

Unit 4

15MQ

Que 1. What is the role of THINGS manager?

- Ans.
1. Group management: Find the devices to form a group, create it and execute.
 2. Configuration: Configuring server & client side for updating system configuration.
 4. Diagnostics: Factory reset (to restore all configurations to default) or reboot.

Que 2. what is the role of CONTROL manager?

- Ans.
1. Discover control devices.
 2. Control, control devices with Resource API.
 3. Subscribe & notify the devices.
 4. Can run as client or server.

Que 3. What is the role of PROTOCOL PLUGIN manager?

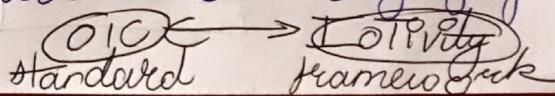
- Ans.
- Its role is to provide a mechanism to represent a non-OIC protocol in OIC framework such as MQTT.

Que 4. What is the role of SOFT SENSOR manager?

- Ans.
1. It receives all the data from sensors and queries it based on sensor's data request.

Que 5. Justify the suitability of IoTivity and OIC framework.

- Ans.
- OIC (Open Interconnect Consortium) defines standards for connecting devices.
 → It ensures interoperability of billions of IoT devices
 → IoTivity is a open source framework based on OIC standards.
 → It ensures seamless device-to-device connectivity to address the emerging field of IoT.



Que 6. Describe the below behaviour of resource model.



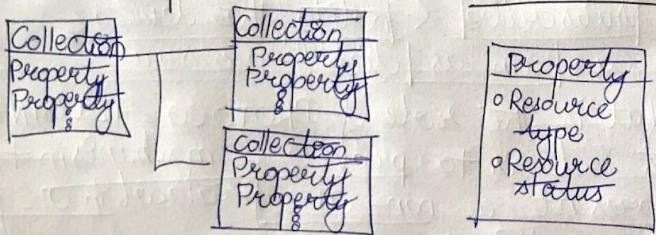
Explain

Ans. The above diagram shows the behaviour of resource model.

→ This model shows → Finding a resource.

→ Querying, finding and setting a resource state

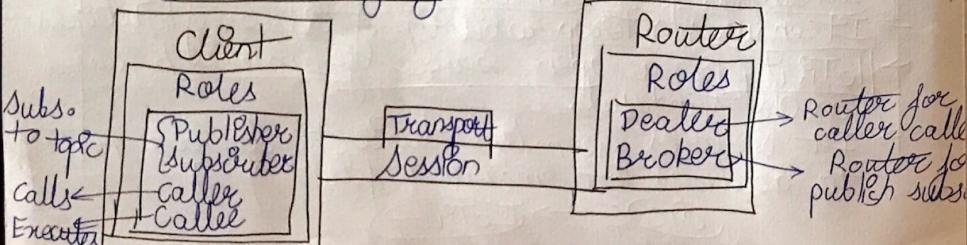
→ This is of a garage door opener.
It can open the door between on light.



Que 7. Describe the features of WAMP protocol.

Ans. Web application messaging protocol (WAMP) is a subprotocol of Web socket which provides publish-subscribe model with remote procedure calls.

→ It allows distributed components to communicate with messaging.

