



H.248 Historical Event Notification

The H.248 event notification feature enables a media gateway controller (MGC) to relearn the historical information about the H.248 events that originally went unacknowledged by the MGC.

Before this feature was introduced, the details of the unacknowledged events were lost, and, as a result, the media gateway (MG) state and the MGC state sometimes diverged. In addition, if DBE switched to a new MGC, the new MGC had no means to learn what events had occurred on the streams and terminations programmed on the DBE.



Note

This behavior affects the nt/qualert and emp/phtoexp events, that are used to indicate that media has ceased flowing on a particular stream, making the MGC delete the context once all streams within that context have reported the events.

Feature History for H.248 Historical Event Notification

Release	Modification
Release 3.5.1	This feature was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.6.0	No modification.

Contents

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Information About H.248 Historical Event Notification

When events occur on the DBE, they are stored internally and reported to the MGC via a Notify command. A subsequent audit of the ObservedEvents descriptor for the stream returns any events which are stored with timestamp information, indicating when the event actually occurred. The DBE has two modes of operation in the case when stored events are cleared from the ObservedEvents descriptor:

- Retain all events
- Clear on acknowledgement

The DBE may be configured to use either of these modes.

**Note**

In either mode, the DBE tries to reduce the memory required to store the event information. This is achieved by only storing the most recent event of each type for each stream. This is true for all events except the dd/etd event, which indicates that the end of a DTMF tone has been detected, and determines which tone was detected. All instances of this event are stored, since the entire sequence of tones may be important.

Retain all events

In the “retain all events” mode, once an event is stored for a stream, it is retained by the DBE until that stream is deleted. Therefore, a new MGC can learn all historical events for each stream on the DBE.

Clear on acknowledgement

In this mode, an event is deleted once the MGC has acknowledged its presence. This acknowledgement occurs in one of the following ways:

- The MGC sends a successful response to the H.248 Notify for the event.
- The MGC audits the ObservedEvents descriptor, clearing all events in the descriptor.

**Note**

This behavior does not apply to the nt/qualert and emp/phtoexp events, since they should be retained (See the first Note in this chapter).

Silent gate deletion

The DBE now has a configuration option to disable its current behavior of deleting silent gates. Silent gate deletion is a term used to describe the DBE’s decision to delete contexts when all streams within the context have received media-down indications and there is no current H.248 association with an MGC to take the decision. If the silent gate deletion function is disabled, gates remain on the device until they are deleted by the MGC, or until the DBE is deactivated.

Association reset

The DBE has a new configuration option to change the association reset behavior. By default, the H.248 association with the MGC can be reset only in the case of failure to notify the MGC of the it/ito event. The new configuration command enables the DBE to reset the H.248 association with the MGC in the case of failure of any event notification.

Rearming of Media Timeout Timers

As part of this feature, the DBE stops rearming the media timeout timers after a pinhole times out. Now after a timeout happens, receiving a packet on the pinhole does not result in a media-up notification, nor restart the timer again.

How to Configure H.248 Historical Event Notification

This section contains the steps for configuring H.248 historical event notification. In order to enable H.248 historical event notification, the MGC has to subscribe to the event on the DBE. The two new commands, **h248-association-timeout** and **h248-preserve-gates**, are used to instruct the DBE what to do when the event occurs.

Configuring H.248 Historical Event Notification

SUMMARY STEPS

1. **configure**
2. **sbc *service-name***
3. **dbe**
4. **vdbe**
5. **h248-association-timeout**
6. **h248-preserve-gates**
7. **commit**
8. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure Example: RP/0/0/CPU0:router# configure	Enables the global configuration mode.
Step 2	sbc <i>service-name</i> Example: RP/0/0/CPU0:router(config)# sbc mysbc	Enters the mode of an SBC service. Use the <i>service-name</i> argument to define the name of the SBC.
Step 3	dbe Example: RP/0/0/CPU0:router(config-sbc)# dbe	Enters the mode of the data border element (DBE) function of the SBC.

