

MD MASUD RANA

IT-18002

A) What is DNS? Describe DDNS. 4

B) How to check DNS health? Write the 5 use of DNS.

C) How do I setup DNS for child domain? 5

2. a) What is a Network? Write about 4

b) What is the OSI reference model? 4

c) What are the layers in OSI reference model? Describe briefly. 6

3. a) What is NIC? Define Firewall. 4

b) What is mean by 127.0.0.1 and localhost? 4

c) What are different types network? 6 Explain each briefly.

4. a) How to enable Dynamic updates 4

in DNS? Write Properties of zone.

b) What is Stub zone? Explain 4

c) Write different types of topologies 6
and explain each briefly.

5. a) What is the backbone network? 5

b) Define modeled soft switching

c) What is anonymous FTP? 4

d) Describe NAT

e) What is TCP/IP? Explain 5

6. a) What is bandwidth? Write NPN. 4

b) What are the main elements of a Protocol? 5

c) Explain QoS - midcat

c) Describe about application layer. 5

7. a) Define Primary zone. 3

b) Explain Authoritative Name Server. 5

c) What is the nature of domain name disputes ? 6

8. a) What is Secondary DNS server? 4
Define Forwarder.

b) What are the properties of 5
DNS Server?

c) What are the types Srv Records? 5

Ans to the Q.No ~01

a) What is DNS? Describe DDNS?

Ans: Domain Name System is a service that can be installed on any windows server operating system to resolve Name to IPAddress and vice-versa. TCP/IP networks, such that the internet use DNS to locate computers and services through user-friendly names.

Dynamic DNS or DDNS is a method of updating, in real time a Domain Name System to point to a changing IP address on the Internet. This is used to provide a persistent domain name for a resource that may

Changed location on the network.

b) How to Check Dns Health? Write the use of DNS?

Ans. Using the Dcdiag, i.e (dcdiag /test:dns /v/e)

Uses of DNS -

- ① Domain Name System are used to help users in finding the location of Web Page over the internet.
- ② It Provide a unique address that is the form of string of numbers and it uniquely identifies a web page.

- ③ The address that is being used called as IP address and IP is the protocol used to transfer the information over the network.
- ④ DNS is an alternate way to provide easy to remember IP addresses and use them to access the web - services easily.
- C) How do I set up DNS for a child Domain?
- Ans: To setup DNS for a child domain, create a delegation record on the Parent DNS server for the child DNS server. Create a secondary

Zone on the child DNS server that transfers the Parent zone from the Parent DNS server. Note Windows Server 2003 has additional types of zones, such as stub zones and forest-level integrated Active Directory zones, that may be a better fit for your environment. Set the Child domain controller to Point to itself first. As soon as additional domain controller is available, set the child domain controller to Point to this domain controller in the child domain as its secondary.

Ans to the Q. No - 02

a) What is a Network? Write about Node?

Ans: Network is defined as a set

of device connected to each other using a physical transmission medium.

Two or more computers are connected directly by an optical fiber or

any other cable. A node is a point where a connection is established.

It is a network component that is

used to send, receive and forward the electronic information.

b) What is the OSI reference model?

Ans. Open System Interconnection (OSI) the name itself suggests that is a reference model that defines how applications can communicate with each other over a networking system.

It also helps to understand the relationship between networks and defines the process of communication in a network.

C) What are the layers in OSI Reference Models? Describe each layer briefly.

Ans:

i) Physical Layer (Layer 1): It converts data bits into electrical impulses or radio signals.

ii) Data Link Layer (Layer 2): At this Data Link layer, data packets are encoded and decoded into bits and it provides a node to node data transfer. This layer also detects the errors that occurred at layer 1.

iii) Network Layer (Layer 3): This layer transfers variable length data sequence from one node to another node in the same network.

This variable-length data-sequence is also known as "Datagrams".

iv) Transport Layer (Layer 4): It transfers data between nodes and also provides acknowledgement of successful data transmission.

v) Session Layer (Layer 5): This layer manages and controls the connections between computers.

(vi) Presentation Layer (Layer 6): It is also called as "Syntax Layer".

(vii) Application Layer (Layer 7): This is last layer of the OSI Reference Model and is the one that is close to the end-user.

Ans to the Q. No. - 03

a) What is NIC? Define Firewall.

Ans: NIC stands for Network Interface

Card. It is also known as Network Adapter or Ethernet Card. It is in the form of an add-in card is installed on a computer so that the computer can be connected to a network.

Firewall is a network security system that is used to protect computer networks from unauthorized access.

It prevents malicious access from outside to the computer network. A firewall can also be built to grant limited access to outside user.

b) What is meant by 127.0.0.1 and localhost?

Ans: IP address 127.0.0.1 is reserved for loopback or localhost connections. These networks are usually reserved for the biggest customers or some of the original members of the internet. To identify any

In case of connection issue, the initial step is to ping the servers and check if it is responding.

If there is no response from the server then there are various causes like the network is down or the cable needs to be replaced or the network card is not in good condition. 127.0.0.1 is a loopback connection on the NIC and if you are able to Ping this server successfully, then it means that the hardware is in a good shape and condition.

c) What are the different types of a network? Explain each briefly.

Ans: There are 4 major types of networks.

① Personal Area Network (PAN): It is the smallest and basic network type that is often used at home. It is a connection between the computer and another device such as mobile, printer, modem etc.

② Local Area Network (LAN): LAN is used in small offices and internet cafes to connect a small group of computers to each other. Usually they are used to transfer a file or for playing the game

in a network.

③ Metropolitan Area Network (MAN): It

is a powerful network type than LAN.

