

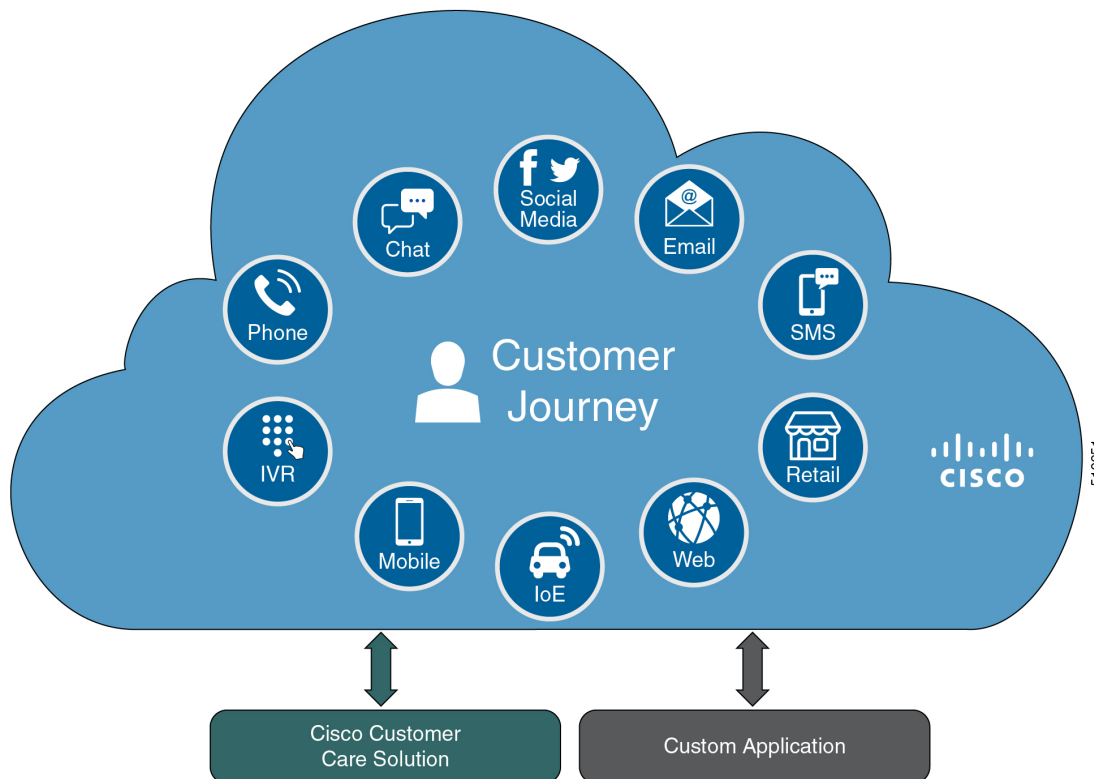


Context Service

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Context Service

Cisco Context Service is a cloud-based, omnichannel solution. Context Service captures customer interaction history and provides flexible storage of the customer interaction data across all channels (including voice, chat, email, and Internet of Things).

