Configuration Limits and Feature Availability for Reference Designs

Reference Design Configuration Limits

Note The first four chapters of this book are for anyone who wants to get familiar with the three contact center enterprise solutions:

- Packaged Contact Center Enterprise
- Cisco Hosted Collaboration Solution for Contact Center
- Unified Contact Center Enterprise

For information about design considerations and guidelines specific to HCS for CC, see the remaining chapters.

The following tables list key configuration limits for Contact Center Enterprise Reference Designs solutions.

Some of these limits are interdependent and dynamically change depending on the elements in your solution. For example, the number of skills per agent affects the maximum number of agents.

Limits that are listed as "per PG" always refer to a redundant pair of PGs.

Important Your contact center enterprise solution can only use the new higher configuration limits with the standard three coresident PG layout.

Related Topics

Sizing and Operating Conditions for Reference Designs

Agent Limits

Note The figures in the Contact Director column refer to what are configured on the Contact Director. The figures do not include what is configured on the target systems to which the Contact Director connects.

Table 1: Agent Limits

Resource	2000 Agent Reference Design Model	4000 Agent Reference Design Model	12000 Agent Reference Design Model	Contact Director Reference Design Model	
Active Agents[1]	2000	4000	12000	24000 (2 target systems of 12000 agents)	
Active Agents on each Unified CM cluster	2000	4000	8000	NA	
Configured Agents	12000	24000	72000	NA	
Configured Agents per PG	12000	12000	12000	NA	
Agents with TraceON enabled	100	100	400	NA	
Agent Desk Settings	2000	4000	12000	NA	
Active Mobile Agents per Agent PG[2] [3]	2000 with nailed-up connections Or 1500 with call-by-call connections	2000 with nailed-up connections Or 1500 with call-by-call connections	2000 with nailed-up connections Or 1500 with call-by-call connections	2000 with nailed-up connections Or 1500 with call-by-call connections	NA
Active ECE Multimedia Agents	1500[4]	4000[5]	12000[6]	NA	
Agents per team	50	50	50	NA	
Teams to which an agent can belong	1	1	1	NA	

Resource	2000 Agent Reference Design Model	4000 Agent Reference Design Model	12000 Agent Reference Design Model	Contact Director Reference Design Model	
Skills per agent	15 Refer to the section on dynamic sizing for details.	15 Refer to the section on dynamic sizing for details.	15 Refer to the section on dynamic sizing for details.	NA	
Number of agents in a skill group	12000	24000	72000	NA	
Attributes per agent	50	50	50	NA	

[1] This includes Outbound and Multichannel agents. However, the number of agents that you can keep occupied is based on the Outbound Option dialer and SocialMiner limits.
[2] 1500 with nailed-up connections if average handle time is less than 3 minutes, or if Agent greeting or Whisper Announcement features are used in conjunction with Mobile Agent.
[3] The Large PG OVA supports 2000 agents with call-by-call connections.
[4] When ECE is colocated, the limit is 400 agents. The limit of 1500 applies when ECE is on a separate server.
[5] This limit requires multiple ECE clusters. Each Agent PG can support either a 400 agent colocated cluster or a 1500 agent cluster on a separate server.
[6] This limit requires multiple ECE clusters. Each Agent PG can support either a 400 agent colocated cluster or a 1500 agent cluster on a separate server.

Related Topics

Dynamic Limits for Skill Groups and Precision Queues Per Agent
Other Dynamic Sizing Factors
PG Agent Capacity with Mobile Agents

Supervisor and Reporting User Limits

Table 2: Supervisor and Reporting User Limits

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model	
Active Supervisors[7]	200	400	1200	NA	
Configured Supervisors	1200	2400	7200	NA	
Active teams	200	400	1200	NA	

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model	
Configured teams	1200	2400	7200	NA	
Supervisors per Team	20	20	20	NA	
Teams per supervisor	20	20	20	NA	
Agents per supervisor	1000	1000	1000	NA	
Active Reporting users	200	400	1200[8]	NA	
Configured Reporting users	1200	2400	7200	NA	
Reporting users per CUIC node	100	200	200	200	NA

[7] Supervisors count against the agent limits. Ten percent of your active agents can be supervisors.
[8] During a failover, this limit drops to 600 until both sides are active again.

