Hardware / Network Requirements

Switch	IP	T1 / E1	SIP Max*	FXO	FXS	Conf Inc	Conf Max	HG PG	BCA	PFT	BHCC	Long Loop	
ST50A	50		8	4	4	6	14	24	36	yes	450		
ST100A	100		14	8	6	12	26	24	36	yes	1,800		
ST100DA	100	1	38	2	6	12	50	24	36	yes	1,800		
ST1D		1	30								7,200		
ST2D		2	60								14,400		
ST200	200					12	12	24	36		3,600		
ST500	500					24	24	24	36		7,200		
ST24A					24		24	24	36		3,600	yes	Full rack width (1 x RJ21)
ST48A					48		48	24	36		7,200	yes	Full rack width (2 x RJ21)
Virtual SW	1000				60*		40*	120*			25,000*		<=1000*
Virtual TR			1,000										1,000, Without Advanced Features

* These are maximums depending on VMware Specifications

Switch	IP	Built in	PRI	SIP MP*	BRI	FXO	FXS	MB	MB	
SG30	30	10				2	2			
SG30BRI	30	10			1		2			
SG50	50	20				4	2			
SG50V	50	20				4	2	50	5	
SG90	90	30				8	4			
SG90V	90	30				8	4	90	9	
SG90BRI	90	30			4		4			
SG90BRIV	90	30			4		4	90	9	
SG220T1	220	100	T1	20						
SG220T1A	220	70	T1	20		2	4			
SG220E1	220	70	E1	20						
SGT1K	0	0	T1	20						
SGE1K	0	0	E1	20						
SG24A	0	0					24			Full rack width (1x RJ21)

Service Appliance	Capacity	Max Size of Conference
SA-100	50 Audio, 50 Web, 500 IM	50 Audio, 50 Web, Max 16 Conferences, Up to 400 Hours of conference data, max 5 units per system image
SA-400	200 Audio, 200 Web, 2000 IM	200 Audio, 200 Web, Max 64 Conferences, up to 1000 hours of conference data, max 5 units per system image
Virtual -SA	200 Audio, 200Web, , 2000 IM	200 Audio, 200 Web, Max 100 conferences, max 5 per system image.

ShoreTel Mobility Router	Capacity	Additional notes
2000 Series	10-100 Users	PB and UC Integration, Security Integration, App Layer Security, Policy Management, Reporting and trending.
4000 Series	10-1000 Users	All of the above plus High Availability

Codec	Sample Rate	Data Rate
L16/1600 (Linear Broadband)	16 KHz	256Kbps
L16/8000 (Linear)	8 KHz	128 Kbps
G.711 μ-law (PCMU)	8 KHz	64 Kbps
G.711 A-law (PCMA)	8 KHz	64 Kbps
G.722	16 KHz*	32 Kbps
G.729a	8KHz	8 Kbps
iLBC	8 KHz	13.33 Kbps
AAC_LC	32 KHz	
BV-32	16KHz	32 Kbps
BV-16	8KHz	16 Kbps
DV-14	8KHz	
T.38		

Table 10: Supported Codecs

ShoreTel Connect Client	Bandwidth Use
Phone Only	.2kbps
Connect Client	.2kbps
Operator Extension Monitor	.2kbps +1.5 Kbps 1.5 Kbps per monitored ext.
Workgroup Agent	.25 Kbps
Queue Monitor	6.5 Kbps per queued call
Workgroup Supervisor	.25 Kbps
Queue Monitor	6.5 Kbps per queued call
Agent Monitor	1.5 Kbps per agent
<150ms Latency one way, <1% Packet loss for RTP / Media traffic, Jitter <50ms between packets	

Table 11: Typical Bandwidth Use for ShoreTel Connect Client

Ingate Feature / Model No	S21	S52	S95	S97	S98
Interfaces (10/100/1000 Mbit/s)	4	6	6, 2 Gbps opt	6, 2 Gbps opt	6, 2 Gbps opt
Power consumption (typical)	25 W	100 W	180 W	200 W	250 W
Max numbers of VLANs (802.1q)	32	128	512	512	512
SIP Connection set up, max calls/s	40	60	80	100	100
RTP data delay (10 Mbps/100 Mbps) network	0.19/ 0.08 ms	0.19/ 0.08 ms	0.19/ 0.08 ms	0.19/ 0.08 ms	0.19/ 0.08 ms
Max number of concurrent calls (20 ms G.711 voice packets)	400	2,000	4,000	8,000	20,000
Secure VoIP sessions (TLS+SRTP)	300	1,500	2,500	3,000	8,000

Taken from the Ingate data sheet, please check for ShoreTel part numbers and specifications Requires firmware 5.0.6 or greater.