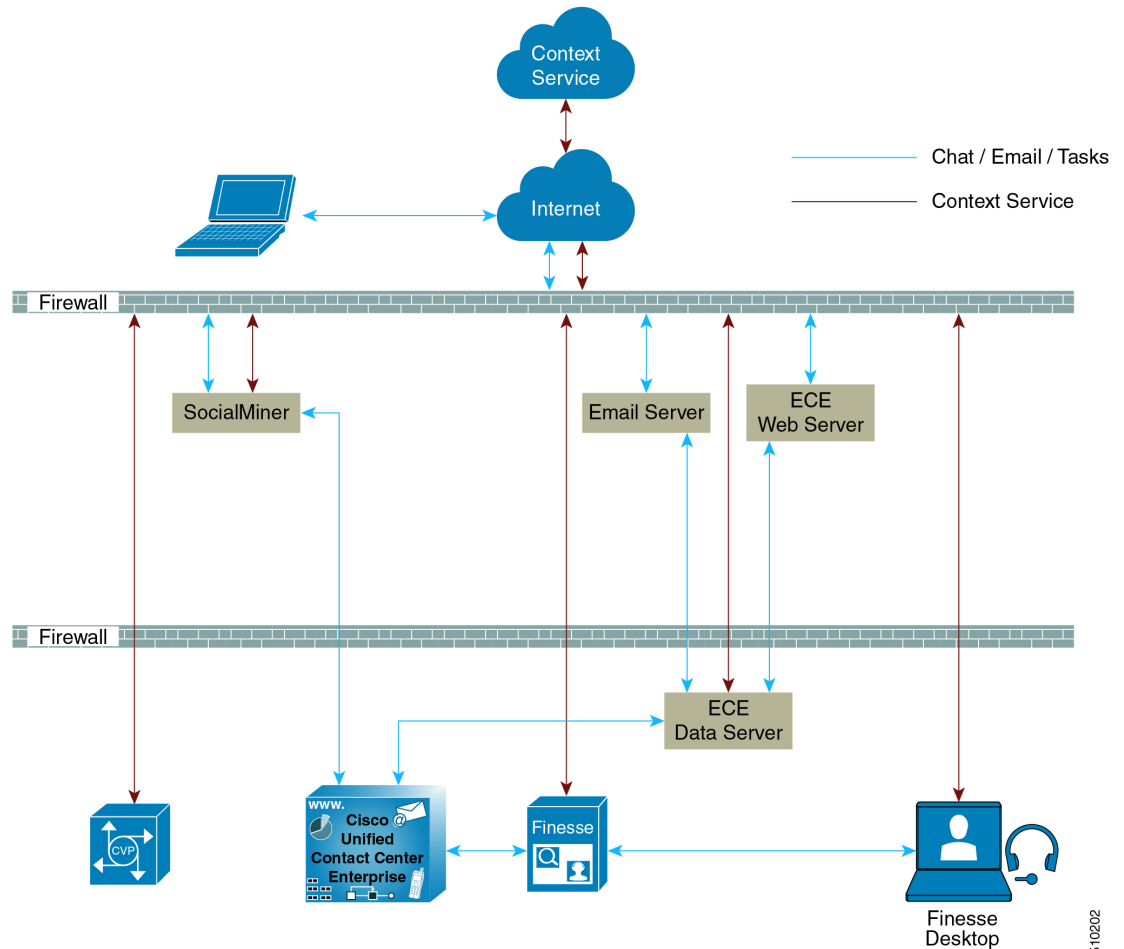


Context Service provides an out-of-the-box integration with Unified Contact Center . You do not need to install any additional components. With Context Service integrated with your contact center, agents can access a customer's previous interactions with your organization. Context Service provides this information to your agents through the Customer Context gadget in the Cisco Finesse desktop.

Context Service provides a flexible data store for storing customer interaction data. You can define what data you want to store and how to store it. Cisco hosts and manages the service, eliminating the need for your organization to deploy and manage servers. Your organization owns the data, even though it's stored in the cloud. Your organization controls access to sensitive data. Cisco partners cannot access protected data unless you grant them access.

For more information about Context Service, see Cisco Context Service Help Central at <https://help.webex.com/community/context-service>.

Design Considerations



Omnichannel Customer Journey

The omnichannel customer journey captures and displays a customer's complete interaction history.

A customer purchases a motorcycle from a company (Cumulus Motorcycle). The customer now has a problem with the motorcycle, so he needs to schedule an appointment with Cumulus Motorcycle for repair. The customer browses the Cumulus web site to locate the nearest service center and chats with a Cumulus agent to determine if the service center that he selected is open on Sundays. In the chat, he tells the agent that he will call when he is ready to schedule an appointment.

The customer calls to schedule a service appointment. The VRU detects his chat and sends his call to a Cumulus Motorcycle agent who is context aware. The customer agrees on a date for service. The agent confirms the appointment, and sends the appointment details to the customer. When the customer realizes that he has a conflict with the appointment, he sends the SMS a new proposed date. The agent receives a screen pop with the customer's proposed date. The agent sends the customer the details for the new appointment. The customer

brings his motorcycle into Cumulus Motorcycle for the scheduled service appointment, then picks up his repaired motorcycle.

