# Track Task Routing Events in a Contact Center Enterprise Environment

## Contents



## Introduction

This document describes the message flow for a new task being routed to an agent in a Contact Center Enterprise environment.

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Customer Collaboration Platform (CCP)
- Cisco Finesse
- Cisco Packaged Contact Center Enterprise (PCCE)
- Cisco Unified Contact Center Enterprise (UCCE)

### Components Used

The information in this document is based on these software and hardware versions:

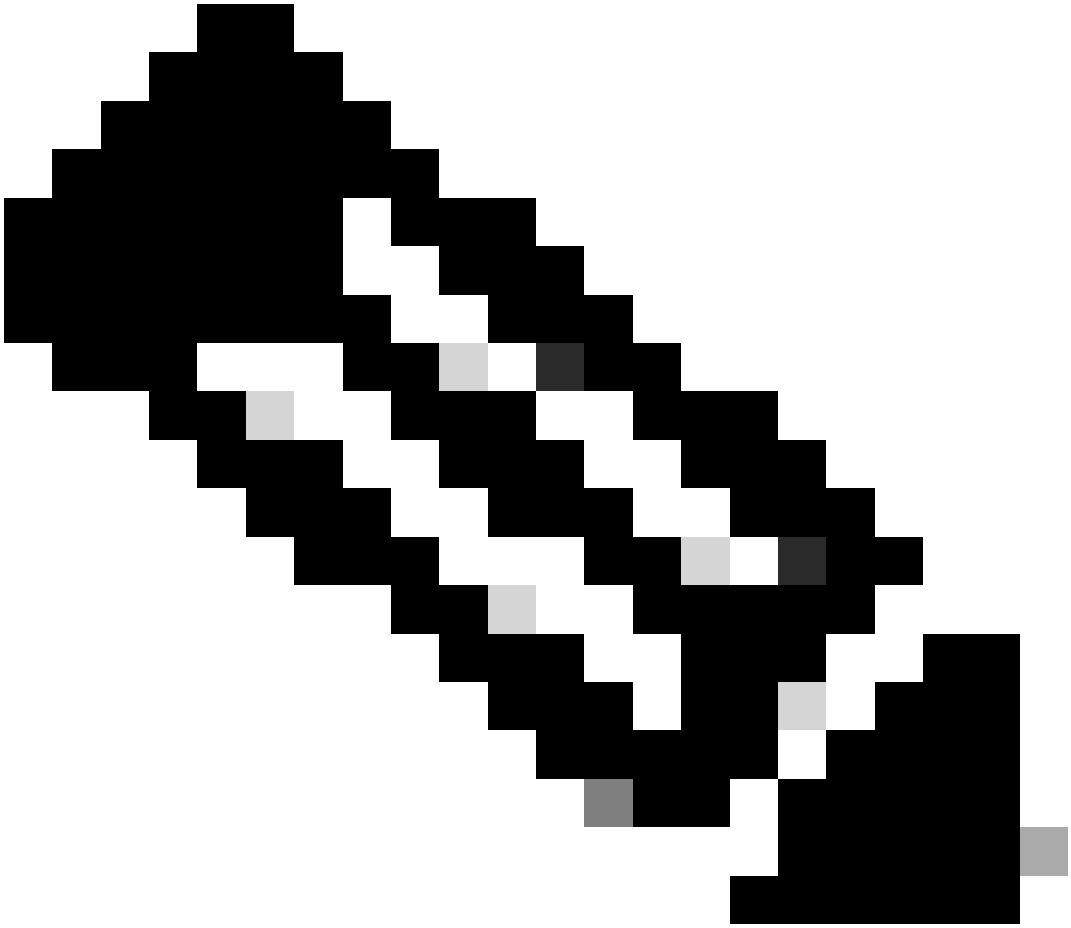
- ICM Version: 12.6(1)
- Finesse Version: 12.6(1)
- CCP Version: 12.5(1) SU1

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

## Logs Required

- CCP Public REST API (CCBU-ccppublicapps)
- CCP REST API (CCBU-ccpapi)
- CCP Runtime Service (CCBU-runtime)
- Finesse Desktop WebServices
- ICM CTI Server (ctisvr)
- ICM Media Routing PIM (mr pim)
- ICM Router (rtr)

---



**Note**:

- For detailed tracking of the tasks in the WebServices log, enable higher trace level within Finesse WebServices using the command: *utils finesse log configuration update webservices ROOT TRACE*
- Updating the log configuration level to DEBUG or TRACE can affect the performance of the Finesse system.