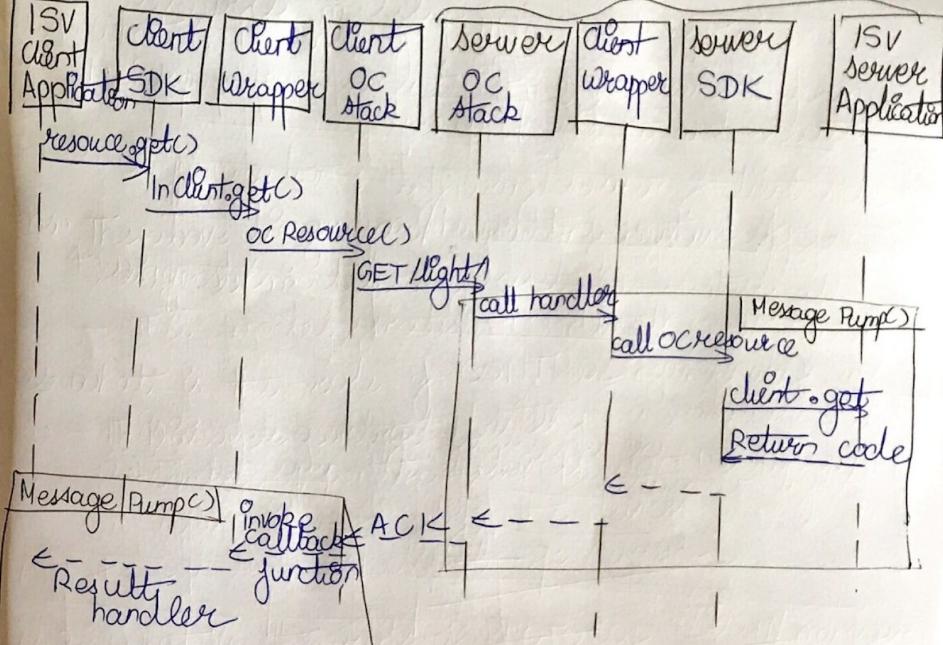


Querying & setting Resource State

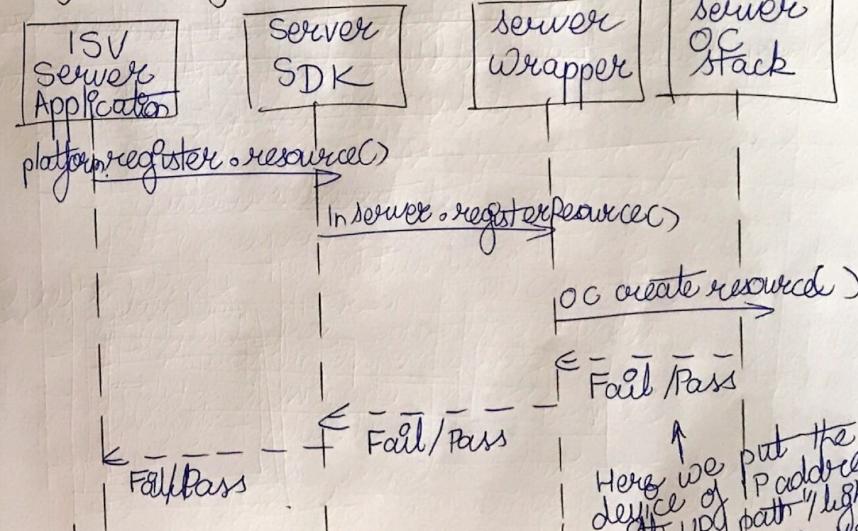
GET

PUT

remember 4



Registering a Resource



Unit-5

15 MQ

Amazon Web Services

1. Amazon RDS: Relational Database Service
- Instance of MySQL, Oracle, Microsoft SQL.
 - Setup, operate & scale a relational database on cloud.
2. Amazon SQS: Simple Queue Service
- Used in application coordination services communicate asynchronously.
 - Queue for storing messages.
 - Translates between apps.
 - Arrive in same order as they were put in queue.
3. Amazon S3: S3 bucket.
- It stores raw objects.
 - Online cloud based data storage infrastructure.
 - Large data, high reliability, scalable, fast raw data storage.
4. Amazon EC2: Elastic cloud compute.
- Infrastructure as a service (IaaS)
 - In the form of virtual machines
5. Amazon AutoScaling: scale EC2 instances
- It is used to scale EC2 instances ↑ or ↓ during spikes.
 - So that workload to meet application performance.

EC2

10MQ

```
import boto.ec2
```

```
from time import sleep
```

```
ACCESS_KEY = "Enter access key"
```

```
SECRET_KEY = "Enter secret key"
```

```
REGION = "India"
```

```
AMI_ID = "some id"
```

```
EC2_KEY_HANDLE = "Enter key handle"
```

```
INSTANCE_TYPE = "t1.micro"
```

```
SEC_GROUP_HANDLE = "default"
```

```
print "connecting to EC2"
```

```
conn = boto.ec2.connect_to_region(REGION,
```

```
aws_access_key = ACCESS_KEY,
```

```
aws_secret_key = SECRET_KEY),
```

```
print "launching instance"
```

```
reservation = conn.run_instances(Image_id = AMI_ID)
```

```
key_name = EC2_KEY_HANDLE
```

```
instance_type = INSTANCE_TYPE
```

```
instance = reservation.instances[0]
```

```
security_groups = SEC_GROUP_HANDLE
```

```
print "waiting to run"
```

```
status = instance.update()
```

```
while status = 'pending':
```

```
sleep(10)
```

```
status = instance.update()
```

```
if status = 'running':
```

```
print "instance is now running":
```