

Configuring Load Balancer on AWS

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Disclaimer

This document is intended to support administrators, technology managers or developers using and implementing Smarten. The business needs of each organization will vary and this document is expected to provide guidelines and not rules for making any decisions related to Smarten. The overall performance of Smarten depends on many factors, including but not limited to hardware configuration and network throughput.

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Prerequisite

- Smarten is deployed on AWS EC2 instance as per instructions in Smarten installation manual.
- AWS MySQL RDS instance is setup and running

1 Architecture



SMARTEN LOAD BALANCING ON AWS

2 Configuring Smarten data folder on EFS

2.1 Creating EFS on AWS

Procedure

- 1. Login to AWS console
- 2. Go to services and select EFS under storage (https://console.aws.amazon.com/efs/)
- 3. Click "Create file system"





Amazon EFS provides file storage for use with your EC2 instances.

Create file system

4. Aws will automatically assign an IP address in the availability zone

n Am terfa	azon EFS file system i ce called a mount targe	is accessed by EC2 inst et. Each mount target ha	ances running ir is an IP address	side one of your VPCs. Ins , which we assign automat	tances connect i cally or you can	o a file system by using a net specify.
	VPC vpc-5e3e34	39 (default) *	•			
reat	te mount targets					
stan	ces connect to a file sy so that EC2 instances	stem by using mount tar across your VPC can a	gets you create ccess the file sy	. We recommend creating a stem.	n mount target in	each of your VPC's Availabilit
	Availability Zone	Subnet	0	IP address	0	Security groups
•	us-east-1a	subnet-c5875be8	(default) *	Automatic P		sg-7430dd09 - default ×
•	us-east-1b	subnet-e01b97a9	(default) *	Automatic P		sg-7430dd09 - default ×
~	us-east-1c	subnet-dcea3a87	(default) *	Automatic &		sg-7430dd09 - default ×
~	us-east-1d	subnet-7b660d1e	(default) *	Automatic P		sg-7430dd09 - default ×
•	us-east-1e	subnet-31d9180d	(default) *	Automatic J*		sg-7430dd09 - default ×
•	us-east-1f	subnet-57e97e5b	(default) *	Automatic 🖋		sg-7430dd09 - default ×

AWS VPC

5. Add the tag and select the performance mode General purpose

Configure optional settings

ou can add tags to des air with key = Corporate	tribe your file system. A tag consists of a case-sensitive key-value pair. (For ex Department and value = Sales and Marketing.) At a minimum, we recommen-	ample, you can define a tag with key-valu d a tag with key = Name.
Key	Value	Remov
Name	Add New Value	0
Add New Key		
Choose performan Ve recommend Genera undreds, or thousands econd with a tradeoff of	Purpose performance mode for most file systems. Max I/O performance mod of EC2 instances are accessing the file system — it scales to higher levels of a slightly higher latencies for file operations.	e is optimized for applications where tens ggregate throughput and operations per
Choose performan Ve recommend General undreds, or thousands econd with a tradeoff or General Pur Max I/O	ee mode Purpose performance mode for most file systems. Max I/O performance mod of EC2 instances are accessing the file system — it scales to higher levels of a slightly higher latencies for file operations. pose (default)	e is optimized for applications where tens ggregate throughput and operations per
Choose performan Ve recommend General undreds, or thousands econd with a tradeoff of General Put Max I/O	Purpose performance mode for most file systems. Max I/O performance mod of EC2 instances are accessing the file system — it scales to higher levels of a slightly higher latencies for file operations. pose (default)	e is optimized for applications where tens ggregate throughput and operations per

6. Review the configuration, and if all okay, then click "Create File System". It make take a few seconds, once done, you will get a success message.

2.2 Mounting EFS on Smarten Instance

Smarten data folder using through EFS file system. Before mounting, need to install the NFS client using below mention command.