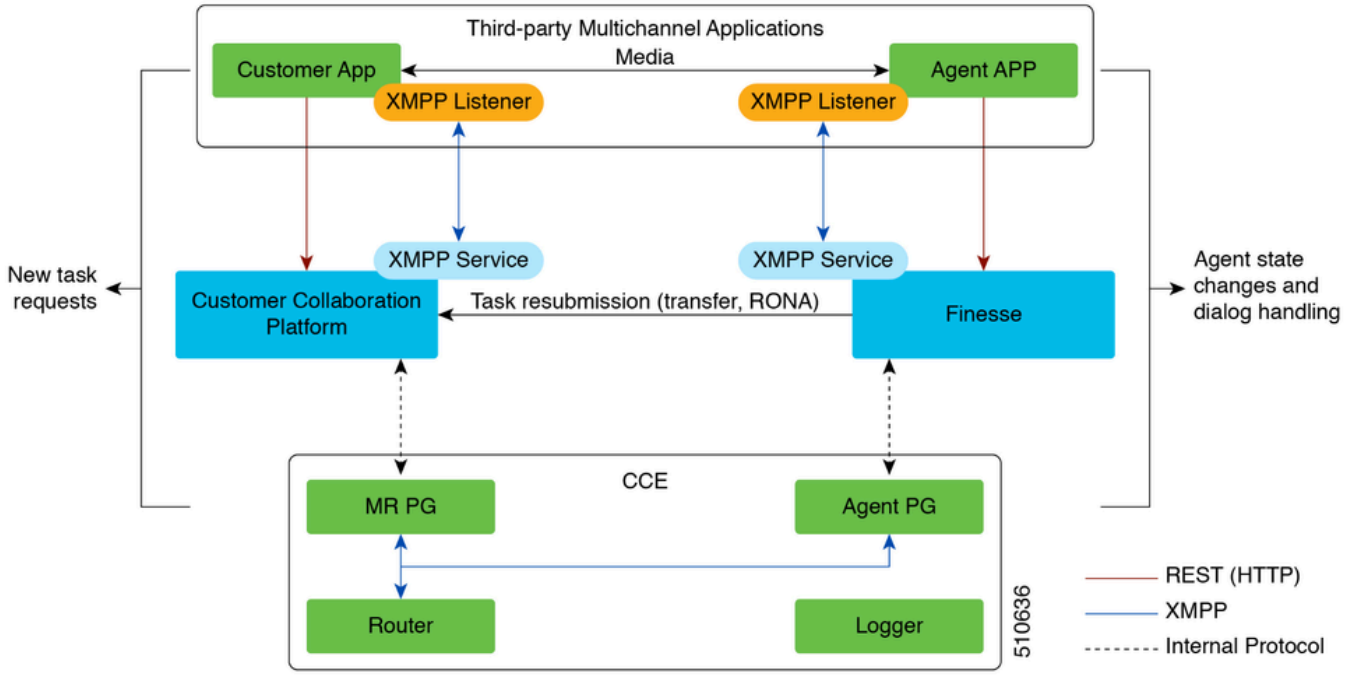
---

# Background Information

Task Routing describes the systems' ability to route requests from different media channels to any agents in a contact center.
Third-party multichannel applications can use the universal queue by integrating with CCE through the Task Routing APIs.
Task Routing APIs provide a standard way to request, queue, route, and handle third-party multichannel tasks in CCE.

## CCP and Task Routing

Third-party multichannel applications use CCPs' Task API to submit non-voice tasks to CCE.
The API works in conjunction with CCP task feeds, campaigns, and notifications to pass task requests to the contact center for routing.
The Task API supports the use of Call variables and ECC variables for task requests. Use these variables to send user-specific information with the request, including attributes of the media such as the chat room URL or the email handle.




