R&R_Deployment Instructions_05_05_2015

Environment Requirements

This minimum requirement to deploy the R&R efficiently:

JDK - 1.7.0_75 (Download Link)

Tomcat - 8.0.20 (Download link)

Deployable Artifacts Summary

There are two deployable artifacts that will be built when you build the parent pom at */reviews_next_gen/application/pom.xml.*

The table below summarises the deployment artifacts:

Artifact	Type	Location
reviews-api	WAR	/reviews_next_gen/application/api/target/reviews-api.war
event-consumer	JAR	/reviews_next_gen/application/ core/event-consumer/target/event-consumer-executable.jar
shipment-tracker	JAR	/reviews_next_gen/application/shipment-tracker/target/shipment-tracker-executable.jar
job-scheduler	JAR	/reviews_next_gen/application/job-scheduler/target/job-scheduler-executable.jar

Server Installations

The list of servers with their configurations:

Cassandra

- Version: 2.1.3
- R&R Casdandra DDL
- R&R Cassandra DML
- Authentication Settings

Aerospike

- Version: 3.4.0
- Keyspace definition

Zookeeper

- Version: 3.3.4
- Configuration

Kafka

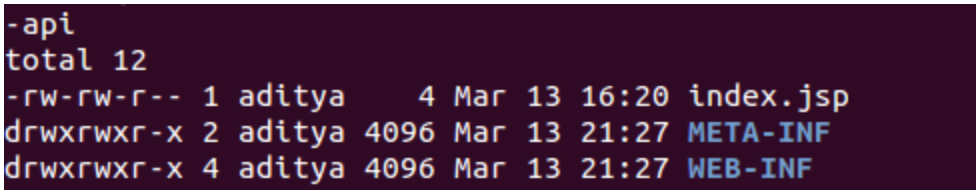
- Version: 2.10-0.8.2.1
- Configuration

Elasticsearch

- Version: 1.5.2
- Configuration
- Elasticsearch DDL & DML

Structure

reviews-api.war



Configuration Folder

Apart from the executable artifacts, the platform also needs a configuration folder. This folder contains files that have connection and performance tuning parameters for different subsystems

Example: Kafka, Cassandra, Aerospike, and so on.

The folder can be copied from *reviews_next_gen/application/config/* to the deployment server (/opt/configurations folder). Once copied, some of the properties need to be updated as per the environment. The following section gives details on what properties need to be updated per config file:

cassandra.properties

Parameter Name	Value	Sample value
hosts	Comma separated set of socket address (<ip>:<port>) of the seed nodes of the cassandra cluster	127.0.0.1:9042,127.0.0.2:9042,
authentication_enabled	Is a boolean, should be set to 'true' or 'false'. If set to false, all authentication related properties will be ignored	true
username	username to be used for authentication	reviews_api
password	password to be used for authentication	reviews_api

aerospike.properties

Parameter Name	Value	Sample value
hosts	Comma separated set of socket address (<ip>:<port>) of the aerospike nodes	10.1.28.15:3000, 10.1.28.16:3000

kafka_consumer.properties

Parameter Name	Value	Sample value
zookeeper.connect	Comma separated set of socket address (<ip>:<port>) of the zookeeper server nodes	10.1.28.18:2181, 10.1.28.19:2181

kafka_producer.properties

Parameter Name	Value	Sample value
metadata.broker.list	Comma separated set of socket address (<ip>:<port>) of the kafka broker nodes	10.1.28.18:9092, 10.1.28.19:9092

shipping.properties

Parameter Name	Value	Sample value

activemq.queue.name	This is the name of shipping ActiveMQ having shipping events.	ORDERQUEUE
activemq.url	The Shipping queue ActiveMQ URL.	tcp://localhost:61616
activemq.username	ActiveMQ username.	admin
activemq.password	ActiveMQ password.	admin

event_consumer.properties

Parameter Name	Value	Actual value
enable_cams_data_feed_action	Determines whether updated product stats will be pushed to CAMS on rating/review creation	false

external_client_service.properties

Parameter Name	Value	Sample value
cams.webservice.url	CaMS webservice URL according to the environment	http://54.86.136.55:8030
cams.admin.webservice.url	CaMS Admin webservice URL according to the environment	http://54.86.136.55:8040
oms.webservice.url	OMS webservice URL according to the environment	http://54.86.136.55:8060/service/oms
oms.admin.webservice.url	OMS Admin webservice URL according to the environment	http://10.1.30.212:10010/service/oms