For BRI Connections use SG90BRI(V), SG30BRI

SG switches can be deployed with Connect but remember to trade off IP Resources and does not have some ST features or performance. Note:- UDP and IP Headers will increase overall bandwidth. i.e. G711 increases 64 KBps to 87.2 KB/s

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Licence and Phone Requirements

Licence	Description
Shoreware Virtual Switch Licences	
Virtual Phone	One required per call controlled device, including Anonymous, VPN, Mobility, Softphones. Bundles Available
Virtual SIP Trunk	One required per SIP Trunk, includes SIP Media Proxy. SIP Trunk Software Licence not required with Virtual switch.
Virtual SA	Free with Audio and Web Licence
Virtual SMR	Required to enable Mobility in Standard and Advanced, free with virtual deployments
Edge Gateway	Free with Standard and Advanced, Used for Secure connection to remote clients and phones.
Ingate SIParator Traversal License	One required per SIP trunk connected to Ingate SIParator 21, 51, 56
Ingate Software-only SIParator Traversal License	One required per SIP trunk in a virtual Environment
Shoreware Applications Server	
Add Language License	One required for each additional language per system image.
SIP Trunk Software Licence	One required per SIP trunk connected to Voice appliances
SIP Device License	One required per 3rd party SIP device (Not required for 400 series)
SIP Based 3rd Party messaging integration License	Used to connect to 3rd Party Voice mail system via SIP, e.g. Microsoft Exchange.
Distributed Voice Services License	Used to allow large network design, voice mail optimisation, workgroup or database resiliency. (See system capacity) or to integrate with 3rd Party Applications
Additional Site License	One required for all remote sites from HQ. Design recommendation is to have one for every site to allow HQ Server portability.
Unified Communications	
Audio Conferencing	One required per concurrent audio conference port Works with SA-100,SA-400 and Virtual SA
Web Conferencing	One required per concurrent desktop sharing session. Works with SA-100, SA-400 and Virtual SA.
License, Remote Phone for Edge Gateway	Used to enable internet audio connectivity for users on a conference without a Connect Client..
Connect Profiles	
Courtesy	Ext Only, No VM, No client, No add-ons
Telephony	Ext + Mbx, Ad hoc 3-party audio-conferencing, No client, No add-ons
Essential	Ext + Mbx, Pro Call Mgr, Enables IM and Collaboration (server required with Audio & Web Licences), Web & App-dialer, Mobility basic (Find Me, etc.) ShoreTel for G-Suite
Standard	Essentials + Mobility client (server required), Remote Phone(Edge GW), SFDC/other CRM, ShoreTel for G-Suite, Telephony for Microsoft
Advanced	Standard + Operator
Workgroup Licensing	**Workgroup licensing must be added to a UC User Profile.**
Workgroup Agent Access*	Queue Handling, Workgroup voice-mail. Log in, Log out. (No Video)
Workgroup Supervisor Access*	Workgroup+ Agent Management (No Video)

Licence Types

	SIP	MGCP
Basic	IP420 CLASS 1*(g)	IP115 CLASS 2
General Purpose	IP480 CLASS 2(g)	IP230 CLASS 2 (g)
Executive Colour Conference	IP485 CLASS 0 (g)	IP565 CLASS 2 IP655 CLASS 3 (g) IP265 CLASS 3
Operator / Key System	IP485 with BB424	IP212K CLASS 2 BB24 CLASS 3
Wireless DECT	IP8430M IP8630M IP8830M IP8660M Multicell Base Station**	IP930d Single Cell Base Station
Wi-Fi	Mobility Dock with Lightning Connector Softphone	

(g) indicates Gigabit Ethernet capability or Versions available, check with data sheet
* Indicates PoE Class
** Only available in Europe