# Log Analysis

## Simple Message Flow

1. Third party Multichannel Application sends a NEW_TASK event to the MR PG.

2. MR PG consumes this NEW_TASK request and sends a 'Route' request to the Router with the configured Dialed Number (DN)

3. Based off the DN, Router runs the associated script and an available agent is selected.

4. Router then sends a DEVICE_TARGET_PRE_CALL_IND to the Agent PGs' opc; based off which, ctisvr places the agent in a RESERVED state.

- At the same time, the Router also sends a CONNECT message to the MR PG.

5. MR PG now sends a DO_THIS_WITH_TASK event to the application.

6. The application sends a OFFER_TASK_IND to the ctisvr, indicating that the agent has been offered a task.

- In response, the ctisvr sends back a OFFER_TASK_EVENT confirming that the specified agent has been reserved to handle the specified task

7. Next, the application sends a START_TASK_IND to the ctisvr indicating that the agent has begun.

- Ctisvr responds back with the START_TASK_EVENT confirming that the specified agent has started handling the task.

8. While processing these START_TASK_IND event, ctisvr updates the Agent status to ACTIVE for the non-voice MRD and the session is now active.

9. Once the session ends, END_TASK_IND message is received by the ctisvr indicating that the task has ended, and a END_TASK_EVENT message is then sent in response.

**Agent States for non-voice Media Routing Domains (MRD):**

- *NOT READY - Agent is logged into the MRD, but is in the Not Ready state*
- *NOT ACTIVE - Agent is logged into the MRD, and is in the Ready state*
- *RESERVED - Task is presented to the Agent.*
- *ACTIVE - Task has been accepted and Agent is actively engaged in handling the task.*

CTISVR

<#root>

**Agent is logged into Finesse and is in the ready status for Task Management:**

```
08:54:27:874 cg3A-ctisvr Trace: AGENT_EVENT: ID=1080 Periph=5000 Ext=1080 Inst=1080 Sig=Finesse UniqueI
08:54:34:531 cg3A-ctisvr Trace: AGENT_EVENT: ID=1080 Periph=5000 Ext=1080 Inst=1080 Sig=Finesse UniqueI
```

CCBU-CCPPUBLICAPPS

<#root>

**CCPPublicapps submits a SocialContact Create Request to CCBU-Runtime for a new task:**

```
0000000078: 192.168.1.1: Jan 30 2024 08:55:49.233 -0500: %CCBU__CCPPUBLICAPPS-6-REQUEST_INITIATED: %[De
0000000011: 192.168.1.1: Jan 30 2024 08:55:49.235 -0500: %CCBU__________CCPAPI-6-CREATE_SOCIAL_CONTACT:
```

CCBU-RUNTIME

<#root>

**CCBU-Runtime receives the request to create a SocialContact for a new task:**

```
0000000056: 192.168.1.1: Jan 30 2024 08:55:49.243 -0500: %CCBU_____FEEDS-6-MSG_INCOMING_FROM_BUS: %
0000000057: 192.168.1.1: Jan 30 2024 08:55:49.246 -0500: %CCBU_____FEEDS-6-CREATE_SOCIAL_CONTACT: C
```

CCBU-RUNTIME

<#root>

**SocialContact is created and a SocialContactID is generated:**

```
In this step, note down the the SocialContactID and use it to track the task through the rest of the log
0000000062: 192.168.1.1: Jan 30 2024 08:55:49.272 -0500: %CCBU_____FEEDS-6-SOCIAL_CONTACT_CREATED:
0000000063: 192.168.1.1: Jan 30 2024 08:55:49.273 -0500: %CCBU_____FEEDS-6-SOCIAL_CONTACT_PROCESSOR
0000000064: 192.168.1.1: Jan 30 2024 08:55:49.273 -0500: %CCBU_____FEEDS-6-SOCIAL_CONTACT_CREATED:
```