email/email_configuration.properties

Parameter Name	Value	Sample value
is_testing_enabled	Enable or disable testing flag	0/1
test_customer_email	If above flag is enabled the email corresponding to this key will be used as end customer email-Id to send emails	test@mailinator.com

email/configuration.properties

Parameter Name	Value	Sample value
mail.client.socket.address	Comma separated set of socket address (http://<ip>:<port>) of the smtp provider server	http://54.86.136.55:10490
mail.template.location	Location of the config folder placed on server	/opt/configurations/config
mail.admin.address	Administrator email address of snapdeal responsible for sending email to end customers	mailer.admin@snapdeals.co.in
mail.admin.name	Administrator name of snapdeal responsible for sending email to end customers	Mailer Admin

elasticsearch.properties

Parameter Name	Value	Sample value
es.cluster.name	cluster name	reviews_and_ratings
es.host.address	Comma separated set of socket address of the elasticsearch nodes	10.1.28.15, 10.1.28.14
es.host.port	elasticsearch port	9300

client.transport.sniff	sniff the rest of the cluster	true
user.stats.page.size	result size for fetching user stats data	100
user.aggregation.page.size	result size for fetching user aggregations	100
user.stats.scroll.ttl	scroll ttl in milliseconds	3600000

Deployment Steps

API Server

- The deployable war can be found at */reviews_next_gen/application/api/target/reviews-api.war*
- Tomcat must be started with the following JVM parameters.
    - Add the following line to 'setenv.sh':

        set JAVA_OPTS="$JAVA_OPTS -Dconfig.location=<path to the config directory>

JVM Arguments

Parameter Name	Value	Sample value
config.location	Path to the configuration folder	/opt/configurations/config

Checklist

1. Tomcat has been deployed with "JAVA_HOME" pointing to JRE
2. Tomcat should have permissions to create log files at the location specified in *reviews_next_gen/application/api/src/main/resources/log4j2.xml*

Event consumer

The deployable jar can be found at *reviews_next_gen/application/core/event-consumer/target/event-consumer-executable.jar*

- **To run the jar:**

  Use the following command:

  java -jar -server -Xms3g -Xmx3g -XX:+UseG1GC -Dconfig.location=<path to the config directory> -Denv=<prod/staging> -Dstatic.resource.url=<http://i.sdlcdn.com/static/> event-consumer-executable.jar

- **Deployment of Event Consumer:**
    - Start twice the number of required active event consumers. In Prod, the number of active event consumers are 2. So totally 4 event consumer instances are required, two in each box(one as active and one as passive)
    - The order in which the event consumers are started are important. First start one event consumer in each machine. Then after some delay, say a minute or so, start the second set of event consumers.

> **Event Consumer Reliability**
> *To Ensure the reliability on Event consumer, make sure that one additional instance of event consumer java process is running as a spare, passive event consumer. This ensures that even when one event consumer goes down, this spare event consumer will be sprung into action consuming the messages that should otherwise be consumed by the crashed event consumer process. Note that the property "sd.total.num.of.consumer.processes" in kafka_consumer.properties does not include this additional spare event consumer process as this a backup and will be active only when any active event consumer goes down.*

Event-Consumer JVM Arguments

Parameter Name	Value	Sample value
config.location	Path to the configuration folder	/opt/configurations/config
env	Respective Environment of Testing/Production	*staging* ***OR*** *prod*
static.resource.url	Respective static CDN URL	http://i.sdlcdn.com/static/

Shipping-Tracker

The deployable jar can be found at reviews_next_gen/application/shipment-tracker/target/shipment-tracker-executable.jar

- **To run the jar:**

  Use the following command:

  java -jar -server -Xms1g -Xmx1g -XX:+UseG1GC -Dconfig.location=<path to the config directory> shipping-tracker-executable.jar

Shipping-Tracker JVM Arguments

Parameter Name	Value	Sample value
config.location	Path to the configuration folder	/opt/configurations/config

Job-Scheduler

The deployable jar can be found at *reviews_next_gen/application/job-scheduler/target/job-scheduler-executable.jar*

- **To run the jar:**

  Use the following command:

  java -jar -server -Xms2g -Xmx2g -XX:+UseG1GC -Dconfig.location=<path to the config directory> -Denv=<prod/staging> -Dstatic.resource.url=<http://i.sdlcdn.com/static/> job-scheduler-executable.jar

Job Scheduler JVM Arguments

Parameter Name	Value	Sample value
config.location	Path to the configuration folder	/opt/configurations/config
env	Respective Environment of Testing/Production	*staging* ***OR*** *prod*
static.resource.url	Respective static CDN URL	http://i.sdlcdn.com/static/

