Features

Cisco Finesse

Introduction

Cisco Finesse is a next-generation agent and supervisor desktop designed to provide a collaborative experience for the various communities that interact with your customer service organization.

Cisco IM and Presence functionality can be provided to the agents using Jabber.

Cisco Finesse provides:

- A browser-based administration console and a browser-based desktop for agents and supervisors; no client-side installations are required.

- IP phone based (FIPPA) agent login & state control with limited features.

- A single, customizable cockpit or interface, that gives customer care providers quick and easy access to multiple assets and information sources.

• REST APIs that simplify the development and integration of value-added applications and minimize the need for detailed desktop development expertise.

The following table lists the availability of the Cisco Finesse REST APIs by license packages:

Table 1: Cisco Finesse REST APIs availability by license packages

Service	Unified CCX Premium	Unified CCX Enhanced	Unified CCX Standard
Cisco Finesse REST APIs	Available	Available	Not available

The following table lists the availability of the Cisco Finesse service in the Unified CCX packages:

Table 2: Cisco Finesse service availability by license packages

Service	Unified CCX Premium	Unified CCX Enhanced	Unified CCX Standard	Unified IP IVR
Cisco Finesse	Available	Available	Not available	Not available

Cisco Finesse functionalities

Cisco Finesse supports the following functionalities:

• Basic call control—Answer, hold, retrieve, end, and make calls.

• Advanced call control—Make a consultation call and transfer or conference the call after the consultation.

• Not Ready and Sign Out reason codes—Reasons that agents can select when they change their state to Not Ready.

• Wrap-up codes—Reasons that agents can apply to calls.

• Phone books—List of contacts from which agents can select one to call.

• Live data gadgets—Display current state of agents, teams and CSQs in the contact center.

• Customizable third-party gadgets.

• Recording using MediaSense and/or Workforce Optimization.

• Scheduled call back—Request a callback at a specific callback phone number and also specify the time or date of the callback.

• Reclassify—Reclassify a direct preview outbound call as busy, answering machine, fax, invalid number, or voice.

• Outbound agent—Supports outbound dialing including progressive, predictive, and direct preview modes, allowing agents to handle both inbound and outbound dialing tasks.

• Multisession webchat—Allows agents to work on multiple chat sessions at the same time for increased agent resource usage.

• Multisession email—Allows agents to work on multiple email sessions at the same time for increased agent resource usage.

• Multiline—Provides multiple lines on agent phones.

- Extension mobility—Allows users to temporarily access their Cisco Unified IP Phone configuration such as line appearances, services, and speed dials from other Cisco Unified IP Phones.

Note

- Team composition changes in Cisco Finesse are not updated dynamically. Log in again or refresh the browser session to see the changes.

- Transition to Logout state is possible only from Not Ready state.

- Limit the team that accesses Live Data reports to a maximum of 50 agents.

- Unified CCX 10.6 with mixed mode COP file supports concurrent use of Cisco Finesse Desktop and Cisco Finesse Agent or Supervisor Desktop Finesse.

- Migration tools are not available to migrate configurations between Cisco Finesse Agent Desktop or Cisco Supervisor Desktop and Finesse. When you migrate, manually recreate configurations such as reason codes, wrap-up codes, workflows, contacts, and phone books.

You can configure the Cisco Finesse Agent and Supervisor Desktops to use Cisco gadgets and third-party gadgets through a layout management method. You can customize the Cisco Finesse Agent and Supervisor Desktops through the Cisco Finesse administration console. The administrators can define the tab names that appear on the desktops and configure which gadgets appear on each tab.

For information about supported browsers and operating systems, see the Compatibility Matrix for Cisco Unified CCX at http://docwiki.cisco.com/wiki/Compatibility_Matrix_for_Unified_CCX.

Note

Video is now supported if you are using Cisco Jabber for Windows as agent phone. The agent desktop where Jabber is used for Video should comply to the Cisco Jabber hardware requirements listed in the *Cisco Jabber for Windows 11.0.x and 11.1.x Release Notes* , located at http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/jabber/Windows/11_0/RN/JABW_BK_C5E7828C_00_cisco-jabber-windows-11-release-notes.html.

Cisco Finesse Desktop latency

Cisco Finesse Agent and Supervisor Desktops can be located remotely from Unified CCX. The round-trip time between the Unified CCX server and the agent desktop must not exceed 400 ms.

Bandwidth requirement for Cisco Finesse client to server

The agent and supervisor login operation involves loading web pages, and includes the CTI login and the display of the initial agent state. After the desktop web page loads, the required bandwidth is significantly less.

Because Cisco Finesse is a web application, caching can significantly impact the required bandwidth. For example, the first time an agent logs in, the number of bytes transmitted is approximately 2 megabytes. If caching is enabled in the browser, during subsequent logins, the number of bytes transmitted is 0.134 megabytes.

Because of additional gadgets on the supervisor desktop, this number is higher for a supervisor login (approximately 2.5 megabytes without caching and 0.325 megabytes with caching). To minimize the amount of bandwidth required for login, make sure that caching is enabled in the browser.

To help you with the bandwidth calculation, Cisco Finesse provides a bandwidth calculator to estimate the bandwidth required to accommodate the client login time.

Note that during failover, agents are redirected to the alternate server and are logged in automatically. For example, if you configure your bandwidth so that login takes 5 minutes and a client failover event occurs, agents will take 5 minutes to successfully log in to the alternate server.

The Cisco Finesse bandwidth calculator does not include the bandwidth required for any third-party gadgets in the Cisco Finesse container or any other applications running on the agent desktop client.

The bandwidth listed in the bandwidth calculator must be available for Cisco Finesse after you account for the bandwidth used by other applications, including voice traffic that may share this bandwidth. The performance of the Cisco Finesse interface, and potentially the quality of voice sharing this bandwidth, may degrade if sufficient bandwidth is not continuously available.

Administration

The administrator can access the Cisco Finesse administration web user interface in read and write mode from the Unified CCX publisher node. From the Unified CCX subscriber node, access is read-only.

Cisco Finesse REST API

Cisco Finesse provides a REST API that allows client applications to access the supported features. The REST API uses secure HTTP (HTTPS) as the transport with XML payloads.

Cisco Finesse provides a JavaScript library and sample gadget code that can help expedite third-party integration. You can find developer documentation for the REST API, the JavaScript library, and sample gadgets at this location: https://developer.cisco.com/site/finesse/.

Silent monitoring

The supervisors can monitor agents calls using Unified Communications Manager-based silent monitoring with Cisco Finesse.

Cisco Finesse does not support SPAN port-based monitoring and desktop monitoring to silent monitor the agent.

Recording

Cisco Finesse workflows can be used to record agent calls using Cisco Unified Communications Manager with Cisco MediaSense or Cisco Workforce Optimization.

Note The agent phone must have built-in-bridge (BIB) support enabled for Cisco Unified Communications Manager-based call recording and monitoring to work with Cisco Finesse.

For information about the phones that have built-in-bridge support, see the at this location: http://docwiki.cisco.com/wiki/Compatibility_Matrix_for_Unified_CCX.

For information about recording APIs, see the at http://developer.cisco.com/web/finesse/docs.

Cisco MediaSense Search and Play Gadget

The Search and Play gadget available on the Supervisor desktop allows you to access all recordings stored in MediaSense.

Recording Tag

Recordings initiated by Unified CCX and stored in Cisco MediaSense are tagged with semantic, contextual metadata. If participants of the call that is being recorded change, there is no change in tags for that call. These tags are prefixed by **CCX:** and contain the following parameters:

- agent = **\<agent ID\>** of each logged-in Unified CCX agent who participated in the recording.

- team = **\<team name\>** of all those teams whose agents have participated in the recording.

- CSQ = **\<CSQ name\>** of that CSQ where the call being recorded was queued and processed.

For example, Tag: CCX:agent=abc,team=Deafult,CSQ=Auto_CSQ.

These tags enable supervisors and agents to filter and search recordings in Cisco MediaSense Search and Play Gadget based on one or a combination of the parameters.

Multiline support

Cisco Finesse supports the use of multiple lines on agent phones. You can configure one or more secondary lines on an agent phone. The agent's ACD line must be in button positions 1 - 4. Any calls on the observed lines are reported in the historical reports. However, Finesse blocks any events that are sent by the CTI server as a result of call activity on an agent's non-primary/non-ACD line (lines other than the one the agent is logged into). These events are not published to Finesse clients. No information about calls that are handled on non-primary/non ACD line appears on the Finesse desktop. Agent state is not modified as a result of activity on the agent's secondary line.

For example, if Agent A uses his non-ACD line to call Agent B (on Agent B's primary/ACD extension), the call does not appear on Agent A's desktop. The call appears on Agent B's desktop because Agent B received the call on the primary/ACD extension.

Direct Transfer Across Line (DTAL) and Join Across Line (JAL) are not supported.

NAT support

Cisco Finesse supports static NAT only with one-to-one mapping between public and private IP addresses. Finesse desktops must be used with FQDNs only, where FQDN resolves to the external IP address.

