



Unified CCX Failover

The following table describes the persistent connection call behavior during the failover of Unified CCX and Cisco Unified Communications Manager:

Failover	Cisco Finesse	
	Persistent Connection Call	ICD Call
Unified CCX failover	Not terminated	Not terminated
Cisco Unified Communications Manager failover	Terminated	Not terminated. The agent enters the Not Ready state
Desktop connectivity loss	Not terminated	Not terminated

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Cisco Finesse High Availability Considerations

This section describes Cisco Finesse operations during the failover of Unified CCX.

Smart Failover

Cisco Finesse clients do not complete redirection to the other server unless they confirm that Cisco Finesse is IN_SERVICE on the other server. If the failed side recovers by that time, the clients automatically reconnect to it.

Failure Scenarios in HA Deployment

This table describes failure scenarios that you might encounter in high availability deployment.

Failure scenario	Failover	What happens to Unified CCX?	What happens to Cisco Finesse Site A?	What happens to Cisco Finesse Site B?	Cisco Finesse client behavior	Recovery
Connectivity between Site A and Site B is broken (Island mode).	No	Both Site A and Site B become master.	IN_SERVICE	IN_SERVICE	Clients can connect and operate with both sites.	After the connectivity is reestablished, Unified CCX converges on the primary node as master. Clients connected to nonmaster node are redirected.
Active node is down (Site A).	Yes	Site B will be the master.	OUT_OF_SERVICE	IN_SERVICE	Clients can connect and operate with Site B.	After the connectivity is reestablished, the primary node will be the master. Clients connected to Site B node are redirected to Site A.

Finesse IP Phone Agent Failure Behavior

The Finesse IP Phone Agent does not automatically failover to the alternate Finesse server. To ensure continued operations in a failure situation, you must configure at least two Finesse IP Phone services in Unified CM, each pointing to different Finesse servers.

When the Finesse server fails, Finesse IPPA attempts to reconnect to it every 5 seconds. After three attempts, if the Finesse server is not in service, Finesse IPPA displays a server unavailable message to the agent. The total time to go out of service is approximately 15 seconds.

In a failure scenario, the Finesse IPPA agents must exit from the current Finesse service and manually sign in to another configured Finesse service that points to an alternate Finesse server. After they successfully sign in to an alternate Finesse service, the agents can resume normal operations.

Cisco Unified Intelligence Center High Availability Considerations

Server is Down

In a two-node high availability (HA) setup, you can connect to any node to access reports. If the node you are connected to goes down, then manually log in to the other node to access reports as this doesn't happen automatically.

Island Mode

If WAN is down, the nodes function in Island mode and both of the nodes independently assume mastership (engine and data stores components). You can access reports from either of the nodes.



Note There will be a data discrepancy in the reports as there is no data replication between the nodes till the connectivity is restored.

Standalone CUIC has no high availability.

Standalone Cisco Unified Intelligence Center

Unified CCX 11.0(1) and later provides support for a standalone Cisco Unified Intelligence Center system with a premium Cisco Unified Intelligence Center license in addition to the on-box Cisco Unified Intelligence Center (which has a standard Cisco Unified Intelligence Center license).

The version of the standalone Cisco Unified Intelligence Center should be the same as the Unified Intelligence Center that is embedded in Unified CCX. The Standalone Cisco Unified Intelligence Center supports multiple data sources including Unified CCX.

In a Unified CCX High Availability deployment, the standalone Cisco Unified Intelligence Center should be connected to the standby node on Unified CCX to minimize the load on the master node. In case of failover of Unified CCX the Cisco Unified Intelligence Center connects to the new standby node. Standalone Cisco Unified Intelligence Center doesn't support high availability.

To install standalone Cisco Unified Intelligence Center, see the Installation and Upgrade Guide for Cisco Unified Intelligence Center, located at: http://www.cisco.com/en/US/products/ps9755/prod_installation_guides_list.html.

For more information on how to create custom reports, see the Cisco Unified Contact Center Express Report Developer Guide, located at: http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_user_guide_list.html.



Note Live Data is not supported on the standalone Cisco Unified Intelligence Center.

Cisco Unified Intelligence Center user sync is not supported with the standalone Cisco Unified Intelligence Center and the Unified CCX server.

Engine Redundancy

Any incoming call arriving at Unified Communications Manager destined for Unified CCX route points can be accepted by the Unified CCX engine and all Unified CCX call treatment and ACD routing services are operational.



Note All the agents should re login within five minutes during a failover.

During failover, ACD subsystem will not be able to route calls to agents until the automatic login process completes and the agent manually sets the state to Ready. Agents on Unified CCX routed calls will see those calls survive and Finesse will automatically re login agents. After being logged back in, agents will have to set the state to Ready when they are ready to begin receiving calls.

When the Master Engine is Down

Once the master engine goes down, the engine on the other node will be selected as the new master. Calls which were queued by the previous primary engine are dropped after a failover. New calls coming in while agents are re-logging will stay in the queue until agents log in. Historical data will be written to the new master engine's local database.

Automatic Call Distribution (ACD)

The HA failure of the active server is detected and the ACD subsystem can automatically fail over from the active to the standby server. All ACD functions are restored on the standby server within 5 seconds.