Access Control Limits

Table 3: Access Control Limits

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Active Administrators per distributor[9]	50	50	50	50
Configured Web Administrators	100	100	100	NA
Roles	30 - Packaged CCE only	NA	NA	NA
Departments	200 - Packaged CCE only	NA	NA	NA
Department per Administrator	10 - Packaged CCE only	NA	NA	NA

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Machines in inventory	1000	1000	1000	NA

[9] Because Packaged CCE, CCMP, and CCDM use web administration, this limit does not apply with them.

Outbound Campaign Limits

Table 4: Outbound Campaign Limits

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Outbound dialer per system	1 per Agent PG	1 per Agent PG	1 per Agent PG	NA
Outbound dialer maximum calls per second	20	40	120	NA
Outbound dialer maximum calls per second per dialer[10]	20	30	30	NA
Outbound dialer maximum ports on each SIP dialer	1500	1500	1500	NA
Outbound dialer maximum ports on each system (total)	1500	3000	6000	NA
Number of Campaigns per System (Agent/VRU based)	1500 campaigns Preview and direct preview modes support up to 750 campaign skill groups in a medium or large PG VM, provided the number of configured dialer ports are twice the number of maximum active campaigns per dialer.	1500 campaigns Preview and direct preview modes support up to 750 campaign skill groups in a medium or large PG VM, provided the number of configured dialer ports are twice the number of maximum active campaigns per dialer.	1500 campaigns Preview and direct preview modes support up to 750 campaign skill groups in a medium or large PG VM, provided the number of configured dialer ports are twice the number of maximum active campaigns per dialer.	NA

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Campaign skill groups per Campaign	20	20	20	NA
Total Campaign Skill Groups	100	600	600	NA
Maximum Outbound Skills per Agent	5	5	5	NA
Do Not Call Records per Import	1,000,000	20,000,000	60,000,000	NA

[10] This figure assumes a 30% transfer rate to a VRU or an agent.

Precision Queue and Skill Group Limits

Note Each Precision Queue has an associated Skill Group. Each Precision Queue effectively has a weight of two Skill Groups.

Table 5: Precision Queue and Skill Group Limits

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Skill Groups per System	16,000 [11]	16,000	27,000	54,000
Enterprise Skill Groups	4000	4000	4000	4000
Maximum combined configured Skill Groups and Precision Queues per peripheral	4000	4000	4000	NA
Configured Precision Queues per system	4000	4000	4000	8000 of the maximum 54,000 queues
Precision Queue steps	10,000	10,000	10,000	NA

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Precision Queue term per Precision Queue	10	10	10	NA
Precision steps per Precision Queue	10	10	10	NA
Unique attributes per Precision Queue	10	10	10	NA
Max Unique Skills per Team	50	50	50	NA
Configured labels	100,000	100,000	160,000	160,000
Precision Routing Attributes on each system	10,000	10,000	10,000	NA
Precision Routing Attributes for each Agent	50	50	50	NA
Skill Group statistics refresh rate	10 seconds (default)	10 seconds (default)	10 seconds (default)	NA
Skill Groups per PG	4000	4000	4000	NA
Queues[12] per Contact Sharing Group	NA	NA	NA	100
Contact Sharing Rules	NA	NA	NA	100
Contact Sharing Groups	NA	NA	NA	1000

[11] In most Packaged CCE topologies, you can only have 4000 Skill Groups because there is only 1 Agent PG. In the Global topology, Packaged CCE supports 16000 skill groups system wide through the use of remote sites. Each remote sites with an Agent PG adds 4000 skill groups. The 16000 maximum requires 3 remote sites.

[12] This includes both Skill Groups and Precision Queues.

Related Topics

Dynamic Limits for Skill Groups and Precision Queues Per Agent

Task Routing Limits

Table 6: Task Routing Limits

Resource	2000 Agent Reference Design	4000 Agent Reference Design	12000 Agent Reference Design	Contact Director Reference Design
Maximum active agents assigned to tasks per system	2000	2000	2000	NA
Maximum reserved and active tasks per agent[13]	15	15	15	NA
Maximum incoming tasks/sec across all MRDs[14]	5	5	5	NA
Task Routing API request/hr through SocialMiner	15000	15000	15000	NA

[13] This figure includes paused and interrupted tasks. Tasks that are still in queue or are transferred out by an agent do not count towards this limit.

[14] SocialMiner throttles the task submission rate to Unified CCE to 5 tasks per second. SocialMiner holds a maximum of 10,000 tasks in the queue for submission. If the queue exceeds 10,000 tasks, then SocialMiner discards the additional tasks with the disposition code NOTIFICATION_RATE_LIMITED. Once the queue is ready again, additional tasks are added to the queue.

