Final Project Presentation

Team Avada-Kedavra

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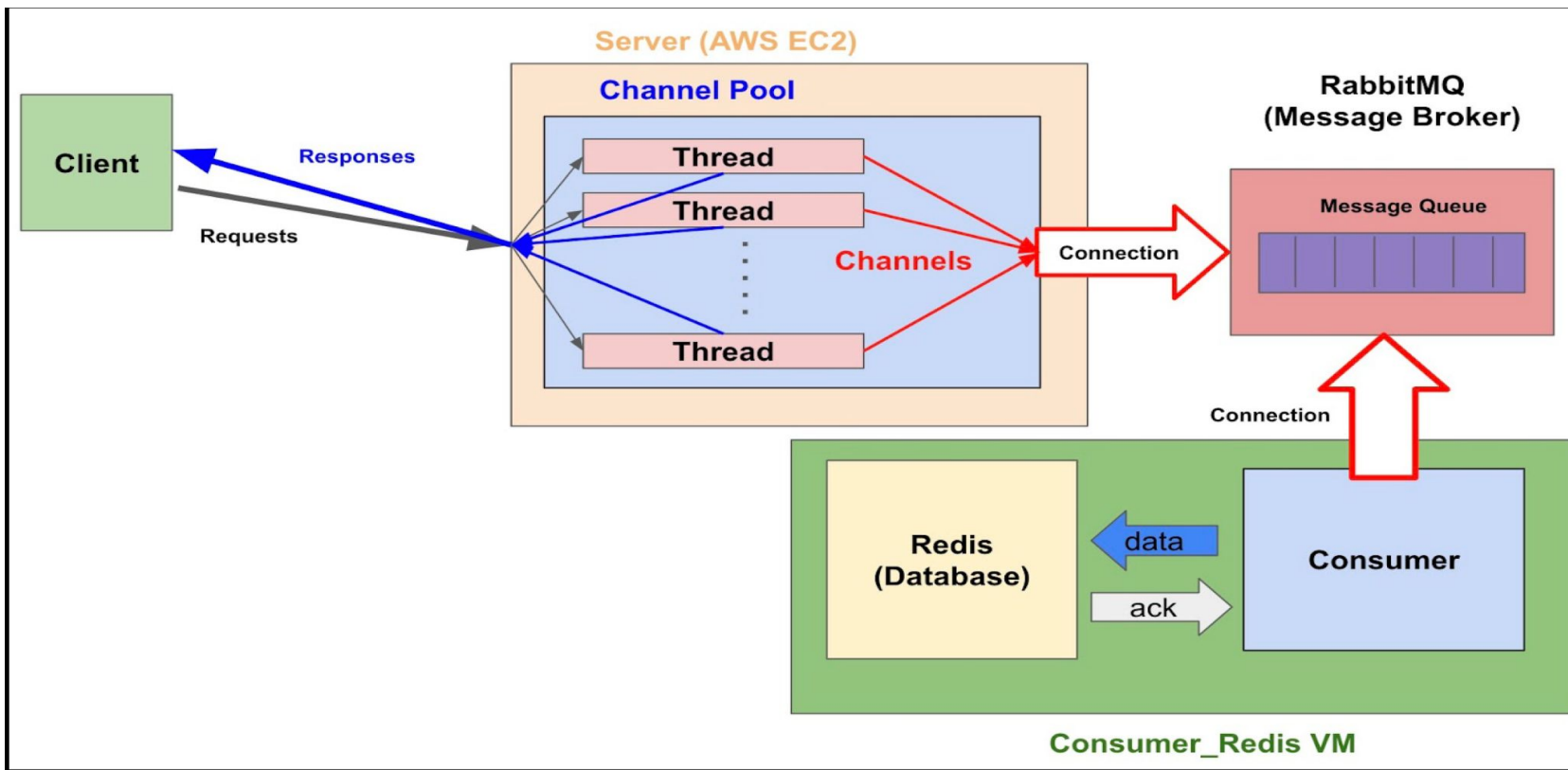
Architecture & Data Layer
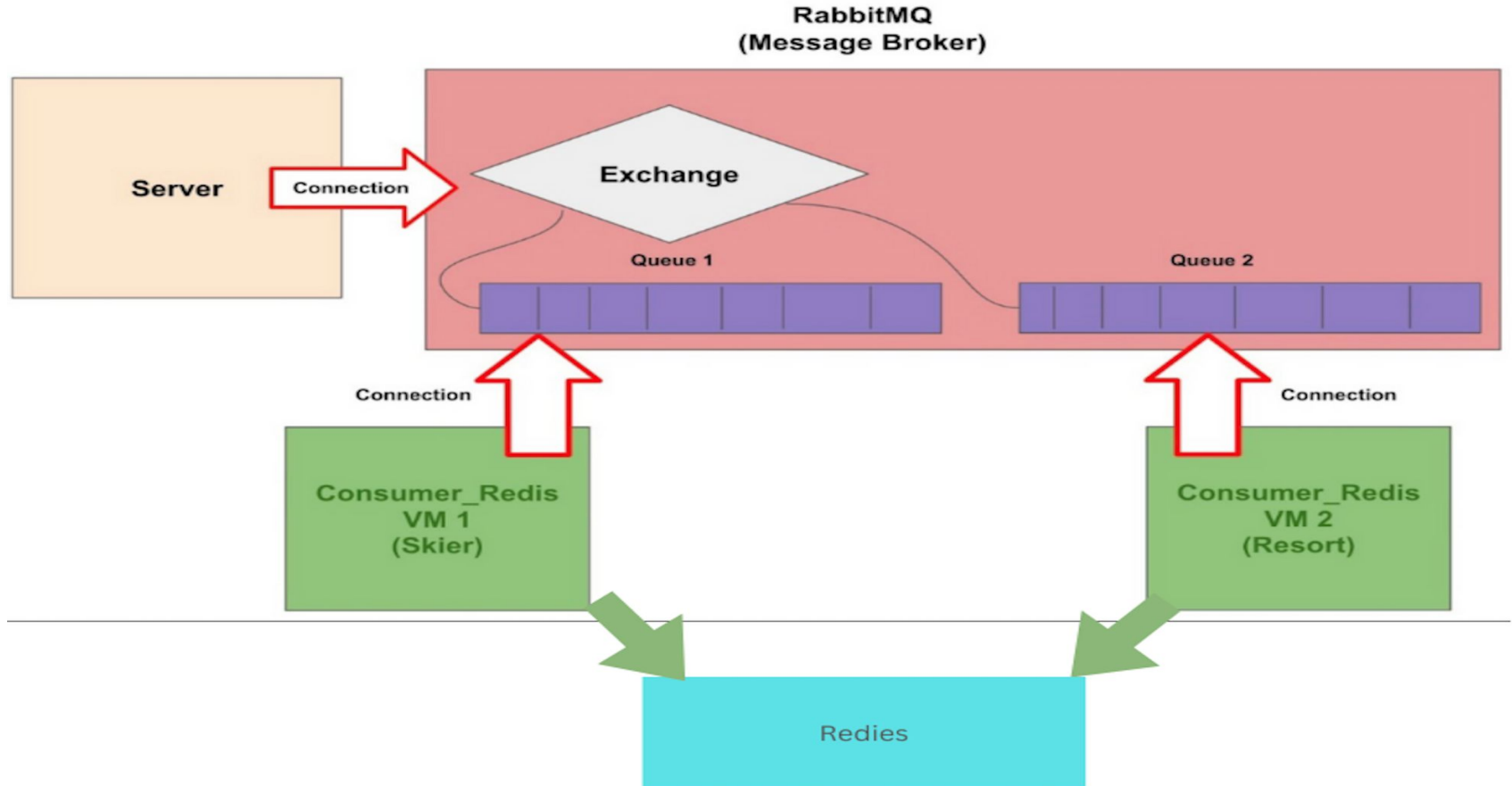
Architecture

