Cisco Interview Questions For Freshers

Cisco Technical Interview Questions & Answers

1. What is an IP access list?

An IP access list is a rule set for traffic control in the network and for reducing the possibilities of network attacks. This list will be useful in filtering the traffic based on rules that are defined for incoming as well as outgoing networks. The standard IP access list features are:

- Provide bandwidth control: IP Access lists on a slower link are helpful in preventing excess traffic on a network.
- Trigger dial-on-demand: Access lists do have the right to enforce the criteria for dial and disconnect.
- Provide NAT control: Access lists are helpful in controlling which addresses are translated by NAT (Network Address Translation).
- Control access to Virtual teletype (vty): Access lists on an inbound vty are capable of controlling which person can access the lines to a device. Access lists on an outbound vty are capable of controlling the destinations to which can be reached by the lines from a device.
- Authenticate remote shell (rsh) and Rate Control Protocol (RCP): Using access lists, it is possible to simplify the remote hosts, remote users, and local users identification in an authentication database that is configured for controlling the device access. For receiving incoming rsh as well as rcp protocol requests, the authentication database will enable the Cisco software.
- Block unwanted traffic: These access lists are capable of filtering incoming/outgoing packets on an interface, thus helpful in controlling the network access depending on the source address, destination address, or user authentication. It is also useful in determining the traffic type that is forwarded or blocked at the device interface.
- Limit debug command output: We can limit the debug output using access lists, depending on an IP address or a protocol.

2. What is a transparent firewall?

A transparent firewall or bridge firewall will behave like a line of the layer among 2 devices and can be easily installed into an existing network without any modification into the Internet Protocol (IP) address. The transparent firewall will allow for entering into the traffic of layer 3 from the level of higher security to lower security levels without the help of access lists. It will act similar to a bridge as it inspects and moves network frames between interfaces.

A transparent firewall is considered a “stealth firewall” that supports outside as well as inside interfaces. Using this, security equipment can be connected with the same network on external and internal ports, with a separate VLAN(Virtual Local Area Network) for each interface.

3. What are the key advantages of using switches?

Switches interpret the bits in the received frame so that they can typically send the frame out of the one required port, rather than all other ports. They don’t create a single shared bus-like hub.

4. What are the two flags used in the core handshake of a typical TCP connection establishment?

The two flags used in the core handshake of a typical TCP connection establishment are SYN and ACK

5. What is a deadlock in Operating Systems? What are the situations for the deadlock to happen?

Deadlock refers to the situation that happens in the operating system where each process will enter into the waiting state for obtaining the resource which has been assigned to some other process.

Consider a real-time example of traffic that is going only in a single direction. Here, we can consider the bridge as a resource. If one car backs up, the deadlock situation will be resolved easily. Multiple cars may have to be backed up on deadlock occurrence. So it might lead to starvation.

The process will be considered to be in a deadlock when the following conditions get satisfied simultaneously:

- **Mutual Exclusion:** When more than one process shares the same resource and all the processes are different, then each process of them has to wait for the other for utilizing the resource as at a time only one process can use the resource.
- **Hold and Wait:** A process is already holding the resource(at least one) and waiting for resources.
- **No pre-emption:** We cannot forcefully stop or remove a process among the waiting processes, for releasing the resource.
- **Circular Wait:** A group of processes will be waiting in a circular manner for the resources held by each other.

6. What is a gateway?

Basically, a gateway is a node of a network that can be used as an entrance into some other network. Being a piece of hardware, it is not the same as a default gateway.

7. What is an auto keyword in C?

- The auto keyword is used for declaring a variable that has a complicated type. For example, an auto keyword can be used for variable declaration where the initialization expression consists of templates, pointers to members, or pointers to functions.
- It can also be used for declaring and initializing a variable to a lambda expression. You cannot declare the variable type on your own because the type of lambda expression will be only known to the compiler.
- Auto variables can be accessed only within the block or function in which they have been declared and cannot be accessed outside of them. By default, they are assigned with garbage value whenever they are declared without assigning any value.
- **Syntax:** auto <data_type> <variable_name>

8. What is routing?

Routing is the process of establishing the routes that data packets take on their way to a particular destination. Routing is done with a router, basically, a device used to select a path for traffic in a network, or between or across multiple networks. This network topology depends on a setup of hardware, to effectively relay data.