SocialMiner Configuration and Operational Limits

The following table shows the sizing limits for small and large deployments of a single SocialMiner system.

Table 7: SocialMiner Configuration and Operational Limits

Limit	Small Deployment	Large Deployment
Concurrent active administrators	5	5
Configured feeds	100	200
Configured campaigns	50	100
Concurrent active social media agents	30	60
Tags per social contact	20	20
Callback contacts per minute	40	40

Limit	Small Deployment	Large Deployment
Filters per system[15]	15 combined Bayesian and Author filters 5 Script filters	20 combined Bayesian and Author filters 10 Script filters
Filters per campaign	10 (5 max for script filters)	10 (5 max for script filters)
Incoming rate of contacts (total per hour)	10,000	10,000

[15] Each filter type has its own performance implications. Performance depends almost entirely on what is in the script filter implementation.

Dialed Number Limits

Table 8: Dialed Number Limits

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
Dialed Numbers on each CVP peripheral (External Voice)	2000[16]	4000[17]	12000[18]	12000[19]
Dialed Number on each Unified CM peripheral (Internal Voice)	2000	2000	2000	NA
Dialed Number on each MR peripheral (Multichannel)	1000	1000	1000	NA
Dialed Number on each Unified CM peripheral (Outbound Voice)	1000	1000	1000	NA

[16] You cannot exceed the system maximum total of 240,000 DN records across all routing client types.
[17] You cannot exceed the system maximum total of 240,000 DN records across all routing client types.
[18] You cannot exceed the system maximum total of 240,000 DN records across all routing client types.
[19] You cannot exceed the system maximum total of 240,000 DN records across all routing client types.

Note In the Global topology, each remote site can support the full limit of Dialed Numbers as mentioned in the table.

System Load Limits

Table 9: System Load Limits

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
VRU Ports in a Reference Layout[2021]	3000	6000	18000	36000
Maximum VRU Ports with Added PGs[22]	6000	12000	36000	72000
Maximum Inbound Calls per Second (CPS)	15	30	90	300, of which Contact Sharing can handle 120 and the remainder is for self-service and line-of-business direct routing.
Congestion Control CPS[23]	18	35	105	300
Maximum Inbound CPS per VRU PG[24]	15	15	15	NA
Maximum VRU PIM per VRU PG	2	2	2	NA
Dynamic Reskilling (operations/hr.)	120	120	120	NA
Maximum Queued Calls and Tasks	15000	15000	15000	15000
Task Routing API through SocialMiner (requests/hr.)	15000	15000	15000	NA
Media Routing Domains per system	20	20	20	NA
Agent Callback requests through SocialMiner (requests/hr.)	1000	1000	1000	NA

Resource	Unified CCE 2000 Agent Reference Design Model	Unified CCE 4000 Agent Reference Design Model	Unified CCE 12000 Agent Reference Design Model	Unified CCE Contact Director Reference Design Model
ECE Email or Chat requests per hour for 400 agent deployment	6 per agent	6 per agent	6 per agent	NA
ECE Email or Chat requests per hour for 1500 agent deployment [25]	6 per agent	6 per agent	6 per agent	NA
Incoming Messages per Second for CVP Reporting Server	420	420	420	420
Reports per user For more details, see Resource Requirements for Reporting	2 Live Data reports 2 AW-RealTime reports 2 historical reports	2 Live Data reports 2 AW-RealTime reports 2 historical reports	2 Live Data reports 2 AW-RealTime reports 2 historical reports	NA
Maximum rows per report	100 for real-time 8000 for historical	100 for real-time 8000 for historical	100 for real-time 8000 for historical	NA

[20] These figures assume that your solution has an equal number of redundant ports. The actual number of ports is twice these figures.

[21] The total calls at agents or the VXML server in the basic layout for each Reference Design model. The added components in a global deployment increase these numbers.

[22] These figures assume that your solution has an equal number of redundant ports. The actual number of ports is twice these figures.

[23] Inbound calls per second figures assume 10% of agents are supervisors who are not directly answering calls. The figures also assume a distribution of calls with 10% transfers and 5% conferences.

[24] If one of the CVP Call Servers is down, the maximum inbound CPS per VRU PIM is also 15.

[25] For more details on email or chat sizing considerations, see the Enterprise Chat and Email Design Guide at https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-implementation-design-guides-list.html.

