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Introduction

This document describes the steps to efficiently guide you through the trace collection process of Cisco Unified Call manger (CUCM). A common scenario will be used for illustration.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Real-Time Monitoring Tool (RTMT) application.
- Configure or confirm detailed tracing for the Call Manager service.
- Configure or confirm detailed tracing for the CTI Manager service.

Components Used

The information in this document is based on current versions of Cisco Unified Communications Manager.

For versions prior to CUCM 9.x, please refer to **Collecting CUCM Traces from CUCM 8.6.2 for a TAC SR**.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Background Information

If you work with a TAC engineer on a Communications Manager issue, you may need to collect

Communications Manager traces. This may be a task you do infrequently, or have never done before.

In this scenario, you troubleshoo a call that has not been recorded, even though the CUCM-side configuration appears to be correct. The administrator receives an alarm messages for each call that failed to record, so the TAC engineer has asked you to reproduce the issue and gather detailed Call Manager traces, detailed CTI Manager traces and Event Viewer logs from CUCM side. These logs will capture the call signaling events, the CTI messages that are exchanged with the server that records the calls, and the alarms from the call that failed to be recorded.

To complete this task, you will need to:

- Install the Real-Time Monitoring Tool (RTMT) application.
- Configure or confirm detailed trace for the Call Manager service.
- Configure or confirm detailed trace for the CTI Manager service.
- Reproduce the issue and take notes.
- Gather the requested traces.
- Verify trace file coverage.
- Attach a trace package to your Service Request.

Installing the Real-Time Monitoring Tool (RTMT) Application.

In CUCM, the Real-Time Monitoring Tool (RTMT) application to gather traces for most types of issues. Every major and minor version of CUCM has an associated version of the RTMT application. If, on your PC, you do not see a **Unified RTMT** program group under **Start > Programs > Cisco**, or if the RTMT version does not match your CUCM cluster, you must install the RTMT tool for your CUCM version before moving forward.

1. Log in to the Cisco Unified CM Administration Page.

2. Select **Application > Plugins**.

3. Click the **Find** button.

4. Click the Download link for the Cisco Unified Real-Time Monitoring Tool – Windows plugin.

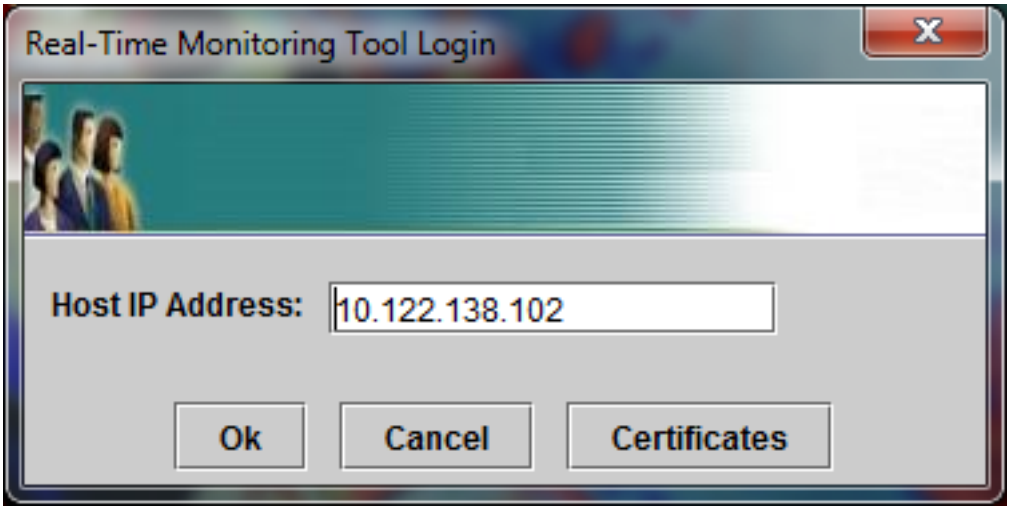
5. Save the **CcmServRtmtPlugin.exe** file.

6. Run **CcmServRtmtPlugin.exe**.

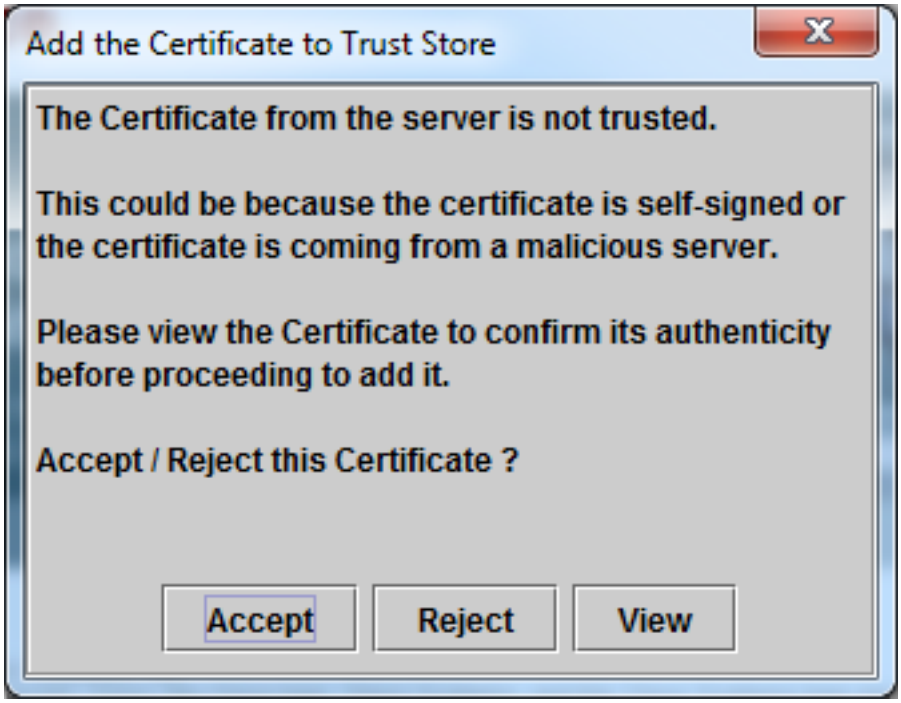
7. Follow the directions of the InstallAnywhere installation wizard, accept the License Agreement and install to the default folder location. If you had an old version of RTMT installed, the installation wizard will direct you to uninstall the old version before proceeding.

8. Navigate to **Start > Programs > Cisco > Unified RTMT**, launch **Cisco Unified Real-Time Monitoring Tool**.

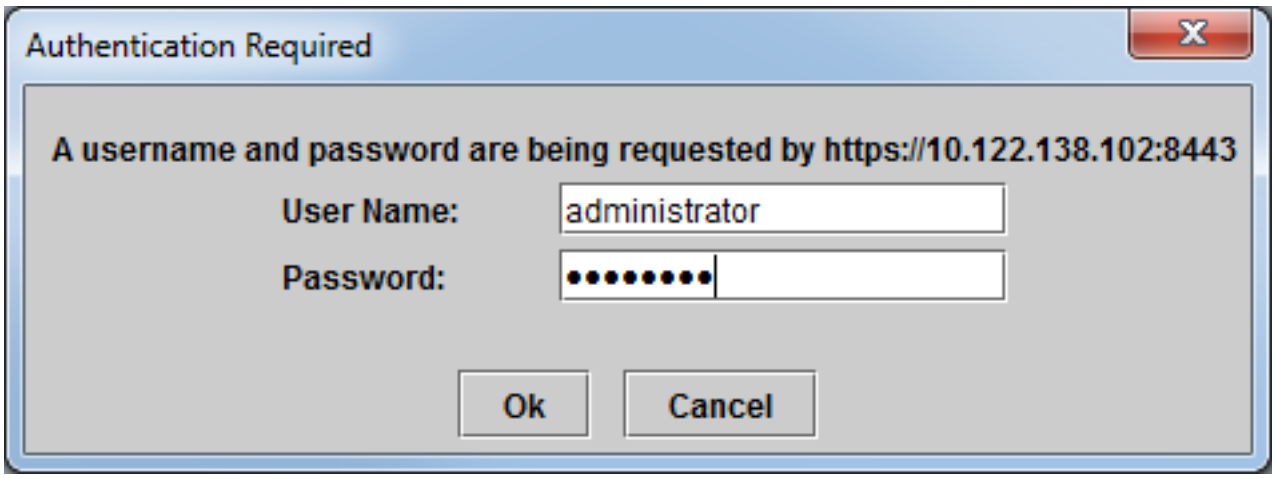
9. In the Real-Time Monitoring Tool Login window, enter the IP address for your CUCM Publisher.