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Server Requirements

Size	Maximum number of users per System	Maximum number of users assigned to HQ Server	Maximum System BHCC	Maximum BHCC per server Reports run outside business hours	Maximum BHCC per server Reports run during business hours
UC 25 with SBE Licence	100	100	1,000	1,000	Not Recommended
UC25 after upgrading to Enterprise	500	200	1,000	1,000	Not Recommended
Small	500	500	5,000	1,000	Not Recommended
Medium	2,500	1,000	25,000	5,000	1,000
Large	10,000	1,000	50,000	10,000	5,000
Very Large	20,000	1,000	100,000	10,000	10,000

Table 29 & 30 Headquarters Server Capacity Requirements (New & Existing Servers)

Size	Processor	RAM	Network
UC 25 (SBE 100)	Celeron J1900, 2-2.4 GHz	4 GB	100 Base-T or Gigabit
UC 25 (Enterprise)	Intel Core i3 3220 3.3 GHz Dual core	4 GB	100 Base-T or Gigabit
Small	Intel Core i3 3220 3.3 GHz Dual core	4 GB	100 Base-T
Medium	Intel Xeon CPU E5- 2640v3 @2.6Ghz – 2 processors	8 GB	100 Base-T or Gigabit
Large	Intel Xeon CPU E5- 2640v3 @2.6Ghz – 2 processors	8 GB	Gigabit Ethernet
Very Large	Intel Core i7 4770K 3.5 GHz Quad core Unlocked	12GB	Gigabit Ethernet

Table 29 Headquarters Server Hardware Requirements (New Servers)**

Size	Max Users per system	Maximum Number of Users per Server (Phones Managed by Switches Managed by Server)	Maximum System BHCC	Maximum BHCC per server Reports run outside business hours	Maximum BHCC per server Reports run during business hours
UC25 (SBE)	100	100	1,000	1,000	Not Recommended
UC25 (Enterprise)	500	200	1,000	1,000	Run on HQ
Small	500	500	5,000	1,000	Run on HQ
Medium	2,500	1,000	25,000	5,000	Run on HQ
Large	10,000	1,000	50,000	10,000	Run on HQ
Very Large	20,000	1,000	100,000	10,000	Run on HQ

Table 31 & 32 Distributed Voice Server Capacity Requirements (New Servers)**

Size	Processor	RAM	Networks
UC 25 (SBE)	Celeron J1900, 2-2.4 GHz	4 GB	100 Base-T
UC25 (Enterprise)	Intel Core i3 3220 3.3 GHz Dual core	4 GB	100 Base-T or Gigabit
Small	Intel Core i3 3220 3.3 GHz Dual core	4 GB	100 Base-T or Gigabit
Medium	Intel Core I7 3770K 3.5 GHz Quad core Unlocked	8 GB	100 Base-T or Gigabit
Large	Intel Core I7 3770K 3.5 GHz Quad core Unlocked	8 GB	Gigabit Ethernet
Very Large	Intel Core I7 4770K 3.5 GHz Quad core Unlocked	8 GB	Gigabit Ethernet

Table 31 DVS Server Hardware Recommendations (New Servers)**

# Users	# Messages	Length (minutes)	Storage (hours)	Storage (GB)
100	15	1	25	0.8 GB
500	15	1	125	3.8 GB
1,000	15	1	250	7.5 GB
2,000	15	1	500	15.0 GB
3,000	15	1	750	22.5 GB
4,000	15	1	1,000	30.0 GB
5,000	15	1	1,250	37.5 GB

Table 44 Voice-mail Hard Disk Space

# Calls/Day	# Calls/Month (20 days)	Storage/Month	Storage/ 3 Months
100	2,000	3 MB	9 MB
1,000	20,000	30 MB	90 MB
10,000	200,000	300 MB	900 MB
50,000	100,0000	1,500 MB	4,500 MB

Table 45 Call Detail Records

Voice-mail Options	ShoreTel Application Server	Distributed Application Server	"V" Voice Appliances
Operating System	Windows Server 2008 32-bit, SP2 (Standard, Enterprise). Windows Server 2008 R2, SP1, 64-bit, (Standard, Enterprise). Windows Server 2012, 64-bit (Standard, Datacenter).		Embedded Linux
VM Port Capacity	254 media streams (ports)	254 media streams (ports)	50V – 5 90V – 9
Hours of Storage	Hard drive dependent (1 Gb per 30 hrs)	Hard drive dependent (1 Gb per 30 hrs)	50V – 22 hrs 90V – 56 hrs
Mailbox Capacities	3,000 mailboxes	3,000 mailboxes	50V – 50 mailboxes 90V – 90 mailboxes
System Capacity	Total of 1 per image	Total of 20 per image	Total of 100 per Server 500 per system
Auto Attendant	1,000 per image	1,000 per image	1,000 per image
ACD	256 Workgroups / 300 members	Distributed Workgroups	Hunt Groups / 16 members
Call Records	Yes	Yes (2 hours of History)	Yes (2 Hours)

