## Diagnostic Report

Data Description	Optimal Range	Data and Results	Automation Script Used to Extract Data (text only)	Screenshot of Result of Script
Time to scale from 1 cluster to 200 clusters (60,000 advertisements expected at peak global usage) based on 300 satellites per cluster (subject to change based on load testing)	15–30 minutes for each cluster	One Cluster = 5min 15sec 200 clusters = 63,000min (1050 hours)	kitchen create	The state of the s
Time to register a cluster and then quench connections to the load balancer, taking the cluster off-line (start-up, operation, shutdown)	1 minute per connection quench, start of cluster launch, and part of time to scale cluster, can be tracked separately as a quench	> Test Kitchen is finished. (2m19.25s)	kitchen destroy	An experimental processing of the control of the co
Peak load averages per system at 200, and 300, satellites per cluster	60% of CPU triggers new cluster launch; if reaching core load at 200 satellites, launch new cluster on 60% CPU loads	top - 04:13:05 up 1:27, 1 user, load average: 0.00, 0.01, 0.05	kitchen exec Web-Server- WEB-centos-7 -c 'top'	10   12   12   12   12   12   12   12
Write times to the diagnostic data drive	<30 milliseconds	1073741824 bytes (1.1 GB) copied, 8.01425 s, 134 MB/s	kitchen exec Web-Server- WEB-centos-7 -c 'dd if=/dev/zero of=testWriteSpeed.txt bs=1G count=1'	PS Character (Eff. Team of the Constitute) stand of the State Constitute on the Security of Constitute of the State Constitute of the Security of the State Constitute of the Security of the



D085: Cloud-Based Automation System Diagnostic Report

Pull time from the game instances (1 Satellite Terminal Server, 1 Web	D . C	One Cluster = 5min 15sec	kitchen create	The second of th
Sonyor 1 Database and 1	Part of cluster launch 15–30 minutes			
*Average messaging service (queue) time	<1 minute in queue	N/A	N/A	N/A
Average latency for the Time server	<30 milliseconds	> Execute command on Web-Server-WEB-centos-7. PING google.com (172.217.4.206) 56(84) bytes of data. 64 bytes from lga15s48-in-f206.1e100.net (172.217.4.206): icmp_seq=1 ttl=109 time=17.9 ms 64 bytes from lga15s48-in-f206.1e100.net (172.217.4.206): icmp_seq=2 ttl=109 time=14.7 ms 64 bytes from lga15s48-in-f206.1e100.net (172.217.4.206): icmp_seq=3 ttl=109 time=15.0 ms 64 bytes from lga15s48-in-f206.1e100.net (172.217.4.206): icmp_seq=3 ttl=109 time=15.0 ms 64 bytes from lga15s48-in-f206.1e100.net (172.217.4.206):	kitchen exe Web-Server- WEB-centos-7 -c 'ping -c 10 google.com'	



D085: Cloud-Based Automation System		Diagnostic Report
	icmp_seq=4 ttl=109	
	time=14.8 ms	
	64 bytes from	
	lga15s48-in-	
	f206.1e100.net	
	(172.217.4.206):	
	icmp_seq=5 ttl=109	
	time=14.9 ms	
	64 bytes from	
	lga15s48-in-	
	f206.1e100.net	
	(172.217.4.206):	
	icmp_seq=6 ttl=109	
	time=14.3 ms	
	64 bytes from	
	lga15s48-in-	
	f206.1e100.net	
	(172.217.4.206):	
	icmp_seq=7 ttl=109	
	time=14.8 ms	
	64 bytes from	
	Iga15s48-in-	
	f206.1e100.net	
	(172.217.4.206):	
	icmp_seq=8 ttl=109	
	time=15.5 ms	
	64 bytes from	
	Iga15s48-in-	
	f206.1e100.net	
	(172.217.4.206):	
	icmp_seq=9 ttl=109	
	time=15.1 ms	
	64 bytes from	
	Iga15s48-in-	
	f206.1e100.net	
	(172.217.4.206):	
	icmp_seq=10 ttl=109 time=14.8 ms	

