

Troubleshooting Gatekeeper Endpoint Call Admission Issues

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Introduction

This document addresses some of the common issues that are known to result in when endpoints are not able to make calls that involve Cisco Gateways or third-party gateways and terminals, and Cisco Gatekeepers (Cisco IOS® gateway and routers).

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Problem

After you configure an H.323 endpoint to register to a Cisco Gatekeeper, the endpoints are not able to make calls.

Solutions

Check the **show gatekeeper endpoint** command in order to make sure that all the endpoints register to the gatekeeper. These sections are the solutions to this problem.

Admission Confirmed (Busy Tone Back)

If the Admission Confirmed (ACF) is sent by the gatekeeper and arrives at the endpoint side, but the call still receives a busy signal, check to see if the terminating IP address in the ACF is an expected valid endpoint IP.

```
value RasMessage ::= admissionConfirm :
{
  requestSeqNum 18
  bandwidth 5120
  callModel direct : NULL
  destCallSignalAddress ipAddress :
  {
    ip '0AAAC80A'H

    !--- The hex for IP, 0A AA C8 0A== 10.170.200.10.

    port 1720
    port 1720
  }
  irrFrequency 240
  willRespondToIRR FALSE
  uuiesRequested
  {
    setup FALSE
    callProceeding FALSE
    connect FALSE
    alerting FALSE
    information FALSE
    releaseComplete FALSE
    facility FALSE
    progress FALSE
    empty FALSE
  }
}
```

If the ACF has an IP address of the terminating endpoint, remove the gatekeeper and make a direct endpoint-to-endpoint call in order to see if you can establish a call.

Admission Reject (ARJ), "rejectReason calledPartyNotRegistered"

This **debug h225 asn1** command shows calledPartyNotRegistered.

```
*Mar 15 06:49:19.685: RAS OUTGOING PDU ::=

value RasMessage ::= admissionReject :
{
  requestSeqNum 34
  rejectReason calledPartyNotRegistered : NULL }
}
```

This is a common reason for rejection captured from the local or originating gatekeeper when the gatekeeper has no information on where the called number needs to be terminated. There are two scenarios in which this problem can occur.

One reason is the call terminates at a gateway and the gateway is not registered with the E164 address or with

a tech-prefix. In order to resolve this, make sure the gateway registers with a tech-prefix to the gatekeeper.

This is a correct gateway configuration example.

```
interface Ethernet0/0
 ip address 172.16.13.16 255.255.255.224
 half-duplex
 h323-gateway voip interface
 h323-gateway voip id hwei-gk ipaddr 172.16.13.14 1718
 h323-gateway voip h323-id gw2
 h323-gateway voip tech-prefix 2
&
!
voice-port 2/0/0
!
voice-port 2/0/1
!
voice-port 2/1/0
 station-id name BLARG
 caller-id enable
!
voice-port 2/1/1
!
dial-peer cor custom
!
dial-peer voice 456 pots
 destination-pattern 456
 port 2/1/0
!
dial-peer voice 123 pots
 destination-pattern 2415...
 port 2/1/1
!
gateway

"show gatekeeper gw" from gatekeeper
GATEWAY TYPE PREFIX TABLE
=====
Prefix: 1*
  Zone hwei-gk master gateway list:
    172.16.13.35:1720 gw1

Prefix: 2*
  Zone hwei-gk master gateway list:
    172.16.13.16:1720 456
```

Another reason for this error message can be that the called party is a terminal in a remote zone, and does not have a proxy enabled in the same gatekeeper zone it is registered. By default, Cisco IOS gatekeeper uses a proxy for inter-zone terminal calls. Issue the **show gatekeeper zone status** command in order to view this. Either configure a proxy register to the same local zone as the terminal or issue either the **no use-proxy hwei-gk default inbound-to terminal** command or the **no use-proxy hwei-gk default outbound-from terminal** command in order to disable the use of a proxy for terminal calls.