	Command or Action	Purpose
Step 4	vdbe Example: RP/0/0/CPU0:router(config-sbc-dbe)# vdbe	Enters the mode for configuring virtual DBE (vDBE) parameters.
Step 5	h248-association-timeout Example: RP/0/0/CPU0:router(config-sbc-dbe-vdbe)# h248-association-timeout	Causes the DBE to reset associations with an H.248 controller when the controller does not respond to observed event notifications. The no version of this command does not let the DBE to reset these associations. The default is the no version of this command.
Step 6	h248-preserve-gates Example: RP/0/0/CPU0:router(config-sbc-dbe-vdbe)# h248-preserve-gates	Stops the DBE from deleting the media terminations or contexts when there is a media timeout and the association with the controller is down. The no version of this command lets the DBE delete these media terminations or contexts. The default is the no version of this command.
Step 7	commit Example: RP/0/0/CPU0:router(config-sbc-dbe-vdbe)# commit	Saves configuration changes. Use the commit command to save the configuration changes to the running configuration file and remain within the configuration session.
Step 8	exit Example: RP/0/0/CPU0:router(config-sbc-dbe-vdbe)# exit	Exits the current mode of the configuration.

Configuring H.248 Historical Event Notification: Examples

h248-association-timeout

If **h248-association-timeout** is configured, the DBE resets the association when the event occurs.

Configuration:

```
sbc JD7200 dbe
vdbe global
h248-version 3
h248-napt-package napt
h248-association-timeout <=== Configured
```

Results:

```
*Jul 13 16:26:28.800: %SBC-5-MSG-4E03-0021: SBC/MG-CTRL:(bmahasn.c 785)
SBC-Media has not received any messages from a controller for an
extended period of time, and will send a 'ping' to controller to check
that it is still active.
Duration of the silence (milliseconds): 60000

*Jul 13 16:26:28.800: %SBC-7-MSG-2E01-0073: SBC/MG-CTRL:(gctpsend.c 992)
Megaco message sent.
Remote address = 200.200.200.136
```

```

Message text =
!/3 [88.116.116.100]:2941
T=17001{
C=-{
N=ROOT{
OE=100{20070713T16262800:IT/ITO}}}} <===Event occurs

*Jul 13 16:26:40.176: %SBC-5-MSG-2E01-0275: SBC/MG-CTRL:(gcamassn.c 1335)
Association statistics (Final values before association is deleted) :
Remote address = 200.200.200.136
Remote port = 2941
Association CB = 0X07105DD4
Number of received messages = 7
Number of received octets = 1636
Number of sent messages
*Jul 13 16:26:40.176: %SBC-5-MSG-2E01-0037: SBC/MG-CTRL:(gctpassn.c 1735)
Megaco has deleted an association with a peer.
Remote address = 200.200.200.136
Remote port = 2941

*Jul 13 16:26:40.180: %SBC-2-MSG-4D01-0056: SBC/MGM: (bmmeaud.c 1400)
The association between the MEDIA component and SIG component has beenlost for vMG ID
0X01010000. Calls that were not yet fully established will belost.

*Jul 13 16:26:43.264: %SBC-5-MSG-2E01-0035: SBC/MG-CTRL:(gctpassn.c 1157)
Megaco has created an association with a peer.
Remote address = 200.200.200.136
Remote port = 2941

*Jul 13 16:26:43.272: %SBC-5-MSG-2E01-0041: SBC/MG-CTRL:(gctpfsm.c 796)
A socket for an association with a peer has connected.
Remote address = 200.200.200.136
Remote port = 2941

*Jul 13 16:26:43.272: %SBC-7-MSG-2E01-0073: SBC/MG-CTRL:(gctpsend.c 992)
Megaco message sent.
Remote address = 200.200.200.136
Message text =
!/3 [88.116.116.100]:2941
T=17002{
C=-{
SC=ROOT{
SV{MT=DC,DL=0,RE="900 Service Restored",V=3,PF=SBC_GateControl/03,20070713T16264300}}}}
<=== Association is reset

```

h248-preserve-gates

When **h248-preserve-gates** is configured, the DBE does not delete the media terminations.