Checklist

1. "JAVA_HOME" pointing to the JRE
2. They should have permissions to create log files at the location specified in *reviews_next_gen/application/api/src/main/resources/log4j2.xml*

3. *Nodes hosting the review-api.war and the event-consumer-<vesrion number>-executable.jar must have the Kafka and zookeeper instances' <ip address> <hostname> mapping entries in the /etc/hosts file.*

Elasticsearch

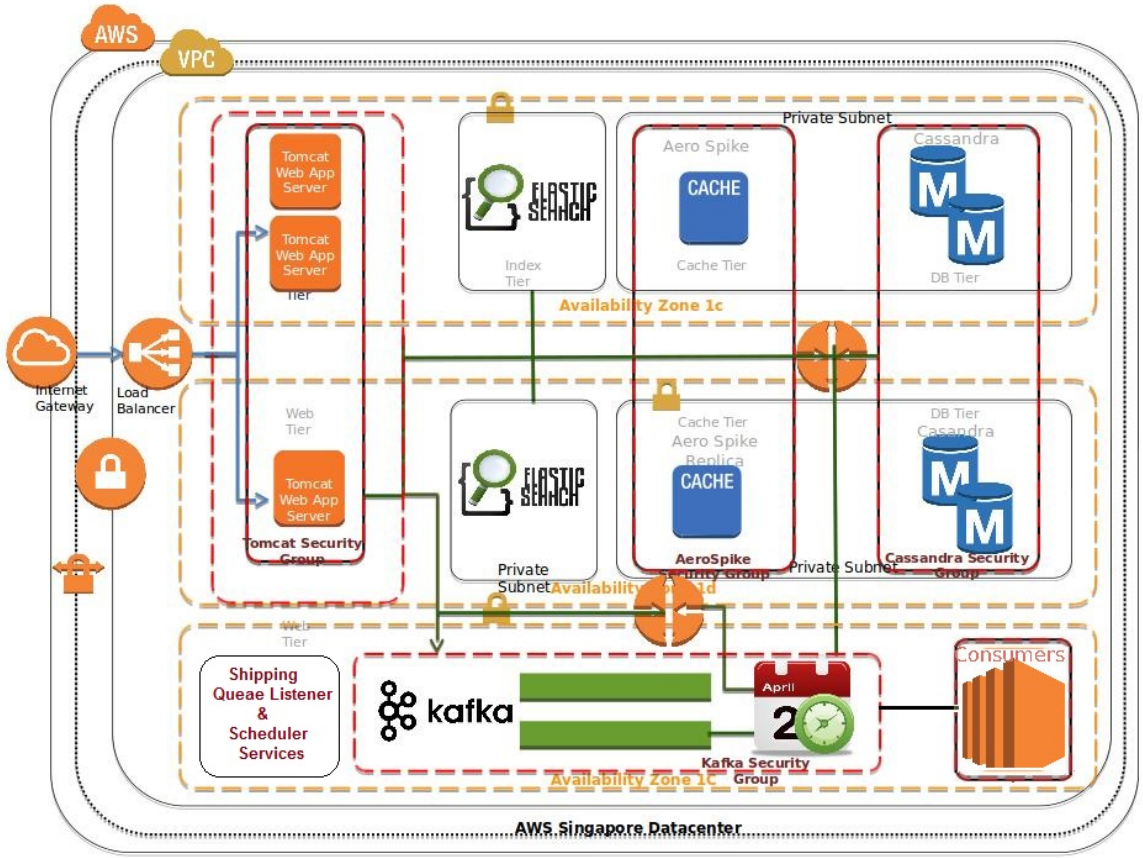
To start the elasticsearch server:

Use the following command:-

./bin/elasticsearch -Xmx8g -Xms8g

Deployment Architecture

The diagram below depicts the deployment architecture for the reviews-api service



Deployment Configurations Details

ITE Server Configuration:

Components	Number of Nodes	CPU	Disk Size (GB)	Disk Type	Ram (GB)
Cassandra (2.1.3)	1	Dual Core/2.8Ghz	200	HDD	8
Aerospike (3.4.0)	1	Dual Core/2.8Ghz	100	HDD	16

Tomcat (8.0.20) **(Deployed wars: Reviews-API)** and **Event Consumer**	1	Dual Core/2.8Ghz	200	HDD	8
Kafka(2.10-0.8.2.1) and Zookeeper (3.3.4)	1	Dual Core/2.8Ghz	200	HDD	8
Elasticsearch (1.5.2)	1	Dual Core/2.8Ghz	200	HDD	8
Shipping queue listener	1	Dual Core/2.8Ghz	50	HDD	4
Job Scheduler	1	Dual Core/2.8Ghz	50	HDD	4