CCBU-RUNTIME

<#root>

**SocialContact is currently in the unread status:**

```
// Campaign ID and the SocialContact tags are associated with the SocialContact.
0000000140: 192.168.1.1: Jan 30 2024 08:55:49.329 -0500: %CCBU_____CCP-DS-API-6-CCP_DS_API_MESSAGE: Read
0000000072: 192.168.1.1: Jan 30 2024 08:55:49.343 -0500: %CCBU_____CAMPAIGN-6-RECEIVED_FILTER_SOCIAL_C
0000000073: 192.168.1.1: Jan 30 2024 08:55:49.344 -0500: %CCBU_____CAMPAIGN-6-SC_FILTER_CACHE_UPDATE:
0000000074: 192.168.1.1: Jan 30 2024 08:55:49.349 -0500: %CCBU_____CAMPAIGN-6-UPDATING_SOCIAL_CONTACT_
0000000141: 192.168.1.1: Jan 30 2024 08:55:49.366 -0500: %CCBU_____CCP-DS-API-6-CCP_DS_API_MESSAGE: Read
0000000047: 192.168.1.1: Jan 30 2024 08:55:49.398 -0500: %CCBU___NOTIFICATION-6-NOTIFICATION_REQUEST: %
```

MR PIM

<#root>

**MR PIM receives the NEW_TASK event from CCP:**

```
08:55:49:391 PG2A-pim3 Trace: Application->PG:
Message = NEW_TASK; Length = 201 bytes
DialogueID = (4) Hex 00000004
SendSeqNo = (1) Hex 00000001
MRDomainID = Undefined
PreviousTask = -1:-1:-1
PreferredAgent = Undefined
Service = (0) Hex 00000000
CiscoReserved = (0) Hex 00000000
ScriptSelector: CumulusTask
ApplicationString1: ae93f5ad-452d-4c52-8057-8d23864a8a8a
ApplicationString2: 5AA797871000018D0000004139ED7AD5
ServiceRequested = (0) Hex 00000000
```

**MR PIM sends a NEW_CALL event to the Router for this new task:**

```
08:55:49:391 PG2A-pim3 Trace: Send INRCMSGNewCall to Router : :
NEW_CALL RCID=5004 PID=5001 DID=4 DIDRelSeq#=1 GrpDelKey=5004 CRS(RtrDate=-1,RtrCID=-1) RCKSeq#=-1 NICC
```

RTR

<#root>

**Router receives the NewCall event and then runs the associated script, which then picks an available age**

```
08:55:49:401 ra-rtr Trace: (4 x 0 : 0 0) NewCall: CID=(154526,37051928), DN=CumulusTask, ANI=ae93f5ad-4
08:55:49:401 ra-rtr Trace: (4 x 0 : 0 0) CID=(154526,37051928):CumulusTask:Step 1 sending call to Agent
```

**Once an agent picked, the Router sends a Device PreCallIndicator message to the cti server in order to r**

```
08:55:49:401 ra-rtr Trace: (4 x 0 : 0 0) DeviceTargetPreCall_V14: CID=(154526,37051928), PerID=5000, PQ
08:55:49:401 ra-rtr Trace: DN=CumulusTask, ANI=ae93f5ad-452d-4c52-8057-8d23864a8a8a, CED=5AA79787100001
08:55:49:401 ra-rtr Trace: RCKSeqNum=0, DelayQTime=0, DelayRouterTime=0, SGDelayQTime=0
08:55:49:401 ra-rtr Trace: CallGUID=, CustomrID=1 ServiceRequested=0
08:55:49:401 ra-rtr Trace: LocationParamPKID=, LocationParamName=, SIPHeader=
08:55:49:401 ra-rtr Trace: NIC_CalledPartyNumber=CumulusTask ECCPayloadID=1
08:55:49:401 ra-rtr Trace: OrigRCCallID{PhyCtrlID=0, RCID=0, DlgID=0x0} OrigOperationType=0
```

**At the same time, Router also sends a CONNECT message to the MR PG:**

```
08:55:49:401 ra-rtr Trace: (4 x 0 : 0 0) Connect: CID=(154526,37051928), EventSelect=0x0, ServiceType=0
08:55:49:401 ra-rtr Trace: (4 x 0 : 0 0) Deleting Dialog.
08:55:50:448 ra-rtr Trace: Agent 5172 from PG domain 5011. [na-0:3[0],RA*] to [res-0+1:3[0],R]
```