Procedure

- Install NFS client use this command.
 # sudo apt-get install nfs-common
- Create a folder where you want to mount the EFS. Best practice create folder in /mnt.
 # sudo mkdir /mnt/data
- Mount the EFS file system with the below mention command.
 # sudo mount -t nfs4 -o
 nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport
 XXXXXXXX.amazonaws.com://mnt/data
 XXXXXXXX.amazonaws.com >> it's EFS DNS name
- Allow port in Smarten instance inbound rules.
 # NFS port 2049
- Verify EFS mount with below mention command.
 # sudo df –h | grep /mnt/data
- Mount EFS when instance booting. Open fstab configuration file and add EFS mount point.
 # sudo vi /etc/fstab

XXXXX.amazonaws.com:/ /mnt/data nfs4 nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2 0 0

Mount EFS file system using below mention command.
 # sudo mount -a

2.3 Copying data folder on EFS

Copying data folder on EFS using below mention command.
 # sudo cp -r data /mnt

2.4 Configuring data folder path in smarten

 Create a system.properties file using below mention path and add data folder location. WILDFLY_HOME /standalone/deployments/smarten.war/conf/ sudonanosystem.properties Add data folder path which is copying in EFS mount point: APPLICATION_PATH=/mnt/data

3 Configuring Smarten Metadata DB on RDS MySQL Database

Create "smarten" database in AWS MySQL rds instance.

3.1 Database Creation

Procedure

- Locate mysql.sql script file from following path. WILDFLY_HOME/standalone/deployments/smarten.war/upgrade/mysql.sql
- 2. Execute script file on above created "smarten" database in MySQL.

3.2 Configuring Database connection parameters in Smarten

Procedure

1. Open file dbConf.properties from path shown below and comment HSQL DB parameter. WILDFLY_HOME/standalone/deploymetns/smarten.war/conf/dbConf.properties

#HSQL Start

#hibernate.dialect=org.hibernate.dialect.HSQLDialect

#hibernate.hbm2ddl.auto=update

#hibernate.connection.driver_class=org.hsqldb.jdbcDriver

#hibernate.connection.username=sa

#hibernate.connection.password=

#hibernate.connection.url=jdbc:hsqldb:<data_folder_path>/DB/elegantjbi;shutdown=true;hsqld
#hsqldb.write_delay=false;hsqldb.lob_compressed=true;hsqldb.log_size=50;hsqldb.defrag_limit
=5;

#hibernate.connection.url=jdbc:hsqldb:hsql://localhost/elegantjbi

#hibernate.connection.url=jdbc:hsqldb:hsql://localhost/<data_tenant_path>
#hibernate.show_sql=false

 Edit dbConf.properties file by following command and uncomment MySQL DB parameter and add MySQL DB credentials.
 WILDFLY HOME/standalone/deployments/smarten.war/conf/dbConf.properties

hibernate.dialect=org.hibernate.dialect.MySQLDialect hibernate.hbm2ddl.auto=update hibernate.connection.driver_class=com.mysql.jdbc.Driver hibernate.connection.username= Database Username hibernate.connection.password= Database Password hibernate.connection.url=jdbc:mysql://Database Ip (endpoint) /Database Name?useUnicode=true&characterEncoding=UTF-8 tenant.db.url.template=jdbc:mysql://Database Ip (endpoint) /<data_tenant_path>?useUnicode=true&characterEncoding=UTF-8 tenant.mysql.command.path=mysql,--host=Database Ip(endpoint),--port=3306,-user=Database Username,--password=Database Password

3.3 Configuring Quartz Scheduler

Procedure

1. Open file quartz.properties from path shown below and comment HSQL DB parameter. WILDFLY_HOME/standalone/deployments/smarten.war/conf/ quartz.properties

#org.quartz.jobStore.class = org.quartz.impl.jdbcjobstore.JobStoreTX
#org.quartz.jobStore.driverDelegateClass = org.quartz.impl.jdbcjobstore.HSQLDBDelegate
#org.quartz.jobStore.tablePrefix = QRTZ_
#org.quartz.jobStore.isClustered = true
#org.quartz.jobStore.clusterCheckinInterval = 20000
#org.quartz.jobStore.useProperties = false
#org.quartz.jobStore.misfireThreshold = 60000
#org.quartz.jobStore.selectWithLockSQL = SELECT * FROM {0}LOCKS UPDLOCK WHERE
LOCK_NAME

2. Open file quartz.properties from path shown below and uncomment MySQL DB parameter. WILDFLY_HOME/standalone/deployments/smarten.war/conf/quartz.properties

org.quartz.jobStore.class = org.quartz.impl.jdbcjobstore.JobStoreTX org.quartz.jobStore.driverDelegateClass = org.quartz.impl.jdbcjobstore.StdJDBCDelegate org.quartz.jobStore.tablePrefix = QRTZ_ org.quartz.jobStore.isClustered = true org.quartz.jobStore.clusterCheckinInterval = 20000 org.quartz.jobStore.useProperties = false org.quartz.jobStore.misfireThreshold = 60000 org.quartz.jobStore.selectWithLockSQL = SELECT * FROM {0}LOCKS WHERE SCHED_NAME = {1} AND LOCK_NAME = ? FOR UPDATE

4 Creating another instance using AMI image

Procedure

- 1. Stop the excising Smarten instance
- 2. Select the Smarten instance and click on Action tab.