Table 1: Components that enable the omnichannel customer journey

Activity	Components
The motorcycle dashboard indicates an error, and instructs the customer to contact Cumulus Motorcycle Customer Service immediately.	The motorcycle sends diagnostic metadata to the Cumulus data center which is connected to Context Service.
The customer browses the Cumulus website to locate the nearest service center. He clicks the Schedule Service Appointment link to view the Cumulus Service Centers located near him. The customer views the nearest Cumulus Service Center and clicks the link to chat with a Cumulus agent.	Enterprise Chat and Email Finesse The Cumulus backend server sends the IoT event data and creates an activity to show the current breadcrumbs in Context Service.
The customer calls to schedule a service appointment. The VRU detects his chat and sends his call to an agent.	SMS Unified CVP Finesse Other components
The customer receives the appointment details.	SMS
The customer has a conflict with the scheduled date. The customer proposes a new date. The agent receives a screen pop with the customer's new date.	SMS Finesse
The customer receives a SMS confirmation with the new date.	SMS (for example, Tropo).
The customer picks up his repaired motorcycle.	

Task Flow to Enable Context Service

To enable Context Service in your contact center solution, follow this task flow:

Sequence	Task
Enable Context Service	
1	Work with your Cisco account partner to onboard your organization: Enable Context Service for Your Organization, on page 5
Configure and Register Components	
2	Register Unified CCE Administration to support Cisco Unified CVP, Cisco Finesse, SocialMiner and ECE servers: Register Unified CCE Administration to Support Components, on page 9.

Sequence	Task
3	Configure connection data in CVP Call Studio: Configure Context Service Connection Data in Call Studio, on page 11.
4	Set the principal Administration & Data Server (for Packaged CCE 4000 Agents or 12000 Agents deployment): Set the Principal AW for Context Service, on page 8.
5	Enable the POD.ID expanded call variable: Enable the POD.ID Expanded Call Variable, on page 11.
Create scripts	
6	Add Context Service to your CVP scripts: https://developer.cisco.com/site/context-service/index.gsp .

Context Service Setup

Context Service Prerequisites

Complete the following tasks before you enable Context Service.

- Install and configure your contact center solution and any components that you plan to integrate with Context Service (Unified CVP, SocialMiner, ECE, and Cisco Finesse).
- Ensure that port 443 (HTTPS) is available for Context Service to use.
- Add the following URLs to your allowed list in your firewall so that your contact center components can connect to, and receive data from, the internet:

- *.webex.com
- *.wbx2.com
- *.ciscoccservice.com



Note You must use wildcard URLs in your allowed list because Context Service is accessed through multiple subdomains. Context Service subdomain names can dynamically change.

- If Context Service uses a proxy server, configure the browser proxy with the URL specified in the Context Service Management gadget.

Enable Context Service for Your Organization

Context Service enables you to store and access customer interaction data in the cloud, creating a flexible and seamless omnichannel customer journey experience. To use Context Service:

- Work with your Cisco account partner to enable Context Service for your organization.
- Register Context Service for your organization to use with your contact center application.
- Connect your contact center application to Context Service.



Note You need Java Runtime Environment (JRE) version to 1.8.0_151 or later to use Context Service. Refer to the [Compatibility Information](#) for your specific release and update accordingly.

Create a Customer Organization and Enable Context Service

Your Cisco account partner can provide Context Service entitlement to your [Cisco Webex Control Hub](#) account.

This example shows how a partner adds a Context Service subscription to a customer organization. The example assumes that:

- The partner is a full administrator or sales administrator and can add trials.
- The [Cisco Webex Control Hub](#) account or the organization and accounts associated with the organization have been created.

Example: Add a Trial Service

Context Service is not tied to the trial services, and does not expire when the trial period is complete.

1. Log in with your partner credentials to the [Cisco Webex Control Hub](#).
2. Click **Start Trial** on the Overview page. The **Start New Trial** window opens.

3. Enter details about the trial:

- **Customer Information:** Enter the name of the customer company and an email for the administrator.
- **Trial Services:** Select the trials to add to this customer. To enable Context, select **Message**.
- **Licenses Quantity:** Specify the number of licenses required for this customer trial. This number is usually the number of users who use this service. This option applies only to the Trial Services. Context Service is not bound by the number of licenses specified here.
- **Trial duration** Specify the duration the trial lasts before you must purchase the service. This option applies only to the Trial Services and not Context Service.



Note Context Service entitlement does not expire when the specified trial period ends. The organization can continue to use Context Service beyond the date of the specified Trial Duration.

