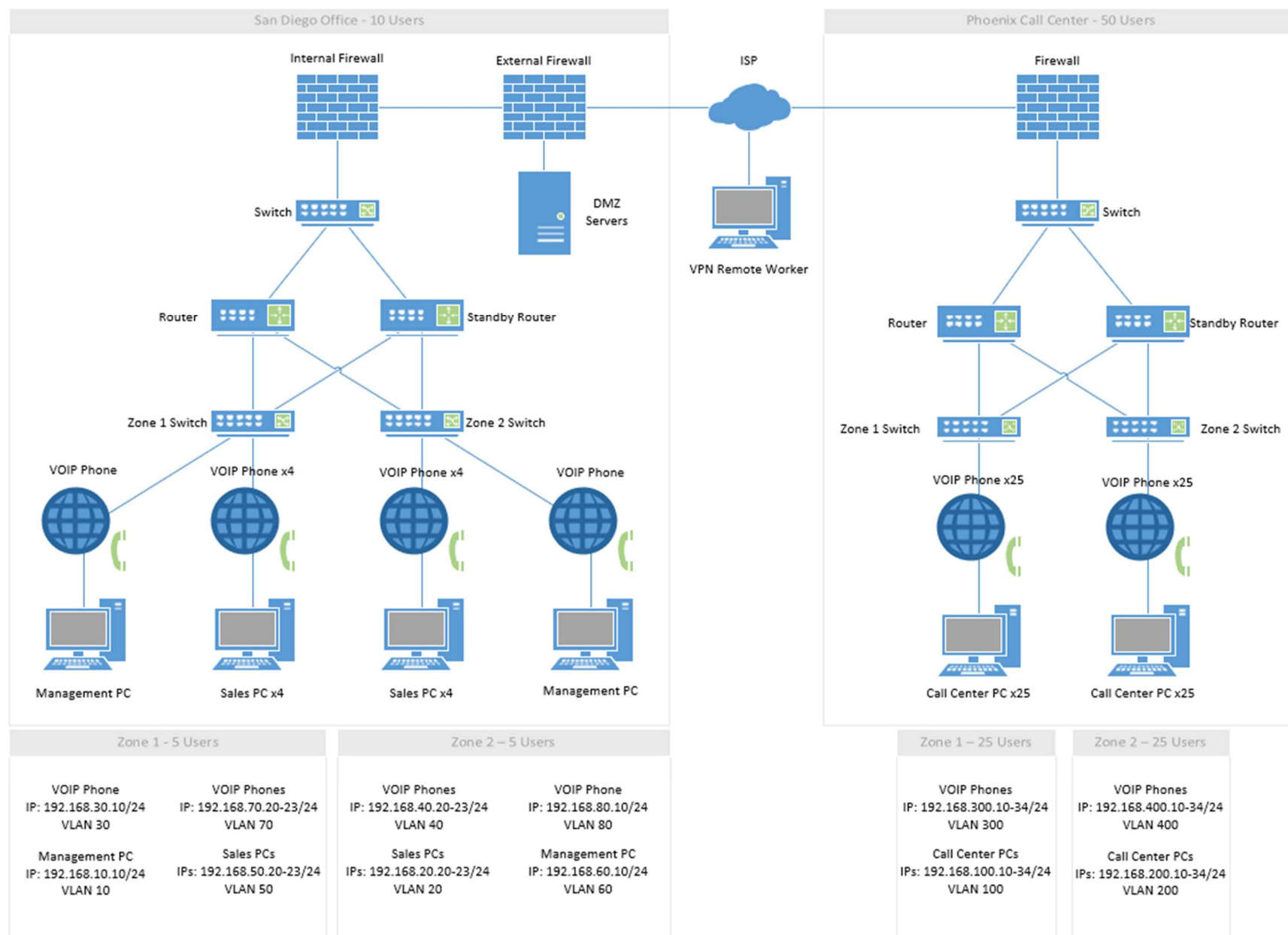


## **Multi-office Company Network Design**

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The first thing between the outside internet and the internal networks are a firewall for security. The Phoenix office houses the Call Center with 50 users which each have a PC and VOIP phone. The phones have a pass through for the ethernet so that each PC and phone pair can be plugged into the switch with a single port. For redundancy, in case of failure, or future maintenance the users are split into two with 25 per switch allowing for either switch to be down and allow for half the users to still work. Utilizing Hot Standby Router Protocol (HSRP) we also set up two routers so that one can be down without it affecting the network. VLANs on the switches are used to organize the PCs and phones even with a single port being used per pair. The San Diego office is setup much the same way with the main difference being the fewer number of VOIP phones and PCs due to there only being ten users at this location. As was done in the Phoenix network the users and departments were split in two on the network so that should there be an issue in the future it is more likely to not affect the entire location. The San Diego office also houses the servers for both networks, so a dual firewall DMZ was setup for an extra layer of security. With the dual firewall design, the first firewall which is set up to only allow traffic meant for the DMZ, which allows for the second firewall to focus on only what is coming from the DMZ to the internal side of the network. This DMZ hosts the vital services such as the DNS, web and mail servers, and FTP servers.

On the less physical side of things, on top of the VLANs being setup to organize the phones and PCs, the assigned IP ranges are also done with organization in mind. The greatest significant digit of the VLAN will be odd for devices on one switch and even on the other which will help for troubleshooting in the future. The range of IPs assigned to the VLANs will be the same as the VLAN number for greater organization. Each department also has dedicated group policy in order to better control access.

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