MR PIM

<#root>

**MR PIM receives the CONNECT message from the Router and then sends a DO_THIS_WITH_TASK event to the CCP**

```
08:55:49:391 PG2A-pim3 Trace: MR_Peripheral::On_Router_Connect:
CONNECT RCID=5004 PID=5001 DID=4 DIDRelSeq#=0 CRS(RtrDate=154526,RtrCID=37051928) RCKSeq#=0 ErrorCode=0

08:55:49:391 PG2A-pim3 Trace: PG->Application:
Message = DO_THIS_WITH_TASK; Length = 135 bytes
DialogueID = (4) Hex 00000004
SendSeqNo = (1) Hex 00000001
IcmTaskID = 154526:37051928: 1
SkillGroup = (5199) Hex 0000144f
Service = Undefined
Agent = (5172) Hex 00001434
AgentInfo: 5172
Label:
ApplicationString2:
MRDID = (5011) Hex 00001393
Interruptible = (1) Hex 00000001
```

CTISVR

<#root>

**Agent is RESERVED:**

```
08:55:49:391 cg3A-ctisvr Trace: AGENT_EVENT: ID=1080 Periph=5000 Ext=1080 Inst=1080 Sig=Finesse UniqueI
08:55:49:391 cg3A-ctisvr Trace: DEVICE_TARGET_PRE_CALL_IND - Instrument=1080 RouterCallKey=154526 37051
```

CCBU-CCPAPI

<#root>

**SocialContact State = queued:**

```
0000000114: 192.168.1.1: Jan 30 2024 08:55:49.508 -0500: %CCBU_______EVENTING-6-DS_NOTIFICATION_EVENT: %
0000000115: 192.168.1.1: Jan 30 2024 08:55:49.509 -0500: %CCBU_______EVENTING-6-SOCIAL_CONTACT_PUBLISH_
0000000116: 192.168.1.1: Jan 30 2024 08:55:49.511 -0500: %CCBU_______EVENTING-6-SOCIAL_CONTACT_PUBLISH_
```

**SocialContact State = reserved:**

```
0000000118: 192.168.1.1: Jan 30 2024 08:55:49.573 -0500: %CCBU_______EVENTING-6-DS_NOTIFICATION_EVENT: %
0000000119: 192.168.1.1: Jan 30 2024 08:55:49.573 -0500: %CCBU_______EVENTING-6-SOCIAL_CONTACT_PUBLISH_
0000000120: 192.168.1.1: Jan 30 2024 08:55:49.574 -0500: %CCBU_______EVENTING-6-SOCIAL_CONTACT_PUBLISH_
```

WEBSERVICES and CTISVR

<#root>

**OFFER_TASK_IND sent to cti server by Finesse:**

```
103624: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:55:58.952 -0500]: [COMMAND_POOL-1-worker-9]: [c

08:55:58:923 cg3A-ctisvr Session 3: MsgType:OFFER_TASK_IND (InvokeID:0x8a88 MRDID:5011 ICMAgentID:5172
08:55:58:923 cg3A-ctisvr Session 3: TaskID:154526/37051928/1ARMSkillGroupID:5199 ARMServiceID:N/A )
08:55:58:923 cg3A-ctisvr Trace: ProcessOfferTaskInd - sessionID 3
08:55:58:923 cg3A-ctisvr Trace: SendARMMsg: ARM_OFFER_TASK_IND-- InvokeID = 35464, ClientInvokeID = 354
SkillGroupID = 5199, ServiceID = -1, SessionID = 3
```

**In response, OFFER_TASK_EVENT is sent to Finesse:**

```
08:55:58:923 cg3A-ctisvr Trace: OFFER_TASK_EVENT: PeripherlID=5000 PeripherlType=4 MRDomainID=5011
08:55:58:923 cg3A-ctisvr Trace: TaskID=154526:37051928:1 ICMAgentID=5172 SkillGroupID=5199
08:55:58:923 cg3A-ctisvr Trace: ServiceID=2671908 ApplicationRouted
```

WEBSERVICES

<#root>

**OfferTaskEvent received by Finesse:**

```
103629: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:55:58.953 -0500]: [EVENT_POOL-1-worker-17]: [c.
103630: [INFO]: [call-id [154526_37051928_1]] [agent-id [1080]]: [Jan 30 2024 08:55:58.954 -0500]: [EVE
103631: [INFO]: [call-id [154526_37051928_1]] [agent-id [1080]]: [Jan 30 2024 08:55:58.954 -0500]: [EVE
```

**Finesse now sends START_TASK_IND to cti server:**

```
104059: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:56:53.772 -0500]: [COMMAND_POOL-1-worker-11]: [
```