10. In the Add the Certificate to Trust Store window, click **Accept.**

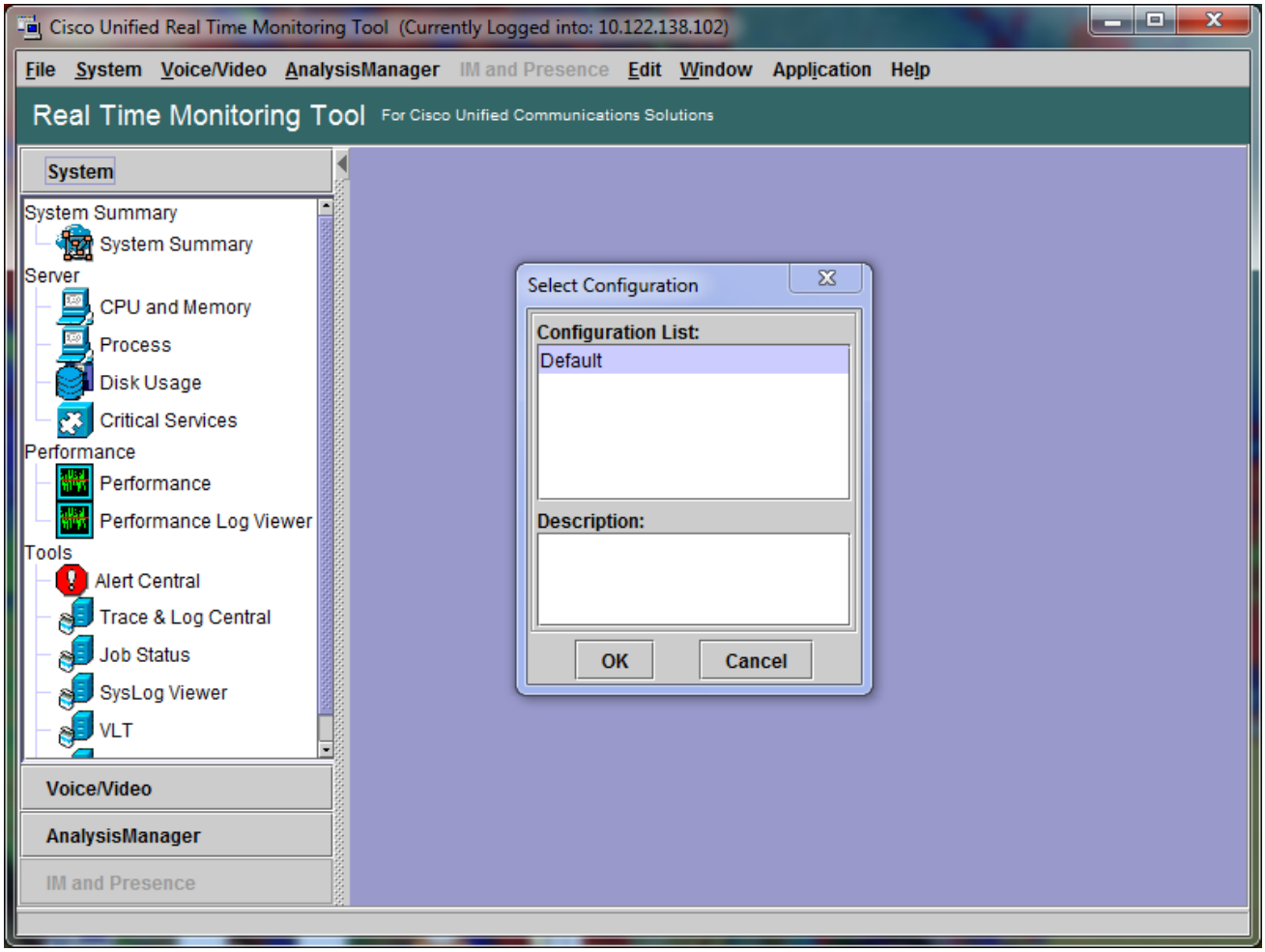


11. In the Authentication Required window, enter the same User Name and Password as you do to log on to the CUCM Administration page.

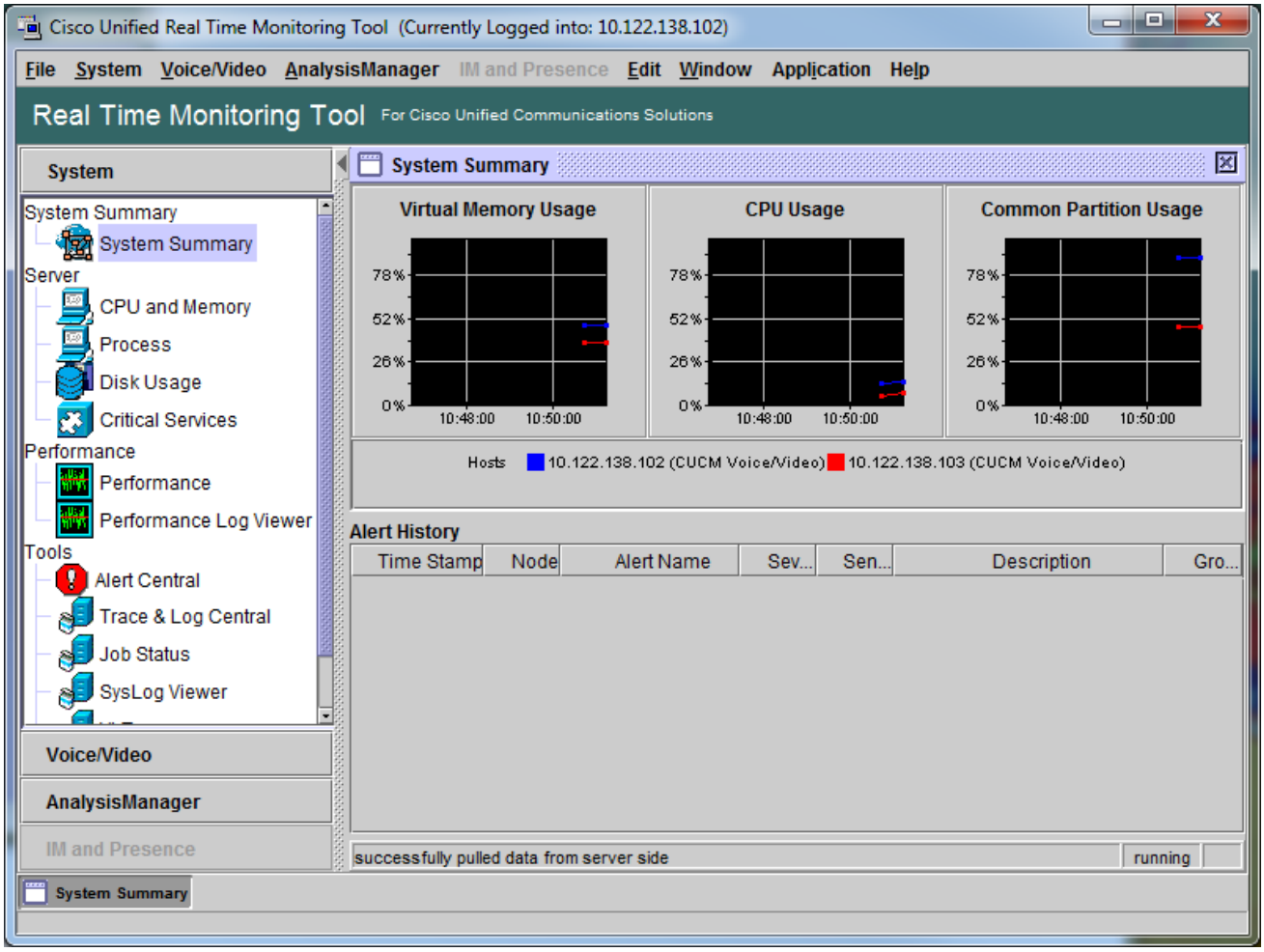


If you are unable to log on, add the **RealtimeandTraceCollection** permission to your user account, or use the application administrator account created when the system was installed, and try again.