IPv6 support

Cisco Finesse provides support for IPv6 with Unified CCX.

E.164 support

Unified CCX agents and supervisors can login to Finesse with '+' (plus sign) as prefix. Finesse also supports E.164 for the following:

- Enterprise Data

- Phone Book Contacts

- Workflow Rules or Conditions

Cisco Finesse IP Phone Agent

With Cisco Finesse IP Phone Agent (IPPA), agents and supervisors can access Finesse features on their Cisco IP Phones as an alternative to accessing Cisco Finesse through the browser. Cisco Finesse IPPA allows agents and supervisors to receive and manage calls if they lose or do not have access to Cisco Finesse through a browser. It supports fewer features than the Finesse desktop in the browser.

Supervisor Tasks

Cisco Finesse IPPA does not support supervisor tasks such as monitor, barge, and intercept, but supervisors can sign in and perform all agent tasks on their IP Phones. For reporting purpose the supervisor will have to log in to Cisco Unified Intelligence Center to view the live data reports.

Reason Code Limits

On the IP Phone, Cisco Finesse can display a maximum of 100 Not Ready or Sign Out reason codes. If more than 100 codes are configured, the phone lists the first 100 applicable codes (global codes or applicable team codes).

Inbound Voice

- Integrated IVR, call queuing, and routing

- Out-of-the-box support for scripting the business logic

- Enterprise database and document manipulation using scripting tool

- Real-time statistics to make run-time decisions

- Full scale automated speech recognition, text to speech and Voice XML scripting

Codec Support

Unified CCX supports the following codecs:

- G.711 a-law and μ-law
- G.729

Unified CCX Outbound Dialer

Unified CCX supports the following outbound dialers:

Unified CCX Outbound Preview Dialer—Allows agents to participate in outbound campaigns in addition to handling inbound calls, which maintains a high level of agent productivity.

Unified CCX Outbound IVR Dialer (Progressive and Predictive)—Allows for outbound calls to be placed to contacts in a campaign and subsequently for live contacts to be serviced by an IVR application. Call Progress Analysis (CPA) capabilities of the SIP Voice gateway are used to filter non-live contacts (which could be fax and no answer). Live calls are transferred to a CTI route point to be serviced by an associated IVR application.

If the live call is answered by an answering machine the call is either routed to an IVR application or the call can be ended. An outbound IVR call that is answered by a customer contact but cannot be serviced due to unavailability of an IVR port is said to be abandoned.

Unified CCX Outbound Agent Dialer (Progressive and Predictive)—Allows for outbound calls to be placed to contacts in a campaign and subsequently for live contacts to be serviced by agents. Call Progress Analysis (CPA) capabilities of the SIP Voice gateway are used to filter non-live contacts (such as fax and no answer). Calls that are answered by a customer are transferred to an agent. An outbound call that is answered by a contact but cannot be serviced due to unavailability of an agent can be transferred to a CTI route point to be serviced by an associated IVR application.
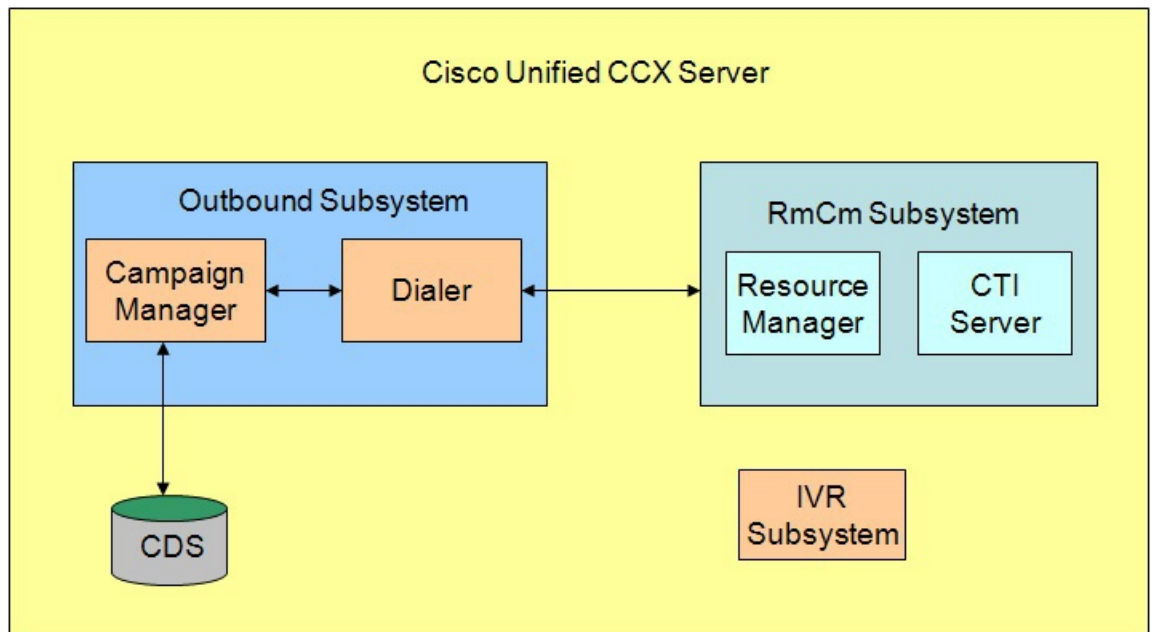
Note   Unified CCX dialer will dial outbound contacts only when the **Cisco Unified CCX Database** service on publisher node is up and running.

High Level Components

This figure and the following table describe the components deployed in Cisco Unified CCX for Outbound:

Figure 1: Cisco Unified Outbound Components

Campaign Manager	Responsible for starting and stopping each campaign and retrieving and updating contact records from and to the database.

Dialer	Receives contacts from the Campaign Manager and initiates the outbound calls. Notifies the Campaign Manager of the call status and call result after the call is answered. The dialer software is IP based and does not require any telephony cards for making outbound calls. In Outbound Preview, the dialer uses the Finesse agent IP phone to place outbound calls through a voice gateway configured in Unified CM. In Outbound IVR, the dialer uses the SIP protocol to place outbound calls through the SIP gateway configured for the Outbound IVR feature.
Resource Manager	Monitors agent states, reserves agents and receives instructions from the Dialer to place the outbound call. This component is used for Outbound Preview, Agent Predictive, and Agent Progressive features.
CTI Server	Handles requests and responses from and to the Finesse and passes the customer data to the Finesse for screen pop. This component is used for Outbound Preview, Agent Predictive, and Agent Progressive features.
IVR Subsystem	Responsible for execution of the IVR application associated with the campaign when a live contact has been detected by the SIP gateway and transferred to the configured CTI Route Point on the Unified CM. This component is used only in the Outbound IVR feature.
Config Datastore (CDS)	Contains the customer contacts information.

All of these components run as part of the Unified CCX Engine and cannot be installed separately.

Functional Description

There are three types of dialing modes in outbound: Direct Preview, Progressive, and Predictive.

Outbound Preview

The Outbound Preview feature supports only the direct preview dialing mode. It uses a 3-stage process for making an outbound call. The first stage is to find an available agent and retrieve the customer information for making the outbound call. The second stage is the reservation call, and its purpose is to reserve an agent and send customer data to the agent desktop. During this stage, the agent is reserved and the data appears on the desktop so that the agent can review the data and decide whether to accept the call by pressing the corresponding button on the agent desktop. If the agent does not accept the call, the call is handled by other outbound agents or closed for the campaign. If the agent does accept the call, Outbound Preview kicks in the last stage where Unified CM is instructed to place the outbound call using the agent's phone. When the outbound call is answered, Outbound Preview updates the customer contact in the database with the call status and call result.

When the outbound call connects with the customer, the agent can perform all call control operations that are normally supported on inbound calls (transfer, conference, hold, retrieve, and so on). Ensure that the agent transfers or conferences the outbound call, only if the call is answered by a person but not through other media such as an answering machine or a fax machine.

Note CUBE is supported with the Outbound Predictive and Progressive dialers for agent and IVR with CPA (Call Progress Analysis).

Progressive and Predictive

The Outbound feature supports two types of dialing modes progressive and predictive for IVR and agent-based campaigns. Each dialer dials an appropriate number of contacts to make efficient use of the available system resources (IVR ports and agents). Both progressive and predictive algorithms use Lines Per Port (LPP) to determine the number of outbound calls to place per available IVR port for IVR-based campaigns and Lines Per Agent (LPA) to determine the number of outbound calls to place per available agent for agent-based campaigns.

Progressive Dialing Mode

For IVR

Progressive algorithm uses the LPP value that is configured by the administrator through Unified CCX Administration. The outbound dialer uses the SIP gateway to place outbound calls, and uses the Call Progress Analysis (CPA) capability of the SIP gateway to filter outbound calls. The SIP gateway filters out non-live contacts such as fax, invalid number, and no answer and forwards only the live calls answered by a customer contact to an IVR port.

For example, if the Number of Lines Per Port is 3 and x number of dedicated ports are available, then the outbound dialer dials 3X outbound calls.