Note: Intra-zone calls do not require the match of a zone prefix.

```
*Mar 1 10:34:46.093: RAS OUTGOING PDU ::=
value RasMessage ::= admissionReject :
{
  requestSeqNum 11084
  rejectReason requestDenied : NULL
}
```

The reason for this rejection is the endpoint-requested bandwidth exceeds the limit configured in the gatekeeper. In order to resolve this, increase the bandwidth in the gatekeeper with the help of the **bandwidth** command under the gatekeeper mode, or lower the bandwidth request from the endpoint.

This example is of a failed call due to a bandwidth request that exceeds the configured limit.

```

Value RasMessage ::= admissionRequest :
{
  requestSeqNum 11084
  callType pointToPoint : NULL
  callModel gatekeeperRouted : NULL
  endpointIdentifier {"6284945400000058"}
  destinationInfo
  {
    e164 : "415525",
    e164 : "415525"
  }
  srcInfo
  {
    e164 : "415526",
    h323-ID : {"hwei-term"}
  }
  srcCallSignalAddress ipAddress :
  {
    ip '0AAAC837'H
    port 1720
  }
  bandwidth 102400

!--- Requested bandwidth is 10240 K.

  callReferenceValue 1022
  conferenceID '37CE425F850A41468B40D72F145C5C14'H
  activeMC FALSE
  answerCall TRUE
  canMapAlias FALSE
  callIdentifier
  {
    guid '4138E0D40EF0D14C9DB84E54F5190BF4'H
  }
  gatekeeperIdentifier {"hwei-gk"}
  willSupplyUUIEs FALSE
}

*Mar 1 10:34:46.093: ARQ (seq# 11084) rcvd
*Mar 1 10:34:46.093: gk_rassrv_arq: arqp=0x62905E20, crv=0x3FE,
answerCall=1
*Mar 1 10:34:46.093: RAS OUTGOING PDU ::=

value RasMessage ::= admissionReject :
{
  requestSeqNum 11084
  rejectReason requestDenied : NULL
}

!--- The show gatekeeper zone status command is issued and shows the
!--- bandwidth limit is much smaller than the requested bandwidth.

GATEKEEPER ZONES
=====
HWEI-GK name      Domain Name      RAS Address      PORT  FLAGS
-----
hwei-gk           cisco.com        172.16.13.14     1719  LS
BANDWIDTH INFORMATION (kbps) :
```

```

Maximum total bandwidth      :
Current total bandwidth      :      0
Maximum interzone bandwidth  :      4000

!--- The limit is 4000 K.

Current interzone bandwidth  :      0
Maximum session bandwidth    :
&&..

hwei-gk1          cisco.com      172.16.13.37      1719  RS

```

For more information on bandwidth issues, refer to [Troubleshooting and Understanding Cisco Gatekeeper Bandwidth Management](#).

If this rejection reason is observed, and there is no bandwidth issue, check to see if the called party is a terminal and if there is a proxy registered to the local zone. Issue the **show gatekeeper zone status** command in order to view this. Either configure a proxy register to the same local zone as the terminal or issue either the **no use-proxy hwei-gk default inbound-to terminal** or **no use-proxy hwei-gk default outbound-from terminal** command in order to disable the use of a proxy for terminal calls.

Verification Commands

This section describes a few **show** commands and debugs that help to verify the configuration required on the gatekeeper and the gateway. Sample **show** command outputs are included in order to illustrate what to look for with each of these commands.

Certain show commands are supported by the Output Interpreter (registered customers only) tool, which allows you to view an analysis of **show** command output.

show gatekeeper endpoint Command

The **show gatekeeper endpoint** command is used to verify the endpoints registration status to the gatekeeper. This is an example for the common outputs of this command.

```

gatekeeper#show gatekeeper endpoint
GATEKEEPER ENDPOINT REGISTRATION
=====
CallSignalAddr  Port  RASSignalAddr  Port  Zone Name          Type  Flags
-----
172.16.13.35    1720  172.16.13.35   50890 hwei-gk            VOIP-GW
    E164-ID: 2073418
    E164-ID: 5251212
    H323-ID: gw3
Total number of active registrations = 1

```

!--- The endpoint is registered.

```

Gatekeeper#show gatekeeper endpoint
GATEKEEPER ENDPOINT REGISTRATION
=====
CallSignalAddr  Port  RASSignalAddr  Port  Zone Name          Type  Flags
-----
Total number of active registrations = 0

