DISH Note

Audience: DNS Technicians; FSM; IM; QAS; GM

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What is Broadband and Home Networking?

Introduction

Your customer just purchased their first HDTV, a top of the line 52" LCD TV that supports 1080p. While you are connecting a ViP722 to their TV, they ask you if DISH Network has any programming in 1080p. What would you tell them?

You could tell them that you can connect the receiver to their broadband home network. In addition, they can watch the very popular A&E program "The Beast" in 1080p over the internet through DishONLINE. But how do you connect the receiver to the customer's home network and just what is a home network. Let's take a look.

What is Home Networking?

A home network is a group of interconnected personal computers sharing a broadband Internet connection, data, and control of other devices on the network, such as a printer or scanner. To use the receiver's Ethernet connection, the DISH Network receiver must be connected to the home network to access the broadband Internet connection.

COMMON COMPONENTS OF A HOME NETWORK
- One or more personal computers
- Broadband Modem/Router
- Switches
- Router
- Gateway
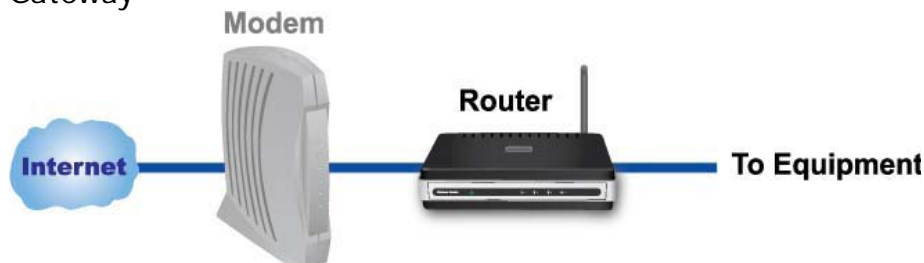
What is Broadband?

Broadband is often used to refer to high-speed Internet access. Speed varies greatly depending on provider and type of service, but the minimum as defined by the FCC is 200 Kilobits per second (Kbps).

TYPES OF INTERNET SERVICE PROVIDERS

- **Cable**: Provided by a cable company by connecting a coaxial cable to a cable modem.
- **DSL (Digital Subscriber Line)**: Provided by a telephone company by connecting a standard phone line to a DSL modem.
- **Satellite**: Provided via a satellite in a fixed location relative to the earth's surface.
- **Fiber**: Provided by fiber optic telephone lines to transfer data.
- **T1/T3**: Provided by a dedicated phone line for direct connection to the Internet backbone.
- **Terrestrial Wireless** (WiMAX): Provided by terrestrial broadcast antennas (similar to broadcast TV towers).

Here is some terminology that we are going to use in future broadband and home networking training:

Bandwidth
- Measures a communications channel's capacity
- The higher a channel's bandwidth, the more information it can carry

DHCP (Dynamic Host Configuration Protocol)
- Automatically assigns a unique (private) IP address to each device connected to the local area network (LAN) so they can "talk" to other devices on the network

DNS (Domain Name System)
- Service that translates a host name into an Internet address
- An example of a domain name is "dishnetwork.com"

Ethernet cable
- Cable used for connecting your receiver or computer to the home network.
- Most common form is RJ-45

Ethernet port
- Port on a computer, DISH Network receiver, or other device that can be connected to a home network via an Ethernet cable
- Ethernet ports support different speeds: 10 Mbps (also called 10BaseT), 100 Mbps (also called 100BaseT) or 1 Gbps (also called 1000BaseT or Gigabit Ethernet)
- The Ethernet ports on the ViP-series of receivers support 10 Mbps or 100 Mbps connections (also referred to as 10/100 Ethernet ports)

Gateway
- Joins two networks together, and acts as an entrance to another network

HomePlug
- A technology that allows compatible equipment to send and receive data via the home power lines

Internet
- A worldwide computer network linking smaller computer networks.
- Referred to as the WAN

Internet Service Provider (ISP)
- The company who provides service for connecting to the Internet; for example, Verizon DSL or Comcast Cable High-Speed Internet

IP Address
- Unique identifier for a device, such as a computer or satellite receiver, to route Internet data and information to the device that requested the information.
- There are two types of IP addresses that are commonly referred to: public IP addresses (visible to the entire internet) and private IP addresses (only used inside a private network or home network)

IPTV (Internet Protocol Television)
- Receiving TV or other video content via your Internet (especially broadband) connection

LAN (Local Area Network)
- Network of equipment that is interconnected and located within a localized area.
- For example, a home network is a LAN

Modem
- Device that connects a home computer (or network of home computers) to the Internet service provider for accessing the Internet

Router
- A physical device that sends information between two different networks
- Most routers also provide DHCP(firewall) to the connected devices
- Routers may also have built-in modem functionality or a built-in switch

Switch (Ethernet)
- Allows multiple devices in a home network to connect together.
- It reduces unnecessary communication by sending data only to the devices that need to receive it

TCP/IP
- Transmission Control Protocol (TCP) and Internet Protocol (IP). A protocol that handles communication on the network between connected devices, how information is delivered, and ensures the information gets to the proper destination

WAN (Wide Area Network)
- A worldwide computer network that links smaller networks together.
- Typically used by companies to connect different locations together.
- For example, all EchoStar computers are connected to the EchoStar WAN.
- The Internet is the largest WAN

These are the basics of home networking and broadband. We will explore this topic further in future trainings.