Operating System & Voice-mail Options

Type	Space Required
Headquarters Server	1600 MB
Linux DVS Server	800 MB
Connect Client	600 MB

Table 43 Hard Disk Requirements

File Size	Storage (GB)
Minimum	0.5 GB
Default	4.0 GB
Maximum	30.0 GB

Table 46 Log File Hard Disk Space

All table numbers corespond to those in the Planning and Installation Guide
**refer to Table 30 & 32 in the Planning & Installation guide, for existing servers.

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Virtual Server / Appliance Requirements

Server Size	Max users per system	Max users per the server (phones managed by switches managed by server)	Max system BHCC	BHCC per server Reports run outside of business hours	Maximum BHCC per server Reports run during business hours	Virtual Cores	RAM per VM	Disc Space	Network
Small (including when used with SBE or SBE 100 system license)	500 (100 for SBE)	500 (100 with SBE 100 license SBE 100, 50 with SBE license)	5,000	1,000	Not recommended	2	4GB	60GB	100 Base-T Or Gig.
Medium	2,500	1,000	25,000	5,000	1,000	4	8 GB	150GB	100 Base-T Or Gig.
Large	10,000	1,000	50,000	10,000	5,000	8	8 GB	260GB	Gigabit Ethernet
Very Large	20,000	1,000	100,000	10,000	5,000	10	16GB	500GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*								

Table 34 HQ Server Virtual Requirements

Size	Users	Call Load Per System	Call Load per Server (w/o reports)	Minimum Virtual Processors per VM	RAM per VM (GB)	Storage System Throughput (Mb/s)	Voice Network Throughput (Mb/s)	Disk Size per HQ VM (GB)	Disk Size per DVS VM (GB)
Small	500	5,000	1,000	2	4	0.17	16	60	40
Medium	2,500	25,000	5,000	4	8	0.83	80	150	80
Large	10,000	50,000	10,000	8	8	3.1	320	260	130

Table 42 Recommended Sizing Parameters for Hyper V

Server Size	Max users per system	Max users per the server (phones managed by switches managed by server)	Max system BHCC	BHCC per server Reports run outside of business hours	Maximum BHCC per server Reports run during business hours	Virtual Cores	RAM per VM	Disk space	Network
Windows Virtual DVS									
Small (including when used with SBE 100 system license)	500	500 (100 with SBE 100 license)	5,000	1,000	run on HQ	2	4GB	40Gb	100 Base-T Or Gig.
Medium	2,500	1,000	25,000	5,000	run on HQ	4	8 GB	80GB	100 Base-T Or Gig.
Large	10,000	1,000	50,000	10,000	run on HQ	8	8 GB	130GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*								
Linux Virtual DVS									
Small + SBE	500 (100 with SBE)	200 (100 with SBE)	2,500	500	N/A	1	2 GB	100 GB	100 Base-T Or Gig.
Medium	1,000	500	5,000	1,000	N/A	2	4 GB	100 GB	100 Base-T Or Gig.
Large	10,000	1,000	25,000	5,000	N/A	4	8 GB	100 GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*								

Table 35 & 36 Windows and Linux DVS Virtual Requirements

Max Number of Users	Maximum Number of local Wi-Fi clients	Maximum Number of local Wi-Fi calls (not bridged through SMR)	Maximum Number of Remote Tunnels	Maximum Number Secure Remote Voice Calls using default encryption	Maximum Number Remote calls that require transcoding	Virtual Cores	RAM per VM	Disk space	Networks	Network interfaces
100	100	100	100	100	50	2	2GB	100GB	100 Base-T or Gig.	2
1000	1,000	1,000	1000	300	150	4	4GB	100GB	100 Base-T or Gig.	2
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*									

ShoreTel Mobility Router

Max SIP trunks managed by switch without advanced features	Total number of streams	Virtual Cores	RAM per VM	Disk space	Networks
50	100	1	2GB	20GB	100 Base-T or Gig.
100	200	2	2GB	20GB	100 Base-T or Gig.
200	400	4	2GB	20GB	Gigabit Ethernet
400	800	7	2GB	20GB	Gigabit Ethernet
600	1200	10	2GB	20GB	Gigabit Ethernet
1000	2000	16	2GB	20GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*				

