RoX Evaluation (2): SecondNet

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1. Experiment Setup
   1. Topology



* 1. End Host Network configurations

|  |  |  |  |
| --- | --- | --- | --- |
| Machine (VM) | IP address | Subnet | Iface |
| M1 | 192.168.11.1 | 192.168.11.0/24 | eth1 |
| M2 | 192.168.12.1 | 192.168.12.0/24 | eth1 |
| M3 | 192.168.13.1 | 192.168.13.0/24 | eth1 |
| M4 | 192.168.14.1 | 192.168.14.0/24 | eth1 |
| M5 | 192.168.15.1 | 192.168.15.0/24 | eth1 |
| M6 | 192.168.16.1 | 192.168.16.0/24 | eth1 |

Apart from IP and subnet configurations, we also need to add some extra route entries. For example, for M1, we need to add:

|  |  |  |  |
| --- | --- | --- | --- |
| Destination | Gateway | Genmask | Iface |
| 192.168.12.0 | 192.168.11.254 | 255.255.255.0 | eth1 |
| 192.168.13.0 | 192.168.11.254 | 255.255.255.0 | eth1 |
| 192.168.14.0 | 192.168.11.254 | 255.255.255.0 | eth1 |
| 192.168.15.0 | 192.168.11.254 | 255.255.255.0 | eth1 |
| 192.168.16.0 | 192.168.11.254 | 255.255.255.0 | eth1 |

* 1. Paths

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Src | Dst | Path | IP |
| 1 | M1 | M2 | M1,T1,M2 | 192.168.12.2 |
| 2 | M2 | M1 | M2,T1,M1 | 192.168.11.2 |
| 3 | M2 | M3 | M2,T1,A2,T2,M3 | 192.168.13.2 |
| 4 | M3 | M2 | M3,T2,A2,T1,M2 | 192.168.12.3 |
| 5 | M3 | M4 | M3,T2,M4 | 192.168.14.2 |
| 6 | M4 | M3 | M4,T2,M3 | 192.168.13.3 |
| 7 | M4 | M5 | M4,T2,M5 | 192.168.15.2 |
| 8 | M5 | M4 | M5,T2,M4 | 192.168.14.3 |
| 9 | M5 | M6 | M5,T2,A3,T3,M6 | 192.168.16.2 |
| 10 | M6 | M5 | M6,T3,A3,T2,M5 | 192.168.15.3 |
| 11 | M6 | M1 | M6,T3,A1,T1,M1 | 192.168.11.3 |
| 12 | M1 | M6 | M1,T1,A1,T3,M6 | 192.168.16.3 |
| 13 | M3 | M6 | M3,T2,A2,T3,M6 | 192.168.16.4 |
| 14 | M6 | M3 | M6,T3,A2,T2,M3 | 192.168.13.4 |

* 1. End Host RoX Configurations

|  |  |  |
| --- | --- | --- |
| Machine (VM) | IP address | Path |
| M1 | 192.168.11.1 | 192.168.11.2 |
|  |  | 192.168.11.3 |
| M2 | 192.168.12.1 | 192.168.12.2 |
|  |  | 192.168.12.3 |
| M3 | 192.168.13.1 | 192.168.13.2 |
|  |  | 192.168.13.3 |
|  |  | 192.168.13.4 |
| M4 | 192.168.14.1 | 192.168.14.2 |
|  |  | 192.168.14.3 |
| M5 | 192.168.15.1 | 192.168.15.2 |
|  |  | 192.168.15.3 |
| M6 | 192.168.16.1 | 192.168.16.2 |
|  |  | 192.168.16.3 |
|  |  | 192.168.16.4 |

1.5 Switch Configurations



1. ToR 1

Basic Configurations

|  |  |  |
| --- | --- | --- |
| Interface | Connection | Network Address |
| ge-1/1/1 | M1’s eth1 | 192.168.11.254/24 |
| ge-1/1/2 | M2’s eth1 | 192.168.12.254/24 |
| ge-1/1/3 | A1’s ge-1/1/1 | 192.168.17.1/24 |
| ge-1/1/4 | A2’s ge-1/1/1 | 192.168.18.1/24 |
| ge-1/1/5 | A3’s ge-1/1/1 | 192.168.19.1/24 |

Path Configurations (Add extra static routing)

|  |  |  |  |
| --- | --- | --- | --- |
| Path ID | Destination | Interface | Next Hop |
| **3** | **192.168.13.2/32** | **ge-1/1/4** | **192.168.18.2** |
| **12** | **192.168.16.3/32** | **ge-1/1/3** | **192.168.17.2** |