The area covered by MAN is a small town, city, etc. A huge server is used to cover such a large span of area

for connection.

④ Wide Area Network (WAN): It is more complex than LAN and covers a large

span of the area typically a large physical distance. WAN is spread across the world.

Ans to the Q.No ~ 04

a) How to enable Dynamic updates (in DNS)? Write Properties of zone.

Ans: Start > Program > Admin tools > DNS >

Zone Properties.

Properties of zone -

- i) General
- ii) SOA
- iii) NAMESERVER
- iv) WINS
- v) Security
- vi) Zone Transfer

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b) What is Stub Zone? Explain.

Ans: A stub zone is a read copy of a zone that contains only those resource records which are necessary to identify the authoritative DNS servers for that particular zone. A stub zone is practically used to resolve names between separate DNS namespaces. This type of zone is generally created when DNS servers for two separate DNS namespaces resolve names for clients in both namespaces.

c) Write different types of topologies and explain each briefly.

Ans: Network topologies are classified as below:-

① Bus Topology:- In Bus Topology, all the devices of the network are connected to a common cable. As the devices are connected to a single cable, it is also termed as Linear Bus Topology.

② Star Topology:- In star Topology, there is a central controller or hub to which every node or device is connected through a cable. In

this topology, the devices are not linked to each other. If a device needs to communicate with the others, then it has to send the signal or data to the central hub.

③ Ring Topology : In Ring Topology,

each device of the network is connected to two other devices on either side which in turn forms a loop.

④ Mesh Topology : In a Mesh Topology

each device of the network is connected to all other devices of

the network. Mesh Topology uses

Routing and Flooding techniques for data transmission.

Ans to the Q.No - 05

a) What is the backbone network?

Define node.

Ans: A backbone network is a centralized infrastructure that is designed to distribute different routes and data to various networks. It also handles the management of bandwidth and multiple channels.

A node refers to a point or joint where a connection takes place. It can be a computer or device that is part of a network. Two or more nodes are needed to form a network connection.

b) What is anonymous FTP? Describe NAT.

Ans : Anonymous FTP is a way of granting user access to files in public servers. Users that are allowed to data in these servers do not need to identify themselves, but instead log in as an anonymous guest.

NAT is Network Address Translation. This is a protocol that provides a way for multiple computers on a common network to share single connection to the internet.

c) What is TCP/IP? Explain.

Ans: TCP/IP is a name given to the collection of networking Protocol that have been used to construct the global internet. The Protocols are also referred to as the DOD or Arpanet Protocol suite because their early development was funded by the Advanced Research Projects Agency of the US Department of Defence.

TCP/IP model is an implementation of OSI reference model.

Ans to the Q.NO.-06

a) What is bandwith? Write about VPN.

Ans: Every signal has a limit of upper range frequency and lower range frequency. The range of limit of network its upper and lower frequency is called bandwith.

VPN means Virtual Private Networks, a technology that allows a secure tunnel to be created across a network such as the internet. For example, VPNs allow you to establish a secure dial-up connection to a remote server.

b) What are the main elements of a Protocol?

Ans: The main elements of a Protocol:-

- ① Syntax: It specifies the structure or format of the data. It also specifies the order in which they are presented.
- ② Semantics: It specifies the meaning of each section of bits.
- ③ Timing: Timing specifies two characteristics. When data should be sent and how fast it can be sent.

c) Describe about application layer.

Ans:-

- Applications layer enables the user to access the network.
- It is the topmost layer of the OSI reference model.
- Application layer protocol are file transfer protocol, simple mail transfer protocol, domain name system etc.
- The most widely used application protocol is HTTP. A user sends the request for the web page using HTTP.

Ans to the Q. No-07

a) Define Primary Zone.

Ans: This is the read and writable copy of a zone file in the DNS namespace. This is the Primary source for information about the zone and it stores the master copy of zone data in local file or in ADDS. By default the Primary zone file is named as zone-name.dns in %windir%\System32\DNS folders on the server.

b) Explain Authoritative Name Servers?

Ans: An authoritative name server is a name server that gives answers that have been configured by an original source, for example the domain administrator or by dynamic DNS method. In contrast to answers that were obtained via a regular DNS query to another name server. An authoritative name server only returns answers to queries about domain names that have been specifically configured by the administrator.

c) What is the nature of domain name disputes?

Ans.

- Domain name disputes enable the users to find the computers and people in an easy way.
- Domain name has significance that has acquired business demands and identifiers to identify the business and target only the business existing.
- These disputes arises due to the cybersquatting this provides a way to pre-emptive the registration.

Process for the trademarks by third parties and has a domain names.

→ Domain names are registered and targeted for the benefit of other Person or company. It is being done by the cybersquatters.

Ans to the Q. No-08

a) What is Secondary DNS server?

Define Forwarder.

Ans: It is backup for Primary DNS where it maintains a read only copy of DNS database.

When one DNS server can not receive the query, it can be forwarded to another DNS once configured as forwarder.

b) What are the Properties of DNS Server?

Ans. Properties of DNS Server:-

- i) INTERFACES
- ii) FORWARDERS
- iii) ADVANCED
- iv) ROUTINING
- v) SECURITY
- vi) MONITORING
- vii) LOGGING
- viii) DEBUG

c) What are the types of SRV Records?

Ans.

MSDCS: Contains DCs information.

TCP: Contains Global Catalog, Kerberos and LDAP information.

NDP: Contains sites information.

Sites: Contains sites information

Domain DNS zone: contains domains dns specific information.

Forest DNS zone: Contains Forests specific information.