Table 38: Virtual SIP Trunk switch (G.711 signalling)

Max SIP trunks managed by switch without advanced features	Total number of streams	Virtual Cores	RAM per VM	Disk space	Networks
25	50	1	2GB	20GB	100 Base-T or Gigabit Ethernet
50	100	2	2GB	20GB	100 Base-T or Gigabit Ethernet
100	200	4	2GB	20GB	100 Base-T or Gigabit Ethernet
200	400	7	2GB	20GB	Gigabit Ethernet
300	600	10	2GB	20GB	Gigabit Ethernet
500	1000	16	2GB	20GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*				

Table 39: Virtual SIP Trunk switch (G.729 signalling)

No. of Trunks	Up to 100	Up to 200	Up to 1,000
Memory	500 MB	1 GB	2 GB
Cores	1	2	4
Disk	20GB	20GB	20GB
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*		

Virtual Ingate Requirements

Max phones managed by switch	RAM per VM	Disk space	Networks
1000	2GB	20GB	100 Base-T or Gig.
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*		

Virtual Phone Switch

* CPU must have similar or better performance based on single threaded rating found on www.CPUBenchmark.net, Minimum Supported VMware Version 5.5.

Size	RAST Connections	Active RAST Calls	Clients	Concurrent Clients voice calls	Virtual Cores	RAM per VM	Disk space	Networks
Small	100	50	50	50	2	2GB	100GB	100 Base-T or Gig.
Medium	500	100	400	100	4	4GB	100GB	Gigabit Ethernet
Large	2,000	200	800	200	8	8GB	100GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*							

Table 41 Edge Gateway

Server Size	G711	G722	G729	Secure WEB sessions	IM	Virtual Cores	RAM per VM	Disk space	Networks
Small	50	15	50	50	500	4	2GB	100GB	100 Base-T or Gig.
Large	200	60	200	200	2000	8*	6GB	100GB	Gigabit Ethernet
IM-only	0	0	0	0	2000	2	2GB	20GB	Gigabit Ethernet
Processor	Intel Xeon CPU E5-2630v4@2.2Ghz*								

Table 40 VMware Capacity and Server Requirements for ShoreTel Virtual Service Appliance
*This number is the recommended guideline. You can allocate fewer virtual processor cores, but monitor the performance load to ensure that CPU utilization is less than 75 percent.

Feature	Small VSA	Large VSA	SA-100	SA-400
Audio with SRTP				
Max G711	50	200	50	200
Max G.729	50	200	50	200
Max G.722	15	60	15	15
Max audio conferences	25	250	16	64
Web with HTTPS				
Max number of web (HTTPS) users	50	200	30	100
Max attendees per conference	50	200	50	200
IM with TLS				
Max number of IM users	500	2000	500	2000

Table 61: Service Appliance Feature Capacities

Useful Links	
ShoreTel University "Learn Now"	https://www.shoretel.com/shoretel-university/learn-now
ShoreTel University Youtube Channel	https://www.youtube.com/channel/UCnodmZaJbEGBdIX-iIdHlcag
ShoreTel University ITunesU Channel	https://itunes.apple.com/us/podcast/shoretel-cloud-connect/id1182481618?mt=2
ShoreTel University Vimeo Channel	https://goo.gl/q8JBXH
Old end user training page (Use for 14.2 Training)	https://goo.gl/mkuuaj
ShoreTel University Certification Central	https://shoretel.absorbtraining.com
Supported Mobility Handsets -	https://www.shoretel.com/shoretel-mobility-handsets-tablets
Stay Connected Dashboard -	https://partners.shoretel.com/product_sales_tools/connect/stay_connected_dashboard.html
ShoreTel Connect Partner Selling Guide -	https://partners.shoretel.com/product_sales_tools/connect/downloads/shoretel_connect_partner_selling_guide.pdf
Useful site for calculating trunk needs -	www.erlang.com
ShoreTel System Power and dimensions calculator (copy link to browser to work)	https://partners.shoretel.com/product_sales_tools/downloads/shoretel_system_calculator.xlsm
New ShoreTel TCO Tool	https://partners.shoretel.com/product_sales_tools/total_cost_of_ownership/
ShoreTel Logos	https://partners.shoretel.com/product_sales_tools/templates/logos.php
ShoreTel Icons and Diagrams	https://partners.shoretel.com/product_sales_tools/templates/icons_diagrams.html
Advanced Applications Catalog	https://partners.shoretel.com/product_sales_tools/products/applications/advanced_applications.html
Customer Case Studies	https://www.shoretel.com/resource-center?combine=&field_resource_content_type_tid%5B0%5D=5
Vertical Programs	https://partners.shoretel.com/programs/vertical_programs/
Current Promotions	https://partners.shoretel.com/product_sales_tools/promotions/
ShoreTel Knowledge Base	http://support.shoretel.com/
Processor Performance -specific link for VM Benchmark	www.cpubenchmark.net/cpu.php?cpu=Intel+Xeon+E5-2630+v4+%40+2.20GHz&id=2758