12. The application will open, and you will see a Select Configuration window. Click **OK** to select the Default configuration.



13. The System Summary page opens.

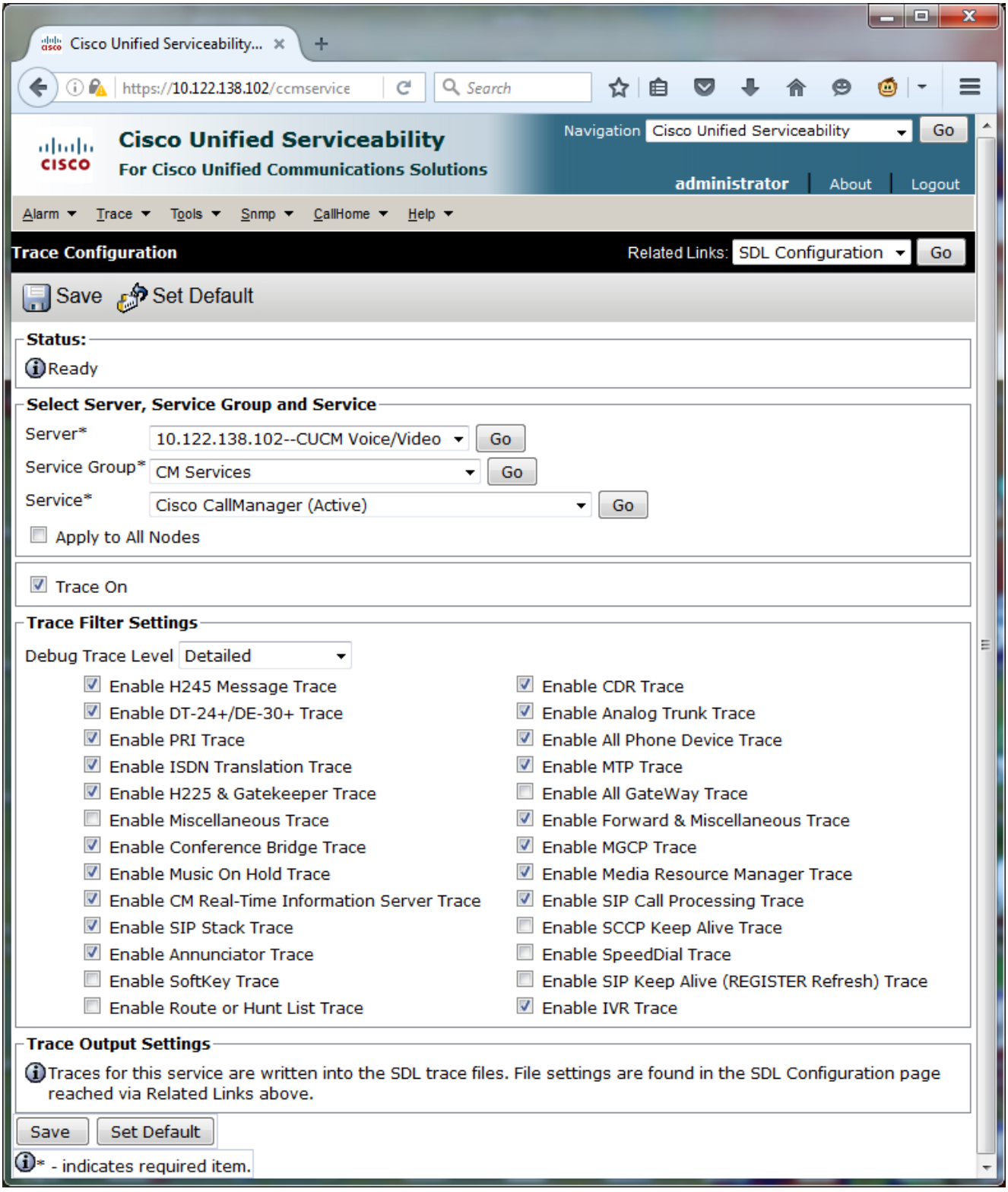


You have now verified that RTMT is installed, and that you are able to log on to your CUCM cluster using the tool.

Configure or Confirm Detailed Tracing for the Call Manager Service

In versions 9.x, 10.x and 11.x of CUCM, detailed tracing is enabled by default for the Call Manager service. Before proceeding, confirm that detailed tracing is still configured. If not, configure it.

1. Log on to the Cisco Unified Serviceability page.
2. Select **Trace > Configuration**.
3. For Server, select the CUCM Publisher and click **Go**.
4. For Service Group, select CM Services and click **Go**.
5. For Service, select Cisco CallManager and click **Go**.
6. If the system is configured for the default detailed tracing, a shown in this image:



Trace On is selected.The Debug Trace Level is set to Detailed.All Trace Filters are selected, with the exception of:

Enable Miscellaneous Trace

Enable SoftKey Trace

Enable Route or Hunt List Trace

Enable All GateWay Trace

Enable SCCP Keep Alive Trace

Enable SpeedDial Trace

Enable SIP Keep Alive (REGISTER Refresh) Trace

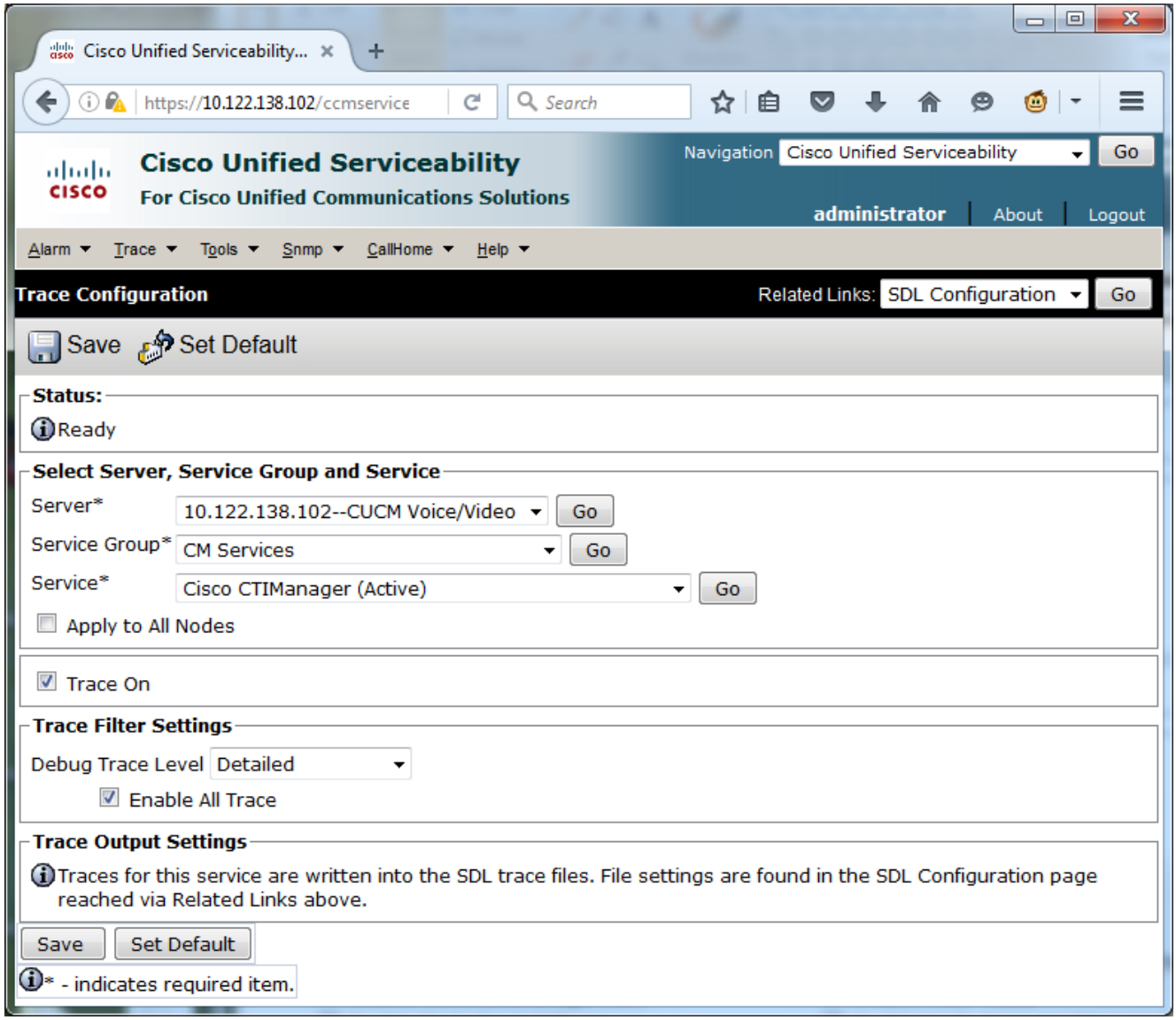
7. If the system is not configured with at least the default detailed tracing settings, and if you are using CUCM 9.x or later:
   Click **Set Default**. This will revert trace configuration for this service to default settings.Select **Apply to All Nodes**.Click **Save**.
8. Confirm trace configuration on the other servers in the cluster.