Data Layer

Deployment and Data Model

Microservice Deployment

	Name ▽	Instance ID	Instance state ▽	Instance type ▽
☐	resortConsumer	i-0560bb58d799bba3f	⊘ Running ⊕ ⊖	t2.micro
☐	WebServer	i-0472eee688b0b9508	⊘ Running ⊕ ⊖	t2.micro
☐	RedisInstance	i-0dd82cb6cb5a1a56a	⊘ Running ⊕ ⊖	t2.micro
☐	MQInstance	i-024b3b9519cbfd927	⊘ Running ⊕ ⊖	t2.small
☐	SkierConsumer	i-0769ca2b191158958	⊘ Running ⊕ ⊖	t2.micro

Data Model

3 GET Requests:
- Skier Total Vertical:
  - **GET /skiers/{resortID}/seasons/{seasonID}/days/{dayID}/skiers/{skierID}**
  - get the total vertical for the skier for the specified ski day
- Skier Total Vertical Result List:
  - **GET /skiers/{skierID}/vertical**
  - get the total vertical for the skier for specified seasons at the specified resort
- Resort:
  - **GET /resorts/{resortID}/seasons/{seasonID}/day/{dayID}/skiers**
  - get number of unique skiers at resort/season/day

We used skier consumer and resort consumer to load JSON data to Redis as following structure:

(key: **resortID-seasonID-dayID-skierID** | value as string: **total vertical**)

(key: **skierID** | value as string: **seasonID, day, time, resortID, liftID, waitTime, vertical**)

(key: **resortID-seasonID-day** | value as string: **skierID, liftID, waitTime, time, vertical**)

JMeter Test Result

For each GET requests, we defined a test with a thread group with:

- 128 threads
- 50 iterations
- 10 second ramp up time

Label	# Sampl...	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Through...	Receive...	Sent KB...
HTTP R...	6400	31	31	37	43	60	14	201	0.00%	554.7/sec	104.55	106.72
TOTAL	6400	31	31	37	43	60	14	201	0.00%	554.7/sec	104.55	106.72