CTISVR

<#root>

**START_TASK_IND received from Finesse:**

```
08:56:53:745 cg3A-ctisvr Session 3: MsgType:START_TASK_IND (InvokeID:0x8b47 MRDID:5011 ICMAgentID:5172
08:56:53:745 cg3A-ctisvr Session 3: TaskID:154526/37051928/1ARMSkillGroupID:5199 ARMServiceID:N/A )
08:56:53:745 cg3A-ctisvr Trace: ProcessStartTaskInd - sessionID 3
08:56:53:745 cg3A-ctisvr Trace: SendARMMsg: ARM_START_TASK_IND-- InvokeID = 35655, ClientInvokeID = 356
SkillGroupID = 5199, ServiceID = -1, SessionID = 3
```

**Agent is now in the ACTIVE state:**

```
08:56:53:745 cg3A-ctisvr Trace: AGENT_EVENT: ID=1080 Periph=5000 Ext=1080 Inst=1080 Sig=Finesse UniqueI
```

**START_TASK_EVENT is sent to Finesse:**

```
// Once the agent is moved to the ACTIVE state and the START_TASK_EVENT is sent to Finesse, this is whe
08:56:53:745 cg3A-ctisvr Trace: START_TASK_EVENT: PeripherlID=5000 PeripherlType=4 MRDomainID=5011
08:56:53:745 cg3A-ctisvr Trace: TaskID=154526:37051928:1 ICMAgentID=5172 SkillGroupID=5199
08:56:53:745 cg3A-ctisvr Trace: ServiceID=2671908 ApplicationRouted
```

WEBSERVICES

<#root>

**StartTaskEvent received by Finesse:**

```
104066: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:56:53.774 -0500]: [EVENT_POOL-1-worker-19]: [c.
104067: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:56:53.774 -0500]: [EVENT_POOL-1-worker-19]: [c.
104068: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:56:53.774 -0500]: [EVENT_POOL-1-worker-19]: [c.
```

**When the task is ended, END_TASK_IND is forwarded to the cti server by Finesse:**

```
104611: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:58:10.565 -0500]: [COMMAND_POOL-1-worker-13]: [
```

## CTISVR

<#root>

**END_TASK_IND received from Finesse:**

```
08:58:10:536 cg3A-ctisvr Session 3: MsgType:END_TASK_IND (InvokeID:0x8c2c MRDID:5011 ICMAgentID:5172
08:58:10:536 cg3A-ctisvr Session 3: TaskID:154526/37051928/1ICMDisposition:38 ApplicationDisposition:38
08:58:10:536 cg3A-ctisvr Trace: Decode string length error: element "WrapupData", strlen 0, fieldlen 2
08:58:10:536 cg3A-ctisvr Trace: ProcessEndTaskInd - sessionID 3
08:58:10:536 cg3A-ctisvr Trace: SendARMMsg: ARM_END_TASK_IND-- InvokeID = 35884, ClientInvokeID = 35884
WrapupData = , ApplicationData =
08:58:10:536 cg3A-ctisvr Trace: MDSIO::ProcessOPCMessage: received msgtype 97 (CTI_END_TASK_EVENT) ...
```

**Agent is moved to NOT_ACTIVE status and END_TASK_EVENT is send back to Finesse:**

```
08:58:10:536 cg3A-ctisvr Trace: AGENT_EVENT: ID=1080 Periph=5000 Ext=1080 Inst=1080 Sig=Finesse UniqueI
08:58:10:536 cg3A-ctisvr Trace: END_TASK_EVENT: PeripherlID=5000 PeripherlType=4 MRDomainID=5011
08:58:10:536 cg3A-ctisvr Trace: TaskID=154526:37051928:1 PreviousTaskID=-1:-1:-1
08:58:10:536 cg3A-ctisvr Trace: ICMAgentID=5172
```

## WEBSERVICES

<#root>

**EndTaskEvent received on Finesse from the CTISVR:**

```
104624: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:58:10.568 -0500]: [EVENT_POOL-1-worker-16]: [c.
```