Depending on the number of calls that get abandoned due to the shortage of dedicated ports, you can adjust the LPP value manually to make the calls efficiently.

An abandoned call occurs when a customer answers the phone, but no port is available to serve the customer. The abandoned call rate must be set to comply with the applicable government regulations.

For Agent

Progressive algorithm uses the LPA value that is configured by the administrator through Unified CCX Administration. The outbound dialer uses the SIP gateway to place outbound calls and uses the Call Progress Analysis (CPA) capability of the SIP gateway to filter outbound calls. The SIP gateway filters out non-live contacts such as fax, invalid number, and no answer and forwards only the live calls answered by a customer contact to an agent.

For example, if the Number of Lines Per Agent is 3 and x number of agents are available, then the outbound dialer dials 3X outbound calls.

Depending on the number of calls that get abandoned due to the shortage of agents, you can adjust the LPA value manually to make the calls efficiently.

An abandoned call occurs when a customer answers the phone, but no agent is available to serve the customer. The abandoned call rate must be set to comply with the applicable government regulations.

Note CUBE is supported with the Outbound Predictive and Progressive dialers for agent and IVR with CPA (Call Progress Analysis).

Progressive Dialing Description

The Outbound subsystem checks the licensing information to determine the number of available ports and agents for the campaign.

For IVR

The dialer multiplies the available ports for the campaign with the LPP value configured by the administrator. Based on this output and the number of contacts, the contacts are dialed out. For instance, if 50 ports are available for a campaign and if you have configured the LPP as 2 through Unified CCX Application Administration web interface or REST API, then the dialer can dial 100 contacts.

The SIP gateway performs call progressive analysis of the call and informs the outcome of the call to Unified CCX. All of the dialed contacts, which turn out to be live voice, are connected to the CTI port that plays an IVR script and remaining calls are disconnected.

Dialer Action for the Following IVR-Based Call Scenarios:

- If the dialer detects more contacts with live voice than the available ports, then the dialer drops these calls as abandoned calls. If the dialer detects fewer contacts with live voice, then the dialer will connect those calls to the CTI port, and the remaining CTI ports are freed.

- If the dialer detects an answering machine, then it connects to the CTI port that plays the IVR script or abandons the call, depending on the option selected in the Answering Machine Treatment field in the Campaign Configuration web page.

- If the dialer detects a fax, modem, or an invalid number, then the dialer abandons the call.

- If the dialer detects a call as low volume, then it considers the call to be live voice. The dialer connects the call to the CTI port that plays the IVR script or abandons the call depending on the option selected in the Handle Low Volume as Voice field in the Campaign Configuration web page.

For Agent

The dialer multiplies the reserved agents for the campaign with the LPA value configured by the administrator. For instance, if 50 agents are available for a campaign and if you have configured the LPA as 2 through Unified CCX Application Administration web interface or REST API, then the dialer can dial 100 contacts.

The SIP gateway performs call progressive analysis of the call and informs the outcome of the call to Unified CCX. All the dialed contacts, which turn out to be live voice, are connected to an agent and the remaining calls are disconnected.

Dialer Action for the Following Agent-Based Call Scenarios:

- If the dialer detects more contacts with live voice than the reserved agents, then the dialer connects to the CTI port that plays the IVR script or abandons the call, depending on the option selected in the Abandoned Call Treatment field in the Campaign Configuration web page. If the dialer detects fewer contacts with live voice, then the dialer connects those calls to the agents in Reserve state, and the remaining agents in Reserve state are moved to Ready state.

- If the dialer detects an answering machine, then it connects to the CTI port that plays the IVR script or abandons the call, depending on the option selected in the Answering Machine Treatment field in the Campaign Configuration web page.

- If the dialer detects a fax, modem, or an invalid number, then the dialer drops the call.

- If the dialer detects a call as low volume, then it considers the call as live voice and connects the call to an available agent or abandons the call depending on the options selected in the Handle Low Volume as Voice field in the Campaign Configuration web page.

Note In a LAN deployment:

- For IVR-based campaigns, the call is connected to an IVR port within two seconds.

- For agent-based campaigns:

    - The call is connected to an agent within two seconds. If agents are not available to handle the call, then the call is connected to an IVR port within two seconds.

    - If Agent AutoAnswer is enabled in the Configure General Outbound Properties web page and the dialer detects the outbound call to be live voice, then the call is connected to the agent within two seconds.

Predictive Dialing Mode

For IVR

Predictive algorithm dynamically varies the LPP between a minimum value of one and maximum value that is configured to ensure that the abandon rate does not exceed the threshold configured through Unified CCX Administration (abandon rate is the percentage of live calls that had to be dropped due to the unavailability of an IVR port). The abandon rate is corrected over a period of time.

For Agent

Predictive algorithm dynamically varies the LPA between a minimum value of one and maximum value that is configured to ensure that the abandon rate does not exceed the threshold configured through Unified CCX Administration (abandon rate is the percentage of live calls that had to be dropped due to the unavailability of an agent). The abandon rate is corrected over a period of time.

Predictive Dialing Description

The Outbound feature in predictive dialing works by keeping outbound dialing at a level where the abandoned rate is below the maximum allowed abandon rate. For example, each campaign is configured with a maximum allowed abandon rate.

For IVR

The dialer continuously increments the number of lines being dialed per port until the abandon rate rises to the preconfigured maximum abandon rate. At this point, the dialer begins lowering the lines per port until the abandon rate goes below the preconfigured maximum. The dialer stays just below the preconfigured maximum abandon rate.

Under ideal circumstances, the dialer internally targets an abandon rate of 85 percent of the preconfigured maximum abandon rate. Due to the random nature of outbound dialing, the actual attainable abandon rate at any point in time may vary for your dialer.

When a campaign starts for the first time, the predictive algorithm uses the seed value of LPP configured through the AppAdmin web interface. For subsequent start of the campaign, the predictive algorithm uses the last corrected LPP value.

The frequency of correction and amount of correction is determined by the Predictive Correction Pace and the Predictive Gain configured.

The Predictive Correction Pace determines the pace at which the correction occurs. The correction occurs in iterations where each iteration size is 25 percent (Predictive Correction Pace/4) of live voice calls that are successfully transferred to the IVR port. The correction factor determines the amount of correction that has to be applied. After every iteration, the predictive algorithm calculates the correction factor and multiples it with the Predictive Gain to determine the final amount of correction to apply.

Note We advise not changing the Predictive Correction Pace and Predictive Gain values unless there is an immediate requirement to control the output of the predictive algorithm. For example, in situations where a campaign runs for a very short time and the LPP needs to be corrected at a faster pace, you can reduce the Predictive Correction Pace and ensure that the value in the Predictive Gain field is 1.0, which is the maximum value.

Dialer Action for the Following IVR-Based Call Scenarios:

- If the dialer detects an answering machine, then it connects to the CTI port that plays the IVR script or abandons the call, depending on the option selected in the Answering Machine Treatment field in the Campaign Configuration web page.

- If no IVR ports are available to handle the call, then the dialer abandons the call.

For Agent

The dialer continuously increments the number of lines being dialed per agent until the abandon rate rises to the preconfigured maximum abandon rate. At this point, the dialer begins lowering the lines per agent until the abandon rate goes below the preconfigured maximum. The dialer stays just below the preconfigured maximum abandon rate.

Under ideal circumstances, the dialer internally targets an abandon rate of 85 percent of the preconfigured maximum abandon rate. Due to the random nature of outbound dialing, the actual attainable abandon rate at any point in time may vary for your dialer.

When a campaign starts for the first time, the predictive algorithm uses the seed value of LPA configured through the AppAdmin web interface. For subsequent start of the campaign, the predictive algorithm uses the last corrected LPA value.

The frequency of correction and amount of correction is determined by the Predictive Correction Pace and the Predictive Gain configured.

The Predictive Correction Pace determines the pace at which the correction occurs. The correction occurs in iterations where each iteration size is 25 percent (Predictive Correction Pace/4) of live voice calls that are successfully transferred to the agent. The correction factor determines the amount of correction that has to be applied. After every iteration, the predictive algorithm calculates the correction factor and multiples it with the Predictive Gain to determine the final amount of correction to apply.

Note We advise not changing the Predictive Correction Pace and Predictive Gain values unless there is an immediate requirement to control the output of the predictive algorithm. For example, in situations where a campaign runs for a very short time and the LPA needs to be corrected at a faster pace, you can reduce the Predictive Correction Pace and ensure that the value in the Predictive Gain field is 1.0, which is the maximum value.

Dialer Action for the Following Agent-Based Call Scenarios:

- If the dialer detects an answering machine, then it connects to the CTI port that plays the IVR script or abandons the call, depending on the option selected in the Answering Machine Treatment field in the Campaign Configuration web page.

- If no agents are available to handle the call, then the dialer connects to the CTI port that plays the IVR script or abandons the call, depending on the option selected in the Abandoned Call Treatment field in the Campaign Configuration web page.

Note In a LAN deployment:

- For IVR-based campaigns, the call is connected to an IVR port within two seconds.