Please note that, if you are using a previous version of CUCM, you will need to manually configure your trace settings to match the illustration. Clicking the **Set Default** button on older versions will set the Debug Trace Level to Error, not Detailed.

Configure or Confirm Detailed Tracing for the CTI Manager Service

In versions 9.x through 11.x of CUCM, detailed tracing is also enabled by default for the CTI Manager service. As this could have been changed, confirm or configure this before proceeding.

1. Log in to the Cisco Unified Serviceability page.
2. Select **Trace > Configuration**.
3. For Server, select the CUCM Publisher and click **Go**.
4. For Service Group, select CM Services and click **Go**.
5. For Service, select Cisco CallManager and click **Go**.
6. If the system is configured for the default detailed tracing, as shown in this image:



Trace On is selected.The Debug Trace Level is set to Detailed.Enable All Trace is selected.

7. If these settings were modified, and if you are using CUCM version 9.x or later:
   Click **Set Default** to revert trace configuration to default settings.Select **Apply to All Nodes**.Click **Save**.
8. Confirm trace configuration on the other servers in the cluster.

As with the Call Manager trace settings, if you are using an earlier version of CUCM than this document is intended for, you will need to manually configure your trace settings to match the illustration. Clicking the **Set Default** button on older versions will set the Debug Trace Level to Error.

Note: But what about the Event Viewer logs? You don't need to change debug levels for either the Event Viewer - Application logs or the Event Viewer - System logs. You will proceed with issue reproduction.

Reproduce the Issue and Take Notes

In this scenario, you would place test calls to generate a failure. However, if you give the TAC engineer a set of traces with no information about the test calls, they may not be able to find the calls to analyze. You also risk collecting data for the wrong time frame and having to start over.

For each test call, record this information:

- Calling party phone number
- Called party phone number
- Call start time
- Call end time
- Time and description for any issues experienced during the call

As CUCM traces can be very lengthy, TAC will need those call details to find your test calls in the data.

Gather the Requested Traces

After the issue was reproduced, gather the traces requested by TAC immediately. This will prevent the trace files from being overwritten before you can gather them.

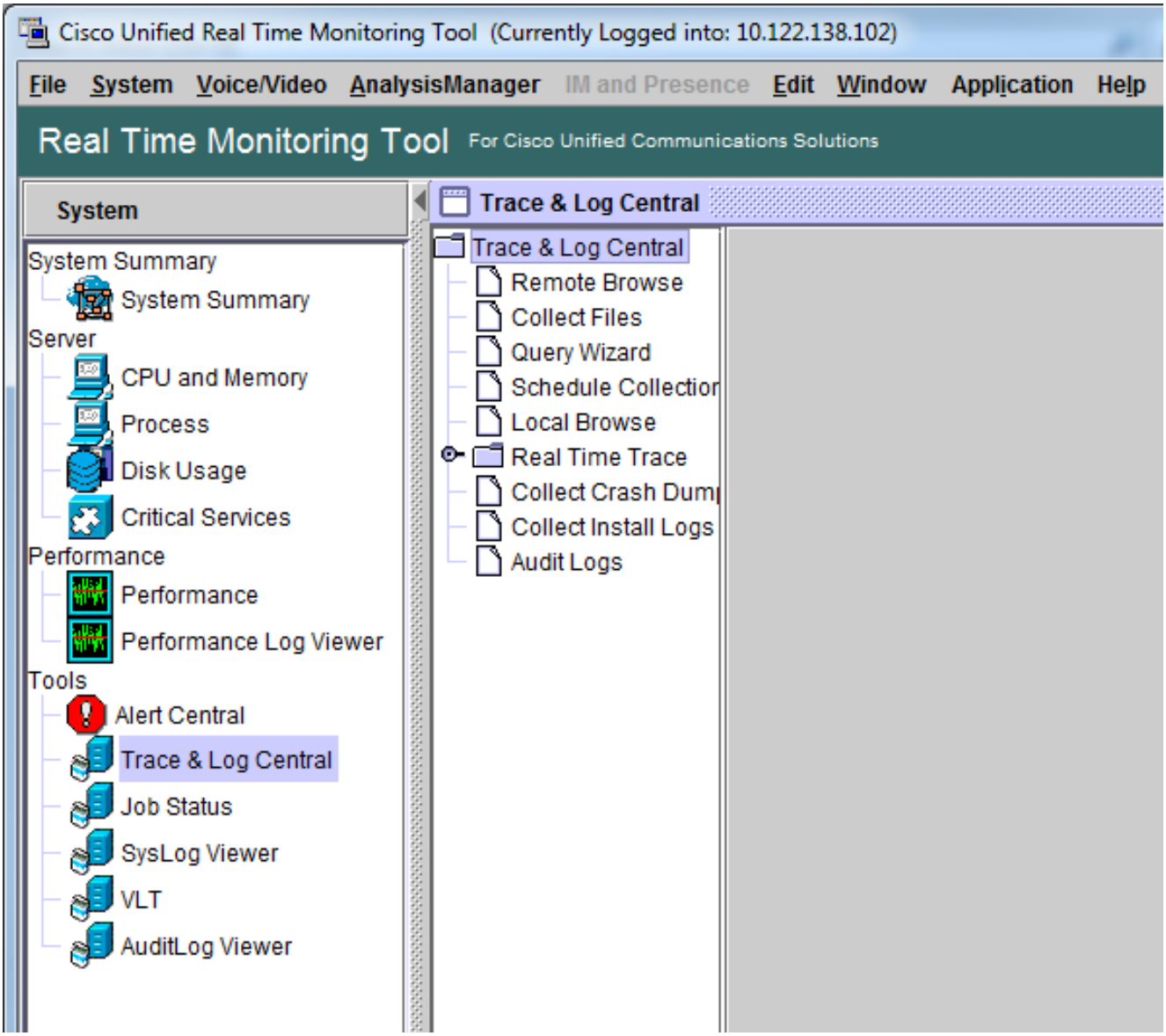
In our scenario, we need to collect Call Manager traces, CTI Manager traces, and all Event Viewer logs. Unless TAC has given you other instructions, you will collect those files from all servers, for the complete time range covering your test call or calls. This will prevent you from missing traces from a server that you did not know was in the call flow.