Call Variable Limits

Table 10: Call Variable Limits

Resource	2000 Agent Reference Design Model	4000 Agent Reference Design Model	12000 Agent Reference Design Model	Contact Director Reference Design Model
Persistent Enabled Expanded Call Variables (Default)[26]	5	5	5	5
Persistent Enabled Expanded Call Variable Arrays	0	0	0	0
Maximum Contents per ECC (Expanded Call Context) Variable (bytes)	210	210	210	210
Maximum Total ECC Contents Size (bytes)	2000	2000	2000	2000
Maximum ECC Variable Name (bytes without null character)	32	32	32	32
Maximum Total Contents and Name Size for ECC Variables (bytes)	2500	2500	2500	2500
Number of Peripheral Variables	10	10	10	10
Call Context for Peripheral Variables 1-10 (bytes)	40	40	40	40

[26] See the "Call Context" section for details.

Other Limits

Table 11: Other Limits

Resource	2000 Agent Reference Design Model	4000 Agent Reference Design Model	12000 Agent Reference Design Model	Contact Director Reference Design Model
Attributes	10000	10000	10000	NA
Maximum Agent PGs with Live Data, Precision Queueing, or Single Sign-On enabled[27]	4[28]	4[29]	12	50
Maximum PGs [30]	30	100	150	NA
Maximum Agent PGs on each VM	1	1	1	NA
Maximum Cisco Finesse server pairs per PG pair	1	1	1	NA
MR PIMs on each MR PG	4	4	4	NA
Bucket Intervals	2000	4000	12000	NA
Configured Call Types	4000	8000	15000	15000
Call Type Skill Group per Interval[31]	30000	30000	30000	NA
Active Routing Scripts	1000	2000	6000	6000
Configured Routing Scripts	2000	4000	12000	12000
Network VRU Scripts	2000	4000	12000	12000
Maximum Reason Codes	1000	2000	6000	NA
Not-ready Reason Codes	100 global codes 100 team codes	100 global codes 100 team codes	100 global codes 100 team codes	NA

Resource	2000 Agent Reference Design Model	4000 Agent Reference Design Model	12000 Agent Reference Design Model	Contact Director Reference Design Model
Sign-out Reason Codes	100 global codes 100 team codes	100 global codes 100 team codes	100 global codes 100 team codes	NA
Wrap-up Reasons[32]	100 global codes 1500 team codes	100 global codes 1500 team codes	100 global codes 1500 team codes	NA
Administration Bulk Jobs[33]	200	200	200	NA
CTI AllEventClients[34]	7/Medium PG 20/Large PG[35]	7/Medium PG 20/Large PG	7/Medium PG 20/Large PG	NA
Real-Time Only Distributors (for configuration only)	4 (2 on each side)	4 (2 on each side)	10 (5 on each side)	10 (5 on each side)
Agent Targeting Rule (ATR)	1000	1000	1000	NA

[27] Deploy only one Agent PG, one VRU PG, and one MR PG on each VM. Use the Medium PG OVA or Large PG OVA, depending on your need for CTI All-Event Clients.
[28] For Packaged CCE, you have only 1 Agent PG, 1 VRU PG, and 1 MR PG.You can extend to the 4 maximum, if you use the Global topology with 3 remote sites.
[29] For Cisco HCS for Contact Center Small Contact Center solutions, 50 with SSO, but only 12 with Precision Queueing and Live Data.
[30] The maximum PG count includes the maximum Agent PG count (specified in the previous row).
[31] Exceeding this limit causes gaps in your reporting.
[32] A team cannot use more than 100 of the total team wrap-up reasons.
[33] This covers the SSO Migration Tool and the Packaged CCE Bulk Tool. It does apply to legacy bulk configuration tools.
[34] The CTI AllEventClients limit includes your Cisco Finesse, Enterprise Chat and Email, and Outbound Dialer connections. Do not use CT IOS desktops with these limits.
[35] Does not apply for Packaged CCE, which does not use the Large PG OVA.

Feature Availability for Reference Designs

These sections summarize the features available in contact center solutions that follow the Contact Center Enterprise Reference Designs.