**END_TASK_EVENT_HANDLER update sent to the Finesse client:**

```
104625: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:58:10.568 -0500]: [EVENT_POOL-1-worker-16]: [c.
104626: [INFO]: [call-id [154526_37051928_1]] [agent-id [1080]]: [Jan 30 2024 08:58:10.569 -0500]: [EVE
104627: [INFO]: [call-id [154526_37051928_1]] [agent-id [1080]]: [Jan 30 2024 08:58:10.569 -0500]: [EVE
```

**Finesse now makes a REST call to CCP for the EndTask event:**

```
104632: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:58:10.569 -0500]: [SM-TASK-NOTIFIER-POOL-1]: [c
```

**CCP returns a successful response indicating that the SocialContact is closed and marked as Handled:**

```
104633: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:58:10.679 -0500]: [SM-TASK-NOTIFIER-POOL-1]: [c
104634: [INFO]: [call-id ] [agent-id ]: [Jan 30 2024 08:58:10.679 -0500]: [SM-TASK-NOTIFIER-POOL-1]: [c
```

CCBU-CCAPI

<#root>

**CCP receives a request from Finesse to close the SocialContact:**

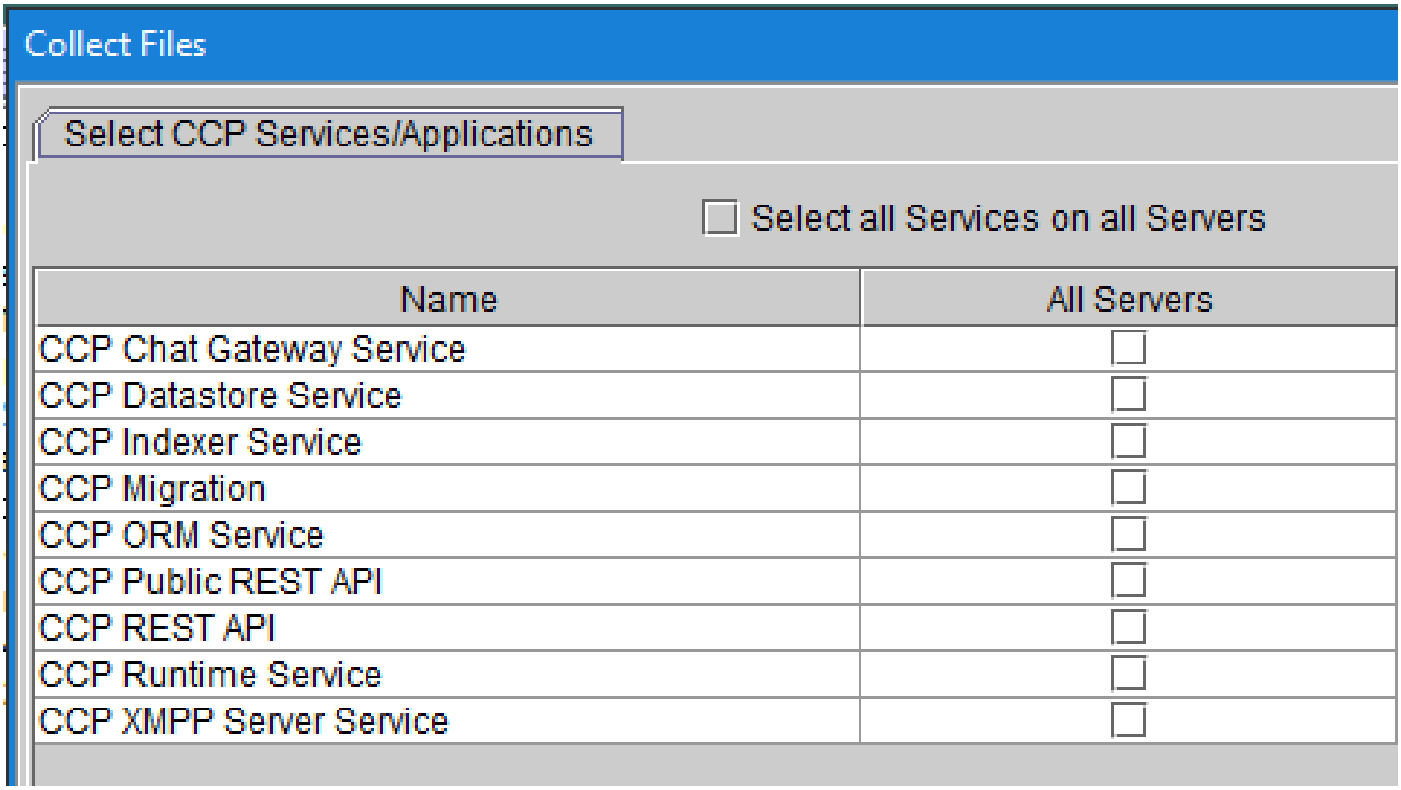
```
0000001461: 192.168.1.1: Jan 30 2024 08:58:10.641 -0500: %CCBU_____CCPAPI-6-REST_API_INFO: CONTACT_
```

