

CSEE4119 Project 2 Preliminary Stage Report

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Task - Establish cross-AS link to AS100

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1.Marvellous_lkenstein-DE 2.4119-Project2 3.4119-Project2:2 x
ssh 4119-project2:2049
[21:26:36] 1 Linux g49-proxy 5.15.0-1021-gcp #28~20.04.1-Ubuntu SMP Mon Oct 17 11:37:54 UTC 2022 x86_64
[21:26:36] 2 +-----+
[21:26:36] 3 |
[21:26:36] 4 |   Columbia CSEE 4119 Fall 2022 - Routing Project
[21:26:36] 5 |   Build your mini-Internet!
[21:26:36] 6 |
[21:26:36] 7 |
[21:26:36] 8 |   You can modify this welcoming message by
[21:26:36] 9 |   modifying the file welcoming_message.txt
[21:26:36] 10 |   in the config directory
[21:26:36] 11 |
[21:26:36] 12 |   From here, you can access your virtual devices
[21:26:36] 13 |   with the goto.sh script. For instance:
[21:26:36] 14 |
[21:26:36] 15 |   ./goto.sh MIAM router
[21:26:36] 16 |
[21:26:36] 17 | +-----+
[21:26:36] 18 Last login: Sun Nov 20 02:26:21 2022 from 157.0.0.59
[21:26:39] 19 root@g49-proxy:~# ./goto.sh PARI router
[21:26:39] 20
[21:26:39] 21 Hello, this is FRRouting (version 7.5).
[21:26:39] 22 Copyright 1996-2005 Kunihiro Ishiguro, et al.
[21:26:39] 23
[21:26:42] 24 PARI_router# ping 180.0.49.2
[21:26:42] 25 PING 180.0.49.2 (180.0.49.2) 56(84) bytes of data.
[21:26:42] 26 64 bytes from 180.0.49.2: icmp_seq=1 ttl=64 time=2.58 ms
[21:26:43] 27 64 bytes from 180.0.49.2: icmp_seq=2 ttl=64 time=2.15 ms
[21:26:44] 28 64 bytes from 180.0.49.2: icmp_seq=3 ttl=64 time=2.14 ms
[21:26:45] 29 64 bytes from 180.0.49.2: icmp_seq=4 ttl=64 time=2.14 ms
[21:26:46] 30 64 bytes from 180.0.49.2: icmp_seq=5 ttl=64 time=2.21 ms
[21:26:47] 31 64 bytes from 180.0.49.2: icmp_seq=6 ttl=64 time=2.10 ms
[21:26:48] 32 64 bytes from 180.0.49.2: icmp_seq=7 ttl=64 time=2.12 ms
[21:26:49] 33 64 bytes from 180.0.49.2: icmp_seq=8 ttl=64 time=2.21 ms
[21:26:50] 34 64 bytes from 180.0.49.2: icmp_seq=9 ttl=64 time=2.17 ms
[21:26:51] 35 ^C
[21:26:51] 36 --- 180.0.49.2 ping statistics ---
[21:26:51] 37 9 packets transmitted, 9 received, 0% packet loss, time 8009ms
[21:26:51] 38 rtt min/avg/max/mdev = 2.101/2.206/2.581/0.137 ms
[21:26:51] 39 PARI_router#
```

Task - Configure eBGP sessions with AS100

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1.Marvellous_lkenstein-DE  2.4119-Project2  3.4119-Project2:2  x
ssh 4119-project2:2049
[21:35:47] 1 Linux g49-proxy 5.15.0-1021-gcp #28~20.04.1-Ubuntu SMP Mon Oct 17 11:37:54 UTC 2022 x86_64
[21:35:47] 2 +-----+
[21:35:47] 3 |
[21:35:47] 4 |   Columbia CSEE 4119 Fall 2022 - Routing Project
[21:35:47] 5 |   Build your mini-Internet!
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[21:35:47] 14 |   ./goto.sh MIAM router
[21:35:47] 15 |
[21:35:47] 16 | +-----+
[21:35:47] 17 |
[21:35:47] 18 Last login: Sun Nov 20 02:35:39 2022 from 157.0.0.59
[21:35:48] 19 root@g49-proxy:~# ./goto.sh PARI router
[21:35:48] 20
[21:35:48] 21 Hello, this is FRRouting (version 7.5).
[21:35:48] 22 Copyright 1996-2005 Kunihiro Ishiguro, et al.
[21:35:48] 23
[21:35:49] 24 PARI_router# show ip bgp summary
[21:35:49] 25
[21:35:49] 26 IPv4 Unicast Summary:
[21:35:49] 27 BGP router identifier 100.0.49.1, local AS number 49 vrf-id 0
[21:35:49] 28 BGP table version 2
[21:35:49] 29 RIB entries 3, using 576 bytes of memory
[21:35:49] 30 Peers 1, using 21 KiB of memory
[21:35:49] 31
[21:35:49] 32 Neighbor      V      AS  MsgRcvd  MsgSent  TblVer  InQ  OutQ  Up/Down  State/PfxRcd  PfxSnt
[21:35:49] 33 100.0.49.2    4      100      14       15       0    0    0 00:10:38      1           2
[21:35:49] 34
[21:35:49] 35 Total number of neighbors 1
[21:35:49] 36 PARI_router#

```

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1. Marvellous...kenstein-DE  2. 4119-Project2  3. 4119-Project2:3  x
ssh 4119-project2:2049
[21:28:16] 1 Linux g49-proxy 5.15.0-1021-gcp #28~20.04.1-Ubuntu SMP Mon Oct 17 11:37:54 UTC 2022 x86_64
[21:28:16] 2 +-----+
[21:28:16] 3 |
[21:28:16] 4 |   Columbia CSEE 4119 Fall 2022 - Routing Project
[21:28:16] 5 |   Build your mini-Internet!
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[21:28:16] 18 | Last login: Sun Nov 20 02:26:36 2022 from 157.0.0.59
[21:28:18] 19 root@g49-proxy:~# ./goto.sh PARI router
[21:28:18] 20
[21:28:18] 21 Hello, this is FRRouting (version 7.5).
[21:28:18] 22 Copyright 1996-2005 Kunihiro Ishiguro, et al.
[21:28:18] 23
[21:28:19] 24 PARI_router# show ip route bgp
[21:28:19] 25 Codes: K - kernel route, C - connected, S - static, R - RIP,
[21:28:19] 26 O - OSPF, I - IS-IS, B - BGP, E - EIGRP, N - NHRP,
[21:28:19] 27 T - Table, v - VNC, V - VNC-Direct, A - Babel, D - SHARP,
[21:28:19] 28 F - PBR, f - OpenFabric,
[21:28:19] 29 > - selected route, * - FIB route, q - queued, r - rejected, b - backup
[21:28:19] 30
[21:28:19] 31 B>* 100.0.0.0/8 [20/0] via 100.0.49.2, ext_100_LOND, weight 1, 00:03:02
[21:28:19] 32 PARI_router#

```

1. Build applications that span multiple computers and use Internet to communicate.
 2. Common Internet applications work (web, video, DNS).
 3. 4th layer: HTTP.
 4. To deliver message across Internet, including:
 5. 5.1. Building communication between computers.

02:28 31.8%

