Cole McLain CS240W Final Project

1. Identify three local companies

a.

I. City of Eugene

ii. Listed as having between 1001 and 5000 employees

iii. Website: eugene-or.gov | Currently no listings for IT jobs

iv. I chose this company because they are one of the top employers, being the city itself. I'm uncertain about internship opportunities considering how critical the infrastructure is, so I would guess there's a low-medium likelihood of internships available.

b.

I. University of Oregon

ii. Has between 5000 and 10,000 employees

iii. Website: uoregon.edu | Has 7 listed openings in IT, the most applicable to my degree being "IT Consultant 3"

iv. I chose this company partly because they have a very large presence in the city, but also because I'm a strong supporter of higher education and would love to both contribute and/or attend the university. There is a small likelihood of internships at this company. They do advertise hiring for temp positions, however there's no mention of this being an internship opportunity.

c.

I. Partnered Solutions IT

ii. Has 1 to 50 employees

iii. Website: partneredsolutionsit.com | Has 3 positions listed: Systems Administrator, Help Desk/Paid Intern, and IT Sales Representative

iv. I chose this company because they provide services that are directly correlated with my degree program. They absolutely offer internships as shown in their job listings.

2. Elevator pitch

"Hi, my name's Cole McLain and I'm a first-year Network Operations student at Lane Community College. I have experience with Windows Server, building and troubleshooting computer networks, and Python programming. I'm very interested in entering the workforce as an IT professional and believe my skills so far

would be valuable in assisting your company with network management and IT troubleshooting tasks. Do you have any internship positions available?

3. Contact and interview with representative

I emailed a system administrator at the University of Oregon and have not received a response yet.

I have a list of questions ready if I hear back from them though:

1) How many servers does the U of O operate?

2) How many are physical vs. virtual?

3) What are the primary functions of the servers? Are they dedicated or do they have multiple roles?

4) What operating systems do the servers use?

5) How many domain controllers exist?

6) How is redundancy handled? Are there backup servers? Multiple ISPs? Multiple switches/routers?

7) How is the network monitored? What performance monitoring apps are used? How are logs collected and analyzed?

8) How is security handled, such as types of firewalls and authentication methods?

4. Proposal for new server

Below is a proposal to the fictitious Jim Banbini, CEO of AmeriSci Inc. AmeriSci is an all-American research lab currently dedicated to studying and developing better and cheaper bindings for books, with an interest in branching out into other fields such as portable dish washers and little computers that could be installed in walls for reminders about pending tasks, events, or pee breaks. But they had to start somewhere small. I was hired on at their inception as the network engineer and administrator thus I am familiar to Jim, though he doesn't hesitate to let me know he's the one in charge on semi-frequent occasions. The company began with 10 employees about 2 years ago and was simple enough to manage but has since found some success. We moved into a larger building 6 months ago and have now grown to over 100 employees making my job more complicated. We're very close to tackling the dishwasher.

Greetings Jim,

I'd like to propose the acquisition of a new DHCP server for our company. As our business has grown, we have greatly increased the number of employee computers on our network, both in-house and folks bringing in their own devices. Each new machine requires manually setting network configurations which can take up to 15 minutes to get to the device, enter settings, and verify connection. As the number of computers grows, this 15 minutes for each device grows into potentially hours per day depending on the number of new devices presented. This also needlessly increases the need for documentation and the potential for errors in configuration.

With a DHCP server, the configuration process can be automated for maximum efficiency. This will cut down on configuration time and allow an estimated hour per day for myself and others to focus on more pressing

tasks. Employees will also experience faster connection time to our network granting them the up-to-15-minutes extra mentioned previously. DHCP does not have high system requirements either, and we could make do with a mini PC costing around $200. Thus, labor costs for configuration will greatly decrease and employee productivity will increase for the relatively low investment in this server.

Installation and configuration will be handled by myself. The server would be installed in [insert location] and estimated configuration time is one hour to be fully functional. Security will be a top priority and will be handled by using secure passwords, implementing security features on the server and connected network devices, and updating the firewall to accommodate the new server.

