ICTNWK541 Assessment

Assessment Task 2: Project Portfolio

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ABC Enterprises is a growing business based in Melbourne with two branches in Sydney and Brisbane.

ABC Enterprises wants to improve its network due to old infrastructure, security and reliability WAN connectivity between Sydney Branch and Brisbane Branch.

We are the network engineer responsible for implementing the required WAN connectivity for ABC Enterprises.

- This is Sydney Branch

- This is Brisbane Branch

- I am going to use this simulation software and tools

- Network details for both branches

Both are a dual-star, high-availability, that use Ethernet connections, only in Brisbane Branch uses Coax and phone Lines connections.

Sydney is a 3-tier and Brisbane is a 2-tier network

I gonna cover these topics

I have included “WAN Configuration and Troubleshooting & Testing” together to show their results

I designed some policies that fit the project requirements.

- If the network is attacked with sniffing, this prevents the data from being seen in clear format.

- prevents unauthorised users from using computer systems

protects data travelling on the Internet

- helps prevent attacks from outside the network

- only allows authorised users access to infrastructure devices

It implements a dual-stack with a DHCP-router to avoid having dedicated servers. Redundancy is provided by LACP on the switches and HSRP (only Sydney) on the routers. Additionally, LACP provides three communication lanes to increase bandwidth. Communication between LAN networks over internet is provided by OSPF.

DHCP-Router

For simplicity I am going to only show the tests in IPv4 or Ipv6, show both it will take too long time, all the tests are in the document

- Testing local network connection over IPv6

- Connection to its WEB server

Brisbane Branch is the only one that has DSL implementation, this is the blue area and works with two modems

- Now, this is the test for local network connection over IPv4

- Now, this is the test for local network connection over Ipv4 between blue and green area

Now, those are the WAN test results

- From Sydney to Brisbane over IPv4

- From Brisbane to Sydney over IPv6

- Secure remote access by login on network devices

Implemented on routers and switches

- I have implemented a DHCP-router to avoid having dedicated servers.

I have implemented LACP to combines 3 links into a logical connection because I am also using a second switch layer 3 to redundancy on each sub-network.

I have implemented HSRP on Sydney Branch to provide local redundancy

I have implemented OSPF to have dynamic routing between both branches

Rules that I have implemented them for allowing traffic among Sydney and Brisbane Branches networks."

- I have implemented VPN with IPsec protocol to Create a secure network over the Internet between protecting data confidentiality and integrity.

My network doesn't support PPP because the WAN connections are Ethernet. PPP requires serial connections. Additionally, PPP isn't compatible with HSRP.

- So I used the reference network given in class.

I have Implemented CHAP as an automatic authentication method.

Dynamic NAT were performed on the file shared in class due to extra complexity over my network.

Also, Firewall and single-port tests were performed on the file submitted in class due to extra complexity over my network.

I have created a sheet with a brief explanation of the technologies I have used.

Mainly the information I have used has been from these web sources

END

THANKS!