Agent and Supervisor

Capability	Supported	Notes

Call Flows	Post-route by CVP
	Comprehensive call flow:
	• Inbound and outbound calls
	• Supplementary services
	  • Hold and resume
	  • Blind, consult, and refer transfers and conferences
	  • Router requery
		These other call flows are only allowed in Non-Reference Design solutions.
		• Pre-route call flows
		• Translation Routes
		• Unified CVP VXML Server (standalone)—Self-service without Unified ICM
		• Call Director—IP switching
		• VRU only—VRU, switching for PSTN endpoints

Outbound campaigns	Cisco Outbound Option supports these dialing modes: • Predictive • Preview • Direct Preview • Progressive	The SIP Dialer uses the UDP transfer protocol for SIP.
Mobile Agent	Nailed-up and Call-by-call modes	
Silent Monitoring	Unified CM-based (BiB)	You cannot monitor mobile agents with Unified CM-based silent monitoring.
Recording	Unified CM-based Network-based Recording CUBE(E)-based TDM gateway-based	

Capability	Supported	Notes
CRM Integration	CRM integration is available through the Cisco Finesse Web API, Finesse gadgets, and existing CRM connectors.	You can integrate with a CRM using the following methods: • CRM iFrame in the Finesse container. This method is simple and easy but does not provide deep CRM integration. • Third-party gadget in the Finesse container. This method achieves full CRM integration but requires custom development using third-party and Finesse APIs. • Finesse gadgets in a CRM browser-based desktop. This method provides lightweight integration into the CRM application. • Finesse Web API s or the CTI Server protocol to integrate into a CRM application. This method provides deep CRM integration but requires custom development.
Desktop	Cisco Finesse Finesse IP Phone Agent	FIPPA only supports a subset of Finesse's features.
Desktop Customization	Cisco Finesse API	Only Non-Reference Designs that use the Avaya PG or the Parent/Child topology can use CTI OS desktops. Cisco Finesse is the required dekstop for all other contact center enterprise solutions.

Voice and Infrastructure

Capability	Supported	Notes
Music on Hold	Unicast with Unified CM subscriber or voice gateway Multicast using voice gateway	"Multicast with Unified CM subscriber source only" is only supported in non-Reference Designs.

Capability	Supported	Notes
Proxy / Cisco Unified SIP Proxy (CUSP)	SIP Proxy is an optional component.	Instead of using CUSP, some deployments can achieve High Availability (HA) and load balancing using these solution components: • Time Division Multiplexing (TDM) gateway and Unified CM, which use the SIP Options heartbeat mechanism to perform HA. • Unified CVP servers, which use the SIP server group and SIP Options heartbeat mechanism to perform HA and load balancing. • Outbound Option. The Outbound dialer can connect to only one physical gateway, if SIP proxy is not used.
Ingress Gateways	See the *Compatibility Matrix* for your solution at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-device-support-tables-list.html for the supported hardware.	
Protocol	Session Initiation Protocol (SIP) over Transmission Control Protocol (TCP) Session Initiation Protocol (SIP) over User Datagram Protocol (UDP) for Outbound Option SIP Dialer to egress voice gateway. All subsequent transfers to endpoints must use SIP TCP. Secure SIP to SIP signaling	Contact center enterprise solutions do not support H.323. You can use SIP over Media Gateway Control Protocol (MGCP) only in Non-Reference Designs. You can use SIP over UDP only for the Outbound Dialer. From the Outbound Option SIP Dialer to the egress gateway has to use UDP.

Capability	Supported	Notes
Codec	For VRU: G.711 mu-law and G.711 a-law For voice agents: G.711 mu-law, G.711 a-law, G.729, and G.729a For video: • Audio track: In the uploaded video file, MediaSense requires that the audio track is AAC-LD MP4A-LATM. The audio is converted to AAC-LD MP4A-LATM, G.711 mu-law, and G.722 for streaming playback. • Video track: H.264	Contact center enterprise solutions do not support iSAC or iLBC. Mixed codecs for Mobile Agent. Remote and Local ports must use the same codec. Mixed codecs for CVP prompts. CVP prompts must all use the same codec. For video playback, MediaSense does not support G.711 a-law.
Media Resources	Gateway or Unified CM based: • Conference bridges • Transcoders and Universal Transcoders • Hardware and IOS Software Media Termination Points	For Unified CM-based resources, appropriately size Unified CM for this load.

IP Phone Support

For a list of supported phones, see the *Compatibility Matrix* for your solution at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-device-support-tables-list.html. Supported phones need the Built-In-Bridge (BIB), CTI-controlled features under SIP line side.

SCCP-based line side protocol is not supported in newer phones.

