# **Glossary terms from course 2, module 2**

**Address class system**: A system which defines how the global IP address space is split up  
 **Address Resolution Protocol (ARP)**: A protocol used to discover the hardware address of a node with a certain IP address  
 **ARP table**: A list of IP addresses and the MAC addresses associated with them  
 **ASN**: Autonomous System Number is a number assigned to an individual autonomous system  
 **Demarcate**: To set the boundaries of something  
 **Demarcation point**: Where one network or system ends and another one begins  
 **Destination network**: The column in a routing table that contains a row for each network that the router knows about  
 **DHCP**: A technology that assigns an IP address automatically to a new device. It is an application layer protocol that automates the configuration process of hosts on a network  
 **Dotted decimal notation**: A format of using dots to separate numbers in a string, such as in an IP address  
 **Dynamic IP address**: An IP address assigned automatically to a new device through a technology known as Dynamic Host Configuration Protocol  
 **Exterior gateway**: Protocols that are used for the exchange of information between independent autonomous systems  
 **Flag field**: It is used to indicate if a datagram is allowed to be fragmented, or to indicate that the datagram has already been fragmented  
 **Fragmentation**: The process of taking a single IP datagram and splitting it up into several smaller datagrams  
 **Fragmentation offset field**: It contains values used by the receiving end to take all the parts of a fragmented packet and put them back together in the correct order  
 **Header checksum field**: A checksum of the contents of the entire IP datagram header  
 **Header length field**: A four bit field that declares how long the entire header is. It is almost always 20 bytes in length when dealing with IPv4  
 **IANA**: The Internet Assigned Numbers Authority, is a non-profit organization that helps manage things like IP address allocation  
 **Identification field**: It is a 16-bit number that's used to group messages together  
 **Interface**: For a router, the port where a router connects to a network. A router gives and receives data through its interfaces. These are also used as part of the routing table  
 **Interior gateway**: Interior gateway protocols are used by routers to share information within a single autonomous system  
 **IP datagram**: A highly structured series of fields that are strictly defined  
 **IP options field**: An optional field and is used to set special characteristics for datagrams primarily used for testing purposes  
 **Network Address Translation (NAT)**: A mitigation tool that lets organizations use one public IP address and many private IP addresses within the network  
 **Next hop**: The IP address of the next router that should receive data intended for the destination networking question or this could just state the network is directly connected and that there aren't any additional hops needed. Defined as part of the routing table  
 **Non-routable address space**: They are ranges of IPs set aside for use by anyone that cannot be routed to  
 **Padding field**: A series of zeros used to ensure the header is the correct total size  
 **Protocol field**: A protocol field is an 8-bit field that contains data about what transport layer protocol is being used  
 **Routing protocols**: Special protocols the routers use to speak to each other in order to share what information they might have  
 **Service type field**: A eight bit field that can be used to specify details about quality of service or QoS technologies  
 **Static IP address**: An IP address that must be manually configured on a node  
 **Subnet mask**: 32-bit numbers that are normally written as four octets of decimal numbers  
 **Subnetting**: The process of taking a large network and splitting it up into many individual smaller sub networks or subnets  
 **Time-To-Live field (TTL)**: An 8-bit field that indicates how many router hops a datagram can traverse before it's thrown away  
 **Total hops**: The total number of devices data passes through to get from its source to its destination. Routers try to choose the shortest path, so fewest hops possible. The routing table is used to keep track of this  
 **Total length field**: A 16-bit field that indicates the total length of the IP datagram it's attached to