- For agent-based campaigns:

    - The call is connected to the agent within two seconds. If agents are not available to handle the call, then the call is connected to an IVR port within two seconds.

    - If Agent AutoAnswer is enabled in the Configure General Outbound Properties web page and the dialer detects the outbound call to be live voice, then the call is connected to the agent within two seconds.

High Availability for Outbound Dialer

The following events occur during a failover in Direct Preview Outbound:

- If a reservation call is at the agent desktop waiting for the agent to accept the call, and the master engine goes down, the agent is automatically logged out and the reservation call disappears from the agent's desktop. If the master engine restarts during failover, the call status for that contact record will be set to **unknown**. If the master engine does not restart during failover, the contact is called when the campaign starts and there are available agents.

- If a reservation call has been accepted by the agent and the call is ringing on the customer phone, there is no effect on the call. However, the agent is logged off and will be able to invoke call control capabilities only through the phone.

In the case of IVR Outbound, the CTI ports on the master engine will go out of service on a failover, which will result in calls in progress between customers and CTI ports to be disconnected. The standby server will resume dialing out the remaining contacts in the outbound IVR campaigns after the failover.

In the case of agent Outbound (progressive and predictive), if an agent is reserved for an outbound campaign and the master engine goes down before the call is transferred to the agent, then the agent is automatically logged out. The dialed out contacts if any, that are yet to be connected to the agent are dropped.

When deploying Outbound in a high availability environment, only the dialer in the master node is active. Outbound calls cannot be distributed or load balanced to the dialer in the standby node.

Scalability

These capacities and limits are supported for outbound:

• Preview outbound supports a maximum of 150 agents.

• Progressive and predictive agent-based outbound supports a maximum of 150 agents.

• Progressive and predictive IVR-based outbound supports a maximum of 150 IVR ports. The number of active outbound IVR ports is limited by the maximum number of outbound IVR ports that are supported for a given platform. Because IVR for inbound and outbound compete for the same set of IVR ports, the actual number of active IVR ports in use for inbound and outbound depends on multiple parameters:

  • Number of licensed inbound ports

  • Number of licensed outbound ports

 • Sum of the number of ports dedicated across outbound IVR campaigns

Refer to the "Configuring Unified CCX Dialer" chapter of the *Unified CCX Administration Guide* for details on how the numbers of active IVR ports for inbound and outbound are determined by these parameters.

Call Flow Description

Direct Preview Mode

In the direct preview mode, the agent hears the ring-out on the agent phone. The direct preview call flow proceeds as illustrated in this figure and the description that follows:

Figure 2: Call Flow for Direct Preview Mode
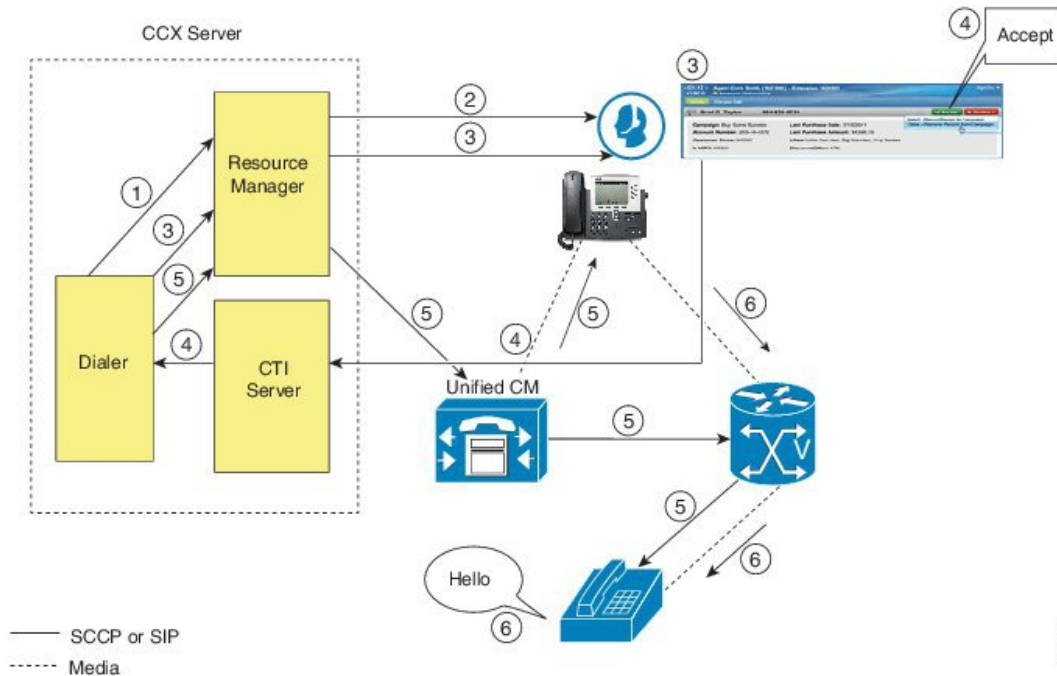
1. An agent in Ready state is available and the Dialer has retrieved contact records from the Campaign Manager. The Dialer requests the Resource Manager to reserve the agent.

2. The Resource Manager reserves the agent by moving the agent to Reserved state.

3. The Dialer sends a reservation call to the agent desktop and, at the same time, a screen pops that contains the customer information and is presented to the agent. The agent reviews the customer data and decides whether to take the call.

4. The agent can choose to accept, skip, or cancel this reservation call. If the agent chooses to accept it, the agent clicks the Accept button on the desktop.

5. The Dialer instructs the Resource Manager to place an outbound call from the agent phone through Unified CM out to the voice gateway. Because this call is a direct preview call, the agent immediately hears the ringback of the customer phone.

6. As soon as the call is answered, the Dialer closes the contact, classifies it as a voice call and sends the result to the Campaign Manager. If an answering machine answers the call, the number is invalid, or the customer requests a callback, and the agent can reclassify the call from the desktop accordingly. If the customer requests a callback and the agent reclassifies the call, the customer is called back using the same number, an alternate number, or a callback number specified by the customer.
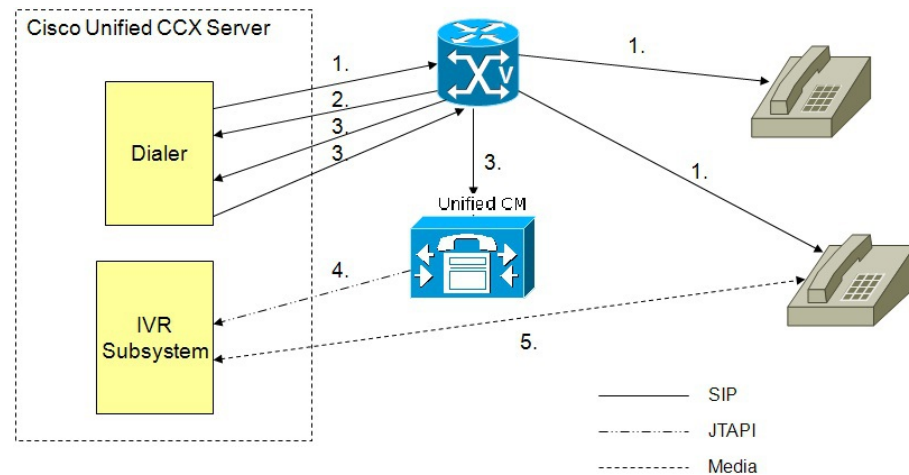
Note A CTI Port is not required to place the outbound call.

IVR Mode

The call flow description for Outbound IVR is illustrated in this figure and the description that follows.

Figure 3: Call Flow for IVR Mode

1. Outbound IVR dialer determines the number of contacts to dial per the configured algorithm (progressive or predictive) and places outbound calls using SIP through the voice gateway.

2. Voice gateway detects non-live contact through its CPA capabilities and sends status of non-live contact to the dialer. The dialer uses this to update contact status information in the configuration database.

3. Voice gateway detects live contact through its CPA capabilities and sends status of live contact to the dialer. The dialer uses this to update contact status information in the configuration database and also
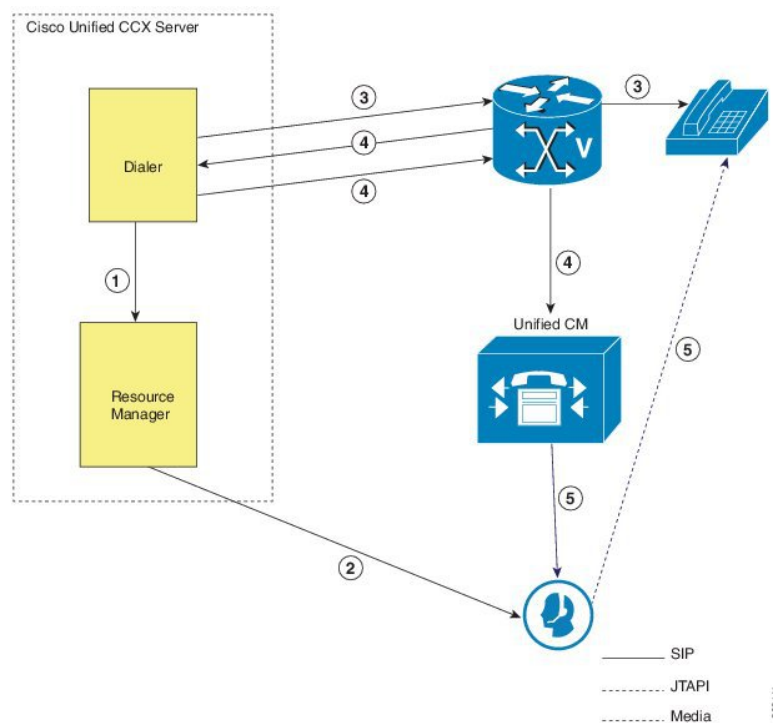
sends a SIP refer message to the SIP gateway which in turn transfers the call to the configured CTI Route Point on Cisco Unified CM.

