Interview Responses 1

From Josh Fiske Interview on 2/28/11

Overview

On Monday February 28th, I met with Mr. Josh Fiske in his office in Price Hall. The purpose of this meeting was to go over a variety of questions regarding his knowledge of Cisco and their products as well as getting a better understanding of the campus network. For this first interview, Josh could only meet with me for a half an hour. This was not enough time to get all of my questions answered. What we did cover was an overview of the network topology, some information on the purchasing of the hardware, and some of the questions regarding working with Cisco. The responses to all of these questions can be found below. After this first interview, due to the limited amount of time available, I have a need to schedule a second one with Josh. Once this occurs, this will be posted on the directed study web page.

Network Topology

- The network is a “wheel and spoke” design
    - Switches at network edge all meet up to a main building networking closet
    - These networking closets then connect back into the Core in the ERC
    - Most of the links to the core are a 1GB uplink. The older ones or the ones with less traffic may be 100MB.
    - Most of the 100 MB links are currently be updated to new 1GB links.
    - The switches at the end points are Cisco 2950’s or 2960’s
        - The 2950’s are the old models that require an external power supply
        - This makes them more susceptible to breaking and they take up more space.
        - The 2950s are 100MB uplinks.
        - OIT recently just purchased over 30 2960s form Cisco to replace many of the older 2950s
        - These new ones are 1GB uplink and have a built in power supply.
        - They were all purchased new and due to the large quantity of them ordered, there was a very substantial discount applied to them.
- Core is a rack with a pair of “Sup 720’s” in it

Network Monitoring

- There are several open source programs used for the network monitoring on campus.
- OIT uses snmp for the major gear

    - This program looks at the link utilization
- Cacti is used to look at the CPU usage
- Nagios is another program used to look at 550 pieces or equipment or 2500 services
    - This one does a lot of real-time monitoring to all comm gear
    - It will send alerts via e-mail or text message to OIT members when a problem occurs.

Network Maintenance

- Virtually no problems with any of the new gear.
    - New gear almost always will run continuously for 2-3 years without going down
- Servers last about 5 to 6 years before having to get replaced
    - They are virtually useless at the end of this life-span since they are out dated and the hardware is wearing out.
- Comm gear lasts about 5 to 7 years
    - Recent batch getting replaced in 6.5 years old
    - OIT knows to replace them based on the number of dropped packets seen
    - Generally, all of the gear that is the same age has the same amount of packet loss as they start to age. This means that the whole batch purchased that year will need to be replaced all at once.
- Software to measure the lost packets is called smokeping
    - This sends out a 20 pings every 5 minutes to comm gear throughout every layer of the network.
    - It then measures the latency time seen or the packets lost in the gear
    - Once the gear starts to have a 10-20% packet loss, it is time for replacement.
- Clarkson has put UPS protection on all of the switches to ensure they are protected from fluctuating power or power surges
    - This gave them 2-3 year up time
- Almost all failures seen in the hardware is due to environmental reasons
    - The fans and power supplies break or water leaks on the equipment
- The switches do not have any service plan on them, Clarkson self insures them by keeping some extra ones on campus.
- The big / expensive gear is insured through Cisco
    - Insurance program is called Smartnet.
    - It takes about 4 hours to get any part you need.
    - A cab driver from Syracuse or NYC will be given the part and paid to drive up here to drop it off.

Cisco Questions

Why Cisco?

- They are more expensive but they are the vendor of choice
- Gear is almost exclusively Cisco gear because it is good equipment and reliable
    - Due to being fully integrated with Cisco products, it makes switching off of their

products much more difficult.
    - Clarkson has been all Cisco for about 10 years
- Great Documentation
    - All of their gear has a lot of very well written documentation readily available
    - This makes it much easier to troubleshoot some of your own problems
- Widely used
    - Because the gear is so popular, it is much easier to find networking people who know how to use it and how to set it up.
    - This makes maintenance and finding help mush easier
    - Juniper and HP have a much smaller client base
- Allow you to buy used gear from a 3rd party and then put it on Cisco service plans
    - This is what makes it possible for Clarkson to have a Cisco core
    - It would have been $120,000 for a brand new core compared to the $45,000 Clarkson paid for a year old used core.
    - Clarkson could still put a service plan on this used core, allowing them to save a lot of money without the risk
    - Cisco will look up the serial number of the used equipment and will tell you before you buy it if it is able to put a service contract on it.
- Cisco's Trade-in program
    - Cisco will buy a lot of used, old, virtually worthless equipment off of you in exchange for buying new equipment through them
    - Josh said this was very nice since they would have had to throw out all of the old switches and would not have gotten any money back out of them

Complaints about Cisco

- The price
    - Cisco charges a premium for their products because they have good equipment
    - Josh wishes it was cheaper because they are the most expensive when not buying in large quantities
    - For large deals, Cisco is much more competitive
- Difficult to get a hold of the sales person sometimes
    - ASR and ASE are located out of Rochester
    - They are very busy and sometimes difficult to get a hold of for small issues that they need help with.