```

!--- The endpoint is not registered.

show gatekeeper gw Command

The **show gatekeeper gw** command is used in order to verify the endpoints registration status for the tech-prefix. This is an example for the common outputs of this command.

```
Gatekeeper#show gatekeeper gw
GATEWAY TYPE PREFIX TABLE
=====
Prefix: 1*
Zone hwei-gk master gateway list:
  172.16.13.35:1720 gw1
```

show gatekeeper zone status Command

The **show gatekeeper zone status** command is used in order to display the local zone status and the remote zone information, as shown in this example.

```
2611-3#show gatekeeper zone status
                        GATEKEEPER ZONES
                        =====
HWEI-GK name          Domain Name    RAS Address      PORT  FLAGS
-----
hwei-gk               cisco.com       172.16.13.14     1719  LS
BANDWIDTH INFORMATION (kbps) :
  Maximum total bandwidth      :
  Current total bandwidth      :    0
  Maximum interzone bandwidth  :    4000
  Current interzone bandwidth  :    0
  Maximum session bandwidth    :
SUBNET ATTRIBUTES :
  All Other Subnets : (Enabled)
PROXY USAGE CONFIGURATION :
  Inbound Calls from all other zones :
    to terminals in local zone hwei-gk : use proxy
    to gateways in local zone hwei-gk  : do not use proxy
    to MCUs in local zone hwei-gk     : do not use proxy
  Outbound Calls to all other zones :
    from terminals in local zone hwei-gk : use proxy
    from gateways in local zone hwei-gk  : do not use proxy
    from MCUs in local zone hwei-gk     : do not use proxy
hwei-gk1              cisco.com       172.16.13.37     1719  RS
```

show gateway Command

The **show gateway** command is used in order to verify the registration status to a gatekeeper. The common outputs of this command are shown in this example.

```
gw3#show gateway
Gateway gw3/ww is registered to Gatekeeper hwei-gk

Alias list (CLI configured)
E164-ID 2073418
E164-ID 5251212
H323-ID gw3
Alias list (last RCF)
E164-ID 2073418
E164-ID 5251212
H323-ID gw3

H323 resource thresholding is Disabled
```

!--- The gateway is registered to gatekeeper (hwei-gk).

```
gw3#show gateway
Gateway gw3 is not registered to any gatekeeper
```

```
Alias list (CLI configured)
```

```
E164-ID 2073418
```

```
E164-ID 5251212
```

```
H323-ID gw3/WW
```

```
Alias list (last RCF)
```

```
H323 resource thresholding is Disabled
```

!--- The gateway is not registered to the gatekeeper.

debug h225 asn1 Command

The **debug h225 asn1** command is the gatekeeper and Cisco gateway **debug** command. In this document, you only look for the ARJ field and search for the rejection reason. This example is a sample output of the ARJ field.

Output from gateway

```
*Mar 26 04:12:38.508: RAS INCOMING PDU ::=
```

```
value RasMessage ::= admissionReject :
```

```
{
```

```
  requestSeqNum 34
```

```
  rejectReason calledPartyNotRegistered : NULL
```

```
}
```

Output from gatekeeper

```
*Mar 15 06:49:19.685: RAS OUTGOING PDU ::=
```

```
value RasMessage ::= admissionReject :
```

```
{
```

```
  requestSeqNum 34
```

```
  rejectReason calledPartyNotRegistered : NULL
```

```
}
```

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Related Information

- **Understanding H.323 Gatekeepers**
 - **Troubleshooting and Understanding Cisco Gatekeeper Bandwidth Management**
 - **Understanding and Troubleshooting Gatekeeper TTL and Aging out Process**
 - **Understanding, Configuring and Troubleshooting Resource Allocation Indication**
 - **VoIP with Gatekeeper**
 - **Voice Technology Support**
 - **Voice and IP Communications Product Support**
 - **Recommended Reading: Troubleshooting Cisco IP Telephony**
 - **Technical Support – Cisco Systems**
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