**SocialContact status is updated to Handled:**

```
0000001462: 192.168.1.1: Jan 30 2024 08:58:10.650 -0500: %CCBU_____CCPAPI-6-REST_API_INFO: CONTACT_
0000000165: 192.168.1.1: Jan 30 2024 08:58:10.655 -0500: %CCBU_____CCP-DS-API-6-CCP_DS_API_MESSAGE: Wri
0000000166: 192.168.1.1: Jan 30 2024 08:58:10.665 -0500: %CCBU_____CCP-DS-API-6-CCP_DS_API_MESSAGE: Rea
0000001463: 192.168.1.1: Jan 30 2024 08:58:10.676 -0500: %CCBU_____CCPAPI-6-REST_API_INFO: CONTACT_
0000000121: 192.168.1.1: Jan 30 2024 08:58:10.680 -0500: %CCBU_____EVENTING-6-MSG_INCOMING_FROM_BUS:
0000000122: 192.168.1.1: Jan 30 2024 08:58:10.694 -0500: %CCBU_____EVENTING-6-DS_NOTIFICATION_EVENT:
0000000034: 192.168.1.1: Jan 30 2024 08:58:10.694 -0500: %CCBU_____MSGPROXY-6-MSG_INCOMING_FROM_BUS:
0000000123: 192.168.1.1: Jan 30 2024 08:58:10.694 -0500: %CCBU_____EVENTING-6-SOCIAL_CONTACT_PUBLISH_
0000000124: 192.168.1.1: Jan 30 2024 08:58:10.696 -0500: %CCBU_____EVENTING-6-SOCIAL_CONTACT_PUBLISH_
```

# Download CCP Logs

## Using RTMT




## Using CCP command line

### List directories and files:

<#root>

*file list activelog mmca/logs/**
OR
*file list activelog mmca/logs/* detail*

admin:

**file list activelog mmca/logs/***

```
<dir> ccp-chat-gateway
<dir> ccp-ds-indexer
<dir> ccp-ds-storage
<dir> ccp-xmpp-server
<dir> ccpapi
<dir> ccppublicapps
<dir> certMgmt
<dir> orm
<dir> runtime
<dir> tomcat
informix-stats.out install_report_server.sh.out
mmca-drs-reg.log sm1_mmca_dbsetup.log
dir count = 10, file count = 4
```

### Download Log files:

```
admin:file get activelog ?
Syntax:
file get activelog file-spec [options]
file-spec    mandatory   file to transfer
options      optional    reltime months|weeks|days|hours|minutes timevalue
                         abstime hh:mm:MM/DD/YY hh:mm:MM/DD/YY
                         match regex
                         recurs
                         compress
```

<#root>

**CCP Chat Gateway Service**

file get activelog mmca/logs/ccp-chat-gateway/*

**CCP Datastore Service**

file get activelog mmca/logs/ccp-ds-storage/*

**CCP Indexer Service**

file get activelog mmca/logs/ccp-ds-indexer/*

**CCP ORM Service**

```
file get activelog mmca/logs/orm/*
```

**CCP Public REST API**

```
file get activelog mmca/logs/ccppublicapps/*
```

**CCP REST API**

```
file get activelog mmca/logs/ccpapi/*
```

**CCP Runtime Service**

```
file get activelog mmca/logs/runtime/*
```

**CCP XMPP Server Service**

```
file get activelog mmca/logs/ccp-xmpp-server/*
```

**CCP Tomcat**

```
file get activelog mmca/logs/tomcat/*
```

# Related Information

**12.6(1)**
UCCE Features Guide - Task Routing

**12.6(2)**
UCCE Features Guide - Task Routing

**Technical Support & Documentation - Cisco Systems**