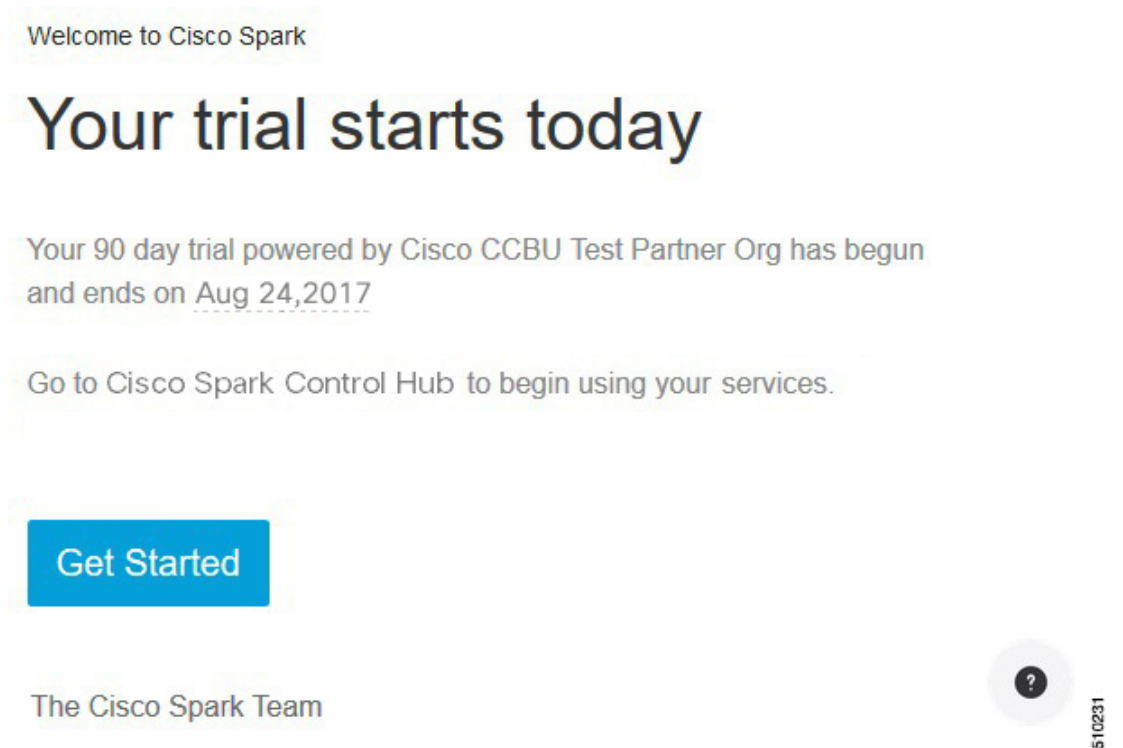


Note You cannot change the customer name and administrator email after you create the trial. You can modify the other terms of the trial as needed.

Make sure that the email you provide is not already associated with a [Cisco Webex Control Hub](#) account.

4. Scroll down to the **Non Trial Services** section and select **Enable Context Service for Cisco Unified Contact Center**.
5. Click **Next**.
6. A message is displayed that asks if you want to set up the services for the customer. Click **No**.

You now have provided Context Service entitlement to the organization. The customer now receives a welcome email at the specified email address with the subject line **Welcome to Cisco Spark Service**.



The customer must click **Get Started** in the email and sign in to [Cisco Webex Control Hub](#) to begin their trial. The customer uses the credentials in the email to sign in and is prompted to create a password.

Your Cisco Context Service is ready. To use the service, connect to Cisco Contact Center with Context Service Enabled. See [Register Context Service](#) for more information.

Component Configuration and Registration

Set the Principal AW for Context Service



Note This procedure is applicable only for Packaged CCE 4000 Agents or 12000 Agents reference design.

During deployment, the first SideA AW machine in the CSV file is the principal AW .

After deployment, you can change the Principal AW by selecting a different AW on the Inventory page. Set the AW on which you make most of your configuration changes as the Principal AW.

Before registering with Context Service in Unified CCE Administration, you must specify the Principal AW to manage the credentials for Context Service.