Q Filter by tags and attributes	or search by keyword							QKK	1 to 28 of	28 >
Name	 Instance ID 	Instance Type -	Availability Zone 👻	Instance State *	Status Checks 👻	Alarm Status	Public DNS (IPv4)	 IPv4 Public IP 	- IPv	/6 IPs
Smarten_Cluster	i-0da4adc6df6d255d0	t2.xlarge	ap-south-1a	stopped		None			-	

AMI ACTION

3. Expand Action tab and click image > Create Image.

Launch Instance Connect	Actions 🔺	
Q Name : Smarten_Cluster 💿 Add	Connect Get Windows Password	
Name	Create Template From Instance Launch More Like This	e Type - Availability Zone - Instance State
Smarten_Cluster	Instance State	e ap-south-1a 🥚 stopped
	Instance Settings	
	Image 🕨 🕨	Create Image
	Networking	Bundle Instance (instance store AMI)
	CloudWatch Monitoring	

AMI CREATE IMAGE

4. Add image name and image description and click on Create Image.

Create Image	×
Instance ID (1) i-0da4adc6df6d255d0 Image name (1) [] Image description (1) [] No rebot (1)] Instance Volumes	
Volume Type (1)Device (1)Snapshot (i)Size (GiB) (i)Volume Type (i)IOPS (i)Throughput (MB/s) (i)Delete on Termination (i)Encrypted (i)	
Root /dev/sda1 snap- 079b130a0a9942cf7 General Purpose SSD (gp2) 100 / 3000 N/A Not Encrypter Add New Volume Image: Comparison of the state of the	d
Total size of EBS Volumes: 8 GiB When you create an EBS image, an EBS snapshot will also be created for each of the above volumes.	ge

AMI CREATE IMAGE

5. Wait for 5 min to image creation completed, then go to EC2 Dashboard > Images and click on AMIs.

Tell us what you think	And here a College and the second second	
EC2 Dashboard New	Owned by me V Q Name : smarten Add hiter	Ø < < 11010F1 .
Events New	Name - AMI Name - AMI ID - Source - Owner - Visibility - Sta	atus - Creation Date - Platform - Root Device - Virtualiz
Tags	Smarten phpshops ami-0a4f42a9f79b732c8 050219269264/ 050219269264 Private ava	ailable July 7, 2020 at 6:03:32 PM Other Linux ebs hvm
Limits		
Instances		
Instances		
Instance Types		
Launch Templates		
Spot Requests		
Savings Plans		
Reserved Instances		
Dedicated Hosts New		
Capacity Reservations	A	
Images	Image: ami-0a4f42a9f79b732c8	88

AMI IMAGE COMPLETED

6. Select image and click on launch button.

tett us what you think	Ov	med by me	V Na	me : Smarter	Add filter									0 10 1 11	olof1
EC2 Dashboard New															
Events New		Name	~ AMI	Name 4	AMIID	*	Source -	Owner ~	Visibility	- Status	 Creation Date 	*	Platform	 Root Device '+ 	Virtualiza
Tags		Smarten	phps	hops	ami-0a4f42a	9f79b732c8	050219269264/	050219269264	Private	available	July 7, 2020 at 6:03.3	2 PM	Other Linux	ebs	hvm
Limits	_														
Instances															
Instances															
Instance Types															
Launch Templates															
Spot Requests															
Savings Plans															
Reserved Instances															
Dedicated Hosts New															
Capacity Reservations	4														
Images	Imag	je: ami-0a4f	42a9f79b73	32c8											

