

Troubleshoot SIP Soft Phone

SIP Soft Phone is a powerful application that you can use on a Windows computer to place and control calls using SIP-based (Session Initiation Protocol) communications. SIP Soft Phone delivers audio through a supported USB audio device that connects to your computer.

This article describes common troubleshooting tasks to help you set up and run SIP Soft Phone in your environment.

Requirements

The soft phone is like any other Customer Interaction Center (CIC) station. You configure it in Interaction Administrator and it accesses the IC server. Once it's installed, your soft phone appears in the station list in the **Login** dialog box.

To use SIP Soft Phone, you must:

- Be configured as a user on an IC server with the appropriate SIP hardware and software prerequisites.
- Install the SIP Soft Phone application on your computer.

Note: You can install the SIP Soft Phone application when setting up IC User Applications.

- Configure SIP Soft Phone to use a supported USB audio device.

When selecting an audio device, audio quality and personal preference are subjective. Choose a high-quality USB headset with noise and echo cancellation. You can find a list of supported USB devices at <http://testlab.inin.com>.

Troubleshooting resources

There are several resources available to help you configure SIP Soft Phone.

Help

The SIP Soft Phone application includes Help. To access Help, right-click the SIP Soft Phone icon in the notification area of the Windows taskbar, and then click Help on the menu. The table of contents in the Help lists all of the things that you can do with SIP Soft Phone. Index and Search tabs are also available.

Common troubleshooting tasks

One of the common problems encountered with SIP Soft Phone is provisioning. When a soft phone fails to provision, it is often because required information is missing from the DNS.

The soft phone must have the following information to provision:

- Short name of the IC server(s)
- FQDN of the IC servers(s)
- Reverse IP lookup that resolves to FQDN

To provision correctly, SIP Soft Phone requires all this information. If the soft phone cannot resolve one of these items, it fails to get its configuration. This issue is one of the more common causes of SIP Soft Phone provisioning and registration failures. Make sure that the soft phone can resolve these items.

To test the name resolution, enter the following at a command prompt:

```
nslookup ExampleName
```

To test the reverse IP lookup, enter:

```
ping -a xxx.xxx.xxx.xxx
```

Other troubleshooting tasks:

- Make sure that there is no Internet proxy configured in Microsoft Internet Explorer.

Windows uses the Internet Explorer proxy settings for any HTTP request from the computer. The Provision Server subsystem does not honor the request coming from an Internet proxy server, as it needs to validate the sending application's signature to be a managed IP phone model that it recognizes. If you need to enable proxy settings, make sure all the possible URLs are in the exception list.

For example:

```
http://icserver2:8088;https://icserver2:8089
```

SIP Soft Phone initially sends a configuration file request to Provision Server HTTP port 8088, which then redirects to Provision Server HTTP port 8089. In this example, SIP Soft Phone gets the configuration file using HTTPS port 8089. If SIP Soft Phone uses an Internet proxy, then you might see 4xx or Timeout HTTP errors in SIP Soft Phone logs.

- Make sure that the configured DHCP Option 160 is in a valid format.

For example:

```
http://Caasprovision.caas.local:8088
```

If you want to confirm the DHCP option value that the computer's network interface card (NIC) receives from DHCP Server, then use the following PowerShell script. Elevate privileges and then run the script with the complete path to the script.

```
PS D:\tools\ReadDhcpOptions-v1.1\ReadDhcpOptions> Set-ExecutionPolicy RemoteSigned
PS D:\tools\ReadDhcpOptions-v1.1\ReadDhcpOptions> D:\Tools\ReadDhcpOptions
v1.1\ReadDhcpOptions\ReadDhcpOptions.ps1
```

- Make sure PTR (pointer) records for reverse lookup are created for FQDN of two IC servers in a switchover pair *only*, and not for any of the manually created host records that point to both IC servers. PTR records for a switchover pair are created by default if both IC servers are in the same Active Directory domain.

For example:

```
caasprovision.caas.local
```

- To rule out DNS and DHCP as the cause of SIP Soft Phone provisioning issues, you can add host entries of all possible lookups in the host file of the local machine. Then, manually provision the soft phone with an FQDN of the active IC server.

IP Address	Host Entries
10.10.1.1	ServerA
10.10.1.2	ServerB
10.10.1.1	ServerA.domain.com
10.10.1.2	ServerB.domain.com

- To check the network availability for provisioning, use a telnet client on a local machine to check if the TCP session to Provision Server is available on ports 8088 and 8089.

You may need to enable the telnet client feature from **Control Panel > Add/Remove programs > Turn Windows features on or off**.

```
telnet 10.10.1.1 8088
telnet 10.10.1.1 8089
```

- If you encounter a 404 not found error for the HTTP request from SIP Soft Phone, make sure there are no other applications running or listening on IC server ports 8088 and 8089.

For example, Splunk's universal forwarder remote data collection application, listens by default on the same port (8089) as Provision Server. As a result, Provision Server cannot initialize its HTTPS listener on port 8089, thus soft phone provisioning fails. If Splunk's universal forwarder is running, using the URL in the browser (for example: <https://10.10.1.1:8089>), should give you the Splunk webpage. If you do the same test when Provision Server is listening, you will not see anything on the webpage since Provision Server does not honor the request from a web browser.

- Required DNS and DHCP records in any network should appear as in the example below, where 10.10.1.1 and 10.10.1.2 are IP addresses of two IC servers in a switchover pair.

You can validate the addresses by checking DNS Server itself (if only one is present) or use an nslookup command on any client computer. Rerun the same nslookup query to confirm that the values do not change upon each request, which happens when there are multiple records on the DNS.

DHCP Option 160: value should be <http://caasprovision.caas.local:8088>

Required DNS Records:

Record Type	Record	Address
HostRecord	CaasProvision.Caas.local	10.10.1.1
HostRecord	CaasProvision.Caas.local	10.10.1.2
HostRecord	ICServerA.Caas.local	10.10.1.1
HostRecord	ICServerB.Caas.local	10.10.1.2
PTRRecord	ICServerA.Caas.local	1.1.10.10
PTRRecord	ICServerB.Caas.local	2.1.10.10

- If the above steps do not help and you need further troubleshooting, run Wireshark on the local computer to analyze DHCP, DNS, HTTP, and SIP requests and responses. A portable version of Wireshark is available and it does not require a local installation
- When you provision SIP Soft Phone for the first time, it uses DHCP Option 160 and resolves to a URL that connects to the active IC server. When you exit SIP Soft Phone, it saves the resolved URL in the registry key ConfigUrl, as shown in the Registry Editor example below.

The next time you start SIP Soft Phone, it reads the registry key and, if the URL is present, uses the URL to download the configuration file and complete the provisioning. If the URL is not present or is not reachable, or if a switchover occurred, then it uses DHCP Option 160 and resolves to the URL of the currently active IC server. It then saves the new URL to the registry upon exit. You can manipulate this path in the registry to play around with the ConfigUrl key while SIP Soft Phone is closed.