Procedure

- Step 1** In **Unified CCE Administration**, go to **Infrastructure > Inventory**.
 - Step 2** Click the AW that you want to manage the Cisco Spark Control Hub admin credentials for Context Service. The Edit CCE AW window opens.
 - Step 3** Select the **PrincipalAW** check box.
 - Step 4** Enter your solution's Diagnostic Framework credentials.
 - Step 5** Click **Save**.
-

Register Unified CCE Administration to Support Components

You register Unified CCE through the Unified CCE Administration tool. This enables Unified CVP, Finesse, SocialMiner and Enterprise Chat and Email to access Context Service in a single operation.



- Note** Before you register with Context Service through Unified CCE Administration, upgrade the JRE on your primary AW to version 1.8.0_151 or higher. For information on upgrading JRE, see the Cisco Unified Contact Center Enterprise Installation and Upgrade Guide.
-

Before you begin

- Add SocialMiner and Enterprise Chat and Email to the **System Inventory in Unified CCE Administration**.

Packaged CCE 2000 Agents always uses the Side A Administration & Data Server as the Principal AW for Context Service.

For Packaged CCE 4000 Agents or 12000 Agents, use the **Inventory in Unified CCE Administration** to set the Principal AW before registering Unified CCE. The Principal AW manages the Context Service credentials.

- When your organization was entitled for Cisco Context Service, you received an email requesting a sign-in and a password change. Sign in using the registration email, and change the password. Now your organization is entitled to use Context Service.

Procedure

- Step 1** Register from the Unified CCE Administration **Overview > Feature > Context Service**.
- Step 2** Provide the following information:

- **Proxy server URL**—Specify the URL if your solution uses an optional proxy server to reach Context Service.
- **Timeout**—The amount of time, in milliseconds, that the system waits for a response from Context Service for each operation.

Valid Timeout range is from 200ms to 15000 ms, with a default of 1200 ms. For the CVP component, the valid Timeout range is from 1200ms to 5000ms, with a default of 2400ms. If the timeout value is less than 1200ms or greater than 5000ms, the Unified CVP sets the minimum value to 1200ms or maximum value to 5000ms.

- **Lab Mode**—Indicate whether Context Service is in lab mode. In lab mode, you can test, develop, and debug Context Service. Lab mode allows you to delete objects from Context Service.

Step 3 Click **Register**.

Your browser displays the Cisco Spark sign-in page.

Step 4 Enter your [Cisco Webex Control Hub](#) admin credentials. Complete the registration in [Cisco Webex Control Hub](#). (See [Register Your Application with Context Service](#) for more information.)

Note Use the same organization admin account to register all components in one contact center solution.

[Cisco Webex Control Hub](#) redirects the browser back to the application from which you initiated the registration.

What to do next

Set up the ECE services in the System Console. For more information, see the *Enterprise Chat and Email Deployment and Maintenance Guide (for Unified Contact Center Enterprise)* at <https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-maintenance-guides-list.html>.

Configure Context Service in ECE. For more information, see the *Enterprise Chat and Email Administrator's Guide to System Console* at <https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-maintenance-guides-list.html>.

If you register CCE Context Service after it is deregistered, restart the ECE Context Service Process and Instance from the ECE System Console Page. To set up ECE services in the System Console, see the *Enterprise Chat and Email Deployment and Maintenance Guide (for Unified Contact Center Enterprise)* at <https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-maintenance-guides-list.html>.

After you register Cisco Finesse, agents can use the Context Service desktop gadget. It is available in Unified CCE Administration, under **Desktop > Resources > Desktop Layout** tab. If the gadget is not in your layout, you can add the gadget with the following XML:

```
<tab>
    <id>manageCustomer</id>
    <label>finesse.container.tabs.agent.manageCustomerLabel</label>
    <gadgets>
        <gadget>/desktop/gadgets/ContextService.xml</gadget>
    </gadgets>
</tab>
```

Add Context Service credentials and connection details to Call Studio. See [Configure Context Service Connection Data in Call Studio](#), on page 11.

Configure Context Service Connection Data in Call Studio

To debug a solution that uses Context Service, Call Studio requires your Context Service credentials and connection details.

Procedure

Step 1 Go to CVP Server and navigate to the C:\Cisco\CVP\conf folder.

Step 2 Copy the connection data from the vxml.properties file to clipboard.

```
VXML.ContextService.ConnectionData: <connection data>
```

Step 3 Launch Cisco Unified Call Studio.