Thanks,

Cole McLain

Network Administrator

cmclain@amerisci.net

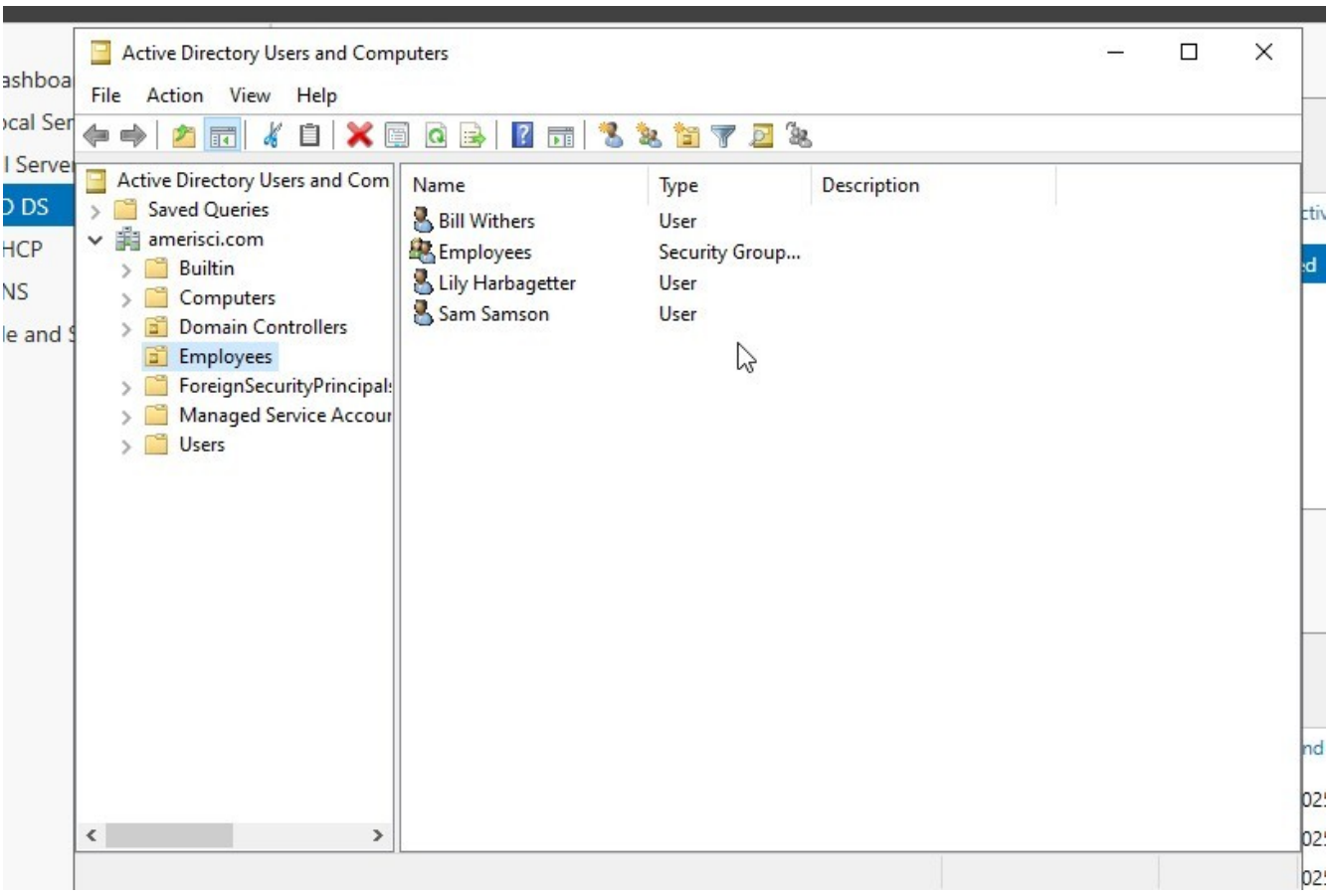
5. Server deployment/configuration

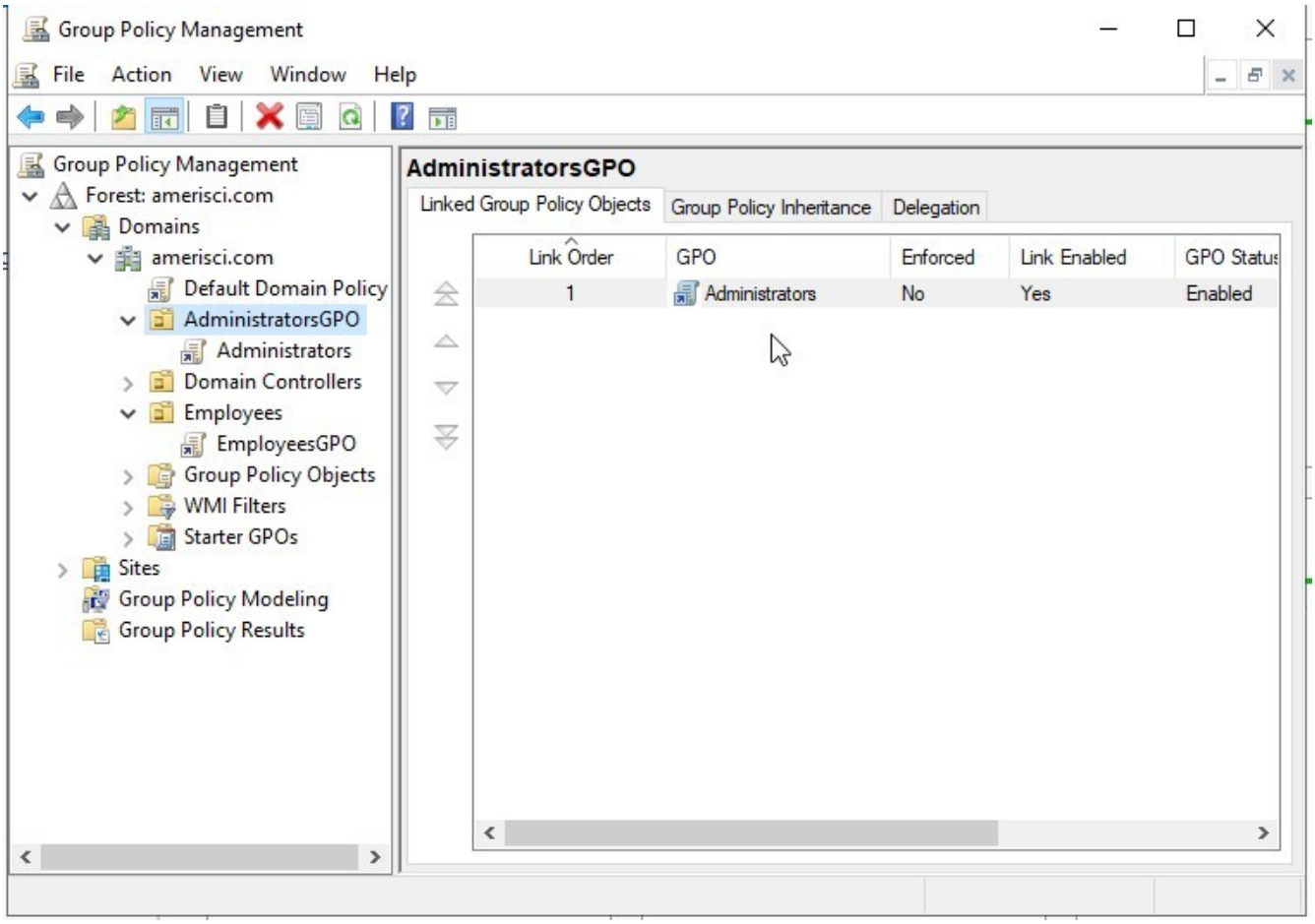
Server name: AmeriSciDHCP

Hardware: 4-core processor, 8 gb RAM, 1 Gigabit Ethernet port

Software: Windows Server 2022, DHCP role, (AD management added for ease of management in this lab)