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System Capacities

Component	Capacity	Notes
System		
Sites	500.	Exact number varies by configuration
Switches	100/site 500/system 100/server	Exact number varies by configuration. **Note:** For Very Large deployments, systems with more than 10,000 ports, the maximum number of switches per site is 60.
Route Points	254/server	This is per server
Analogue Ports	5,000	Exact number varies by configuration.
IP Phones	20,000 (max)	Exact number varies by configuration. See Server capacity table.
Simultaneous Calls	10,000.	10,000 calling 10,000
Busy Hour Call Completion	100,000	Depending upon server configurations
Users		
Users	20,000	
– Port Based Users	5,000	
– IP Phone Users	20,000	
– Virtual Users	1,000/server	
User Groups	250	
Telephony Permissions	100	
Call Permissions	100	
Voice Mail Permissions	100	
Trunks		
Trunks	10,000	
Trunk Groups	500	
Number of Trunks/TG	500	
Servers		
Number of servers	21	1 main, 20 distributed (for voice mail, auto-attendant, messaging, directory, configuration services, and desktop call control). Each server is certified to support up to 1,000 users.
Number of Voice-mail Box Switches (VMBs)	500/system 100/server	
Number of 3rd Party SIP Servers	20	

Component	Capacity	Notes
Media streams (G.711 per server)	254	Simultaneous voice mail sessions, for example.
Media streams (G.729 per server)	40	
Media streams (total)	9,384	21 servers x 254 media streams per server + 500VMB x 9 streams per VMB.
Voice Mail		
Mailboxes (total)	20,000	These can be distributed across the servers.
Mailboxes (per server)	1,000	
Storage	Unlimited	Restricted by the size of disk available (1 hour of voice mail per 30 MB of disk storage).
Auto-Attendant		
Menus (total)	1,000	Every server has every menu.
Hunt Groups		
Hunt Groups per Switch (SG)	8	
Total hunt group members per hunt group SG Switches	16	
Hunt groups per switch (ST)	24	
Total hunt group members per switch (ST)	24	
Total hunt group members per hunt group on virtual switches.	16	
Workgroups		
Workgroups (total)	256/system	
Members per workgroup	300	Top down, round robin, longest idle and simultaneous distribution patterns.
WG Agents (total per system)	300/system	If more are required it is recommended you investigate the ShoreTel Enterprise Contact Center Solution
WG Agents	16	Simultaneous ring.
Calls in Queue per Queue	254/server	Overflow is directed to the workgroup backup extension.

Component	Capacity	Notes
BHCC/system without reports during business hrs	Very Large HW=10k / Large HW = 10K / Med HW =1K / Small HW = not recommended	See Server HW specs for size & traffic considerations
BHCC/system with reports during business hrs	Very Large HW=5k /Large HW = 5K / Med HW = 1K / Small HW = not recommended	See Server HW specs for size & traffic considerations
Max # of PCM's in WG server	300	
Paging Groups		
Paging Groups (total)	300/system	
Paging Group Members	300/system	
Max # of simultaneous pages	100/server	
Account Codes		
Account Codes (per system)	100,000/ system	
Call Detail Record		
Storage	1.5 GB (MySQL has a capacity of 64TB)	500,000 workgroup calls, OR 1.5 million extension-to-extension calls, OR 1.0 million combined call records Implementing a database of this size typically requires 4.0 GB of disk space, including disk space for the main database (1.5 GB), the archive database (1.5 GB), and temporary space required to generate reports (1.0 GB).
ShoreTel Connect Client		
ShoreTel Connect Client (per system)	10,000	
ShoreTel Connect Client (per server)	1,000 .	
Phone Only	10,000	
Workgroup Agent	300 per server, 300 per system	
Workgroup Supervisor	128 per server, 128 per system	
Workgroup Agent/server	300 per server, 300 per system	
Operator	200	Up to 500 monitored extensions per operator, depending on the value of the Max buddies per user field on the Telephony Features Permission page in ShoreTel Connect Director.