AMI LAUNCH

7. Select instance type (select same instance type which is set in Smarten instance) and click next.

Step Amazo the app	Step 2: Choose an Instance Type Imazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose he appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.													
Filter b	y: All instance types 👻 🛛	Current	t generation 👻 S	Show/Hide Columns										
Curre	Currently selected: 12 xlarge (Variable ECUs, 4 vCPUs, 2.3 GHz, Intel Broadwell E5-2686v4, 16 GIB memory; EBS only)													
	Family	Ŧ	Туре -	vCPUs (i) -	Memory (GiB) -	Instance Storage (GB) (i) -	EBS-Optimized Available (i) -	Network Performance (i) -	IPv6 Support					
	General purpose		t2.nano	1	0.5	EBS only		Low to Moderate	Yes					
	General purpose		t2.micro Free tier eligible	1	1	EBS only	-	- Low to Moderate						
	General purpose		t2.small	1	2	EBS only		Low to Moderate	Yes					
	General purpose		t2.medium	2	4	EBS only	- Low to Moderate		Yes					
	General purpose		t2.large	2	8	EBS only	-	Low to Moderate	Yes					
	General purpose		t2.xlarge	4	16	EBS only		Moderate	Yes					
	General purpose		t2.2xlarge	8	32	EBS only	-	Moderate	Yes					
	General purpose		t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes					
							Cancel Previous	Review and Launch Next: Conf	gure Instance Details					

AMI SELECT INSTANCE TYPE

- 8. Next add storage option, Do not changes anything and click next.
- 9. Next configure security group, select existing security group which is assign to smarten instance and click next and then review and launch.

5 Configuring AWS Elastic Load Balancer (ELB)

5.1 Creating Elastic Load Balancer with Stickiness

Procedure

- 1. From the EC2 Dashboard, select the "Load Balancing > Load Balancer" menu item.
- 2. Click the "Create Load Balancer" button.

aws Services	• Resource Groups	• * 🗘
Spot Requests Reserved Instances	Create Load Balancer	Actions 👻
Scheduled Instances	Filter: Q Search	×
Dedicated Hosts	Name	- DNS name
 IMAGES 		
AMIs		
Bundle Tasks		
ELASTIC BLOCK STORE		
Volumes		
Snapshots		
NETWORK & SECURITY		
	CREATE LOAD BALANCER	

3. Select Application Load Balancer Type and click on Create.



LOAD BALANCER TYPE

- 4. On the subsequent "Configure Load Balancer" page:
 - Enter a name for the load balancer and specify the scheme as "Internet facing".
 - In the "Listeners" section, ensure that there is an HTTP listener on load balancer port 80.
 - In the "Availability Zones" section, select the availability zones.

• Click the "Next: Configure Security Settings" button to proceed.

aws Services - Resource G	oups v 🖈 🗘	Vimal Patel 👻	Mumbai *	Support ¥
Configure Load Balancer 2. Configure Security Settin	ps 3. Configure Security Groups 4. Configure Routing 5. Register Targets 6. Review			
Step 1: Configure Load Balance	t i i i i i i i i i i i i i i i i i i i			
Basic Configuration				^
To configure your load balance, provide a name, select Name Mr4ELB Scheme Mr4ELB Onternal IP address type Mr4	a scheme, specify one or more listeners, and select a network. The default configuration is an intermet/facing load balancer in the selected network with a listener that receives HTTP traffic on port 80.			
Listeners A listener is a process that checks for connection requ	etis, using the protocol and port that you configured.			_
Load Balancer Protocol	Load Balancer Port			
HTTP	80			0
Add listener				
Availability Zones				
Specify the Availability Zones to enable for your load b	viancer. The load balancer routes traffic to the targets in these Availability Zones only. You can specify only one subnet per Availability Zone. You must specify subnets from at least two Availability Zones to increase the i	vailability of your lo	ad balancer.	
VPC (i) vpc-d6bc52bf(172.3	1.0.0/16) (default) •			
Availability Zones 🔽 ap-south- sub Ta IPv-	ver-8037d8e1 V) address () Assigned by ANS			
ap-south- sub	net cd745587 vd)			

LOAD BALANCER SECURITY

5. Click Next "Configure Security Settings"

- Select the option to "Create a new security group"
- Add a security rile to allow inbound traffic on port 80 (the HTTP port) with source "Anywhere".

6. Next click on the "Configure Routing" page:

- In the "Target group" section, create a new target group and assign it a name.
- Ensure that the protocols is set to "HTTP", the port to "8080" and the target type to "instance".
- With this configuration, traffic between the load balancer and the instance will be transmitted using HTTP.
- In the "Health checks" section, define the protocol as "HTTP" and the path to "/smarten".
- Click the "Next: Register Targets" button proceed.