1. Launch the Real-Time Monitoring Tool.

2. Connect to the IP address of your CUCM Publisher.

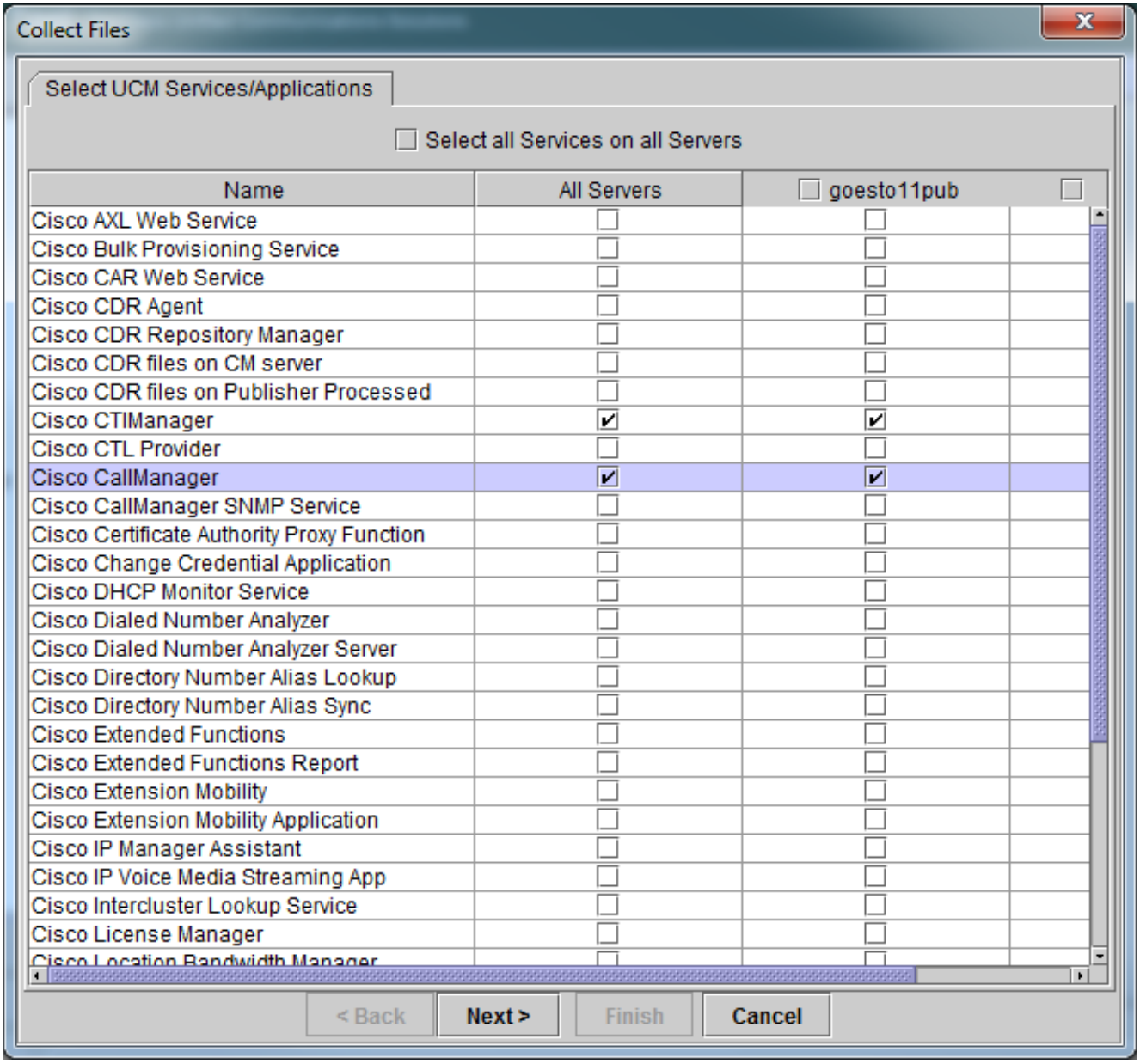
3. Log on using the same credentials you use for the CUCM Administration web page.

4. Naviigate and Select **System > Tools > Trace & Log Central.**



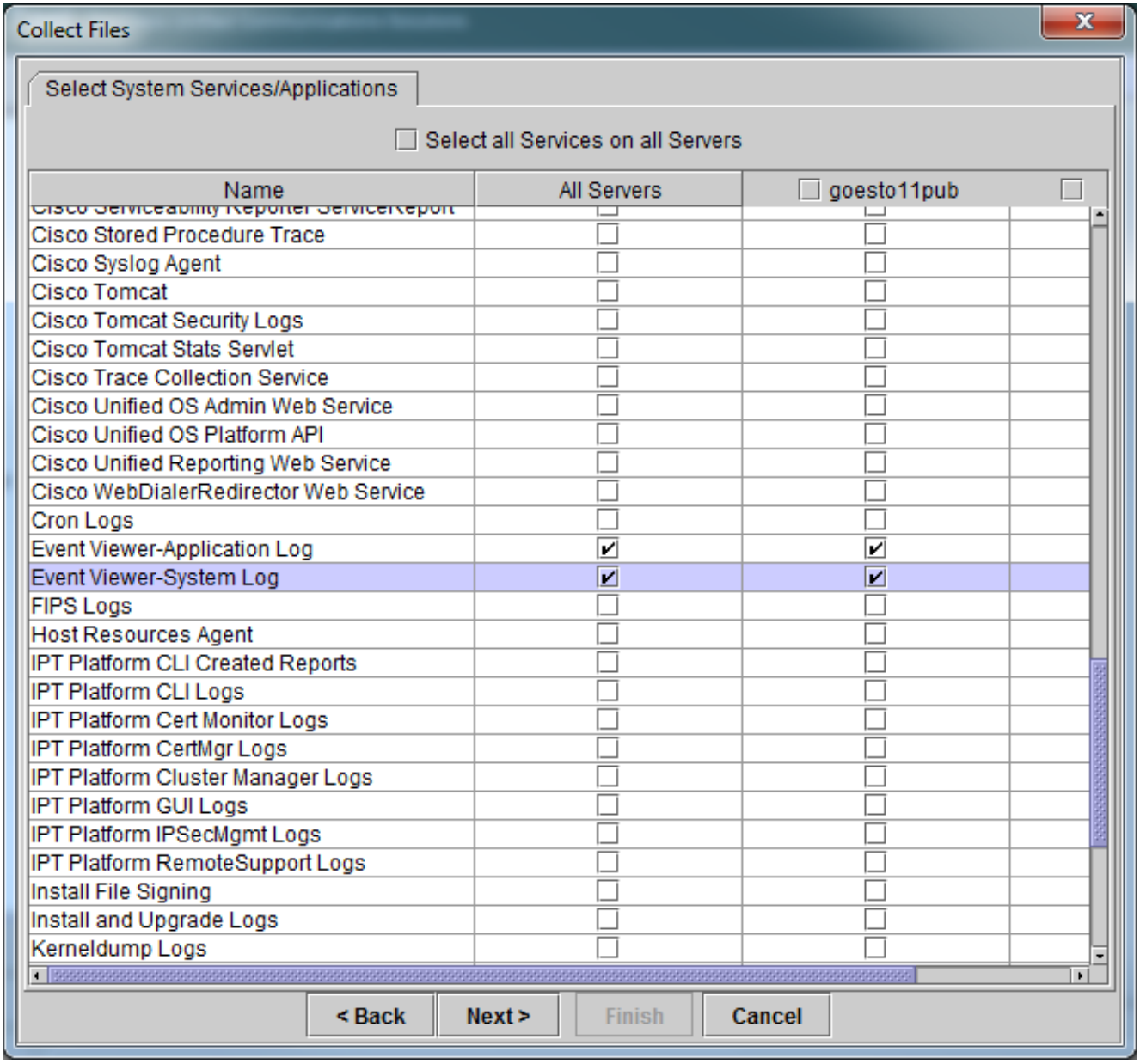
5. Double Click **Collect Files**. The Collect Files window opens to Select UCM Services/Applications.