Step 4 Choose **Window > Preferences**.

Step 5 On the **Preferences** window, choose **Call Studio > Debug Preferences**.

Step 6 In the Context Service area enter the following connector properties:

- a) In the **Connection Data** field, paste the connection data from the clipboard.
- b) In the **Proxy URL** field, enter the Proxy URL in the format: *hostname:port* or *IP_address:port*.
- c) In the **Timeout** field, enter how long the client waits for a response from Context Service. The allowed values are from 1200ms to 5000ms, with a default of 2400ms.

Step 7 Click **OK**.

Note To check the validity of connection data through the Proxy URL, click **Test connection**.

Enable the POD.ID Expanded Call Variable

Enable the built-in POD.ID expanded call variable to send task context data through the system.



Note For a new incoming call Unified CVP creates a new POD and passes that POD information to CCE in the POD.ID ECC variable. In order to make Unified CVP send the POD.ID ECC variable to CCE, the Call Studio Script should contain CVP Subdialog_Start at the beginning of the script followed by the business logic of creating or updating the POD. The Call Studio Script should contain CVP Subdialog_Return at the end of script with Caller Input as “Yes” for Subdialog_Return in order to pass the POD ID to the CCE Application.

Procedure

Step 1 In Unified CCE Administration, choose **Overview > Features > Context Service**.

Step 2 Click the **POD.ID** row in the Expanded Call Variables list.
The **Edit POD.ID** window opens.

Step 3 Check the **Enabled** check box.

Step 4 Click **Save**.

Solution Serviceability

This section provides the information and resources to troubleshoot Context Service.

You can view service status for Context Service and subscribe to updates at <https://status.ciscospark.com>.

For Enterprise Chat and Email troubleshooting information, see the *Enterprise Chat and Email Administrator's Guide to System Console* at <https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-maintenance-guides-list.html>.

Access Context Service Logs

The log file from Context Service is `CCBU-runtime.<YYYY-MM-DDTHH-MM-SS>.sss.log`.

The path to the log file is `/opt/cisco/mmca/logs/runtime`.

Context Service logs are stored at `C:\icm\tomcat\logs\ContextService.*.log` on the Principal AW.

Fusion Management Connector logs are stored at `/opt/cisco/ccbu/logs/fusion-mgmt-connector` directory

Cisco Finesse logs are stored at `/opt/cisco/desktop/logs/finesse-auth`

Cisco SocialMiner logs are stored at `/opt/cisco/mmca/logs/runtime`

For the location of Enterprise Chat and Email logs, see the *Enterprise Chat and Email Administrator's Guide to System Console* at <https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-maintenance-guides-list.html>.

View Context Service Customer Record Statistics

You can check Context Service customer record statistics from the VXML logs.

Verify the VXML logs for any exceptions. Search the log `$CVP_HOME/logs/VXML` for the instances “Context service client stats summary” - Verify the reachability `/connectivity`. The report displays the count, latency, etc for each record. Alerts are captured in `syslogServer`.

Troubleshooting Context Service Registration Process

This section lists the issues and the possible solutions during registration of the components with the Context Service Cloud.

Cannot Configure Cisco SocialMiner

You cannot configure Cisco SocialMiner, if Context Service fails to connect with it.

Check the Context service logs at `C:\icm\tomcat\logs\ContextService`. If there are connectivity errors, the Context Service logs provide information similar to this:

```
0000001306: *.*.*.*: Aug 12 2016 16:58:15.629 -0400:
%CCBU_pool-1-thread-35-Infrastructure-1548-3-REST_API_EXCEPTION:
```

```
%[exception=com.sun.jersey.api.client.ClientHandlerException:  
java.net.SocketTimeoutException: connect timed out][message_string=Failed  
to make request. Exception is caught for rest call:GET  
https://*.*.*.*:443/ccp-webapp/ccp/contextServiceConfig]: The REST API  
has caught an exception
```

To fix the issue, check to see if Cisco SocialMiner is up and running. If Cisco SocialMiner is up and running, check its connection with the principal AW Machine.

If your issue is still unresolved, contact Cisco customer support.

Cannot Register Context Service

When you try to register with Context Service, if registration fails with the following error, check to see if you have an internet connection.

```
Failed to register with the Context Service because of a connection error.  
Verify that the server has internet access and/or the proxy server URL  
is correct.
```

If your registration fails due to incorrect proxy server URL, check the proxy server configuration in your browser.

