current delay measurement status. The following is a sample output from the command:  
`UCS# show perf-mon current feature dm`
- This command displays the current loss measurement status. The following is a sample output from the command:  
`UCS# show perf-mon current feature lm`
- This command displays the delay measurement status for interval-id. The following is a sample output from the command:  
`UCS# show perf-mon interval-id id 3 instance 4 feature dm`
- This command displays the loss measurement status for interval-info. The following is a sample output from the command:  
`UCS# show perf-mon interval-info 5 feature lm`

