

The following section is provided to assist in determining if your OSP network is set up correctly. The problems listed have been reported as the most common errors made when configuring settlement in a network. Each section describes a problem and a solution.

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## Settlement Database Not Set Up Properly

### Problem

Calls are routed through a settlement server, but the originating gateway gets no response or a negative response.

### Solution

Check with the settlement provider to make sure that the router is properly registered with that provider. Router registration with settlement provider is normally done outside of OSP.

## Tcl IVR Script Not Called

### Problem

Tcl IVR script is not used on the originating gateway or terminating gateway.

### Solution

Configure a Tcl IVR script for the dial peer using the **application** *application name* command.

 **Note:** Tcl/IVR scripts are required for settlement, and classic IVR 1.0 does not support settlement.

- Use the **show call application voice summary** command to list all the available scripts on the router.
- Default is classic SESSION application, which cannot do settlement.
- The fax\_hop\_on.tcl script does not work with settlement.

The following example shows the available scripts on the router.

```
router# show call application voice summary
name          description
session       Basic app to do DID, or supply dialtone.
fax_hop_on    Script to talk to a fax redialer
clid_authen   Authenticate with (ani, dnis)
clid_authen_collect Authenticate with (ani, dnis), collect if that fails
clid_authen_npw Authenticate with (ani, NULL)
clid_authen_col_npw Authenticate with (ani, NULL), collect if that fails
clid_col_npw_3 Authenticate with (ani, NULL), and 3 tries collecting
clid_col_npw_npw Authenticate with (ani, NULL) and 3 tries without pw
SESSION       Default system session application
```

## No Destination Pattern Set

### Problem

The originating gateway inbound POTS dial peer has no destination pattern set.

### **Solution**

Because some PBX devices do not pass along the calling number in the setup message, the router uses the destination-pattern number or answer-address as an alternative, and a calling number is a required field for settlement.

## **No Session Target Settlement Set on Originating Gateway**

### **Problem**

The originating gateway outbound VoIP dial peer has no session target settlement.

The router could make successful calls, but not through a settlement server. The session target specification dictates how the router resolves the terminating gateway address for a particular called number.

### **Solution**

Configure the **session target settlement** *provider-number* command.

## **No VoIP Inbound Dial Peer on Terminating Gateway**

### **Problem**

The terminating gateway has no VoIP inbound dial peer. Because the settlement token in the incoming setup message from the originating gateway cannot be validate, the terminating gateway rejects the call.

### **Solution**

Create an inbound dial peer with the **session target settlement** command.

## **No Application Attribute on Terminating Gateway**

### **Problem**

The terminating gateway has an inbound dial peer configured, but with no **application** command. The default session application (**SESSION**) processes the call, but it does not support settlement.

### **Solution**

The default session application (**SESSION**) does not support the settlement feature. Therefore, you must configure the **application** command in the inbound dial peer.

## **Terminating Gateway Not Synchronized with Settlement Server**

### **Solution**

**Problem**

The terminating gateway clock is not synchronized with the settlement server. The terminating gateway rejects the call because it is too soon or too late to use the settlement token in the incoming setup message.

**Solution**

Use the **ntp** or **clock set** command to synchronize the clocks between the terminating gateway and the settlement server.

## Settlement Provider Not Running

**Problem**

The settlement provider on the originating gateway or terminating gateway is not running. No settlement transaction processing is allowed unless the provider is running.

**Solution**

Enable settlement using the **no shutdown** command in settlement configuration mode. Use the **show settlement** command to verify the provider status.

## Router and Server Not Using SSL to Communicate

**Problem**

The router cannot use SSL to communicate with the server because the server URL should be "https," not "http."

**Solution**

Configure a secured URL using "https."

**Problem**

The router cannot use SSL to communicate with the server because the certificates of the server or router were not properly obtained.

**Solution**

Check the certificate enrollment process for both the server and the router.

## Multiple Dial Peers Have Random Order

**Problem**

The originating gateway has multiple dial peers for the same called number, and settlement is never used. The order for rotary dial peers is random unless a dial peer preference is specified. The dial peer with lower preference is chosen first.

### Solution

Define dial peer preference by using the **preference** command.

## H.323 Setup Connection Timeout

### Problem

The originating gateway cannot successfully set up a call with the first terminating gateway that is returned from the OSP server. The problem occurs when a gateway attempts to set up the call with the terminating gateways in the order they are received. If for some reason the H.323 call setup is not successful, there is a 15-second timeout by default before the next terminating gateway on the list is contacted.

### Solution

The H.323 call setup timeout can be tuned using the **h225 timeout** command.

For example:

```
voice class h323 1
  h225 timeout tcp establish <value 0 to 30 seconds>
  dial-peer voice 919 voip
  application session
  destination-pattern 919555....
  voice-class codec 1
  voice-class h323 1
  session target settlement
```

## Problem Isolation

To isolate problems with settlement, perform the following tasks:

- Check the originating gateway and terminating gateway configuration for dial peers, settlement providers, and certificates.
- Check the network between the originating gateway, terminating gateway, and the server. Ping each device to make sure that the machines are running.
- Verify that IP calls can be made successfully. If so, the problem is specific to settlement.
- Turn on **debug voip ivr settlement** on the originating gateway to see if the Tcl IVR script initiates a settlement request to the server.
- Use the **debug voip settlement network** command on the originating gateway to capture the HTTP requests sent to the server and the response from the server. If the originating gateway gets no response from the server, contact the settlement provider.
- Turn on **debug voip settlement misc** to see the list of TOWs returned from the server. If this list is incorrect, contact the settlement provider.
- If the terminating gateway rejects the settlement token because it is too soon or too late to use it, synchronize the terminating gateway clock with the server.