If you are still unable to register, the Context Service SDK could have been corrupted, when an automatic update was run.

To recover the corrupted Context Service SDK:

1. Stop the Cisco Tomcat service.
2. Delete the C:\icm\ContextService directory.
3. Restart the Cisco Tomcat service. The Context Service directory is recreated.

If your issue is still unresolved, contact customer support.

Cannot Deregister Context Service

If the AW-HDS-DDS side A can access only the key management system but not the rest of Context Service, registration succeeds. However, deregistration fails because the cluster was not created.

Check the Context Service logs on the Principal AW at:

C:\icm\tomcat\logs\ContextService.*.log. If the cluster was not created, the SDK logs provide information similar to this:

```
0000000111: *.*.*.*: Aug 12 2016 10:46:59.835 -0400:  
%_Thread-25-6-com.cisco.thunderhead.RESTClient: Error on CREATE:  
https://hercules-a.wbx2.com/v1/connectors  
  
0000000112: *.*.*.*: Aug 12 2016 10:46:59.835 -0400:  
%_Thread-25-3-com.cisco.thunderhead.RESTClient: Error: try #1: Exception  
trying to connect=com.sun.jersey.api.client.ClientHandlerException:  
org.apache.http.conn.HttpHostConnectException: Connect to  
hercules-a.wbx2.com:443 [hercules-a.wbx2.com/*.*.*.*,  
hercules-a.wbx2.com/*.*.*.*] failed: Connection timed out: connect
```

To fix this issue, check to see if your server is up and running.

If you are still unable to deregister, the Context Service SDK could be corrupt.

To recover the corrupted Context Service SDK:

1. Stop the Cisco Tomcat service.
2. Delete the `C:\icm\ContextService` directory.
3. Restart the Cisco Tomcat service.

The Context Service directory is recreated. If the issue is still unresolved, contact Cisco support.

Context Service Registration Incomplete

When registering or de-registering Context Service, the process stops responding and continues to display one of the following messages:

```
Registration is in progress
```

OR

```
Deregistration is in progress
```

These messages could occur for the following reasons:

- The proxy is invalid or not reachable. Make sure that the proxy URL is correct and reachable from Finesse.
- The browser pop-up is disabled. Ensure the browser pop-up is enabled.
- The Context Service Cloud services may not be reachable. For more information, see the Fusion Management Connector (FMC) logs located at:
`/opt/cisco/ccbu/logs/fusion-mgmt-connector` directory.
- Fusion Management Connector (FMC) is still in the loading state.

Context Service Registration Status Invalid

Registering Context Service can fail with this error:

```
The Context service registration status is invalid. Check the Settings and try again.
```

This error could occur for the following reasons:

- An invalid client setting update results in an invalid registration state. To ensure that the update keeps the connector in registered state, perform the following:
 1. Correct the client settings.
 2. Save and refresh the page.

If the update is unsuccessful, try restarting the Cisco Tomcat service. If the issue still persists, re-register Context Service.

- Connection data is invalid. Restart Cisco Tomcat service. If that doesn't help, contact Cisco Support.

Unable to Determine Context Service Registration Status or Client Settings

Errors occur when the Fusion Management web application, deployed on the Platform Tomcat is down, or the Cisco Tomcat service is down.

When this occurs:

- Verify that the Cisco Tomcat service is up and running. The service may not respond with an XML in some error scenarios.
- Restart Platform Tomcat and try again.
- Check the logs under: `/opt/cisco/ccbu/logs/fusion-mgmt-connector` for more information.

Context Service Registration Incomplete Due to Page Refresh

As part of Context Service registration process, do not refresh the pop up page while the registration or deregistration process is in progress. This may result in an **Undefined** state for that respective component.

Troubleshooting Context Service Connectivity Process

This section describes the various connectivity related issues that are encountered and the troubleshooting that can be performed for a possible solution.

Activity Operation

Exception related to Activity operation failure

Deployment failure, dynamic jar download failure, context service client initialization failure, or incorrect connection data.