1. ToR 2

Basic Configurations

|  |  |  |
| --- | --- | --- |
| Interface | Connection | Network Address |
| ge-1/1/1 | M3’s eth1 | 192.168.13.254/24 |
| ge-1/1/2 | M4’s eth1 | 192.168.14.254/24 |
| ge-1/1/3 | M5’s eth1 | 192.168.15.254/24 |
| ge-1/1/4 | A1’s ge-1/1/2 | 192.168.20.1/24 |
| ge-1/1/5 | A2’s ge-1/1/2 | 192.168.21.1/24 |
| ge-1/1/6 | A3’s ge-1/1/2 | 192.168.22.1/24 |

Path Configurations (Add extra static routing)

|  |  |  |  |
| --- | --- | --- | --- |
| Path ID | Destination | Interface | Next Hop |
| **4** | **192.168.12.3/32** | **ge-1/1/5** | **192.168.21.2** |
| **9** | **192.168.16.2/32** | **ge-1/1/6** | **192.168.22.2** |
| **13** | **192.168.16.4/32** | **ge-1/1/5** | **192.168.21.2** |

1. ToR 3

Basic Configurations

|  |  |  |
| --- | --- | --- |
| Interface | Connection | Network Address |
| ge-1/1/1 | M6’s eth1 | 192.168.16.254/24 |
| ge-1/1/2 | A1’s ge-1/1/3 | 192.168.23.1/24 |
| ge-1/1/3 | A2’s ge-1/1/3 | 192.168.24.1/24 |
| ge-1/1/4 | A3’s ge-1/1/3 | 192.168.25.1/24 |

Path Configurations (Add extra static routing)

|  |  |  |  |
| --- | --- | --- | --- |
| Path ID | Destination | Interface | Next Hop |
| **10** | **192.168.15.3** | **ge-1/1/4** | **192.168.25.2** |
| **11** | **192.168.11.3** | **ge-1/1/2** | **192.168.23.2** |
| **14** | **192.168.13.4** | **ge-1/1/3** | **192.168.24.2** |

1. Aggr 1

Basic Configurations

|  |  |  |
| --- | --- | --- |
| Interface | Connection | Network Address |
| ge-1/1/1 | T1’s ge-1/1/3 | 192.168.17.2/24 |
| ge-1/1/2 | T2’s ge-1/1/4 | 192.168.20.2/24 |
| ge-1/1/3 | T3’s ge-1/1/2 | 192.168.23.2/24 |

Path Configurations (Add extra static routing)

|  |  |  |  |
| --- | --- | --- | --- |
| Path ID | Destination | Interface | Next Hop |
| **11** | **192.168.11.3** | **ge-1/1/1** | **192.168.17.1** |
| **12** | **192.168.16.3** | **ge-1/1/3** | **192.168.23.1** |

1. Aggr 2

Basic Configurations

|  |  |  |
| --- | --- | --- |
| Interface | Connection | Network Address |
| ge-1/1/1 | T1’s ge-1/1/4 | 192.168.18.2/24 |
| ge-1/1/2 | T2’s ge-1/1/5 | 192.168.21.2/24 |
| ge-1/1/3 | T3’s ge-1/1/3 | 192.168.24.2/24 |

Path Configurations (Add extra static routing)

|  |  |  |  |
| --- | --- | --- | --- |
| Path ID | Destination | Interface | Next Hop |
| **3** | **192.168.13.2** | **ge-1/1/2** | **192.168.21.1** |
| **4** | **192.168.12.3** | **ge-1/1/1** | **192.168.18.1** |
| **13** | **192.168.16.4** | **ge-1/1/3** | **192.168.24.1** |
| **14** | **192.168.13.4** | **ge-1/1/2** | **192.168.21.1** |

1. Aggr 3

Basic Configurations

|  |  |  |
| --- | --- | --- |
| Interface | Connection | Network Address |
| ge-1/1/1 | T1’s ge-1/1/5 | 192.168.19.2/24 |
| ge-1/1/2 | T2’s ge-1/1/6 | 192.168.22.2/24 |
| ge-1/1/3 | T3’s ge-1/1/4 | 192.168.25.2/24 |

Path Configurations (Add extra static routing)

|  |  |  |  |
| --- | --- | --- | --- |
| Path ID | Destination | Interface | Next Hop |
| **9** | **192.168.16.2** | **ge-1/1/3** | **192.168.25.1** |
| **10** | **192.168.15.3** | **ge-1/1/2** | **192.168.22.1** |

1. Job
2. Measurement