D085: Cloud-Based Automa	tion System			Diagnostic Report
		google.com ping statistics 10 packets transmitted, 10 received, 0% packet loss, time 9060ms rtt min/avg/max/mdev =		
		14.391/15.239/17.942/0. 949 ms		
Average latency of each cluster	<30 milliseconds	> Execute command on Web-Server-WEB- centos-7. PING localhost (127.0.0.1) 56(84) bytes of data. 64 bytes from localhost (127.0.0.1): icmp_seq=1 ttl=64 time=0.017 ms 64 bytes from localhost (127.0.0.1): icmp_seq=2 ttl=64 time=0.043 ms 64 bytes from localhost (127.0.0.1): icmp_seq=3 ttl=64 time=0.047 ms 64 bytes from localhost (127.0.0.1): icmp_seq=4 ttl=64 time=0.047 ms 64 bytes from localhost (127.0.0.1): icmp_seq=4 ttl=64 time=0.051 ms 64 bytes from localhost (127.0.0.1): icmp_seq=5 ttl=64 time=0.043 ms 64 bytes from localhost (127.0.0.1):	kitchen exe Web-Server- WEB-centos-7 -c 'ping -c 10 localhost'	



D085: Cloud-Based Automat	tion System			Diagnostic Report
		icmp_seq=6 ttl=64		-
		time=0.044 ms		
		64 bytes from		
		localhost (127.0.0.1):		
		icmp_seq=7 ttl=64		
		time=0.043 ms		
		64 bytes from		
		localhost (127.0.0.1):		
		icmp_seq=8 ttl=64		
		time=0.030 ms		
		64 bytes from		
		localhost (127.0.0.1):		
		icmp_seq=9 ttl=64		
		time=0.044 ms		
		64 bytes from		
		localhost (127.0.0.1):		
		icmp_seq=10 ttl=64		
		time=0.048 ms		
		localhost ping		
		statistics		
		10 packets		
		transmitted, 10 received,		
		0% packet loss, time		
		9195ms		
		rtt		
		min/avg/max/mdev =		
		0.017/0.041/0.051/0.009		
		ms		
		1)	1) kitchen exe Web-	A CONTROL OF THE PROPERTY OF T
		> Execute	Server-WEB-	100 m
		command on Web-	centos-7 -c 'nmcli'	Name of the State
Network data in and out		Server-WEB-	2) kitchen exe	The property of the Control of the C
for each cluster	<1 second	centos-7.	Scaled-Web-	
		eth0: connected to	Server-SWEB-	
		eth0	centos-7 -c 'ping -	
		"Intel	c 3	
		82540EM"	192.168.56.101'	



D085: Cloud-Based Automation System		Diagnostic Report
	ethernet	
	(e1000),	
	08:00:27:B9:12:C	
	6, hw, mtu 1500	
	ip4 default	
	inet4	
	10.0.2.15/24	
	route4	
	0.0.0.0/0	
	route4	
	10.0.2.0/24	
	inet6	
	fe80::4fbd:911e:d	
	14c:1b1/64	
	route6	
	fe80::/64	
	route6	
	ff00::/8	
	eth1:	
	connected to	
	System eth1	
	"Intel	
	82540EM"	
	ethernet	
	(e1000),	
	08:00:27:BB:B2:C	
	2, hw, mtu 1500	
	inet4	
	192.168.56.101/2	
	4	
	route4	
	192.168.56.0/24	
	192.100.30.0/24	
	lo:	
	unmanaged	
	"lo"	
	loopback	
	(unknown),	



D085: Cloud-Based Automation System		Diagnostic Report
	00:00:00:00:0	
	0, sw, mtu 65536	
	DNS	
	configuration:	
	servers:	
	10.0.2.3	
	2)> Execute	
	command on	
	Scaled-Web-	
	Server-SWEB-	
	centos-7.	
	PING	
	192.168.56.10	
	1	
	(192.168.56.10	
	1) 56(84)	
	bytes of data.	
	64 bytes	
	from	
	192.168.56.10	
	1: icmp_seq=1	
	ttl=64	
	time=0.766 ms	
	64 bytes	
	from	
	192.168.56.10	
	1: icmp_seq=2	
	ttl=64	
	time=0.453 ms	
	64 bytes	
	from	
	192.168.56.10	
	1: icmp_seq=3	
	ttl=64	
	time=0.449 ms	
	192.168.56.10	