6. In Select UCM Services/Applications, click the checkbox in the All Servers column for: Cisco CTIManagerCisco CallManager



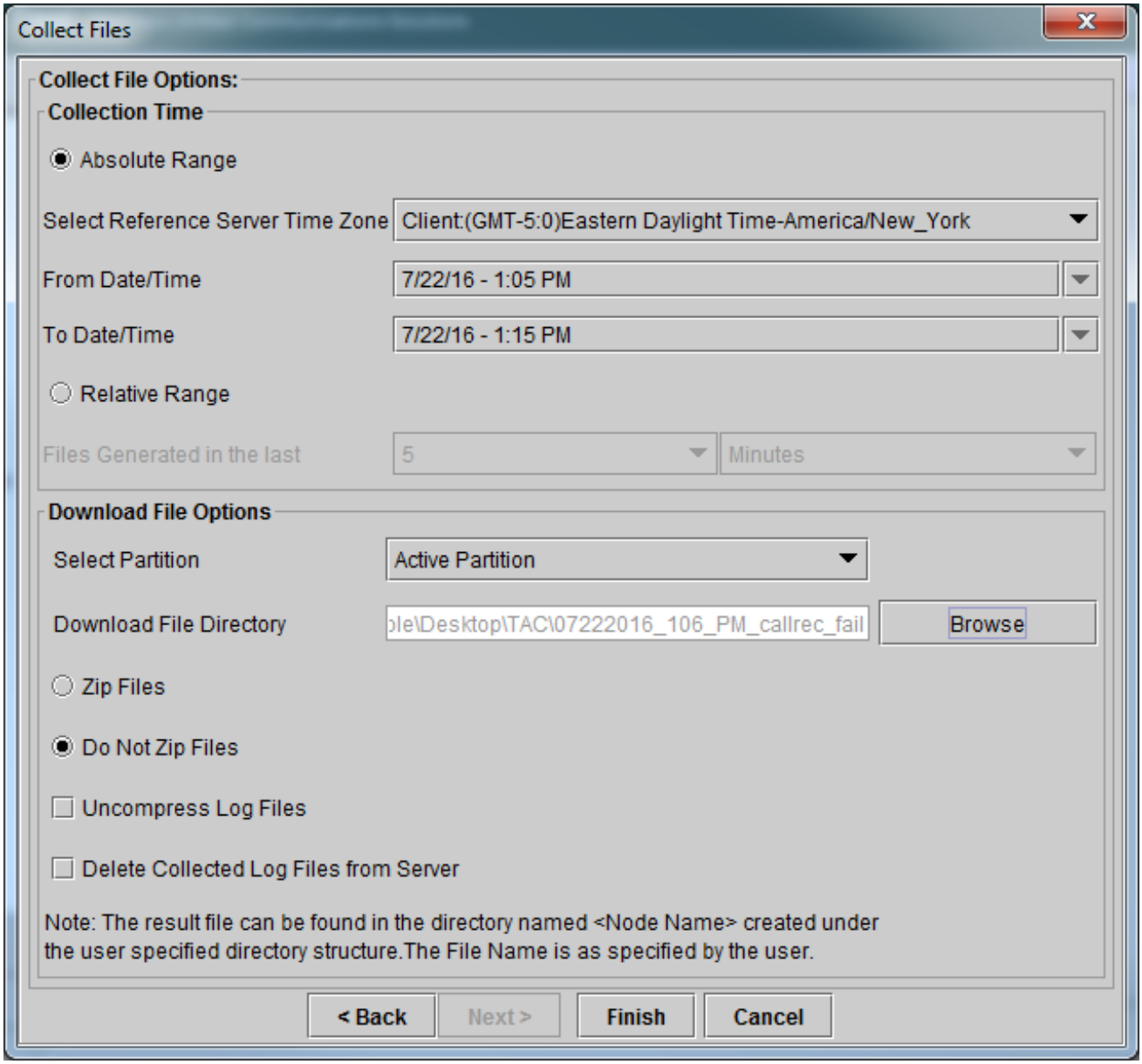
7. Click **Next**. The Collect Files window advances to Select System Services/Applications.

8. In Select System Services/Applications, click the checkbox in the All Servers column for: Event Viewer-Application LogEvent Viewer-System Log



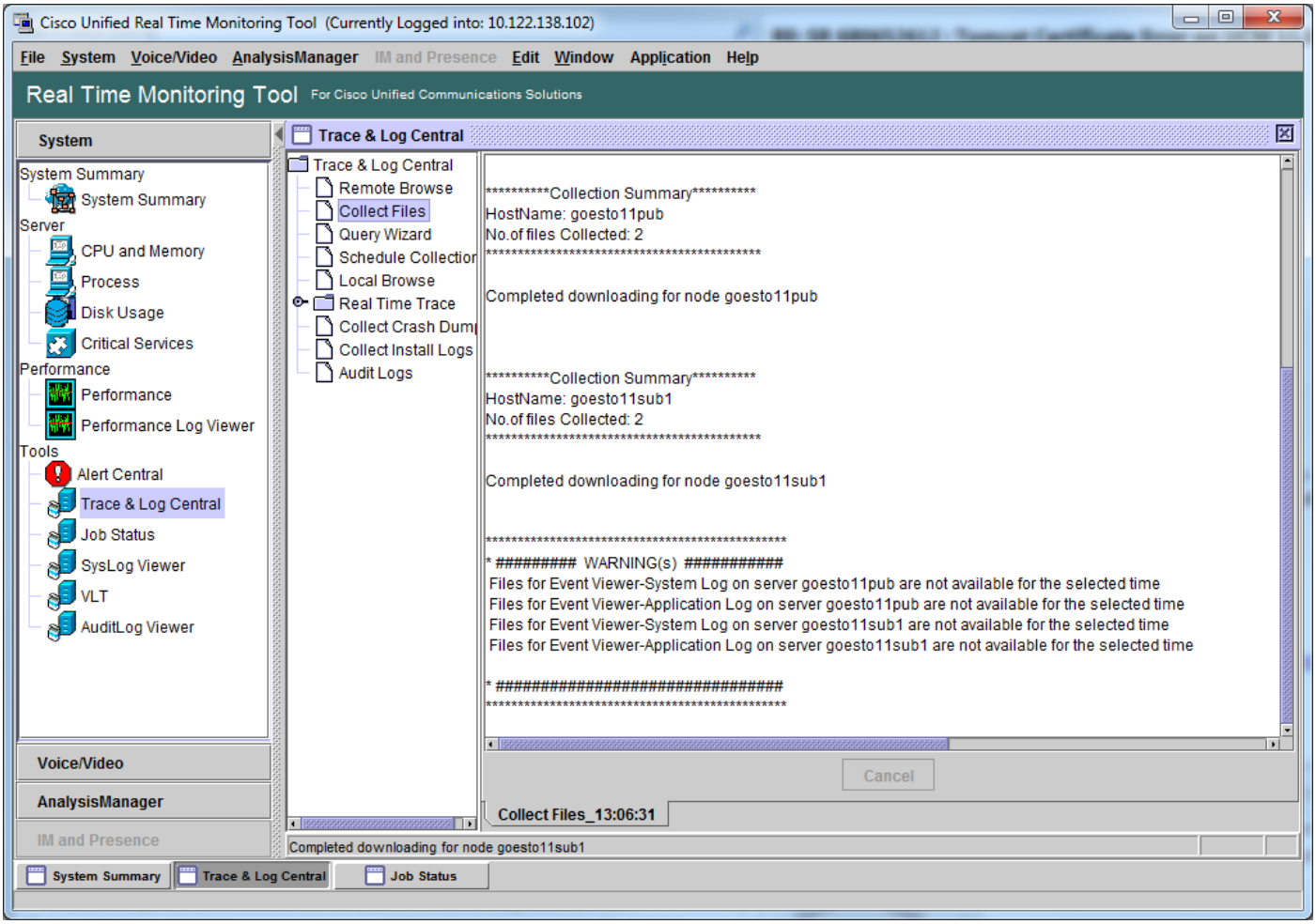
9. Click **Next**. The Collect Files window advances to the Collect File Options screen.

10. Configure your Collection Time As you have timestamps for your test call(s), select **Absolute Range**.For From Date/Time, set the time for 1 minute before your first test call.For To Date/Time, set the time for 1 minute after your last test call.
11. Configure your Download File Options. Click **Browse** to configure your Download File Directory, and specify a new directory for each trace file collection. For example, you may want to download these files to Desktop\TAC\callrectest01. Traces for a later test could go to Desktop\TAC\callrectest02. This keeps the collected file sets for each issue reproduction organized and separated.Leave all other settings set to the defaults.



