HA testing in Yardstick

Kubi  jean.gaoliang@huawei.com
Rex   limingjiang@huawei.com
Outline

• HA in OPNFV
• Ha testing method
• Yardstick HA testing Framework
  • Orchestrating scenarios
• HA Test cases in yardstick Euphrates
  • TC025 – example of bare metal down
  • TC045 – example of killing neutron-server
  • TC056 – example of Message Queue failure
HA in OPNFV

- **Hypervisor HA**
- **VM HA**
- **Hardware HA**
- **VIM HA**
HA testing method

- HA testing in yardstick uses attackers like process killer to inject fault into the SUT, monitor the specified KPI and check the status, finally get a report about the result of the High Availability.
Yardstick HA testing framework

• Scenarios can be orchestrated
• automatically restore the SUT
• Attackers and monitors can be reused
Orchestrating scenarios

fault injection

monitor and check

define operations

organize steps

```
# Test case for TC052 :OpenStack Controller Node Disk I/O Block
# This test case is written by new scenario-based HA testing

schema: "yardstick:task:0.1"
scenarios:

  type: "GeneralHA"
  options:
    attackers:
    monitors:
    operations:
    resultCheckers:
    steps:

  nodes:
    node1: node1.LF
  runner:
    type: Duration
duration: 1
sla:
  outage_time: 5
  action: monitor

context:
  type: Node
  name: LF
  file: etc/yardstick/nodes/fuel_virtual/pod.yaml
```

```
attackers:
  -
    fault_type: "general-attacker"
    host: node1
    key: "Block-10"
    attack_key: "block-10"

monitors:
  -
    monitor_type: "openstack-cmd"
    key: "nova-flavor-list"
    command_name: "nova flavor-list"
    monitor_time: 10
    sla:
      max_outage_time: 5

operations:
  -
    operation_type: "general-operation"
    key: "create-flavor"
    operation_key: "nova-create-flavor"
    host: node1
    action_parameter:
      flavorconfig: "test-001 test-001 100 1 1"
      rollback_parameter:
        flavorid: "test-001"

resultCheckers:
  -
    checker_type: "general-result-checker"
    key: "check-flavor"
    host: node1
    checker_key: "nova-flavor-checker"
    expectedValue: "test-001"
    condition: "in"
```
HA Test cases in yardstick Euphrates

15 Test Cases in Yardstick Euphrates

• VIM Component HA
  • TC019(Nova)  TC045(Neutron)  TC046(Keystone)  TC047(Glance)  TC048(Cinder)
  • TC049(Swift)  TC053(HAProxy)

• Different Types of Component Failure
  • TC025(Baremetal Down)  TC050(Network)
  • TC051(CPU Overload)  TC052(I/O Block)

• VIM Resources
  • TC054(Virtual IP Master Node)
  • TC056(Messaging Queue Service)
  • TC057(Cluster Management)
  • TC058(Virtual Router)
TC025 – Controller node HA

Requires Openstack controller HA deployed, use IPMI to shutdown any controller node

- Attacker
  - IPMI power off
- Monitor
  - Openstack command
- Checker
  - CLI outage time
TC045 – Neutron server ha

Requires Openstack controller HA deployed, use IPMI to shutdown any controller node

• Attacker
  • kill process on 1 node

• Monitor
  • Openstack command
  • process recovery

• Checker
  • CLI outage time
  • process recovery time
TC056 - OpenStack Controller Messaging Queue Service High Availability

• Checker:
  • The outage time of RabbitMQ related services.
  • The recovery time of the attacked process