D085: Cloud-Based Automat	tion System			Diagnostic Report
		1 ping statistics		_
		3 packets		
		transmitted, 3		
		received, 0%		
		packet loss,		
		time 2001ms		
		rtt		
		min/avg/max/		
		mdev =		
		0.449/0.556/0.		
		766/0.148 ms		of classic spitchama dampadabase transpat friend. Hitcher was scaled web-server-sold-center-7.
		> Execute command	kitchen exe Scaled-Web-	1997 - 04   127   1997   388
		on Scaled-Web-Server-	Server-SWEB-centos-7 -c	3 rest 30 6 12412 \$5'6 415 5 60 6 7 6 75'7 \$ yyrismal 7 7 6 7 6 7 7 7 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 8 7 8 7 8 7 7 8
		SWEB-centos-7. top - 04:12:19 up 5:46,	'top'	* most 53 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		1 user, load average:		15 rest (3-78 0 0 0 5 0.0 0.0 0.00 hyperter/):  15 rest (3-78 0 0 0 0 5 0.0 0.0 0.00 hyperter/):  15 rest (3-78 0 0 0 0 0 0.0 0.00 0.00 hyperter/):  15 rest (3-78 0 0 0 0 0 0.0 0.00 0.00 hyperter/):
		0.00, 0.01, 0.05		
		Tasks: 102 total, 1		
		running, 101 sleeping, 0		
		stopped, 0 zombie		
		%Cpu(s): 0.0 us,		
		3.0 sy, 0.0 ni, 97.0 id,		
Overall CPU utilization of		0.0 wa, 0.0 hi, 0.0 si,		
the environment for each	Not >60%	0.0 st		
cluster	1406 7 00 70	KiB Mem: 1014592		
		total, 312364 free,		
		133116 used, 569112		
		buff/cache KiB Swap: 2098172		
		total, 2098172 free,		
		0 used. 714664 avail		
		Mem		
		PID USER PR		
		NI VIRT RES SHR S		
		%CPU %MEM TIME+		
		COMMAND		



D085: Cloud-Based Automation System		Diagnostic Report
	1 root 20 0	
	128152 6756 4216 S	
	0.0 0.7 0:02.93	
	systemd	
	2 root 20 0	
	0 0 0 5 0.0 0.0	
	0:00.00 kthreadd	
	4 root 0 -20	
	0 0 0 5 0.0 0.0	
	0:00.00 kworker/0:+	
	5 root 20 0	
	0 0 0 5 0.0 0.0	
	0:00.02 kworker/u4+	
	6 root 20 0	
	0 0 0 5 0.0 0.0	
	0:00.16 ksoftirgd/0	
	7 root rt 0	
	0 0 0 5 0.0 0.0	
	0:00.01 migration/0	
	8 root 20 0	
	0 0 0 5 0.0 0.0	
	0:00.00 rcu_bh	
	9 root 20 0	
	0 0 0 5 0.0 0.0	
	0:01.27 rcu_sched	
	10 root 0 -20	
	0 0 0 5 0.0 0.0	
	0:00.00 lru-add-dr+	
	11 root rt 0	
	0 0 0 5 0.0 0.0	
	0:00.17 watchdog/0 12 root rt 0	
	0 0 0 5 0.0 0.0	
	0:00.18 watchdog/1	
	13 root rt 0	
	0 0 0 S 0.0 0.0	
	0:00.01 migration/1	
	14 root 20 0	
	0 0 0 S 0.0 0.0	
	0:00.08 ksoftirqd/1	



D085: Cloud-Based Automation System Diagnostic Report 0 - 2016 root 0 S 0.0 0.0 0:00.00 kworker/1:+ 18 root 20 0 0 0 S 0.0 0.0 0:00.00 kdevtmpfs 19 root 0 -20 0 S 0.0 0.0 0:00.00 netns \*Diagnostic data able to N/A N/A N/A be written by the Show read/write times <1 automation to the correct second cloud bucket storage space kitchen exe Scaled-Web-Climary(C)SE() leave the Leasthean's leave, the Jutiple kitches exe trained-tracts command on scale-de-sub-cover-and content. The Command on scale and the Command on scale and the Command on scale and the Command on the System from Incalment (20:00.01) together itself the Command of System from Incalment (20:00.01) ----> Execute command Server-SWEB-centos-7 -c on Scaled-Web-Server-'ping -c 3 localhost' SWEB-centos-7. PING localhost (127.0.0.1) 56(84) bytes of data. 64 bytes from localhost (127.0.0.1): icmp\_seq=1 ttl=64 time=0.017 ms 64 bytes from Scaled Satellite Cluster localhost (127.0.0.1): latency <30 milliseconds icmp seq=2 ttl=64 time=0.049 ms 64 bytes from localhost (127.0.0.1): icmp seq=3 ttl=64 time=0.038 ms --- localhost ping statistics ---3 packets transmitted, 3 received, 0% packet loss, time 2001ms