12. Click **Finish**.

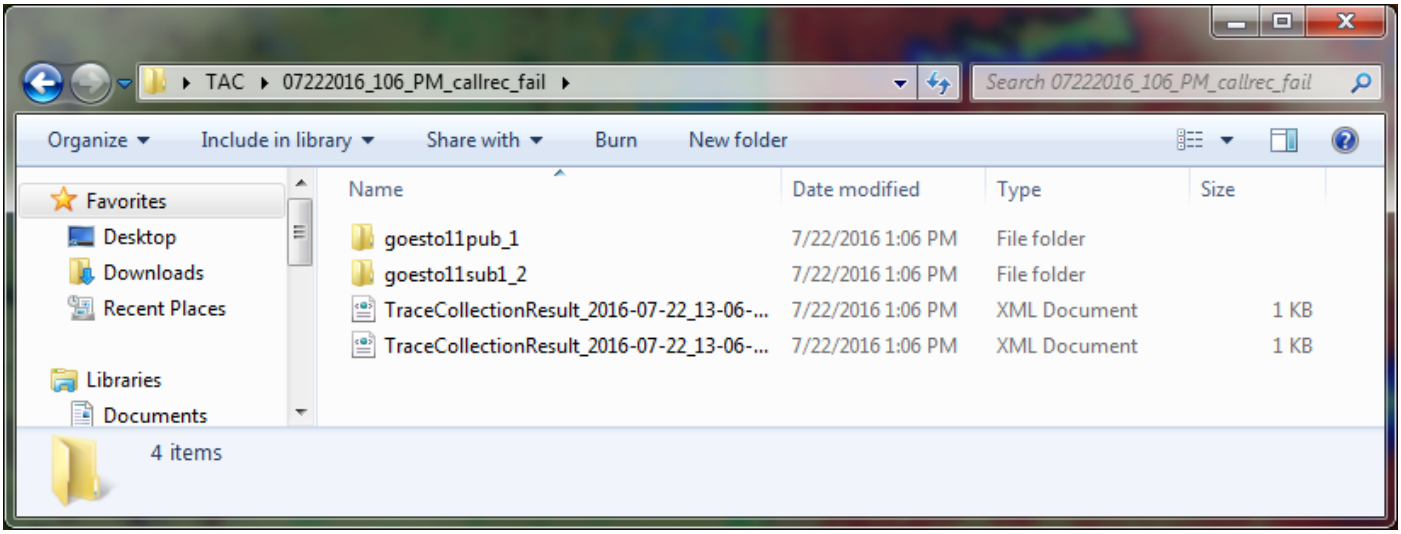
You will observe that the Collect Files window updates with the status of trace collection. While trace collection is ongoing, you will see a **Cancel** button is available. When collection is complete, the **Cancel** button will be grayed out.



Verify Trace File Coverage

Review the files that you have gathered to ensure they cover the problem time frame. The simplest way to do this is to review the **TraceCollectionResult*.xml** files.

When RTMT collects a set of files, it writes a **TraceCollectionResult*.xml** file to the download file directory for each server that it collects data from. You will see these files along with subdirectories for each CUCM server. The **TraceCollectionResult*.xml** files state which files were successfully downloaded from each server . The subdirectories contain the actual trace and log files.



Open each TraceCollectionResult file, and observe whether the modified date for the listed file or

files map to the date and time range for your trace collection. If trace files could not be collected, for example due to their being overwritten, they will be missing.

One thing you will note if you are familiar with earlier versions of CUCM is that the Cisco Call Manager traces will be a single set of SDL* traces, not a set of SDL* traces and a set of ccm* traces. This is because, starting with CUCM 9.x, traces are interleaved into a single set of files for more ease of troubleshooting. The same is true for the Cisco CTI Manager service. Instead of there being both SDL* traces and cti* traces, all of the data will be in the SDL* traces for that service.

Trace collection issues can usually be avoided by collecting traces immediately after an issue reproduction.

Important: The TraceCollectionResult*.xml files simply contain a list of files which were successfully collected from each CUCM server. TAC will need to review the actual trace and log files that were collected.

Attach a Trace Package to Your Service Request

Now that you have a complete set of traces for your issue reproduction call, you need to get them to your TAC engineer.

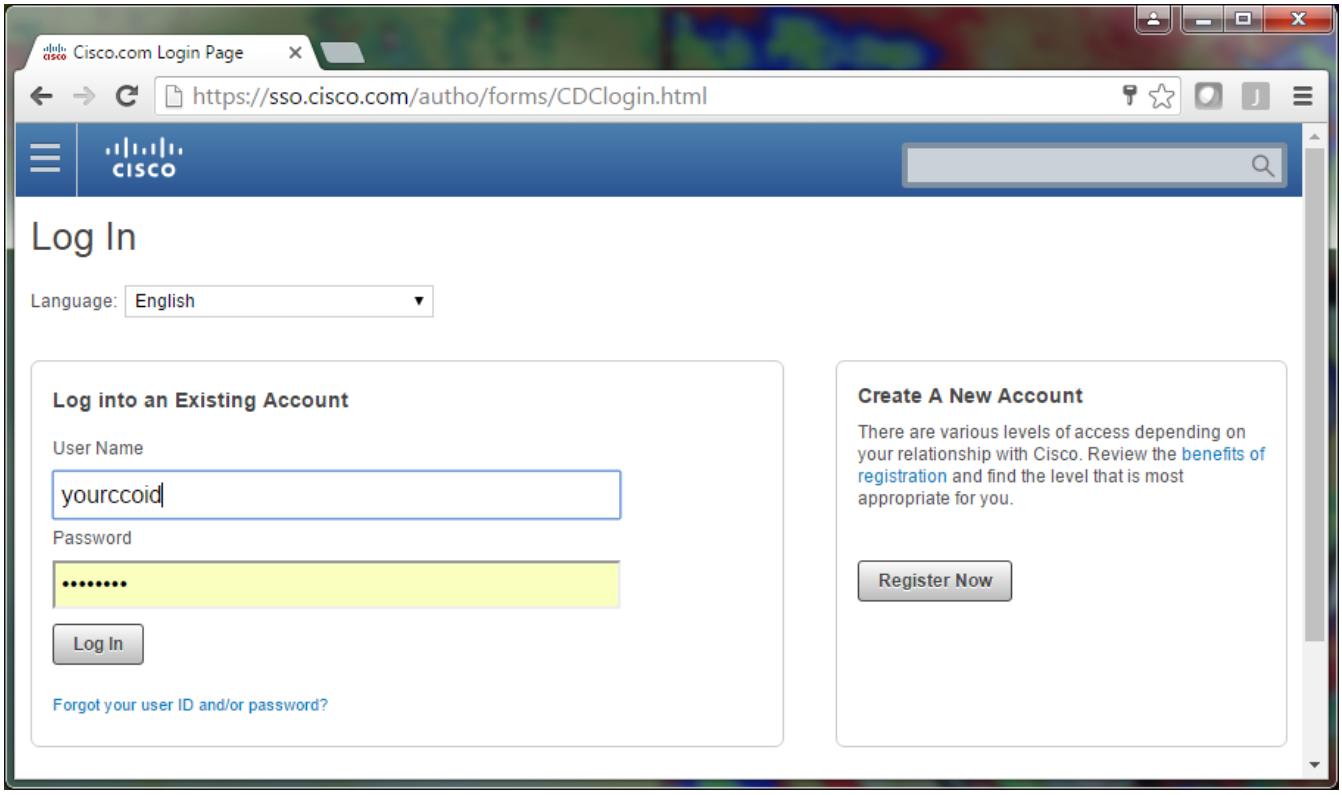
When you downloaded the traces, you specified a new download file directory. This directory now contains all of the log and trace files, as well as the TraceCollectionResult*.xml files. TAC will generally want all of the contents of the download file directory, not just one or two files.

To make this simple, upload a single .zip file using our Case File Uploader tool.