Administration Interfaces

Capability	Supported	Notes
Core Component Provisioning	• Gateways - CLI • Unified CVP - Web-based operation console • Unified CCE - Web-based administration and thick client configuration tools • Unified CCMP for Unified CCE solutions, Unified CCDM for Cisco Hosted Collaboration Solution for Contact Center solutions. • Cisco VVB - Web-based operation console • Unified CM - Web-based administration • Cisco Finesse - Web-based administration • Unified Intelligence Center - Web-based administration	For provisioning, Packaged CCE does not support CCMP or CCDM.
Service Creation Environment	Unified CCE Internet Script Editor Unified CCE Script Editor CVP Call Studio	
Serviceability	Cisco Prime Collaboration - Assurance Unified System Command Line Interface (CLI) RTMT Analysis Manager Diagnosis SNMP syslog	Contact center enterprise solutions do not support RTMT Analysis Manager Analyze Call Path. Finesse supports RTMT only for log collection.

VRU and Queueing

This table lists the VRU and call queuing features that optimize inbound call management.

Capability	Supported	Notes
Voice Response Unit (VRU)	Unified CVP Comprehensive Model Type 10	The following are supported only in Non-Reference Designs: • All other Unified CVP VRU types • Cisco Unified IP IVR • Third-party VRUs
Caller Input	DTMF - RFC2833 Automatic Speech Recognition and Text-to-speech (ASR/TTS)	
Video	CVP and Video Basic CVP Video in Queue	
CVP Media Server	The CVP Media Server uses the third-party Microsoft Internet Information Services (IIS). The CVP installer adds the CVP Media Server coresident on the Unified CVP Server.	

Reporting

Capability	Supported	Notes
Reporting tools	Cisco Unified Intelligence Center Third-party reporting applications Custom reporting	
Database sources	Unified CCE AW-HDS-DDS Unified CCE Live Data Unified CVP Reporting	For a typical 1000 agent deployment with an average rate of 8 calls per second, the retention period is approximately 24 months. For a longer retention period, install an external HDS. To size the needs for your deployment, use the DB Estimator tool in the ICMDBA tool.
Database Integration	CVP Database Element	Unified CVP VXML Server supports connections to third-party Microsoft SQL Server databases.

Capability	Supported	Notes
Retention	All contact center enterprise solutions have a fixed retention size for the AW-HDS-DDS. For more retention, you need an external HDS-DDS node. Use the DB Estimator Tool in the ICMDBA tool to calculate the vDisk size based on your solution sizing and customer retention requirements. The DB vDisk of the AW-HDS-DDS can be custom-sized when you deploy the OVA. A 2000 Agent Reference Design can have up to 4 external HDS. For more information about the HDS sizing, see the *Cisco Collaboration Virtualization* page for your solution at http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/cisco-collaboration-virtualization.html.	

Capability	Supported	Notes
Report capacities	Two hundred Unified Intelligence Center users can concurrently run: • Two real-time reports with 100 rows per report, with 10 columns each. • Two historical reports with 2000 rows, with 10 columns each. • Two live data reports with 100 rows, with 10 columns each. (Adjust this based on the deployment type whether LD runs or not). This is applicable for both Unified CCE and Packaged CCE solutions. **Note** • Do not run more than ten concurrent reports on any client machine. This is a combined limit for reports that run on the Unified Intelligence Center User Interface, Permalinks, and Dashboards on the client machine. • However, you cannot run ten concurrent reports for the 200 maximum reporting users on each node. • You have fewer reporting users on a node, they can run proportionally more reports. But, no client machine can exceed the ten report limit.	In addition, 30 users each running one real-time XML permalink and one historical XML permalink is supported. (This results in approximately 7200 real-time XML permalink executions per hour and 60 Historical XML permalink executions per hour.) The real-time reports have the capacity of 100 rows per report, with 10 columns each and the historical reports have the capacity of 2000 rows, with 10 columns each.

Third-Party Integrations

Option	Notes
Recording	Recording Methods: • CUCM-based (BiB) • Network-based Recording • CUBE Forking Optionally, you can use a third-party recording server integration with MediaSense.
Wallboards	Wallboard provide real-time monitoring of your service to customers. They display information on customer service metrics, such as number of calls waiting, waiting call length, and service levels.
Workforce Management	WFM allows the scheduling of multiple Contact Service Queue (CSQs) and sites. You can use a single WFM implementation worldwide.
Cisco Solution Plus	Refer to the Cisco Solution Plus program for supported options.
Automated Call Distributor (ACD)	You cannot use a third-party ACD in a Reference Design.