Text

- HTTP Request - GET: /skiers/{skierID}/vertical
- HTTP Request - GET: /skiers/{skierID}/vertical
- HTTP Request - GET: /skiers/{skierID}/vertical
- HTTP Request - GET: /skiers/{skierID}/vertical
- HTTP Request - GET: /skiers/{skierID}/vertical
- HTTP Request - GET: /skiers/{skierID}/vertical
- HTTP Request - GET: /skiers/{skierID}/vertical

Sampler result Request Response data

Response Body Response headers

Find

total vertical ->103337360

GET

```
/resorts
/{resortID}
/seasons
/{seasonID}        get number of unique skiers at
/day               resort/season/day
/{dayID}
/skiers
```

Label	# Sampl...	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Through...	Receive...	Sent KB..
HTTP R...	6400	34	32	43	51	86	16	195	0.00%	544.4/sec	101.54	114.30
TOTAL	6400	34	32	43	51	86	16	195	0.00%	544.4/sec	101.54	114.30

Text ▾

Sampler result Request **Response data**

Response Body Response headers

[   ] [Find]

HTTP Request - GET: /resorts/{resortID}/seasons/{seasonID}/day/{dayID}/skiers
HTTP Request - GET: /resorts/{resortID}/seasons/{seasonID}/day/{dayID}/skiers
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HTTP Request - GET: /resorts/{resortID}/seasons/{seasonID}/day/{dayID}/skiers

number of unique ->17551

GET /skiers
/{resortID}
/seasons
/{seasonID}/days
/{dayID}/skiers
/{skierID}

get ski day vertical for a skier

Label	# Sampl...	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Through...	Receive...	Sent KB...
HTTP R...	6400	31	31	38	44	59	15	192	0.00%	557.8/sec	105.14	107.32
TOTAL	6400	31	31	38	44	59	15	192	0.00%	557.8/sec	105.14	107.32

Text

HTTP Request - GET: /skiers/{resortID}/seasons/{seasonID}/days/{dayID}/skiers/{skierID}
HTTP Request - GET: /skiers/{resortID}/seasons/{seasonID}/days/{dayID}/skiers/{skierID}
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HTTP Request - GET: /skiers/{resortID}/seasons/{seasonID}/days/{dayID}/skiers/{skierID}

Sampler result   Request   Response data

Response Body   Response headers

speical vertical ->2952000

Improvement
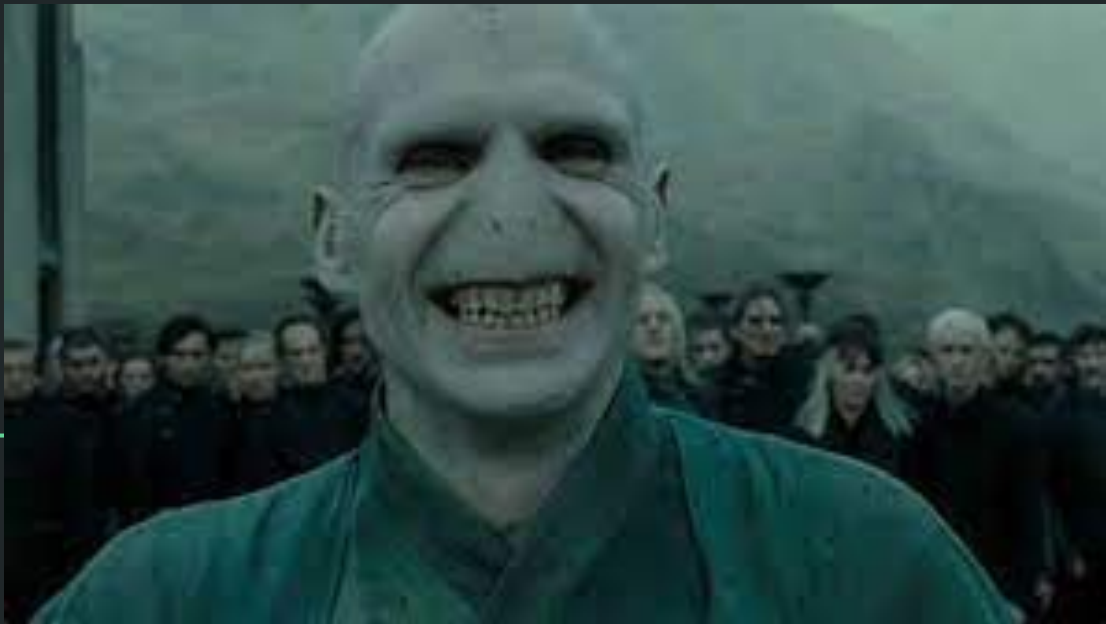
1 Use load balancer to increase the capacity of our servlets and RMQ

2 Deploy more costly instances to increase the capacity

Thank you!