COL334 Evaluation A4

Aniruddha Deb
2020CS10869

A) The routing tables for the nodes are as follows:

```
Node: A, Time: +29.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.5.0    10.0.1.2    255.255.255.0   UGS   2       -     -   2
10.0.6.0    10.0.1.2    255.255.255.0   UGS   3       -     -   2
10.0.4.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
10.0.3.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
10.0.0.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: B, Time: +29.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.5.2    255.255.255.0   UGS   2       -     -   3
10.0.4.0    10.0.3.2    255.255.255.0   UGS   2       -     -   2
10.0.2.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.5.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: C, Time: +29.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.3.1    255.255.255.0   UGS   3       -     -   2
10.0.5.0    10.0.3.1    255.255.255.0   UGS   2       -     -   2
10.0.1.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.4.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: D, Time: +29.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.3.0    10.0.5.1    255.255.255.0   UGS   2       -     -   2
```

```
10.0.2.0    10.0.5.1    255.255.255.0   UGS   3       -     -   2
10.0.0.0    10.0.5.1    255.255.255.0   UGS   3       -     -   2
10.0.1.0    10.0.5.1    255.255.255.0   UGS   2       -     -   2
10.0.4.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.5.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.6.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: A, Time: +79.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.4.0    10.0.1.2    255.255.255.0   UGS   16      -     -   2
10.0.3.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
10.0.0.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: B, Time: +79.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.1.1    255.255.255.0   UGS   16      -     -   1
10.0.4.0    10.0.1.1    255.255.255.0   UGS   16      -     -   1
10.0.2.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.5.0    10.0.1.1    255.255.255.0   UGS   16      -     -   1

Node: C, Time: +79.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.1.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.4.0    10.0.2.1    255.255.255.0   UGS   16      -     -   1

Node: D, Time: +79.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: A, Time: +149.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.2.2    255.255.255.0   UGS   12      -     -   3
10.0.4.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
10.0.3.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
```

```
10.0.0.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: B, Time: +149.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.3.2    255.255.255.0   UGS   12      -     -   2
10.0.4.0    10.0.3.2    255.255.255.0   UGS   2       -     -   2
10.0.2.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.5.0    10.0.1.1    255.255.255.0   UGS   16      -     -   1

Node: C, Time: +149.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.4.2    255.255.255.0   UGS   11      -     -   3
10.0.1.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.4.0    10.0.2.1    255.255.255.0   UGS   16      -     -   1
10.0.4.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: D, Time: +149.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.3.0    10.0.4.1    255.255.255.0   UGS   11      -     -   1
10.0.2.0    10.0.4.1    255.255.255.0   UGS   11      -     -   1
10.0.0.0    10.0.4.1    255.255.255.0   UGS   12      -     -   1
10.0.1.0    10.0.4.1    255.255.255.0   UGS   12      -     -   1
10.0.5.0    10.0.4.1    255.255.255.0   UGS   16      -     -   1
10.0.6.0    0.0.0.0     255.255.255.0   U 1     -     -   3
10.0.4.0    0.0.0.0     255.255.255.0   U 1     -     -   1

Node: A, Time: +280.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.5.0    10.0.1.2    255.255.255.0   UGS   2       -     -   2
10.0.6.0    10.0.1.2    255.255.255.0   UGS   3       -     -   2
10.0.4.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
10.0.3.0    10.0.2.2    255.255.255.0   UGS   2       -     -   3
10.0.0.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   2
```

```
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: B, Time: +280.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.5.2    255.255.255.0   UGS   2       -     -   3
10.0.4.0    10.0.3.2    255.255.255.0   UGS   2       -     -   2
10.0.2.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.1.1    255.255.255.0   UGS   2       -     -   1
10.0.1.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.5.0    10.0.1.1    255.255.255.0   UGS   16      -     -   1
10.0.5.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: C, Time: +280.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.6.0    10.0.3.1    255.255.255.0   UGS   3       -     -   2
10.0.5.0    10.0.3.1    255.255.255.0   UGS   2       -     -   2
10.0.1.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.0.0    10.0.2.1    255.255.255.0   UGS   2       -     -   1
10.0.2.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.3.0    0.0.0.0     255.255.255.0   U 1     -     -   2
10.0.4.0    10.0.2.1    255.255.255.0   UGS   16      -     -   1
10.0.4.0    0.0.0.0     255.255.255.0   U 1     -     -   3

Node: D, Time: +280.0s
Destination Gateway     Genmask     Flags Metric Ref  Use Iface
10.0.3.0    10.0.5.1    255.255.255.0   UGS   2       -     -   2
10.0.2.0    10.0.5.1    255.255.255.0   UGS   3       -     -   2
10.0.0.0    10.0.5.1    255.255.255.0   UGS   3       -     -   2
10.0.1.0    10.0.5.1    255.255.255.0   UGS   2       -     -   2
10.0.5.0    10.0.4.1    255.255.255.0   UGS   12      -     -   1
10.0.6.0    0.0.0.0     255.255.255.0   U 1     -     -   3
10.0.4.0    0.0.0.0     255.255.255.0   U 1     -     -   1
10.0.5.0    0.0.0.0     255.255.255.0   U 1     -     -   2
```

B) At t=29 s, all the tables have converged and all the links are stable. Once the B-D and B-D links are detatched, the network becomes disconnected, and D is not reachable from A, B or C. This can be seen in the tables at t=79 s, where D's gateway has changed in B and C.

At t=149 s, we see that D is reachable from A, B and C via the B-D link which was reconstructed: C routes it's packets for D through B, as does A. At t=280 s, all the router

tables have converged as they had at t=49 seconds, as all the broken links are back up again.

The command to run the program is `./waf --run 2020CS10869_partb` (after putting the file in the scratch directory)