Server is secured by Windows Firewall and GPOs limiting access to administrative tasks

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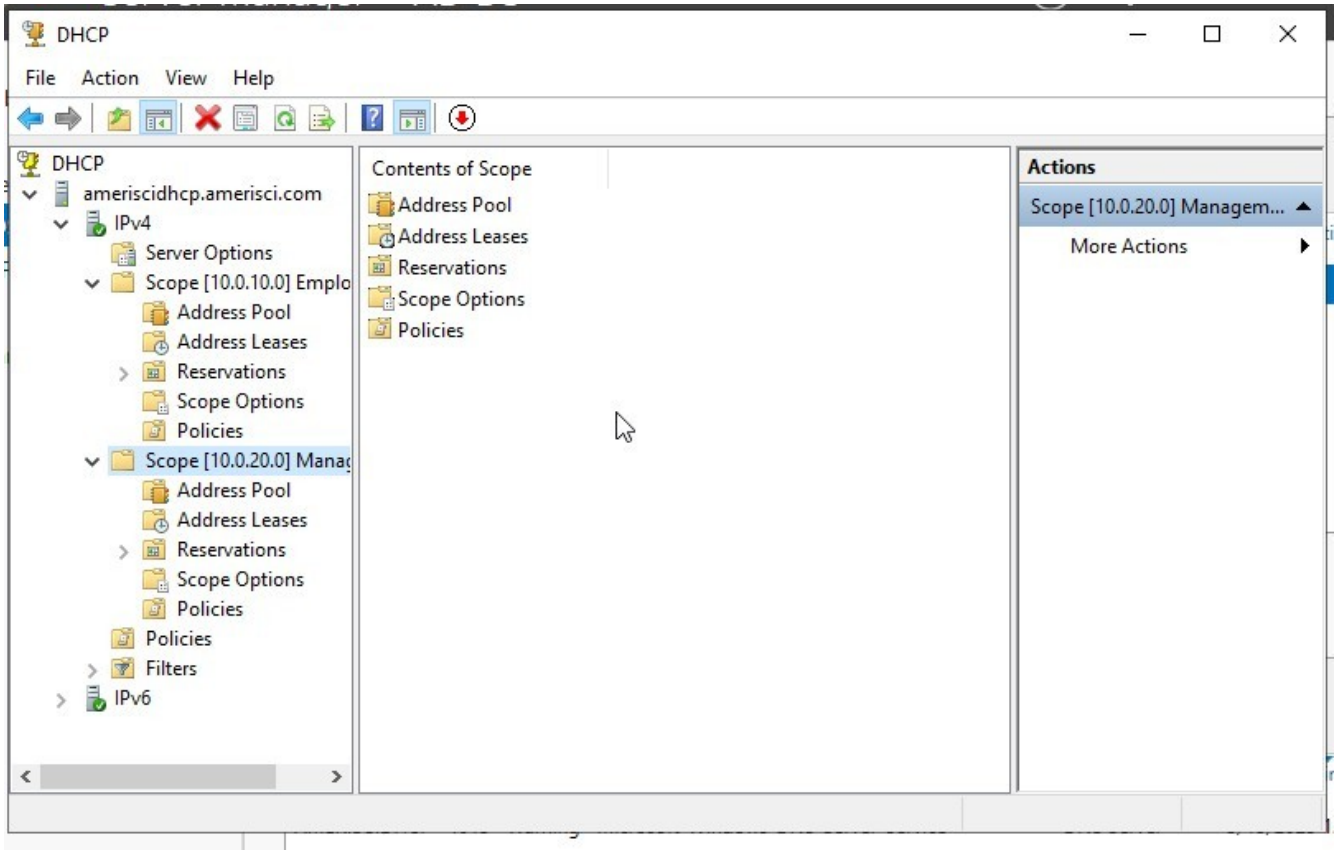
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