Basic configuration		
Chance a target hung		
 Instances A target group consisting of instances: Supports load balancing to instances within a specific VPC. 	 IP addresses A target group consisting of IP addresses: Supports load balancing to VPC and on-premises resources. Facilitates routing to multiple IP addresses and network interfaces on the same instance. Offers flexibility with microservice based architectures, simplifying inter-application communication. 	 Lambda function A target group consisting of a Lambda function: Facilitates routing to a single Lambda function. Accessible to Application Load Balancers only.
Target group name		
Up to 32 alphanumeric characters, includin	g hyphens. Must not begin or end with a hyph	en.
Protocol : Port		
HIIP ▼ . 8080 €		
VPC Select the VPC containing the instances you	want to choose from for inclusion in this targ	et group.
IPv4: 172.31.0.0/16		*
Health checks		
The associated load balancer periodically se	ends requests, per the settings below, to the re	gistered targets to test their status.
Health check protocol		
нттр 💌		
Health check path	o accine caron calminicience.	
/		
Line to 102.6 descenters all event		
Advanced health check setting	s	
Tags - optional		
Consider adding tags to your target gro them.	up. Tags enable you to categorize your AWS re	sources so you can more easily manage

LOAD BALANCER BASIC CONFIGURATION

- 7. On the "Register Targets" page, use the instance ID obtained is step 1 to identify and select the both of "Smarten Instance".
- 8. Click the "Add to registered" button to move the instance into the list of registered targets.
- 9. Click the "Next: Review" button to proceed.

aws Servic	ces v	Resource Groups	*	*			Ĺ	¢	
1. Configure Load Balancer	2. Configu	re Security Settings	3. Co	nfigure Security G	roups	4. Configure Routing	5. Regi	ster Targets	6. Review
Step 5: Register Register targets with your tar and the target passes the ini	Target rget group. tial health	S If you register a targ checks.	et in a	an enabled Avai	lability Z	one, the load balance	er starts r	outing reques	sts to the targets as soor
Registered targets									
To deregister instances, sele	ct one or n	nore registered instar	ices a	and then click R	emove.				
Remove									
Instance	Ŧ	Name	¥	Port ·	State	v	Securi	ty groups	
				80	🥥 run	ning	WordPr	ess Certified b	y Bitnami-4-8-1-0 on Ub
Instances To register additional instance registered on the specified of Add to registered on po	es, select ort you m ort 80	one or more running ust specify a differen	instar t port	nces, specify a p	port, and	then click Add. The	default po	ort is the port	specified for the target of
Instance	 Name 	e State		∵ Sec	urity gro	oups - Zone	Ŧ	Subnet ID	
•		🥥 n	unning) Word	dPress Ce	ertifi us-east-1a			

LOAD BALANCER REGISTER TARGETS

5.2 Enable Stickiness

Sticky session is a mechanism to route requests from the same client to the same target.

Procedure

1. On the navigation pane, under LOAD BALANCING, choose Target Groups.

Capacity Reservations	EC2 > Target groups				
▼ Images	Target groups (7)				C Actions V
Elastic Block Store	Q Filter resources by property	v or value			
Snapshots	Name .	ARN	Port V Prot	tocol ⊽ Target ty ⊽ Load b	balancer VPC ID
Lifecycle Manager					
Network & Security					
Security Groups New	HTTP-ELB		8080 HTT	P Instance	
Elastic IPs New Placement Groups New					
Key Pairs New					
Network Interfaces					
Load Balancing		· · · · · · · · · ·			
Load Balancers Target Groups New					
▼ Auto Scaling					
Launch Configurations					
Auto Scaling Groups					

LOAD BALANCER TARGET GROUPS

- 2. Choose the name of the target group to open its details page.
- 3. On the Group details tab, in the Attributes section, choose Edit.

Group detail Targets Monitoring Tags	
Health check settings	Edit
Protocol HTTP	Unhealthy threshold 2
Path /smarten	Timeout 2 seconds
Port traffic-port	Interval 10 seconds
Healthy threshold 2	Success codes 302
Attributes	Edit
Stickiness Enabled	Deregistration delay 10 seconds
Stickiness duration	Slow start duration

LOAD BALANCER ATTRIBUTES

- 4. On the Edit attributes page, do the following:
 - a. Select Stickiness
 - b. For Stickiness duration, specify a value between 1 second and 7 days.
 - c. Choose save changes.

