**IPv6 Design Plan**

**Objectives:**

- Solidify your understanding of IPv6 subnetting.
- Design your own IPv6 network addressing schema.

**Assignment:**

- Because of your very efficient IP allocation and subnetting guide from your time as the new Network Administrator at the new St. George Hospital, the higher-ups have seen fit to promote you immediately to manager over all of Utah’s Network Infrastructure in charge of IPv6 design and deployment. Congratulations!
- As IHC is new to the whole IPv6 game, they have no idea what IPv6 networks they should be allocating and how large for each location.
- In your new role as Head IPv6 Deployment Specialist, you have the daunting task ahead of you to figure out an efficient IPv6 plan given the block of IPv6 addresses you have been assigned.
- Your assignment is to efficiently plan what IPv6 allocations should go to which locations of the state, which networks should be allocated to which hospitals, while leaving room for growth for future hospitals in each location.

**Locations:**

- SLC County
- Utah County
- Ogden County
- Washington County
- Iron County
- Cache County
- Davis County
- Remote Hospitals

The locations above are a fixed number of locations forever, there will NEVER be another. Split your IPv6 Assignment into equal size chunks so that each Location gets its own allocation.

- Each Location will have Hospitals under it that should receive their own blocks of IPv6 IPs. (I would recommend each hospital be allocated a minimum of a /56 IPv6 block).
- Each Location will never have more than 1 LARGE, 2 MEDIUM, 6 SMALL Hospitals under its location.
- There are currently 9 Hospitals in each Location on Day 1. Each should receive their allocation out of the “Location” network you designate. Each “Location” network should probably be a /51.
- There is at least one LARGE, two MEDIUM and six SMALL hospitals in each location.
- SMALL should get a /56 allocation, MEDIUM should get a /55 allocation, LARGE should get a /54 allocation.
- You will want to build in space in between each Hospital allocation, so that each SMALL can be assigned a /55 if it needs to in the future, each MEDIUM can upgrade to a /54, and each LARGE can upgrade to a /53 as it needs to in the future.
- Plan for these to expand if they ever need to.
- Label each hospitals allocation in the format similar to “SLC County - (LARGE|MEDIUM|SMALL) Hospital #(1-9)” and so on.
- Plan for equal spacing in between each Hospital network within your Location allocation.

**Details:**

- Get your IPv6 Assigned Network from the Equipment page:
You will now need to figure out an IPv6 allocation plan for the design requirements listed above.

- Document the IPv6 plan in a text file or spreadsheet. Listing details of which full IPv6 network goes to which location, and which IPv6 networks are for each 9 hospitals under each location.

- Make sure to document which are used for “future expansion” for each Hospital, and which are UNUSED.

- Your documentation should be in hierarchical order by IPv6 address.
  - You may want to use the IPv6 Chart and IPv6 Subnetting Card for help.

**To pass off**

Upload the IPv6 Network Allocation Plan to Canvas by the due-date time listed in Canvas.