9. When does network congestion occur?

Network congestion basically happens when applications send more data than the network devices (e.g., routers and switches) can handle or accommodate. Thereby causing buffers on these devices to fill up and sometimes overflow.

Here, a buffer is a portion of the memory of a device that is basically set aside as a temporary holding place for data. This data is sent to or received from other devices and the whole process might result in delayed or lost packets. Eventually, applications retransmit the data and end up adding more traffic. This further increases congestion.

10. How Multithreading will be achieved in Python?

Python has a Global Interpreter Lock (GIL) that makes sure only one of your ‘threads’ can be executed at a time. A thread will acquire the GIL, does a small amount of work, then the GIL will be passed onto the next thread.

This happens so quickly as if your threads are executing in parallel, but in reality, they are just taking turns using the same CPU core.

All this GIL passing process will add overhead to the execution. This indicates that, if you want to speed up your code run, then the usage of the threading package often is not considered to be a good idea.

11. What is Recovery testing?

Recovery testing is a technique used in software testing, which verifies the ability of software to recover from hardware/software failures, crashes, network failures, etc. The recovery testing purpose will be determining whether the software operations can continue even after the integrity loss or disaster. It includes returning the software to the point where integrity was known and doing transaction reprocessing to the point of failure.

12. What are the features of an IP access list?

There are three different kinds of access lists. These are standard, extended, and named. Benefits of IP access lists include the following:

- Authenticate incoming rsh and rcp requests
- Control access to vty
- Limit debug command output
- Identify or classify traffic for QoS features
- Provide bandwidth control
- Trigger dial-on-demand calls
- Provide NAT control
- Restrict the content of routing updates
- Block unwanted traffic or users
- Reduce the chance of DoS attacks.

13. How will swapping lead to better memory management?

Swapping is a process/memory management technique used by the operating system(os) for increasing the processor utilization by moving a few blocked processes from the main memory into the secondary memory. This will lead to a queue formation that has temporarily suspended processes and the execution will be continued with the processes that are newly arrived. At the regular intervals fixed by the operating system, processes can be moved from the main memory to secondary storage, and then later they can be moved back. Swapping will allow multiple processes to run, that can fit into memory at a single time. Thus, we can say that swapping will lead to better memory management.

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14. When we declare union in C, how is the size of union allocated in the memory?

15. Discussions on MVC architecture.

16. If you are not having a size of operator in C, how will you get to know the size of an int?

17. Differentiate between C and C++.

18. Write a program for printing all permutations of a given string.

19. What is the boundary problem in allocation of size of structures?

20. What is the difference between user and kernel space?

21. Write a program to reverse a linked-list.

22. How does Insertion sort differ from binary sort. Explain line by line

23. Write a C program for printing numbers into words such as 123 (one hundred and twenty-three)

24. Explain Pre order, in order, post order with examples

25. How data encryption is different from data encapsulation?

26. Write a program to create a stack using a linked list in Java

27. What is a firewall? Different types of Firewall? How does a Firewall works?

28. What do you understand by the sliding window protocol?

29. Write a code to Multiply a number by 8 without using * operator

30. What is a real time OS and how it's different from other OS?

31. What is virtual memory paging?

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Cisco HR Interview Questions

1. What do you know about our company?

2. How will you define yourself in one word?

3. How do you take personal conflicts?

4. Why do you want to be part of CISCO?

5. What kind of expectations do you have from this job

6. What are your strengths?

7. Tell me three qualities which your friends, teachers, and parents admire?

8. List some of your achievements?

9. What is the one thing that you regret in your life?

10. Do you have any Location constraints?

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