**Networking 1B - US Project - Hawaii Cluster**

**Part I. Build the Hawaii Topology**

* You will start by building the following topology off the Phoenix backbone router.
* The Phoenix router will connect to the Hawaii router.
* You will most likely have to add serial interfaces to the Hawaii and Oahu routers.(Physical Tab)
* Cluster the topology once it is fully built. (Highlight everything, New Cluster). Name it Hawaii.



**Part II. IP Scheme**

The Hawaii cluster has the following LANs. It uses the following IP Scheme: 103.X.64.0 /19

* East Hawaii - 1500 hosts
* West Hawaii - 1200 hosts
* Oahu - 300 hosts
* Maui - 450 hosts
* Kauai - 200 hosts
* Molokai - 105 hosts
* There are also 5 WAN Links.

LAN IP Assignments

* Router gets first usable
* PCs on each LAN get 2nd, 3rd and 4th usable.
* Switches get last usable IP address from each LAN.

**Part III. Routing within Hawaii**

* Set up RIP v2. You should only need 1 network statement on each router. Easy peasy.
* Hawaii is the border router and should create a default route (towards Phoenix).
* Hawaii should use RIP to distribute the default router via the *Default-Information Originate* command.

**Part IV. Housekeeping and General Router Configuration Information**

* You can set the clock rate at 2 Mbps for all WAN Links
* Housekeeping should include hostname, enable secret, line vty and line console.

**Part V. Access Control Lists**

You will create six ACLs. The numbers and purpose for each is shown below:

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| **ACL#** | **Purpose** |
| 22 | * Block the Daytona beach LAN from reaching the Molokai LAN.
* Daytona should not be blocked from reaching any other LANs in Hawaii with this ACL.
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| 55 | * Block New York Cluster and Michigan Cluster from reaching the WestHawaii LAN.
* This ACL should not block those clusters from reaching the EastHawaii LAN, nor should it block any other cluster from reaching the WestHawaii LAN.
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| 105 | * O2 and K3 should be able to PING palin.com, but can't bring up the palin.com web page (port 80).
* All other hosts on the Oahu and Kauai LANs should be able to do both.
* This should be accomplished with a single ACL on a single router. (Placement is the key)
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| 134 | * K2 and K3 should be able to PING Mo2 and Mo3, but not Mo1.
* Mo2 and Mo3 should be able to ping K2 and K3, but not K1.
* K1 and Mo1 should be able to PING one another.
* Don't block anything else, but what is specified above.
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| 156 | * The Maui router should block any telnet session (port 23) that originates from outside Hawaii.
* Any telnet connection from inside Hawaii should be successful.
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| 180 | * The EastHawaii LAN should only be able to be PINGed by devices that have .254 or .253 in the last octet of their IP address. (mostly server and switches)
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