4. Cisco Unified CM transfers the call to a IVR port on Cisco Unified CCX server.

5. The IVR subsystem then associates the call with the IVR application associated with the campaign. The engine starts execution of the application and an IVR session takes place between the IVR application for the campaign on Cisco Unified CCX and the customer contact.

Agent Mode

The call flow description for Agent Outbound is illustrated in this figure and the description that follows.

Figure 4: Call Flow for Agent Mode

1. The dialer requests the Resource Manager to reserve the agent.

2. The Resource Manager reserves the agent by moving the agent to Reserved state.

3. Outbound dialer determines the number of contacts to dial as per the configured algorithm (progressive or predictive) and places outbound calls using SIP through the voice gateway.

4. The voice gateway detects live contact through its CPA capabilities and sends status of live contact to the dialer. The dialer uses this information to update contact status information in the configuration database and also sends a SIP refer message to the SIP gateway, which then transfers the call to the Cisco Unified CM.

5. Cisco Unified CM transfers the call to the reserved agent on Cisco Unified CCX server. The Outbound subsystem then associates the call to the reserved agent.

Deployment Guidelines

The following guidelines should be followed when deploying outbound:

- Outbound supports a maximum of 15 active campaigns and a maximum of 1 million active outbound records for each campaign.

- Outbound does not come preinstalled with any Do Not Call lists. The system administrator should manually filter the contact list against the Do Not Call list prior to importing contacts.

The following guidelines are specific to outbound:

- Outbound supports a maximum of 10 CSQs for each campaign.

- Finesse IPPA agents are not supported.

- Direct preview outbound cannot detect an answering machine, fax, or modem. The agent should manually reclassify the call to "answer machine" or "fax" from the desktop. The contact will be called again using the same number (in the case of "answer machine") or using an alternate number (in the case of "fax").

- For direct preview outbound, agents should not transfer or conference the outbound call if the call is answered by the media other than a person, such as an answering machine or fax machine.

- For progressive and predictive outbound, the SIP gateway performs call progressive analysis which determines whether the outcome of a call is an answering machine, live voice, fax, or beep tone and presents only the live voice calls to the agents. The contact will be called again using the same number in case of no answer and busy tone or using an alternate number in case of a fax, modem or an invalid number.

- When Phone 1 of a contact is dialed and the CPA marks it as Busy or Unanswered the same number is retried based on the retry count and delay configured in the campaign. When the retry count reaches the maximum value, the contact is marked as closed. The other phone number for a given contact is dialed only when the called number is classified as Modem, Fax or Invalid.

The following guidelines are specific to IVR and agent-based progressive and predictive outbound:

- It is possible to only have a single instance of the SIP gateway in the deployment.

- Install the SIP gateway on the same site (that is, the same campus LAN) as the Unified CCX primary engine. The SIP gateway can be installed across the LAN or WAN. The maximum delay over the WAN should not exceed 80 milliseconds.

  Note The primary engine is always the first node that was installed in the Unified CCX cluster and cannot be changed.

- No voice gateway based redundancy of the SIP gateway is supported.

- The protocol supported between the SIP Gateway and Unified CM for transferring the outbound call to an IVR application or to an available agent includes SIP and H323.

- It is possible to use the same gateway for both inbound and outbound voice.

Home Agent with Extend and Connect

Definitions

- CTI Remote Device — New device type that represents the user's off-cluster phones, which the users plan to use with Cisco Unified Communications applications. The device type is configured with one or more lines (for example, Directory Numbers) and one or more remote destinations.

- Remote Destinations — A numerical address that represents the user's other phones (for example, home office line and other PBX phone). The phone can be any off-cluster device such as DVO-R (Dial-via-Office-Reverse).

Introduction

The Extend and Connect feature can be configured for agents and supervisors on remote devices to accept inbound and outbound calls. This feature works with Cisco Jabber in Extended mode and the new CTI Remote Device type and enables applications to have limited call control capability over third-party devices of an user. Configure all third-party devices or end points of an user as remote destinations on a virtual CTI Remote Device. You can configure third-party devices or end points of an user from Cisco Unified Communications Manager administration console.

If there is an active remote destination set for a remote device, a call to that device is placed only to the active remote destination.

Note You cannot perform silent monitoring on Home Agents using this feature.

Feature Availability by License Package

The following table lists the availability of Extend and Connect feature in the Unified CCX packages.

Feature	Unified CCX Premium	Unified CCX Enhanced	Unified CCX Standard	Unified IP IVR
Extend and Connect	Available	Available	Not available	Not available

Persistent Connection Call

Persistent connection allows an agent to maintain a dedicated connection with an active remote destination. Persistent connection is supported from Cisco Unified Communications Manager. This connection saves connection establishment time for each call.

A persistent connection call is made to the active remote destination during agent login. The agent answers the persistent connection call only from a configured remote destination. ICD calls are placed over persistent connection. The agent moves to Ready state after answering the persistent connection call. Unified CCX plays an announcement upon answering persistent connection call provided that announcement is configured with the identifier as "UCCX Persistent Connection Prompt".

After the persistent connection is established for incoming calls, Unified CCX plays an announcement on persistent connection provided that announcement is configured with identifier as "UCCX Customer Call

Prompt". The agent's remote device displays the caller ID during the ICD call provided that the remote device has a provision to display caller information. The caller ID name is displayed as **EC Mode**. The caller information remains displayed until the next call is placed on the persistent connection call. By default, Unified CCX makes a maximum of three attempts to establish a persistent connection call.

The default call duration for a persistent connection is 12 hours. You can change the persistent connection duration using the **Maximum Call Duration Timer** field in Cisco Unified Communications Manager.

When a persistent connection call is not answered, the agent is moved to Not Ready state and is not allowed to move to Ready state until the persistent connection call is established. The persistent connection call is dropped after the agent logs out.

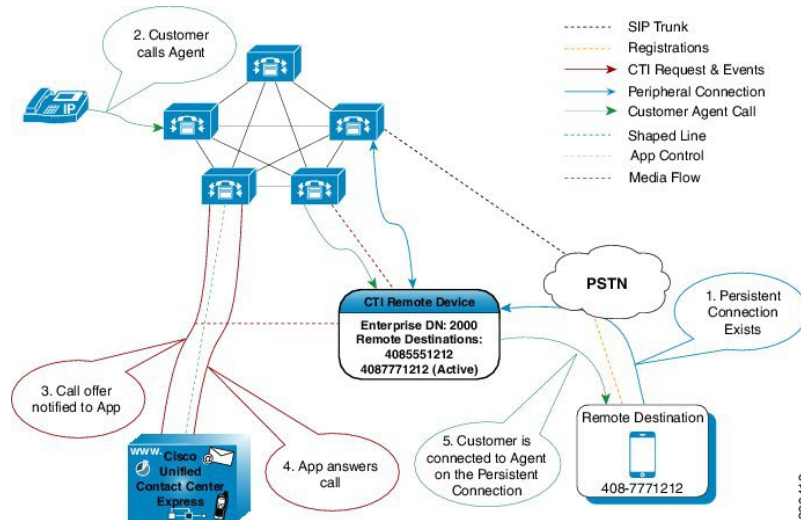The following figure shows the persistent connection call flow:

Figure 5: Persistent Connection Call Flow
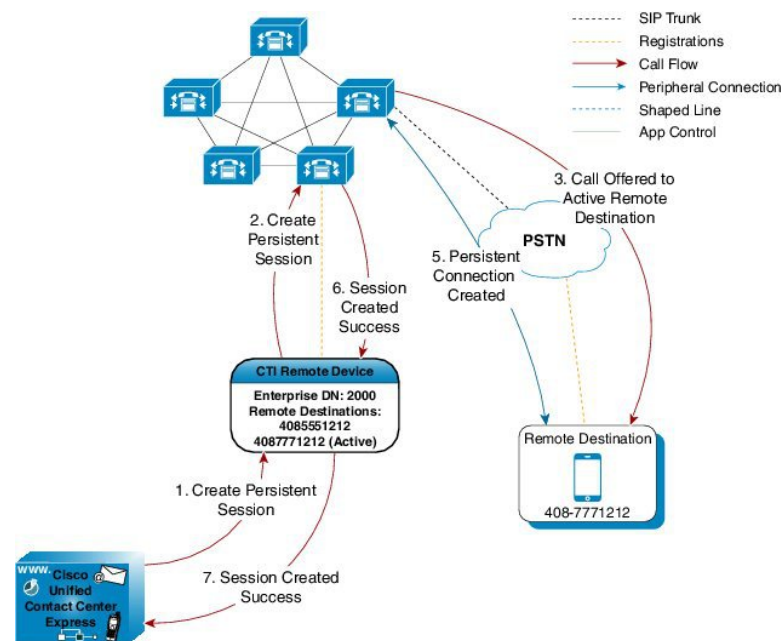
The following figure shows a persistent connection incoming call:

*Figure 6: Persistent Connection Incoming Call*

For remote phones that have persistent connection, the following features are not supported:

- Call Hold/Resume is not supported for a persistent connection call.
- Intercept/Barge-In is not supported for persistent connection with Cisco Finesse.