Interactive Voice Response

When an active server fails in a HA system, IVR subsystem will automatically failover.

All calls in queue and calls receiving IVR call treatment will be lost. Calls already transferred to the agent will be preserved.

Unified CCX Outbound Dialer

Behavior Under High Availability

The Config Data Store (CDS) is required for normal operation of outbound for call status and call result updates of contact records. When deploying in a two-node high availability system, the CDS must be running on both nodes to enable the database write operation. The Outbound subsystem will be operational as long as the Publisher CDS is up and running. In a high availability environment, only the dialer in the master node is active.

If a contact is imported for a campaign and failover occurs before the contact is dialed out, then the contact is retried the next day. The number of contacts that can be retried for each campaign is as mentioned below:

- For direct preview campaigns, the count is the maximum value that is configured for Contact Records Cache Size field.

- For IVR-based progressive and predictive campaigns, the count is the Number of Dedicated Ports multiplied with the Lines Per Port (LPP) values configured.
- For agent-based progressive and predictive campaigns, the count is 45 for medium or large VM profiles and is 15 for small VM profiles.

Failover Scenarios for Preview Outbound:

- If a preview outbound call not in reserved state is waiting for the agent to accept the call and when the master engine goes down, the agent is automatically logged out and the preview call disappears from the agent desktop. If the master engine restarts during failover, the call status for that contact record is 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 preview outbound call not in reserved state is accepted by the agent and the call is ringing on the customer phone, there is no change on the call. However, the agent is logged out and will be able to use call control capabilities only through the phone.

Failover Scenarios for Progressive and Predictive IVR-Based Outbound:

- The CTI ports on the master engine will go out of service on a failover and the calls that are in progress between customers and CTI ports will be disconnected. The standby server will continue dialing out the remaining contacts in the campaign after the failover.

Failover Scenarios for Progressive and Predictive Agent-Based Outbound:

- If an agent is currently on an outbound call and Cisco Finesse service restarts or agent closes the browser and reopens, then the agent is automatically logged in after 60 seconds and the state of the agent is set to Not Ready. If the customer is still on the call, then the agent continues to handle the call but outbound specific options will not be available on the agent desktop.

WAN Link Failure Between Sites—Island Mode

Connectivity failure creates a scenario called ‘Island mode’ where each node (on either side of the network) assumes mastership and handles calls. Each node behaves as if the other side has failed and declares itself master (Engine and Data Stores components). The node that was already the master, continues as is. Phones and Finesse need to register with Unified CM and server on the same side of the network. This operation happens automatically. The following lists the failover behaviors:

- Historical data is written to local Data Stores
- Real Time Reporting (RTR) shows the status of each node independently
- No configuration changes are allowed
- Enterprise Database access across the network is not possible
- Outbound will be impaired as these do not support high availability

If the Island mode occurs for more than four days, DB replication between the nodes will be broken and will need to be reestablished from Unified CCX Administration web interface when the WAN link is restored.



Note Backup scripts are executed on the publisher, and it backs up the database that has mastership. In Island mode, only one node gets backed up and the data getting collected on the other node does not get backed up. The backup is inconsistent, and if restored, there will be loss of data.

When Connectivity is Restored

Once the network connectivity is restored, convergence of engine mastership occurs. Two masters cannot exist and one of the nodes will drop mastership. All active calls being handled by that node will be dropped.

Similarly, convergence happens for the data stores with no disruption in call activity. All data will be replicated as soon as convergence is done only if the link was up within a predetermined replication retention period, otherwise, the customer needs to initialize the replication from datastore control center pages.



Tip You can use the Unified CCX Administration Datastore control center pages or the CLI to check the replication status.

WAN Link and Single Engine Failure

When the WAN goes down, CTI functionality, which was provided by Unified CM Sub 1 across the WAN is no longer available. The master engine on node 2 fails over to Unified Communications Manager Sub 2. All calls still in the queue are dropped.

Some agents will remain in Not Ready state since the corresponding agent's phones are registered with the Unified Communications Manager Sub 1. There is no automatic function to force phones to re-register.

This situation is corrected when the WAN link is restored.

Chat and Email

With high availability, failure of the active server can be detected and the nonvoice subsystem automatically fails over from the active server to the standby server. All unanswered chats are moved to the new active server.

An active chat session is available until the browser gets redirected to the standby server. The chat session is terminated after the redirect is complete and the message is displayed as, 'The Chat has Ended.' During an engine failover, the agent gets a message that, 'Chat and Email are temporarily down due to Outages.' All queued contacts are discarded in Chat whereas it is reinjected in Email.

The fault tolerance for Web Chat is provided in the Unified CCX. In an HA deployment, SocialMiner is configured to communicate with both the Unified CCX nodes. When a new contact arrives at SocialMiner, both the Unified CCX nodes are notified.

In the case of a failover, all emails that were previously queued and were assigned to an agent get requeued and get assigned to the agents.



Attention Cisco SocialMiner does not support HA deployment options. Chat and email will not be available if SocialMiner is down.



Note Web Chat and email do not support the Island mode scenario.