 Stickiness The type of sticlient's session 	ckiness associa to a specific i	ated wit	a	
Stickiness du	uration			
2	hours	•		
1 second - 7 d	ays			
			Cancel	Save changes

LOAD BALANCER STICKINESS

5.3 Elastic Load Balancer Other Configuration

• Listeners

Use this list to specify listeners for your load balancer. Each listener routes incoming client traffic on a specified port using a specified protocol to one or more processes on instances.

To add a listener

- Choose Add listener.
- In the Application Load Balancer listener dialog box, configure settings you want, and then choose Add.

I can s	pecify listeners for your load b	alancer. Each listener routes incomi	ng client traffic on a specified	port using a specified protocol to	o your environment
cesse	s. By default, we've configured	I your load balancer with a standard v	web server on port 80.		
				Actions V	+ Add listener
	Port	Protocol	SSL certificate	Default process	Enabled
	80	HTTP	-	default	0

LOAD BALANCER LISTENERS

• Health check

Use the following setting to configure process health checks:

- o Health check protocol Http
- o Health check path /smarten
- o Healthy threshold 5
- o Unhealthy threshold 2
- o Timeout 2 Seconds
- o Interval 15 Seconds
- o Success codes 302

Health	checks ted load balancer periodically sends requests, per the settings below, to the registered targets to test their status.
Health ch	ack protocol
HTTP	v
Health chi Use the def	ack path ault path of "/" to ping the root, or specify a custom path if preferred.
1	1
Up to 1024	characters allowed.
🔻 Advan	ced health check settings Restore defaults
Port	
The port th	e load balancer uses when performing health checks on targets. The default is the port on which each target receives traffic
Traffic	so balancer, but you can specify a different port.
Overri	por c de
Healthy th	weshold
The number	; of consecutive health checks successes required before considering an unhealthy target healthy (2-10).
5	
2-10	
Unhealthy	/ threshold
The number	r of consecutive health check failures required before considering a target unhealthy (2-10).
2	
2-10	
Timeout The amount	t of time, in seconds, during which no response means a failed health check (2-120 seconds).
3	
2	seconds
2-120	
Interval	mate amount of sime battance banklin density of an infinite of terrors (C 700 seconds)
ne approx	soconds
5-300	seconds
300	
Success co The HTTP o	xdes odes to use when checking for a successful response from a target. You can specify multiple values (for example, "200,202") or lues fror example, "200-299").
- ange or va	and the second
200	

LOAD BALANCER HEALTH CHECK

• Rules

When create a listener, define actions for the default rule. Default rules can't have conditions. If the conditions for none of a listener's rules are met, then the action for the default rule is performed.



• Routing algorithm

Application Load Balancers by default used round robin algorithm. Routing is performed independently for each target group, even when a target is registered with multiple target groups.

EC2 > Target groups > HTTP-ELB > Edit attributes	
Edit attributes	
Attributes	Restore defaults
Deregistration delay The time to wait for in-flight requests to complete while deregistering a target. During this time, the state or 300 Seconds 0-3600 Slow start duration During this period, a newly registered target receives an increasing share of requests, until it reaches its fair state or seconds 0 seconds 30-900 or 0 to disable	if the target is draining. share.
Load balancing algorithm Determines how the load balancer selects targets from this target group when routing requests. Round robin Least outstanding requests Stickiness The type of stickiness associated with this target group. If enabled, the load balancer binds a client's session to a specific instance within the target group.	
Ca	ancel Save changes



6 Configuring Smarten for non-sticky sessions

Amazon Elasticache for Redis is highly suited as a session store to manage session information such as user authentication tokens, session state, and more. Simply use ElastiCache for Redis as a fast key-value store with appropriate TTL on session keys to manage your session information.