Configuration:

```

sbc JD7200 dbe
vdb global
h248-version 3
h248-napt-package napt
h248-preserve-gates <=== Configured

```

Results:

```

*Jul 13 17:25:29.272: %SBC-7-MSG-2E01-0073: SBC/MG-CTRL:(gctpsend.c 992)
Megaco message sent.
Remote address = 200.200.200.136
Message text =

```

```

!/3 [88.116.116.100]:2941
T=18900{
C=-{
N=ROOT{
OE=100{20070713T17252900:IT/ITO}}}} <=== Event Occurs

*Jul 13 17:25:41.272: %SBC-7-MSG-2E01-0091: SBC/MG-CTRL:(gctasnd2.c 207)
A transaction has failed
Transaction ID          = 18900
Transaction type       = 0X00
Reason                 = 0X01

*Jul 13 17:25:41.272: %SBC-7-MSG-4E03-0029: SBC/MG-CTRL:(bmahrrp.c 85)
A request from the Media Gateway to its controller has failed. The
Media Gateway will continue to operate normally.
Megaco transaction ID:  18900
Reason code for failure: 1

*Jul 13 17:25:41.272: %SBC-4-MSG-4E03-0023: SBC/MG-CTRL:(bmahrrp.c 134)
The Media Gateway Controller controlling this Media Gateway has failed.
The Media Gateway will attempt to connect to an alternative controller.

*Jul 13 17:25:41.272: %SBC-5-MSG-2E01-0275: SBC/MG-CTRL:(gcamassn.c 1335)
Association statistics (Final values before association is deleted) :
Remote address          = 200.200.200.136
Remote port            = 2941
Association CB          = 0X07105354
Number of received messages = 7
Number of received octets = 1711
Number of sent messages

*Jul 13 17:25:41.272: %SBC-5-MSG-2E01-0037: SBC/MG-CTRL:(gctpassn.c 1735)
Megaco has deleted an association with a peer.
Remote address          = 200.200.200.136
Remote port            = 2941

*Jul 13 17:25:41.276: %SBC-2-MSG-4D01-0056: SBC/MGM: (bmmeaud.c 1400)
The association between the MEDIA component and SIG component has beenlost for vMG ID
0X01010000. Calls that were not yet fully established will belost.

*Jul 13 17:25:46.212: %SBC-5-MSG-2E01-0035: SBC/MG-CTRL:(gctpassn.c 1157)
Megaco has created an association with a peer.
Remote address          = 200.200.200.136
Remote port            = 2941

*Jul 13 17:25:46.220: %SBC-5-MSG-2E01-0041: SBC/MG-CTRL:(gctpfsm.c 796)
A socket for an association with a peer has connected.
Remote address          = 200.200.200.136
Remote port            = 2941

*Jul 13 17:25:46.220: %SBC-7-MSG-2E01-0073: SBC/MG-CTRL:(gctpsend.c 992)
Megaco message sent.
Remote address = 200.200.200.136
Message text =
!/3 [88.116.116.100]:2941
T=18901{
C=-{
SC=ROOT{
SV{MT=DC,DL=0,RE="900 Service Restored",V=3,PF=SBC_GateControl/03,20070713T17254600}}}}
<=== Association is reset

*Jul 13 17:26:51.788: %SBC-7-MSG-2E01-0073: SBC/MG-CTRL:(gctpsend.c 992)

```


Additional References

```

DTMF Interworking:          No
Media Flowing:             No
Unexpected SrcAddr Packets: No
Billing ID:                 0000000000000000000000000000000000000000000000000000000000000000
Media directions allowed:  sendrecv

```

Additional References

The following sections provide references related to configuring H.248 historical event notification.

Related Documents

Related Topic	Document Title
Cisco IOS XR master command reference	Cisco IOS XR Master Commands List
Cisco IOS XR SBC interface configuration commands	<i>Cisco IOS XR Session Border Controller Command Reference</i>
Initial system bootup and configuration information for a router using the Cisco IOS XR Software	<i>Cisco IOS XR Getting Started Guide</i>
Cisco IOS XR command modes	<i>Cisco IOS XR Command Mode Reference</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support from existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
—	To locate and download MIBs using Cisco IOS XR software, use the Cisco MIB Locator found at the following URL and choose a platform under the Cisco Access Products menu: http://cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

■ **Additional References**