Component	Capacity	Notes
Music on Hold (MOH)		
File-based music on hold	255 calls per server	.
Jack based music on hold	36 calls	One switch can provide up to 36 MOH streams
Programmable Buttons		
IP phone buttons configured for extension monitoring (per switch)	1024	Solution Architect Recommendation 250 for optimum experience.
Phones that can monitor an extension	32	
Voice Switch Capacity		
Media streams/switch (No encryption)	60	
Media streams/switch (encryption)	60	
Media streams/switch (SRTP)	40	
Media streams/switch (SRTP + authentication)	30	
G711 Limits for VMB	9	
G729 Limits for VMB	5	
BAA Simultaneous # of calls - Voice Switches	60	
Simultaneous # of calls SIP Ringing - Voice Switches -G711	60	
Simultaneous # of calls SIP Ringing - Voice Switches -G729	0	

Table 8 System Capacity from Planning & Installation Guide

Mobility Router	Max Users	Max Calls	Max Calls with Transcoding	Max SRV Users	Max SRV Calls
2000	100	100	50	100	20
4000	1000	500	300	500	200
6000	5000	2000	1250	2500	1000
Virtual SMR	1000	500	300	500	200

ShoreTel Mobility Router System Capacity

Real Time Capacities

Feature	SBE 100	EE
Sites	5	500
Switches	7	500
Users (with extensions)	100 (SBE System Key) 200 (Enterprise System Key)	20,000
Telephones	100	20,000
Trunks	100	10,000
Simultaneous calls, extension-to-extension	50	10,000
Busy Hour Call Completion	1,000	100,000
DVS	4	20
Integration with 3rd party PBX	No	Yes
On-net dialling	No	Yes
Voice mailboxes	120	20,000
Simultaneous calls per server	25	254
AMIS	No	Yes
SMDI - External voice-mail	No	Yes
SMDI - ShoreTel voice-mail	No	Yes
Service Appliance 100 (SA100)	2	5
SA100 MAX audio/web/IM ports	100/100/100	1,000/1,000/10,000
Service Appliance 400 (SA400)	No	Yes
Workgroups (groups, agents, supervisors)	100/100/100	256/300/128
ShoreTel Mobility clients	100	5,000
Distributed features: workgroups, database, paging, account codes	No	Yes

Table 33 SBE and Enterprise Edition Differences

	Hunt Group	BCA	Pick Up Groups	P Pones
Extension	SG:8 ST:24	SG:24 ST:36	SG:16 ST:24	SG:120
Members / Extensions	See Total Members Below	SG:32 ST:44 Phones monitoring the same extension	SG:24 ST:24	N/A
Stack Size / Extensions	SG:16 ST:24	SG:24 ST:36	N/A	SG:24
Total members on all extensions	SG:16 ST:16	N/A	SG:80 ST:80	N/A

Table 9 Feature Capacity General Guidelines

Phones	Up to 1000
Backup Auto-Attendant Steams	50
Make-Me Conference	60
Extension Monitor Buttons	5,000
BHCC	25,000
Hunt Groups	40
Total HG Users	160
Users Per HG	24
Pick-Up Groups	80
Total PUG Users	400
Users Per PUG	TBD*
BCA	120
BCA Call Stack	24
BCA Extensions	32

Table 59: Virtual Phone Switch Feature Capacities

Real Time Capacity features in a virtual phone switch can be run in parallel providing you keep within the above parameters

*The number of users per hunt group on a virtual switch is variable depending on the size and configuration of the virtual system. Watch the Diagnostics & Monitoring system (Maintenance menu) in Director closely to ensure that the virtual system is not overloaded.