6.1 Configuring Redis Server on AWS Elasticache

Procedure

1. Open the Amazon ElastiCache console at https://console.aws.amazon.com/elasticache/



AWS ELASTICACHE

3. Select "Redis" as your cluster engine.

aws	Services 👻 Resource Groups 🗸	*	¢	tutorials @ aws 🔹	N. Virginia 👻	Support 👻
	Create your Amazon Elast	iCache cluster			0	
	Cluster engine	Redis In-memory data structure store used as database, cache and message broker. ElastiCache for Redis offers Multi-AZ with Auto-Failover and enhanced robustness. Cluster Mode enabled Memcached High-performance, distributed memory object caching system, intended for use in speeding up dynamic web applications.				
	Name		0			
	Description		0			
	Engine version compatibility	5.0.3	0			
	Port	6379	0			
	Baramatar amun	dafault radio5 0 alustar an	A			
Feedback	S English (US)	© 2008 - 2019, Amazon Web Se	ervices, Inc. or its	affiliates. All rights reserved	 Privacy Polic 	y Terms of Use

AWS ELASTICACHE CLUSTER

4. Check "Cluster Mode enabled".

AWS Services - Resource Groups -	*	û tutorials @ aws ▾ N.	Virginia 👻 Support 👻
Create your Amazon Elas	tiCache cluster		0
Cluster engine	Redis In-memory data structure store used as database, cache and message broker. ElastiCache for Redis offers Multi-AZ with Auto-Failover and enhanced robustness. Cluster Mode enabled Memcached High-performance, distributed memory object caching system, intended for use in speeding up dynamic web applications.		
Name		0	
Description		0	
Engine version compatibility	5.0.3	θ	
Port	6379	0	
Baramatar amun	dafault radiaE A aluatar an	A	
🗨 Feedback 🔇 English (US)	© 2008 - 2019, Amazon Web S	ervices, Inc. or its affiliates. All rights reserved.	Privacy Policy Terms of Use

AWS REDIS ELEASTICACHE CLUSTER

5. Fill a name for your Redis Cluster and Engine version compatibility.

aws Services ▼			\$ Vimal Patel 🔻	Mumbai 🔻	Support 1
Redis settings					
Name	Smarten Redis	θ			
Description	Smarten Memory Cache	0			
Engine version compatibility	5.0.5	Ð			
Port	6379	0			
Parameter group	default.redis5.0.cluster.on	0			
Node type	cache.t3.medium (3.09 GiB)	θ			
Number of Shards	3	0			
Replicas per Shard	2	0			
Multi-AZ	•	0			
Subnet group	redistest (vpc-d6bc52bf)	0			

AWS REDIS ELEASTICACHE CLUSTER CONFIGURATION

6. Change the node type to cache.t3.medium, the size of node should depend on workload and should start with the m5 or r5 instance families.

ews Services ▼			¢	Vimal Patel 🔻	Mumbai 🔻	Support
Redis settings						
Name	Smarten Redis	0				
Description	Smarten Memory Cache	0				
Engine version compatibility	5.0.5	0				
Port	6379	0				
Parameter group	default.redis5.0.cluster.on	0				
Node type	cache.t3.medium (3.09 GiB)	0				
Number of Shards	3	0				
Replicas per Shard	2	0				
Multi-AZ		0				
Subnet group	redistest (vpc-d6bc52bf)	0				

AWS REDIS ELASTICACHE NODE CONFIGURATION

7. In Number of Shared, select 3. It means the data will be partitioned in three different master nodes.

aws Services ▼			\$°	Vimal Patel 🔻	Mumbai 🔻	Support
Redis settings						
Name	Smarten Redis	0				
Description	Smarten Memory Cache	0				
Engine version compatibility	5.0.5	0				
Port	6379	0				
Parameter group	default.redis5.0.cluster.on	0				
Node type	cache.t3.medium (3.09 GiB)	0				
Number of Shards	3	0				
Replicas per Shard	2	0				
Multi-AZ		0				
Subnet group	redistest (vpc-d6bc52bf)	0				

AWS REDIS ELASTICACHE NODE CONFIGURATION

8. In Replicas per Shared, select 2. It means each master node will have two replicas. In case of a failure, an automatic failover will be triggered and one of the replicas will take over the role of the master node.

