Camelot Scale and Load Numbers

- Make sure Camelot processor usage (top -p `pidof camserv`) is less than 90 % to get consistent results.
- SIP Endpoints
- SIpx Siptrunk cross calls
- H323 Endpoints
- ICE Endpoints
- Secured Endpoints (Only Registration) Numbers and Memory Usage with ECC (Elliptical curve cryptography) TLS, enabled only at Camelot (not on CUCM)
- Sipx/Jabber Endpoint registration when EC is enabled and Camelot root certificate as ECDSA
    - Endpoint configuration used for load:
    - Camelot ECDSA root certificate:
- Sipx endpoint auto_park auto_park_retrieve load
    - Endpoint configuration used for load:
- Jabber endpoint http_query_req() with POST load

> ***Make sure Camelot processor usage (top -p `pidof camserv`) is less than 90 % to get consistent results.***

SIP Endpoints

Total_Endpoints	device profile	call_direction	configuration	Average CPU /hour	Average mem_leak/hour	machine details
500 sipx 1 siptrunk	secured	sipx endpoints place call to siptrunk	cps(calls per second) - 4 media - audio+video (random) path confirmation - audio auto call disconnect - 10 sec logs - standard modules(sip, siptransp,vapi,http, tftp)	82-88%	0-500 kb	centos 6.9 (6GB)

SIpx Siptrunk cross calls

Endpoints Deatils	Device profile	Call Direction	Configuration	Average CPU /hour	Average mem_leak/hour	machine details	Duration of load

500 sipx and 1 siptrunk for sipx siptrunk scenarios 500 sipx and 1 siptrunk for siptrunk sipx scenarios	secured	sipx place call siptrunk cross calls (40 calls connected at a time) siptrunk place call sipx cross calls (40 calls connected at a time)	cps(calls per second) - 4 media - audio+video (random) path confirmation - audio+video Audio pc initiator delay 3s and responder delay 1s. Video pc initiator delay 8s and responder delay 5s. auto call disconnect - 10 sec logs - standard modules(sip, siptransp,vapi,http, tftp)	72-78% 70-75 %	0-1 mb 0-1 mb	centos 6.9 (6GB) centos 6.9 (6GB)	2 days 2 days

H323 Endpoints

Total_Endpoints	Camelot Instance	Signaling Mode	configuration	Verified till	Average_mem_leak/hour	machine details
500	(Same Camelot instance for both originating and terminating endpoints)	GK routed	cps(calls per second): 1 media: audio+video path confirmation - audio auto call disconnect : verified with 180 seconds, 150 seconds and 120 seconds as well logs - Only error logs	13 hours	7 MB	centos 6.5 (6GB)

ICE Endpoints

Total_Endpoints	device profile	call_direction	configuration	Average CPU/hour	Average mem_leak /hour	machine details	Load Duration	CSR	VCS resource usage
500 sipx	secured	sipx endpoints place call to sipx endpoints	cps(calls per second) - 1 media - audio+video auto call disconnect - 220 sec logs - standard modules(sip, siptransp,vapi, http,tftp)	100%	Originator 4-5MB/Hr Terminator 8-10MB/Hr	centos 7 (6GB)	~5Hr	100%	1-Node Large Deployment ~96%

Secured Endpoints (Only Registration) Numbers and Memory Usage with ECC (*Elliptical curve cryptography*) TLS, enabled only at Camelot (not on CUCM)

Total_Endpoint	Endpoint Type	device profile	No. of endpoints per batch	Sleep between batches	EC Curves	Memory Usage	Duration	No. Of CCM nodes in the Cluster
2000	sipx on-prem	Secured (tls1dot2 1)	2000	0	Default	3.2 GB	12 Hrs	4
2000	jabber on-prem	Secured (tls1dot2 1)	25	5	Default	3.5 GB	12 Hrs	4

Sipx/Jabber Endpoint registration when EC is enabled and Camelot root certificate as ECDSA

Total_Endpoint	Endpoint Type	device profile	No. of endpoints per batch	Sleep between batches (in seconds)	Memory Usage	Duration	No. Of CCM nodes in the Cluster
1000	sipx on-prem	Secured (tls1dot2 1)	50	10	1.64 GB	5 days	1
1000	jabber on-prem	Secured (tls1dot2 1)	1	0.4	2.083 GB	1 day	1

Endpoint configuration used for load:

ep.config('sip.phone.ip','10.12.10.233")

ep.config('sip.phone.httpip', '10.12.10.5')

ep.config('sip.phone.modelnumber','36225')

ep.config('sip.protocol.reguseragenthdr','Cisco-CP8865/11.5.1')

ep.config('sip.phone.secured','2')

ep.config('sip.phone.tlscipherlist','ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256')

ep.config('sip.phone.certificate.hashalgorithm','sha384')

ep.config('sip.phone.certificate.keyalgorithm','ECDSA')

ep.config('sip.phone.certificate.keycurve','P-384')

ep.gen_cert_key()

ep.init()

ep.inservice()

Camelot ECDSA root certificate:

Currently Camelot publishes the CamelotRoot-ECDSA.cer root certificate for ECDSA along with CamelotRoot.cer for RSA as part Camleot package. We have renamed CamelotRoot-ECDSA.cer root certificate file name to CamelotRoot.cer for Camelot pickp this ECDSA certificate. Simialrly CamelotKey-ECDSA.pem has been renamed to CamelotKey.pem file.

Sipx endpoint auto_park auto_park_retrieve load

Total_Endpoint	Endpoint Type	device profile	No. of endpoints per batch	Sleep between batches (in seconds)	Memory Usage	Duration	No. Of CCM nodes in the Cluster

1000 (500 originator + 500 terminator) originator is configured with auto_park/retrieve config	sipx on-prem	non-secure. Both Audio & Video traffic	BCG call rate 1.0		~6MB/hour leak	6 days	1

Endpoint configuration used for load:

ep[i].enable_auto_park(park_type='blfdpark', talk_time=60000, disc_timeout=7000,status_timeout=7000,button_number=2)
ep[i].enable_auto_park_retrieve(park_type='blfdpark', trigger_time=50000, talk_time=60000,button_number=2)

Jabber endpoint http_query_req() with POST load

Total_Endpoint	Endpoint Type	device profile	No. of endpoints per batch	Sleep between batches (in seconds)	Memory Usage	Duration	No. Of CCM nodes in the Cluster
1000 jabber endpoints	on-prem	secure	generate 10 POST http requests per second from Camelot Notes: Observed that CUCM is responding (http responses) only with 3-4 response per seconds.		~2MB/hour leak	6 days	1

Query Request used for the load :

mybody = '<?xml version="1.0" encoding="UTF-8"?><users bulkSearch="directoryUri"><user>op0014923000024</user></users>'

ep1.http_query_request(ip='10.12.10.99','8443','/cucm-uds/private/users',secure=True,showfinalresp=True,auth_type='Basic',body=mybody, headers={"Content-Type": "application/xml"},method='POST')