12.7.2 Redundancy Facts

This lesson covers the following topics:

- Implement secure network designs
- Manage redundant power options

Implement Secure Network Designs

The following table describes secure network designs.

Secure Network Designs	Description
Load balancing	A process that distributes processing among multiple nodes.
Active/active	Two load balancers working in tandem to distribute network traffic.
Active/passive	Two load balancers with one actively working and the second in listening mode to take over if the first one becomes unavailable.
Power scheduling	Power scheduling is used to configure an active redundancy. This sends power to networks when a power facility goes down. Power scheduling prevent total loss of power during catastrophic events.
Virtual IP (VIP)	An IP address that is not assigned to an endpoint. VIP is used for load balancing. It typically uses NAT IP address assignment.
Geographic dispersal	The use of multiple locations to store data to mitigate downtime due to location.
Multipath	A fault-tolerance technique that gives multiple physical paths between a CPU and a mass-storage appliance.

Manage Redundant Power Options

Redundant power options are vital. A network without power is useless. Common power options found in datacenters include:

- Uninterrupted power supply (UPS). A UPS is a stand-alone bank of batteries that allows for the graceful shutdown of network appliances when power goes out.
- Generator. A generator is a large scale device that provides power for an extended period of time. Normally between 24 and 48 hours.
- Dual supply. A dual power supply is common in network appliances like servers and firewalls. It allows for one failure and hot-swapping.
- Managed power distribution unit (PDU). A managed power distribution unit is a rack-mounted unit that distributes power on a large scale such as a data center.