WS	Services V				\$ Vimal Patel 🔻	Mumbal 🔻	Support 1
		Redis settings					
		Name	Smarten Redis	0			
		Description	Smarten Memory Cache	Ð			
		Engine version compatibility	5.0.5	Ð			
		Port	6379	0			
		Parameter group	default.redis5.0.cluster.on	Ð			
		Node type	cache.t3.medium (3.09 GiB)	Ð			
		Number of Shards	3	Ð			
		Replicas per Shard	2	Ð			
		Multi-AZ		θ			
		Subnet group	redistest (vpc-d6bc52bf)	0			

AWS REDIS ELASTICACHE REPLICA CONFIGURATION

9. Select a Subnet group.

aws Services ▼			🔷 Vimal Patel 🔻	Mumbai 🔻	Support 1
Redis settings					
Name	Smarten Redis	θ			
Description	Smarten Memory Cache	Ð			
Engine version compatibility	5.0.5	θ			
Port	6379	0			
Parameter group	default.redis5.0.cluster.on	0			
Node type	cache.t3.medium (3.09 GiB)	0			
Number of Shards	3	0			
Replicas per Shard	2	0			
Multi-AZ		0			
Subnet group	redistest (vpc-d6bc52bf)	Ð			

AWS REDIS ELASTICACHE SUBNET GROUP CONFIGURATION

10. Select a Security group for Redis Cluster, make sure the Security group allows incoming TCP connections on port 6379.

aws Services ▼				🗘 Vimal Patel	🗸 Mumbai 🔻	Support 🔻
Security						
	Security groups	default (sg-89dc28e0) 🖋	0			
	Encryption at-rest		0			
	Encryption in-transit		0			
Import da	ta to cluster					
	Seed RDB file S3 location	myBucket/myFolder/objectName	0			
		Use comma to separate multiple paths in the field				- 1
Backup						
E	nable automatic backups		0			
	Backup retention period	1 •	0			
		day(s)				

AWS REDIS ELASTICACHE SECURITY GROUPS

11. Enable automatic backups and set backup retention period.

aws Services ▼				Ç [®] Vimal Patel ▼	Mumbai 🔻	Support 🔻
	Security					1
	Security groups	default (sg-89dc28e0) 🖋	0			
	Encryption at-rest		0			
	Encryption in-transit		0			
	Import data to cluster					
	Seed RDB file S3 location	myBucket/myFolder/objectName Use comma to separate multiple paths in the field	0			
	Backup					
	Enable automatic backups	\sim	0			
	Backup retention period	1 v day(s)	0			

AWS REDIS ELASTICACHE AUTOMATIC BACKUPS

12. Click on "create". A Redis Cluster will get initialized and once it becomes "available".

aws	Services 🗸 Resource Groups 🗸	*		Ĵ tutorials @ aws ▾	N. Virginia 👻	Support ¥
	Import data to cluster					
	Seed RDB file S3 location	myBucket/myFolder/objectName Use comma to separate multiple paths in the field	0			
	Backup					
	Enable automatic backups		0			
	Maintenance					
	Maintenance window	No preference Specify maintenance window	0			
	Topic for SNS notification	Disable notifications	• 0			
				Cancel	reate	
Feedback	🚱 English (US)	© 2008 - 2019, Amazon	Web Services, Inc.	. or its affiliates. All rights reserv	ed. Privacy Policy	r Terms of Use



6.2 Enabling session sharing in Smarten

Procedure

1. Click on Redis cluster and copy Redis primary endpoint.

iguration Endpoint:	
Primary Endpoint:	ecache. 67. 4478.00001. apre 14 cache. amazonaws. com: 6070
	224

AWS REDIS ELEASTICACHE CLUSTER ENDPOINT

- Open file redishhttpSession.xml from path shown below.
 WILDFLY_HOME/standalone/deployments/smarten.war/WEB-INF/redishhttpSession.xml
- 3. Enter Redis primary endpoint and port in tedishhttpsSession.xml file.



SMARTEN REDIS CONFIGURATION

4. After changes save and closed file and start Smarten services.

7 Running Smarten

Make sure the application server is running and Smarten application is successfully installed before running smarten.

All types of users, including Administrators, can log in from the same URL.

Open web browser and type URL <a href="http://<host">http://<host name>:<port number>/smarten/

For example, <u>http://192.168.1.1:8080/smarten/</u>

Log in to application using default credentials provided

Enter Username - admin Enter Password - admin

8 Product and Support Information

Find more information about Smarten and its features at <u>www.smarten.com</u> Support: <u>support@smarten.com</u> Sales: <u>sales@smarten.com</u> Feedback & Suggestions: <u>support@smarten.com</u> Support & Knowledgebase Portal: <u>support.smarten.com</u>