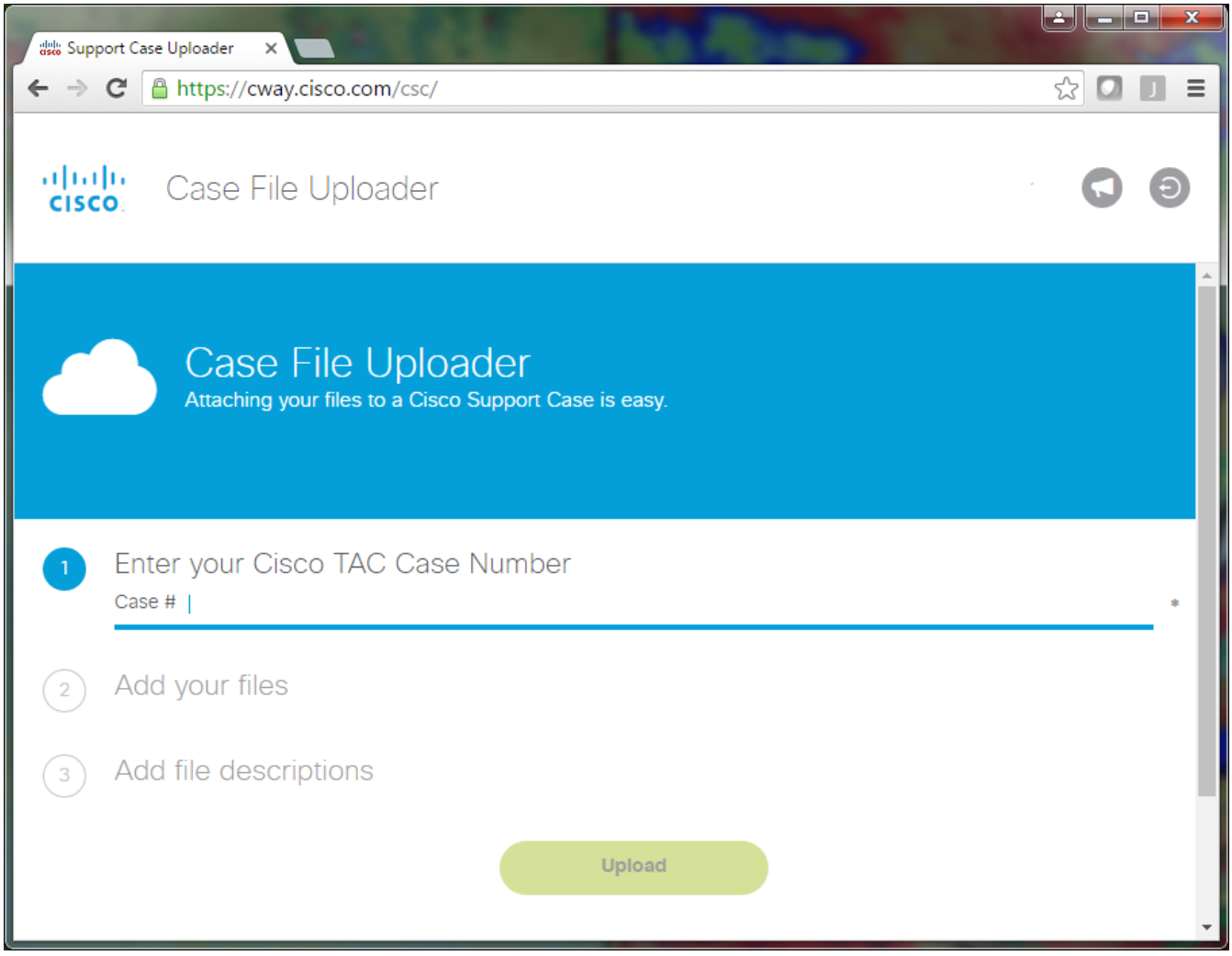
1. Compress the entire download file directory to a single .zip archive file.

2. Browse to **https://cway.cisco.com/csc**.

- You will be redirected to a log in page. Log in with your CCO username and password.

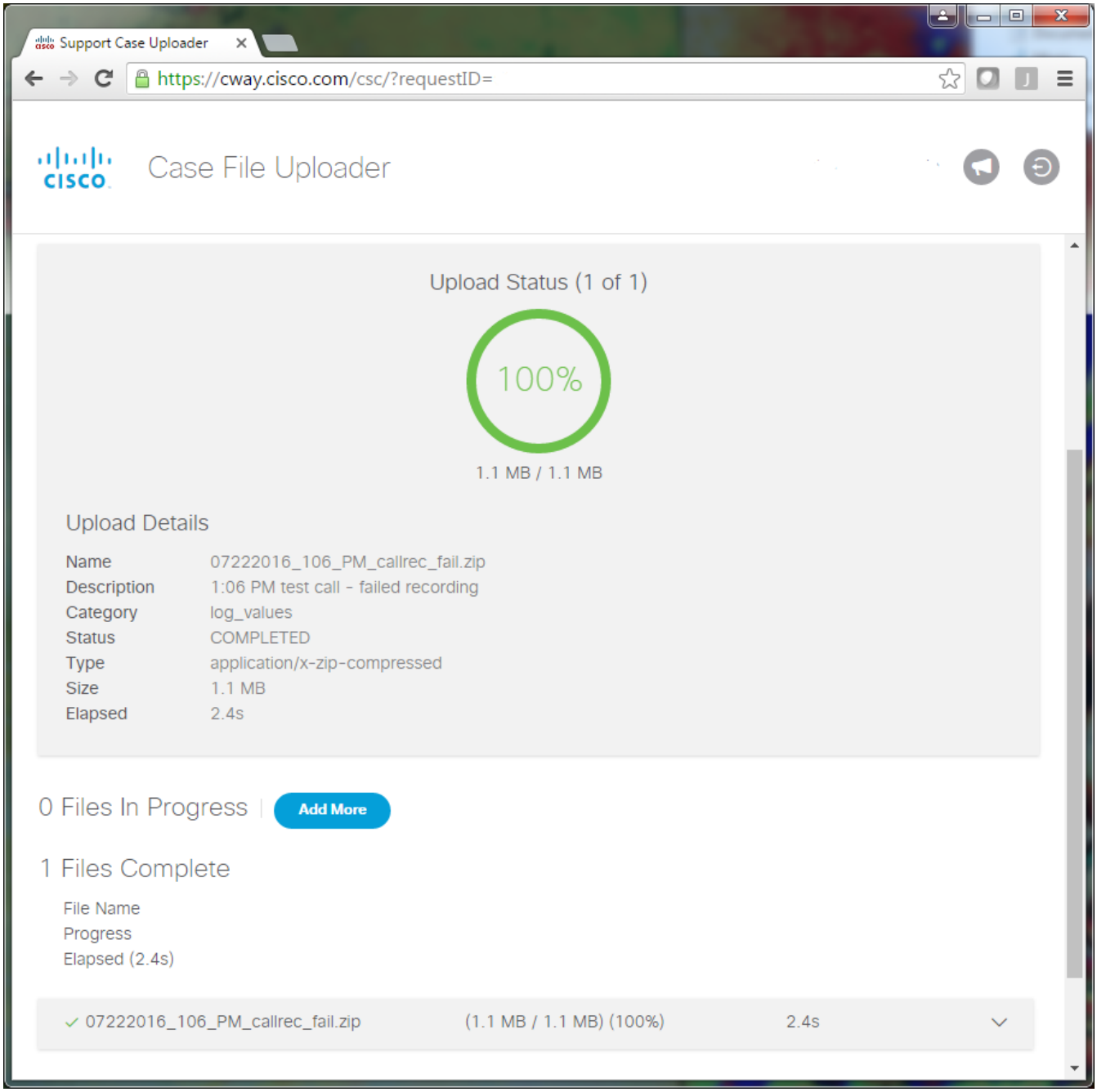


- This will bring you to the Case File Uploader tool.



Enter your Service Request number.Add your **.zip** file.Add a file description for your TAC engineer. This is a good opportunity to communicate your issue reproduction notes.Click **Upload.**

- The Case File Uploader tool will display upload status. Wait for the upload to complete.



- Close the browser window.

Lastly, please ensure that you have communicated to your TAC engineer all of your issue reproduction notes, whether this was through the upload tool, via email, or verbally. This will allow them to get started on analyzing the data for you.

Summary

How to use RTMT to collect the most commonly needed types of detailed traces for troubleshooting CUCM with your TAC engineer, covering RTMT installation, tracing configuration

in CUCM, recommending practices for reproducing issues, gathering and verifying trace files, and efficiently attaching those files to a Service Request.