- Live Data and Historical reports do not distinguish the remote agents from the enterprise agents.

- The supervisors cannot initiate recording for remote agents using Cisco MediaSense directly, but recording can be achieved using Gateway forking. For more information about Cisco MediaSense, see the at:

  http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html

- The maximum number of supported remote agents is 100.

- Extend and Connect is not supported on shared lines.

Signaling Flow

The following figure shows the signaling flow chart:

Figure 7: Signaling Flow
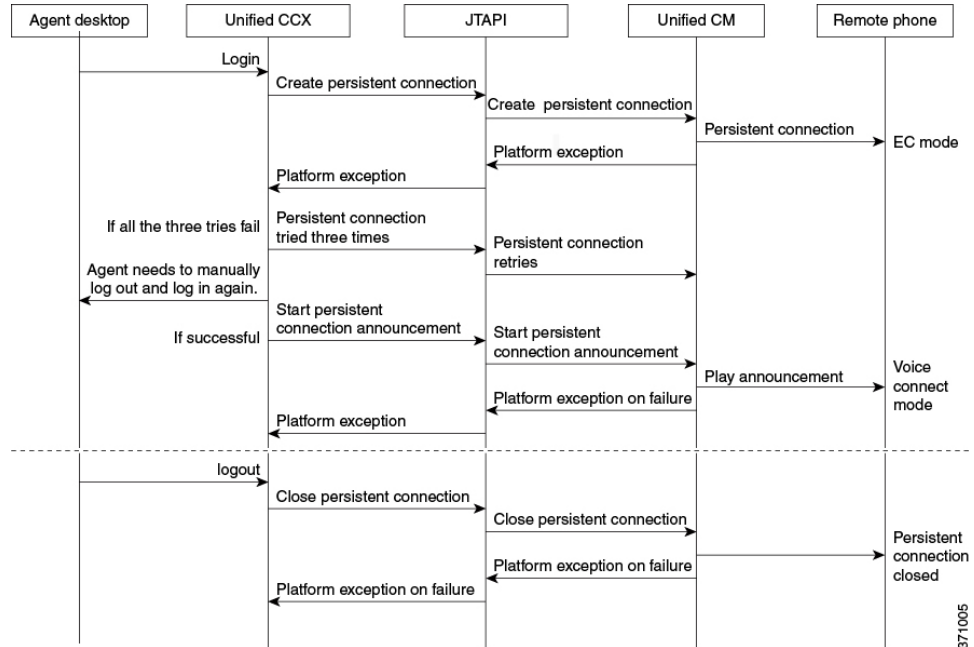
Agent and Device Configuration

To use this feature, perform the following configuration:

1. Configure CTI Remote Device, CSF for Cisco Jabber, and Remote Destinations in Cisco Unified Communications Manager Version 10.x.
2. Configure ICT between Cisco Unified Communications Manager Version 10.x and Cisco Unified Presence server Version 10.x.

Call by Call Mode

Unified CCX administrator can switch off persistent connection using Unified CCX Administration page to enable Call by Call mode. In this mode, every call will be routed independently to the Home Agent as if the agent is using an IP phone. When the call ends, the Home Agent's phone disconnects before it is made ready for the next call.

Deployment Guidelines

In case of fresh deployments of Cisco Unified Communications Manager and Unified CCX, ensure that the DNS is configured for all the components.

Remote Agent Over Broadband

Unified CCX supports remote agents (for example, at-home agents) using Cisco Unified IP Phone over a broadband internet connection.

The Cisco VPN Client feature available in select Cisco Unified IP Phones provides another option for remote agents to connect their IP Phones to the enterprise.

The enterprise will need to deploy and set up an appliance which supports SSL VPN connectivity. Connectivity between the remote agent and enterprise must be over broadband/SSL VPN.

The VPN feature needs to be configured on the Cisco Unified Communication Manager as per the *Cisco Unified Communications Manager Security Guide*.

The Cisco Unified IP Phone should then be configured within the enterprise as detailed in the *Cisco Unified IP Phone Administration Guide for Cisco Unified Communications Manager*.

After the IP Phone has been configured in the enterprise, the agent can then take it home and connect it to a regular broadband router to obtain VPN connectivity to the enterprise. The agent will then be able to use the configured extension for receiving and placing calls from home.

Unified CCX Web Chat

As part of the Premium license, Unified CCX agents can service customer chat requests using the Agent Web Chat gadget in Cisco Finesse.

This feature requires a SocialMiner deployment to accept and relay the contact requests from a customer website. One SocialMiner deployment can serve only one Unified CCX deployment (single node or high availability deployment). SocialMiner does not support redundancy.

Note   The Chat Web Form that is generated uses JavaScript. The web page where this is loaded must be accessed using a JavaScript enabled browser. The default Chat Web Form displays a message to the user if JavaScript is not enabled on the browser where it is loaded.

Deployment Scenario 1: Customer Web Site in Demilitarized Zone (DMZ)

Figure 8: Customer Web Site in DMZ
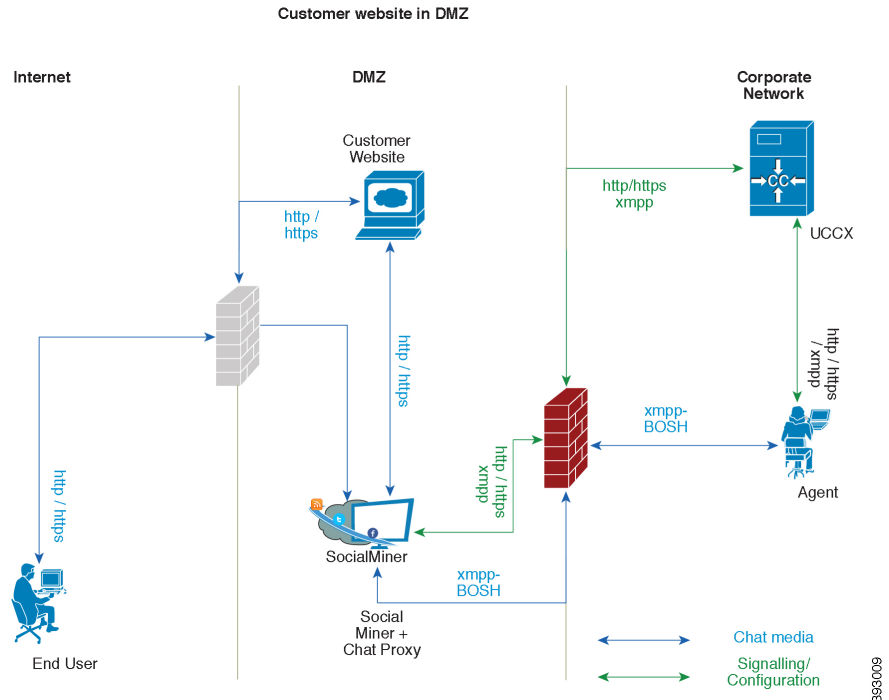
The Cisco Unified CCX is deployed inside the enterprise firewall and SocialMiner is deployed inside company premises in the DMZ along with the customer website. The DMZ is open to all HTTP/HTTPS traffic from the Internet. For Unified CCX Web Chat deployment to work, allow bidirectional HTTPS traffic between End User and SocialMiner. Allow bidirectional HTTPS and XMPP traffic between SocialMiner in the DMZ and Unified CCX on ports HTTPS (443) and XMPP (5222). Allow bidirectional BOSH traffic between SM and the agent on port BOSH (7443). For more information on the ports utilized, see the *Port Utilization in SocialMiner* section in the Port Utilization Guide for Cisco Unified Contact Center Express Solutions.

The Unified CCX is shielded from all outside traffic except the traffic coming from the DMZ zone. All web chat communications occur over HTTP/HTTPS and BOSH ports irrespective of where SocialMiner is deployed.