0085: Cloud-Based Automation System				Diagnostic Report
D085: Cloud-Based Automa	tion System	rtt min/avg/max/mdev = 0.017/0.034/0.049/0.014 ms> Execute command on Scaled-Web-Server- SWEB-centos-7. PING google.com (172.217.4.206) 56(84) bytes of data. 64 bytes from ord37s19-in- f14.1e100.net (172.217.4.206):	kitchen exe Scaled-Web- Server-SWEB-centos-7 -c 'ping -c 3 google.com'	Diagnostic Report
Scaled Satellite Cluster latency between gateway/scaled clusters and core	<30 milliseconds	icmp_seq=1 ttl=109 time=346 ms 64 bytes from ord37s19-in- f14.1e100.net (172.217.4.206): icmp_seq=2 ttl=109 time=15.2 ms 64 bytes from ord37s19-in- f14.1e100.net (172.217.4.206): icmp_seq=3 ttl=109 time=14.7 ms  google.com ping statistics 3 packets transmitted, 3 received, 0% packet loss, time		
		2065ms rtt min/avg/max/mdev = 14.799/125.467/346.348/ 156.186 ms		



D085: Cloud-Based Automat	ion System			Diagnostic Report
Scaled Satellite Cluster latency between scaled clusters and environment	<30 milliseconds	1)> Execute command on Scaled-Web- Server-SWEB- centos-7. eth0: connected to eth0  "Intel 82540EM"  ethernet (e1000), 08:00:27:B9:12:C 6, hw, mtu 1500  ip4 default inet4 10.0.2.15/24 route4 0.0.0.0/0 route4 10.0.2.0/24 inet6 fe80::3414:5b35: dbc4:faaf/64 route6 fe80::/64 route6 fe80::/64 route6 ff00::/8  eth1: connected to System eth1  "Intel 82540EM" ethernet (e1000), 08:00:27:6A:43:6 A, hw, mtu 1500	1) kitchen exe Scaled-Web-Server-SWEB-centos-7 -c 'nmcli' 2) kitchen exe Web-Server-WEB-centos-7 -c 'ping -c 3 192.168.56.106'	The state of the s

D085: Cloud-Based Automation System		Diagnostic Report
	inet4 192.168.56.106/2 4	
	route4 192.168.56.0/24	
	lo: unmanaged	
	"lo <sup>"</sup> loopback (unknown),	
	00:00:00:00:0 0, sw, mtu 65536	
	DNS configuration: servers: 10.0.2.3	
	2) > Execute	
	command on Web- Server-WEB-	
	centos-7. PING 10.0.2.15	
	(10.0.2.15) 56(84) bytes of data.	
	64 bytes from 10.0.2.15:	
	icmp_seq=1 ttl=64	
	time=0.019 ms 64 bytes from	
	10.0.2.15: icmp_seq=2	

D085: Cloud-Based Automation System			Diagnostic Report	
		ttl=64		-
		time=0.039 ms		
		64 bytes		
		from		
		10.0.2.15:		
		icmp_seq=3		
		ttl=64		
		time=0.047 ms		
		10.0.2.15 ping		
		statistics		
		3 packets		
		transmitted, 3		
		received, 0%		
		packet loss,		
		time 2021ms		
		rtt		
		min/avg/max/mdev =		
		0.019/0.035/0.047/0.011		
		ms		Committee Commit
Pull time from the scaled		One Cluster = 5min 15sec	kitchen create	The state of the s
	minutes for each			mental (F. parel) as (20 ma), Limen ().  Mental (F. parel) as (20 ma), Limen ().
time cluster	r			

<sup>\*</sup> Note: If using a desktop-based client, such as Docker or Vagrant, and not the AWS solution, the Data Description aspects "Average messaging service (queue) time" and "Diagnostic data able to be written by the automation to the correct cloud bucket storage space" should be populated with "N/A". If proposing an AWS solution, these datasets will be populated.

