

Task 1: IP Subnet Planning

You have been given an IP address block of 192.168.23.0 /24. You must provide for existing networks as well as future growth.

Subnet assignments are (assuming **ip subnet-zero** is enabled):

- 1st subnet, existing student LAN (off of router R2-Central), up to 60 hosts;
- 2nd subnet, future student LAN, up to 28 hosts;
- 3rd subnet, existing ISP LAN, up to 12 hosts;
- 4th subnet, future ISP LAN, up to 6 hosts;
- 5th subnet, existing WAN, point-to-point link;
- 6th subnet, future WAN, point-to-point link;
- 7th subnet, future WAN, point-to-point link.

Interface IP addresses:

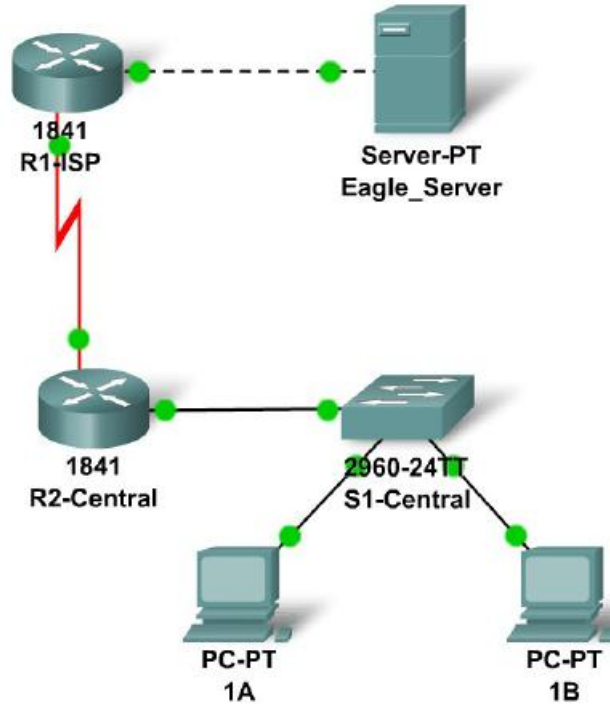
- For the server, configure the second highest usable IP address on the existing ISP LAN subnet.
- For R1-ISP's Fa0/0 interface, configure the highest usable IP address on the existing ISP LAN subnet.
- For R1-ISP's S0/0/0 interface, configure the highest usable address on the existing WAN subnet.
- For R2-Central's S0/0/0 interface, use the lowest usable address on the existing WAN subnet.
- For R2-Central's Fa0/0 interface, use the highest usable address on the existing student LAN subnet.
- For hosts 1A and 1B, use the first 2 IP addresses (two lowest usable addresses) on the existing student LAN subnet.

Additional configurations:

- For PCs 1A and 1B, in addition to IP and default gateway configuration, configure them to use DNS services.
- For the server, in addition to IP and default gateway configuration, enable DNS services, use the domain name eagle-server.example.com, and enable HTTP services.
- For R1-ISP router serial interface, you will need to set the clock rate (a timing mechanism required on the DCE end of serial links) to 64000.
- No clock rate is needed on the DTE side, in this case R2-Central's serial interface.

PT 6.8.1 CHEAT SHEET

Device	Interface	IP Addr	Subnet Mask	Gateway
R1 ISP	Fa0/0	192.168.23.110	255.255.255.240	NA
	S0/0/0	192.168.23.122	255.255.255.252	NA
R2 CENTRAL	Fa0/0	192.168.23.62	255.255.255.192	NA
	S0/0/0	192.168.23.121	255.255.255.252	NA
PC 1A	NIC	192.168.23.1	255.255.255.192	192.168.23.62
PC 1B	NIC	198.168.23.2	255.255.255.192	192.168.23.62
Eagle Server	NIC	192.168.23.109	255.255.255.240	192.168.23.110



SUBNET	HOSTS	CIDR	MASK	NETWORK	HOST RANGE	BROADCAST
Central	60	/26	255.255.255.192	192.168.23.0	1-62	192.168.23.63
Central xtra	28	/27	255.255.255.224	192.168.23.64	65-94	192.168.23.95
ISP Eagle	12	/28	255.255.255.240	192.168.23.96	97-110	192.168.23.111
Eagle xtra	6	/29	255.255.255.248	192.168.23.112	113-118	192.168.23.119
WAN	2	/30	255.255.255.252	192.168.23.120	121-122	192.168.23.123
WAN xtra	2	/30	255.255.255.252	192.168.23.124	125-126	192.168.23.127
WAN xtra	2	/30	255.255.255.252	192.168.23.128	129-130	192.168.23.131