Deployment Scenario 2: Customer Web Site in Public Cloud or Domain

Figure 9: Customer Web Site in Public Cloud or Domain
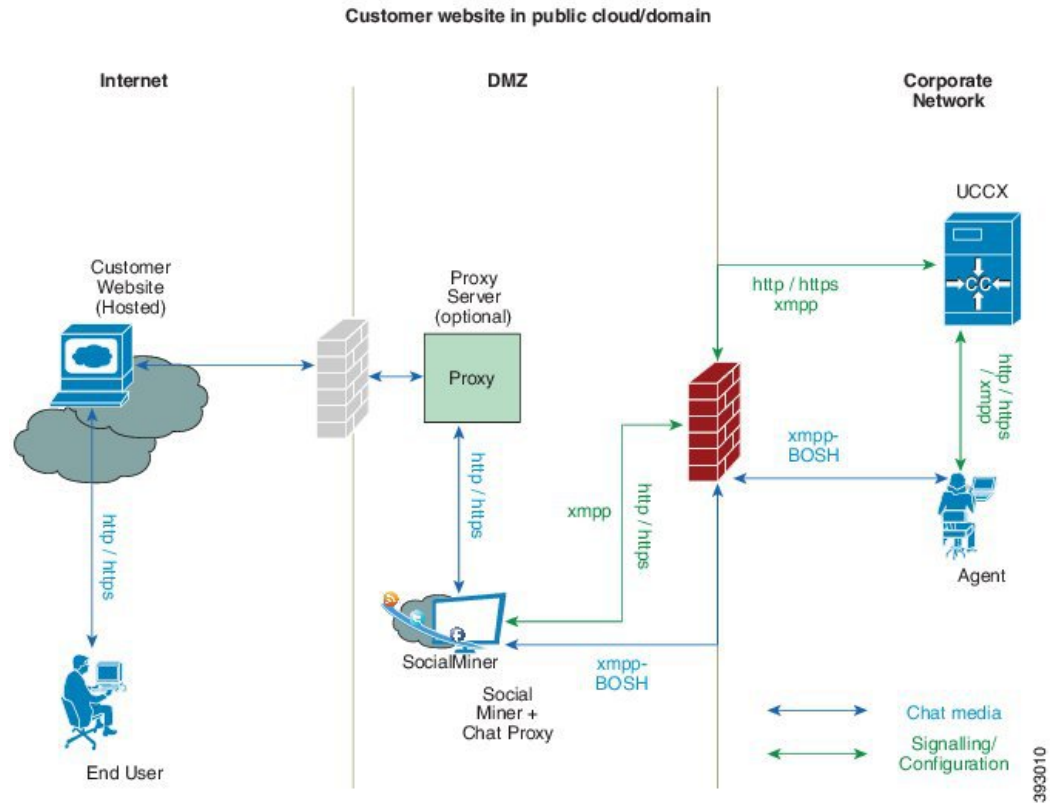
One variation of the preceding scenario can be an addition of a proxy server that can intercept and relay all interactions going to SocialMiner.

Note SocialMiner should only need to access a proxy server if it sits behind a corporate network firewall and has to use an http or https proxy server for accessing an outside network. Configuration of private NAT address is not supported.

Unified CCX Finesse Agent Email

As part of the Unified CCX Premium license, Unified CCX supports agent email with Finesse.

Adminstrators should edit the Cisco Finesse Desktop Layout to enable the gadgets to appear on the agent desktop.

As part of the Premium license, Unified CCX agents can service customer email requests using the Agent Email gadget in Cisco Finesse

For more information, see "Cisco Finesse" section in the at :

http://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-installation-and-configuration-guides-list.html.
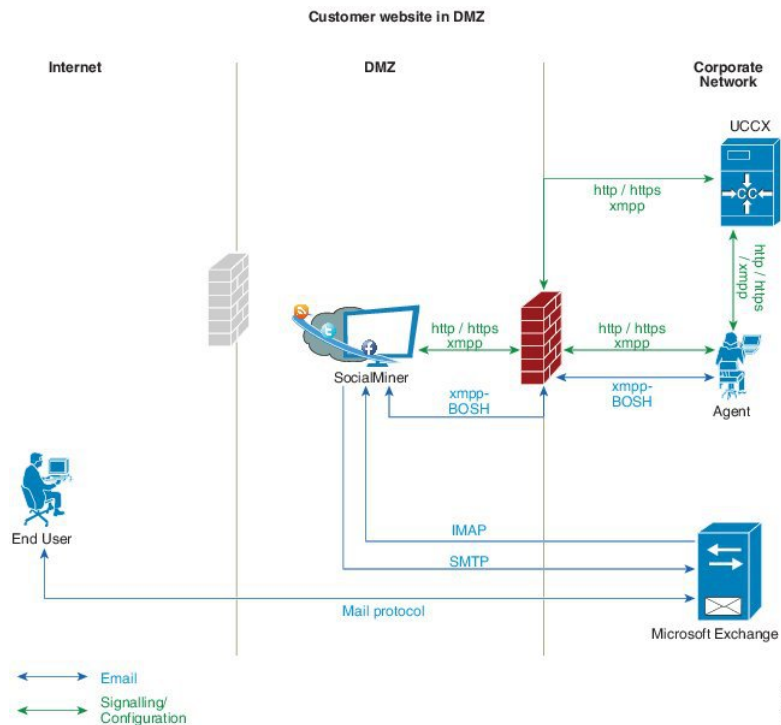
Cisco Finesse Agent Email requires the deployment of Cisco SocialMiner to handle the email and relay the contact requests from a mail server. One SocialMiner deployment can serve only one Unified CCX deployment (single-node or high-availability deployment), and vice versa.

The Cisco Finesse Agent Email feature requires the use of an external mail server (Microsoft Exchange 2010, 2013, 2016 and Office 365 are supported). This mail server is not provided, installed, or configured as part of the Unified CCX installation. To communicate with the Exchange Server, SocialMiner uses secure IMAP (for message retrieval) and secure SMTP (for message sending). On the Exchange Server, enable IMAP (SMTP is enabled by default).

For more information about enabling IMAP, see section "Mail Server Configuration" in at:

http://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-installation-and-configuration-guides-list.html.

Figure 10: Customer Web Site in DMZ

Unified CCX allows email contacts to be routed to agents based on the email addresses to which they are sent by the customers. Cisco Finesse Agent Email feature uses skill-based routing and last-agent email routing.

Separate CSQs are required for Email. You must associate each Email CSQ with a separate email account on the mail server. This account must be dedicated to the Email CSQ feature and must not be used for other purposes. Agent association with Email CSQs is configured in the same manner as Voice CSQs by assigning skills and competency levels to the CSQ.

Cisco Finesse provides a common chat and email state, separate from voice state. Blending ensures that agents can handle voice, email, and chat contacts from the same desktop.

When an agent replies to the customer's email, the reply email address depends on the information in the customer's email. If the customer's email contains the Reply-to header field, the agent's reply email is sent to the email address in the Reply-to header. If the Reply-to header is missing in the customer's email, the agent's reply email is sent to the From address in the customer's email. The sender address of agent's email is the email account associated with the Email CSQ on which the reply is being sent. Upon requeue, Unified CCX ensures that the response is sent with the email address of the requeued CSQ as the From address.

Reporting

Unified Intelligence Center

Unified Intelligence Center is the reporting solution for Unified CCX that provides access Historical reports and Live Data reports.

Note

- Historical Reporting Client (HRC) is no longer available with Unified CCX.

- Co-resident CUIC on UCCX does not provide the capability to customize reports or to restrict value list collections without implementing custom report definitions. Implementing custom report definitions requires the system to be integrated with a Standalone CUIC Premium server.

- Standalone CUIC on premise server doesn't provide the access to view Live Data Reports.

- During a manual or nightly Unified CCX synchronization with Unified Intelligence Center, the collections that are manually added to the default stock value lists (UCCX_AgentID, UCCX_AgentName, UCCX_TeamNames, UCCX_CSQ Names, UCCX_Voice_CSQ, UCCX_Email_CSQ, UCCX_Chat_CSQ_List) are deleted.

