

1. What is single point of failure and how to avoid it?

- Single points of failure: If the failure of a single network device or link (for example, a switch, router, or WAN connection) would result in a network becoming unavailable, that single device or link is a potential single point of failure. To eliminate single points of failure from your design, you might include redundant links and redundant hardware.

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2. What is load balancing in servers?

Load Balancing

- Another network optimization technology introduced in Chapter 3 was content switching , which allows a request coming into a server farm to be distributed across multiple servers containing identical content. This approach to load balancing lightens the load on individual servers in a server farm and allows servers to be taken out of the farm for maintenance without disrupting access to the server farm's data.

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3. What is Link Efficiency and how can it affect performance?

- To make the most of the limited bandwidth available on slower speed links, you might choose to implement compression or link fragmentation and interleaving (LFI). These QoS mechanisms are examples of link efficiency mechanisms.

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4. How could achieve fault tolerance hint redundancy plays a big part here:

1.Servers

- Fault-tolerance examples for a user's default gateway include HSRP, CARP, VRRP, and GLBP. Fault tolerance should also be implemented for critical servers and systems.

2.Storage

- The feature of fault tolerance (FT) (which is offered by VMware) can have a backup copy of the active directory server(s) available in the event primary servers fail.

3.Power

- Fault tolerance about power and fault tolerance for critical systems and network devices can be put in place, along with monitoring controls to alert an administrator in the event of a failure or degradation in performance.

4.Topology (network.)

- Characteristics and Benefits of a Ring Topology

Characteristics

---Devices are interconnected by connecting to a single ring or, in some cases (for example, FDDI), a dual ring.

Benefits

---A dual ring topology adds a layer of fault tolerance. Therefore, if a cable break occurred, connectivity to all devices could be restored.

Drawbacks

---A break in a ring when a single ring topology is used results in a network outage for all devices connected to the ring.

- Characteristics, Benefits, and Drawbacks of a Partial-Mesh Topology

Characteristics

---Selected sites (that is, sites with frequent intersite communication) are interconnected via direct links, whereas sites that have less frequent communication can communicate via another site.

Benefits

---A partial-mesh topology provides optimal routes between selected sites with higher intersite traffic volumes, while avoiding the expense of interconnecting every site to every other site.

Drawbacks

---A partial-mesh topology is less fault tolerance than a full-mesh topology.

5.Devices and Interfaces (i.e switches etc.)

- High availability is synonymous with fault tolerance and usually means having at least two devices that are able to perform a specific function.

This is in preparation for one of the devices failing and having the remaining device be able to still provide the network services.

6.Naming and addressing services (DHCP, DNS)

- First-hop redundancy protocols such as Host Standby Router Protocol (HSRP), Common Address Redundancy Protocol (CARP), Virtual Router Redundancy Protocol (VRRP), and Gateway Load Balancing Protocol (GLBP) can be used to provide a fault tolerance for the host's default gateway on a given subnet.

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