Check that the Context Service extension jar dynamically downloads in the following path:

`CVP_HOME\VXMLServer\Tomcat\webapps\CVP\WEB-INF\contextservice\context-service-sdk-downloads`

- Check the network connectivity.
- If you use a proxy server, make sure that it is working.

Ensure that the Context Service client initialization is successful.

- Restart the VXML Server service.

Verify that the customer ID is valid and exists.

- Create valid customers.

Verify the VXML logs for any exceptions. Search the log `$CVP_HOME/logs/VXML` for the instances “CS_SDK_STATUS” - Verify the reachability /connectivity. Alerts are captured in `syslogServer`.

Context Service Connection Data Not Published

The connection data is published in the following scenarios:

- De-registering or cancelling Context Service.

- Registering with Context Service.
- Updating connection data when Context Services sends a notification.

This issue can occur when there is a change in the connection data in the cloud. Also, check for the following log statements in the fusion-management-connector logs at

`/opt/cisco/ccbu/logs/fusion-mgmt-connector/:`

- Error occurred while fetching runtime connector information from DB
- There are no runtime connectors registered in system currently
- Exception occurred while fetching connection data
- Exception occurred while publishing connection data

If the issue persists, contact Cisco Support.

Activity Count Mismatch Between CVP and Other Components

This issue can occur if there is a count mismatch between CVP and other components due to a break in network or cloud connectivity. You will get this error message `Activity Failed`.

Check the statistics. Context Service Statistics: Unified CVP fetches the customer record related statistics every 30 minutes and writes in the VXML logs and syslogs. These statistics are flushed out immediately post fetching.

Verify the VXML logs for any exceptions. Search the log `$CVP_HOME/logs/VXML` for the instances “CS_SDK_STATUS” - Verify the reachability /connectivity. Alerts are captured in `syslogServer`.

Activity Failure in Debug Mode

Error/Exception in VXMLlogs

Network issue, incorrect connection data

- Verify that the proxy is correct.
- Check if the proxy is working on the web browser.
- Check if the connection data is valid.

Verify the VXML logs for any exceptions. Search the log `$CVP_HOME/logs/VXML` for the instances “CS_SDK_STATUS” - Verify the reachability /connectivity. Alerts are captured in `syslogServer`.

Periodic Logging of Context Service SDK Connector Status

- Context Service status information is logged periodically into the respective log files.
- The periodic interval is 30 minutes, and this is synchronized to the wall clock time. The log should appear at 1100hrs, 1130hrs, 1200hrs and so on.
- The status message lists the overall status, services used by the connector, information on whether it is reachable, latency and so on.
- Fusion Management Connector logs are located at `/opt/cisco/ccbu/logs/fusion-mgmt-connector`

- Finesse Auth logs are located at: `/opt/cisco/desktop/logs/finesse-auth`.

Periodic Logging of Context Service JMX Counters

The JMX statistics information is logged into the logs located at `/opt/cisco/desktop/logs/finesse-auth` directory" with the text "CS_SDK_STATS_SUMMARY".



Note This statistics information is not logged into the Fusion Management Connector logs.

Troubleshooting Context Service Runtime Process

This section describes the runtime related issues that are encountered during the runtime connection with the Context Service Cloud. The troubleshooting tips and the possible solution for each are presented.

Unable to Access Customer Context Information

In the Cisco Finesse desktop gadget, there may be instances where the customer's context information is not accessible and the following error message is displayed:

```
Experiencing issues with accessing customer's context information
```

This error message could occur due to the following reasons:

- Invalid client settings. Check and correct the client settings.
- Due to connectivity issues. Check if the Context Service connectivity is accessible from Cisco Finesse.
- Cisco Finesse is not registered with Context Service. Check your Context Service registration. If Context Services is not registered, try again

Deregister a Component with Context Service

After registering a server, you can deregister it if you decide to stop using Context Service with that server.

Before you begin

Ensure that your web browser allows popups.

Procedure

- Step 1** In Unified CCE Administration, choose **Overview > Features > Context Service**.
- Step 2** Click **Deregister**.
Your browser displays the Cisco Spark sign-in page.
- Step 3** Sign in with your [Cisco Webex Control Hub](#) admin credentials and confirm the removal of your Hybrid Services cluster.

You are redirected to the application page for the completion of the deregistration process. The browser window closes automatically after a successful deregistration. Avoid making any changes to the client settings until the deregistration is completed successfully.