Calculating Specific Real Time Capacity of Switch Appliances

Sum (HG_stacksize(n) x HG_Members(n)) + (monitoring_phones(n) * BCA_Monitoring_LInes(n))/2 <= X
X=80 for SG Switchs, X=120 for ST Switches
e.g. worked example:-

1 x Hunt Group with 4 Members and a Call Stack of 4
1 x Hunt Group with 8 Members and a Call Stack of 3
10 x Phones Each Monitoring 4 x BCA

HG 1   +HG 2   +BCA's   =Total
(4x4)   +(8x3)   +(10x4)/2   =60 so all ok.

Other worked examples can be found in the ShoreTel Connect Partner Selling Guide

CC Capacities & Requirements

CC Element	Maximum number or value
Max Configured Agents	2000
Max Simultaneous Agents	1000
Max DNIS Routes	1500
Number of Agent Groups	256
Number of Agent Queues	1000
Max number of groups to which an agent can belong	64
Max Skills	256
Max Wrap Up/ Release Codes	512
Max Secondary Announcements	20
Max IVR Ports per server	254
Max Calls in Queue per server	254
Max Agent Boards	256
Max Active Supervisors	100
Max Wallboards/Agent-boards	256
Database Backup Periodicity	1 a day
Maximum interactions	15,000 calls (voice, email, and chat) per hour with up to 600 agents, 10,000 calls (voice, email, and chat) per hour with 601 to 1000 agents
Max IRN	1500
Max Active Supervisors tested in performance	15
Maximum number of scheduled reports in an hour	10
Wallboard API Feed Active?	Yes
Agent Board API Feed Active?	Yes
CCIR Enabled?	Yes

CC System Capacity

PC Requirements	Supervisor PC Running CC Only	Supervisor PC with CC and Communicator	Agent PC Running CC Only	Agent PC with CC and Communicator
CPU	Pentium IV 2.0 GHz	Dual Core 1.6 Ghz	Pentium III 800 MHz	Pentium IV 2.0 GHz
Available Memory	1 G	1 G	512 MB	1 G
Hard Disk Space	2 G	2 G	1 G	1 G
CD	Optional			
First Network Adapter	10/100 Mb			
External Modem	Optional			
Vista/Windows 7/ Windows 8 Operating System				

Licence	Description
System	The node-locked system license key required for all systems.
Voice	The maximum number of agents, who log into a group that requires a license to handle incoming and outbound voice calls, that can be logged into the system concurrently.
Email	The maximum number of agents, who log into a group that requires a license to handle incoming email contacts, that can be logged on the system concurrently.
Chat	The maximum number of agents, who log into a group that requires a license to handle incoming chat contacts, that can be logged into the system concurrently.
Dial Lists	The maximum number of agents, who log into a group that requires a license to handle outbound dial lists calls, that can be logged into the system concurrently
IVR Ports	The maximum number of IVR ports the system will use. Note that you can define additional IVR ports than the number for which you are licensed. This allows you to use IVR stations to create redundant IVR stations.
Supervisor	The maximum number of supervisors that can be logged into the system concurrently. Contact Center currently supports up to 100 concurrent supervisors.
Redundancy	Enables running the Contact Center system in a redundant configuration.
Agent Activity API	The number of external applications able to connect and receive agent data.
Group Activity API	The number of external applications able to connect and receive group data.

License Types

Size	ACD Agents per System	Max ACD BHCA	Processor / Server	Minimum Ram	Network	Free Disk Space
Small	<300	7,500	Intel Core 2 Duo E8400, Single DualCore 3.00 Ghz Intel Core i3-540 Processor (4M Cache, 3.06 Ghz)r Intel Xeon 3430 Single QuadCore 2.4 Ghz	4 GB	100 Base-T or Gigabit Ethernet	200 GB
Medium	300-600	15,000	Intel Xeon 5520 Single QuadCore 2.27 Ghz	8 GB	100 Base-T or Gigabit Ethernet	200 GB
Medium	600-1000	10,000	Intel Xeon 5520 Dual Quad-Core 2.27 Ghz	8 GB	100 Base-Tor Gigabit Ethernet	200 GB
IVR Server	250 ports per server		Same as "small"	4 GB	100 Base-T or Gigabit Ethernet	500 GB

System Requirements CC Server

System Size	# of Agents	Call Load Per System	Cores Per VM RAM per VM	Disk Size for Contact Center	Server
Small	< 100	7,500	2	4 GB	200 GB
Medium	100-599	15,000	4	8 GB	500 GB
Large	600-1,000	10,000	4	8 GB	750 GB

System Requirements for Virtualised Deployment CC Server