Staging Server Configuration:

Components	Number of Nodes	CPU	Disk Size (GB)	Disk Type	Ram (GB)
Cassandra (2.1.3)	1	Dual Core/2.8Ghz	200	HDD	8
Aerospike (3.4.0)	1	Dual Core/2.8Ghz	200	HDD	16
Tomcat (8.0.20) **(Deployed wars: Reviews-API)** and **Event Consumer**	1	Dual Core/2.8Ghz	200	HDD	8
Kafka(2.10-0.8.2.1) and Zookeeper (3.3.4)	1	Dual Core/2.8Ghz	200	HDD	8
Elasticsearch (1.5.2)	1	Dual Core/2.8Ghz	200	HDD	8
Shipping queue listener	1	Dual Core/2.8Ghz	50	HDD	4
Job Scheduler	1	Dual Core/2.8Ghz	50	HDD	4

PT Server Configuration:

Components	Number of Nodes	CPU	Disk Size (GB)	Disk Type	Ram (GB)
Cassandra (2.1.3)	3	Quad Core/2.8Ghz	200	HDD	16
Aerospike (3.4.0)	2	Quad Core/2.8Ghz	100	SSD	16
Tomcat (8.0.20) **(Deployed wars: Reviews-API)**	2	Quad Core/2.8Ghz	50	HDD	16
Kafka(2.10-0.8.2.1)	2	Quad Core/2.8Ghz	200	HDD	8
Zookeeper (3.3.4)	2	Quad Core/2.8Ghz	50	HDD	8
Event Consumer	2	Quad Core/2.8Ghz	50	HDD	8
Elasticsearch (1.5.2)	2	Quad Core/2.8Ghz	200	HDD	16
Shipping queue listener	1	Quad Core/2.8Ghz	50	HDD	4
Job Scheduler	1	Quad Core/2.8Ghz	50	HDD	4

Third Party Web-Service Dependencies

- OMS
- OMS Admin
- CaMS
- CaMS Admin

Special Instructions

1. Upload the 'config' folder containing the property files for aerospike, cassandra and kafka (These files are mainly connection parameters that will vary w.r.t dev, ITE and prod environments)
2. Set Tomcat environment variable, '*config.location*' to the path of the config folder while deploying the war
3. Make sure that the "num.partitions" in kafka's server.properties must be equal to "sd.total.num.of.partitions" in kafka_consumer.properties file of each event consumer process.
4. Make sure that the "sd.total.num.of.consumer.processes" in kafka_consumer.properties file has the right value.
5. Login to the cassandra host. Please run the command :- cqlsh -f Sprint2DDL.cql

PS: Please get the Sprint2DDl.cql file from the attachements

6. To Ensure the reliability on Event consumer, make sure that one additional instance of event consumer java process is running as a spare passive event consumer. This ensures that even when one event consumer goes down, this spare event consumer will be sprung into action consuming the messages that should otherwise be consumed by the crashed event consumer process. Note that the property "sd.total.num.of.consumer.processes" in kafka_consumer.properties does not include this additional spare event consumer process as this a backup and will be active only when any active event consumer goes down.
7. The Reviews system uses GSON for JSON (de)serialization. And since, the snapdeal base library has a very tight coupling of protocols with Serialization library, we were not able to plugin a different serialization mechanism.
   Hence the reviews API client library uses a different approach to solve this issue by creating a separate Spring application context. The right way to use the reviews api client library is using our Factory as mentioned below. Note that you need not include reviews api client library packages in your Spring's component scan paths

```
Map<ConfigurationParams, String> configParams = new HashMap<>();
configParams.put(ConfigurationParams.BASE_URL, "http://54.172.79.57:8080/reviews-api");
ReviewClientFactory.init(configParams);
ReviewClientService client = ReviewClientFactory.getClient();
client.getReviewStats(queryParams);
```

Frequently Asked Questions

Exception on startup: unable to locate log appender

<Unresolved>

Why does the Event consumer throw a file not found exception?

Config.location param not passed to the consumer jar. Refer section on steps to run the jar for a sample of how to pass the parameter. Log files not being generated. (Setting the log path to '.' in log4j.xml)

Array index out of bounds when reading config files?

All hostnames must be socket addresses i.e <host>:<port>. The application does not assume any default port numbers.

Where do I find the client consumer executable?

/reviews_next_gen/application/core/event-consumer/target/event-consumer-executable.jar