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|  | **KITA RECORD VID 20 JAN KAYS, RECORDING PON SEMUA BAGI BY 20TH** |
| Yin | Assalamualaikum and hi, we are group 2 and we are going to present our mini group project. Before that, a little introduction to our group members. |
|  | **NEXT PART WE NEED TO MEET ON TEAMS KE PAPE AND RECORD SEBAB KENA TUNJUK MUKA, PART INTRO JE. MASA EXPLAIN REQ TU DY TAK KATA KENA TUNJUK MUKA SO LEH HANTAR VOICE RECORDING JE** |
| Izham | Assalamualaikum, my name is MUHAMMAD IZHAM BIN NORHAMADI, I’m from S2G1 and my matric number is (B032020039) |
| Nurul | Hi everyone, im NURUL SYAFIQAH BINTI SAFIAN my matrik num is(B032010234) and im from S1G2 |
| Syafi | Hello and Assalamualaikum, im SYAFI BIN ABD RAZAK, my matriks nums is B032010078 and im from S1G2 |
| Khai | Salam. My name is KHAIRUL RIDZWAN BIN MUHAMAD ZARIN, my matriks number is(B032010222) and im from S1G1 |
| Yin | Hi, im Nurin Farzana Binti Mujibur Rahman and my matriks num is B032010454 and im from S1G1. |
|  | **OKAY, NEXT PART SEND VOICE RECORDING JE. IMMA COMBINE AUDIO TU DGN SLIDES NNTY.** |
| Izham | For requirement 1, we need to assign all devices with IP address blocks that have been specified. We are group 8 so all x values will be replaced with an 8. So, the HQ network address is 192.168.8.128/25. The HQ network has 3 different vlans which are shown by the different colours: orange, blue and red. we use Variable Length Subnet Mask in order to subnet the network.  Based on the addressing scheme we designed, the red vlan uses a network address of 192.168.8.128/28 The orange vlan uses a network address of 192.168.8.144/29 and the blue networks uses a network address of 192.168.8.152/29.  The branches network address is 172.8.0.0/16. The different branches are indicated by the purple and green. We subnet the branch network address using VLSM to get subnets for the purple, green and serial interface subnets. The purple network requires 16,000 addresses and the Green network requires 4,000 addresses. Thus, network address for the purple branch is 172.8.0.0/18 and the network address for the green branch is 172.8.64.0/20. The serial interface network addresses are 172.8.80.0/30 and 172.8.80.4/30.  There is also an ISP address which is 202.184.3.1/30 and set as a Loopback. |
|  | Here is our addressing table. There are host addresses which are DHCP assigned. This will be discussed when we present requirement 6. |
| Nurul | Requirement 2 states that we need to configure the red, orange and blue vlans. We used the vlan id of 10 for red, 20 for orange and 30 for blue. Using the command show vlan brief we can see that they have been correctly configured for Switch 2. A similar result outputs when we run the commands on switch01 and switch1.  Next, for requirement 3, we need to assign the ports to the vlans. For our network we decided that the fast ethernet interfaces 1-10 were for the red vlan, 11-15 are for the orange vlan, the 16-20 are for the blue vlan and the 21-23 ports are for the trunking ports. All host machines were connected to the switches using this assignment design. This is evidenced by the next slides where you can see the ports that are assigned to each vlan.  Next, we need to configure the trunk ports to allow the vlans to communicate between them. As mentioned earlier we set the trunks to ports fa0/21-23. Using the command show interface trunk we can verify that this has been done correctly. |
| Syafi | So now, we are halfway through with configuring the vlans. Requirement 4 states that we should configure the subinterfaces at the hq router. This is because, in order for the vlans to work, they need a layer three device to enable inter-vlan routing. We use the approach where we create subinterfaces for the interface fa0/0 at the hq router. We also need to configure the ip addresses for the serial connections. Once the configurations are complete, we can the command show ip interface brief to verify the configuration.  Next for requirement 5, we need to configure the routers with suitable routing protocol and access control list. We are using Ripv2 as this is a classless routing protocol which is important to us as we used Variable Length Subnet Mask to subnet the network. The image shows the ripv2 has been configured for the hq router and that it is connected to the networks 172.8.0.0 and 192.168.8.0. this output is the same for all three routers after configuration. |
| khai | Next we need to set the acl. The requirement states that, one All hosts in the branch networks should be able to communicate with each other and the Orange Web Server only and two, All hosts on the blue and red VLANs should be able to communicate with each other and the Orange Web Server only. Thus, we use the extended acl as this will allow us to specify the destination and source address.  Extended acls are applied at BRANCH1 and BANCH2 routers at the fa0/0 interface and at the subinterfaces for the HQ router. Shown are the access lists for each requirement. Shown are the access lists for the branch routers. Next is the access list for the hq router. ACL extend-3 is used for inbound red source addresses where as the extend-4 acl is used for inbound blue source addresses. |
| Yin | For requirement 6, it is stated that all hosts except the orange hosts need to have dynamically assigned ip addresses. For the green network, the hosts ip addresses are assigned using the purple dhcp server. For this, we must use the ip-helper command to use the router as a dhcp relay agent.  After configuration the hosts will request an address from the server. This is evidenced by the pictures provided here.  For requirement 7, we need to configure a web, dns and mail server. Shown are the mail server. For the mail server we choose to configure it on the orange web server as this way even though traffic between the branches network and the hq networks are controlled, they can still communicate via email.  This is the configuration for the dns server, we b server and finally the email server.  Lastly for requirement 8 we need to build the webpage with our names and pictures. This is the final design. You can click on the links to see the photos. As this is on the web server all hosts can access this webpage.  Now for a live demonstration of our network. First to check that that the addresses have been assigned using dhcp for all hosts except the orange hosts. Now to test the connectivity within each subnet. As you can see all networks including the vlans can ping each other. Next, the green and purple networks are also able to ping each other and the blue and red vlans are able to ping each other. Any host within the network should be able to ping the orange server. Now to verify that hosts of the branches network cannot ping the hq network and vice versa. Next, to show that web page can be retrieved from any device in the network. And lastly, all hosts can email each other.  And that is our complete network. Thank you :) |