Unified Intelligence Center Historical reports

The following table presents the Historical reports that are available for each license package:

Historical reports	Premium	Enhanced	Standard	IP-IVR
Chat reports				
Chat Agent Detail Report	Yes	No	No	No
Chat Agent Summary Report	Yes	No	No	No
Chat CSQ Activity Report	Yes	No	No	No
Chat CSQ Agent Summary Report	Yes	No	No	No
Chat Traffic Analysis Report	Yes	No	No	No
Email reports				
Email Agent Activity Report	Yes	No	No	No

Historical reports	Premium	Enhanced	Standard	IP-IVR
Email Contact Service Queue Activity Report	Yes	No	No	No
Email Contact Service Queue Agent Activity Report	Yes	No	No	No
Email Inbox Traffic Analysis Report	Yes	No	No	No
Email Resolution Detail Report	Yes	No	No	No
Email Response Detail Report	Yes	No	No	No
Inbound reports				
Abandoned Call Detail Activity Report	Yes	Yes	Yes	Yes
Aborted Rejected Call Detail Report	Yes	Yes	Yes	Yes
Agent Call Summary Report	Yes	Yes	Yes	No
Agent Detail Report	Yes	Yes	Yes	No
Agent Login Logout Activity Report	Yes	Yes	Yes	No
Agent Not Ready Reason Code Summary Report	Yes	Yes	Yes	No
Agent State Detail Report	Yes	Yes	Yes	No
Agent State Summary by Agent Report	Yes	Yes	Yes	No
Agent State Summary by Interval Report	Yes	Yes	Yes	No
Agent Summary Report	Yes	Yes	Yes	No
Agent Wrap-up Data Summary Report	Yes	Yes	No	No
Agent Wrap-up Data Detail Report	Yes	Yes	No	No
Call Custom Variables Report	Yes	Yes	Yes	Yes
Called Number Summary Activity Report	Yes	Yes	Yes	Yes
Common Skill CSQ Activity report	Yes	Yes	Yes	No
Contact Service Queue Activity by CSQ Report	Yes	Yes	Yes	No
Contact Service Queue Activity Report	Yes	Yes	Yes	No
Contact Service Queue Activity Report by Interval	Yes	Yes	Yes	No
Contact Service Queue Call Distribution Summary	Yes	Yes	Yes	No
Contact Service Queue Priority Summary	Yes	Yes	Yes	No
Contact Service Queue Service Level Priority Summary Report	Yes	Yes	Yes	No
CSQ Agent Summary Report	Yes	Yes	Yes	No

Historical reports	Premium	Enhanced	Standard	IP-IVR
Detailed Call by Call CCDR Report	Yes	Yes	Yes	Yes
Detailed Call CSQ Agent Report	Yes	Yes	Yes	No
Priority Summary Activity Report	Yes	Yes	No	No
Traffic Analysis Report	Yes	Yes	Yes	Yes
Outbound reports [1]				
Agent Outbound Campaign Summary Report	No	No	No	No
Agent Outbound CCDR Report	No	No	No	No
Agent Outbound Half Hourly Report	No	No	No	No
IVR Outbound Campaign Summary Report	No	No	No	No
IVR Outbound CCDR Report	No	No	No	No
IVR Outbound Half Hourly Report	No	No	No	No
Outbound Agent Detail Performance Report	No	No	No	No
Preview Outbound Agent Detail Performance Report	Yes	No	No	No
Preview Outbound Campaign Summary Report	Yes	No	No	No
System reports				
Application Performance Analysis Report	Yes	Yes	Yes	Yes
Application Summary Report	Yes	Yes	Yes	Yes
License Utilization Hourly Report	Yes	Yes	Yes	Yes

[1] Obtain Outbound license that is optional with the Premium license to access IVR and Agent-Outbound reports.

Unified Intelligence Center Live Data Reports

The following table presents the Live Data reports that are available for each license package:

Live Data reports	Premium	Enhanced	Standard	IP-IVR
Agent reports				
Agent CSQ Statistics Report	Yes	Yes	No	No
Agent State Log Report	Yes	Yes	No	No
Agent Statistics Report	Yes	Yes	No	No
Agent Team Summary Report	Yes	Yes	No	No

Live Data reports	Premium	Enhanced	Standard	IP-IVR
Supervisor reports				
Agent Outbound Team Summary Report	Yes	Yes	Yes	No
Chat Agent Statistics Report	Yes	No	No	No
Chat CSQ Summary Report	Yes	No	No	No
Team State Report	Yes	Yes	Yes	No
Team Summary Report	Yes	Yes	Yes	No
Voice CSQ Agent Detail Report	Yes	Yes	Yes	No
Voice CSQ Summary Report	Yes	Yes	Yes	No

Note

- The team that accesses Live Data reports can have a maximum limit of 50 logged in agents at any particular time.

- A maximum number of 42 users are supported to run Live-Data Reports concurrently on Cisco Unified Intelligence Center.

- All the Live Data reports are available as gadgets. For more information to configure gadgets, see the , located at http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html.

- Live Data counters in the Unified Intelligence Center reports and the Cisco Finesse gadgets are reset in the following scenarios:

  - Manual reset—Administrator resets the real-time report counters from the Application Administration interface.

  - Automatic reset—Daily purge resets the real-time report counters at midnight (in the local Unified CCX server time zone).

  If there are active calls at the time of reset, the Contact Service Queue (CSQ) reports display data for the calls, and the agent report counters are set to zero.

- Live Data reports are not updated dynamically if configuration changes are made to CSQ, team, or agents. Refresh the report to see the latest changes.

- Live Data reports do not support team names and CSQ names that have multi-byte characters. Such team names and CSQ names are not synced from Unified CCX to Unified Intelligence Center, but user names are synced.

Finesse Reports

Agents and supervisors can access Live Data reports that are configured to be displayed as gadgets in the desktops. The following are the default reports that are configured:

Agent desktop

- Home tab

    - Agent CSQ Statistics Report

    - Agent Team Summary Report

- My Statistics tab

    - Agent Statistics Report

    - Agent State Log Report

Supervisor desktop

- Team Data tab

    - Team Summary Report—Short and Long Term Average

    - Team Summary Report—Since Midnight

- Queue Data tab

    - Voice CSQ Agent Detail Report

    - Voice CSQ Summary Report

Note   To add or modify the report gadgets, contact your administrator. For more information, see available here:

http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html

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Wallboards

Unified CCX supports wallboard reporting. Obtain the wallboard from a Cisco-approved vendor from Cisco Marketplace:

https://marketplace.cisco.com

Configuration APIs

The Cisco Unified Contact Center Express Application Programming Interface (UCCXAPI) provides a platform to integrate provisioning applications similar to what is provided by the Unified CCX Application Administration interface. Cisco Unified CCX exposes sophisticated control of the contact center application management with its Configuration REST APIs. For more information on supported APIs, see *Cisco Unified Contact Center Express Developer Guide* available here:

https://developer.cisco.com/site/collaboration/contact-center/uccxapi/overview/

Remote Expert Mobile

For all information about the Remote Expert Mobile deployment, see the *Cisco Contact Center Solutions and Unified Communications Manager Solution Configuration Guide for Remote Expert Mobile*, available at http://www.cisco.com/c/en/us/support/customer-collaboration/remote-expert-mobile/tsd-products-support-series-home.html.

Post Call Treatment

Post Call Treatment allows Unified CCX to provide treatment to an ICD call once the agent ends the call from the Finesse desktop. The Unified CCX administrator has an option to configure the Post Call Treatment via the Cisco Unified CCX Script Editor. This functionality will not be available if the agent ends the call from the phone or when the customer hangs up before the agent.

Purge Enhancement

This feature enhances the existing feature of purging the database. The administrator can now set the purge duration for a scheduled purge in Unified CCX Administration in addition to the purge start time. The enhancement also allows the administrator to configure to initiate an automatic purge when the extent size exceeds the set limits.

Security

SSL HTTPS Connection

The certificates uploaded using the Cisco Unified OS Administration interface to the Tomcat trust store is available to secure all HTTP connections made during script execution. The following can be secured:

- Document steps
- VoiceXML script
- Custom java code that provides web services

Enhanced Security API (ESAPI)

A new security filter is added to the Application Administration component. This filter identifies malicious user input and protects the application against XSS attacks.

If the Application Administration users find any user activity that was allowed earlier is now blocked by the security filter, then disable the security filter using a CLI command. For more information, see the *Cisco Unified Contact Center Express Operations Guide*, located at http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_maintenance_guides_list.html.

Caller ID Support

Caller ID feature displays the caller's number instead of the CTI port number on the agent's IP phone. Caller ID (CLID) is disabled by default. To enable CLID using a CLI command, see the *Cisco Unified Contact Center Express Operations Guide*, located at http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_maintenance_guides_list.html.

Note
- CLID is not supported with Jabber.

- When the CLID screen pops up on the phone screen, the **Answer** key is hidden below the CLID screen. You see two soft keys: **Update** and **Exit**. Press **Exit** to see the **Answer** key.

E.164 Support

Unified CCX supports E.164 numbering plan for route point directory numbers, and Finesse agent and supervisor extensions. E.164 is supported for the following components:

- CTI port directory numbers

- Contact phone numbers for outbound calls

- Cisco Finesse

- Trigger directory numbers
- Agent extensions
- Display of Incoming calls
- Phonebook and keypad
- Route points
- Configuration APIs for route points
- Script editor

Note For CTI port directory numbers:

- Unified CCX doesn't completely support E.164 numbering plan for CTI route point directory numbers (DN).

- This limitation is because of the Unified CM limit on device name length set as 15 characters. The system automatically adds "_" between the device name prefix and the DN. So a maximum of 13 characters in the DN is supported as device name prefix (which includes the "+" sign) is mandatory and hence at least one character is needed there. For example, (Device name prefix) + '_' + (length of DN) = 15 ==> [(1 + '_' + 13) = 15]

For Finesse Agent and Supervisor extensions:

- Unified CCX E.164 numbers support a total of 15 characters. When using the plus sign (+) dialing, the plus sign (+) is followed by up to 14 characters that consist of numerals and the special characters—alphabet X, hash(#), square brackets ([ ]), hyphen (-), and asterisk (*).