A

Seminar report

on

AppleTalk

Submitted in partial fulfillment of the requirement for the award of degree
of Bachelor of Technology in Computer Science

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Preface

I have made this report file on the topic **AppleTalk,** I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude to ……..who assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

Introduction

AppleTalk is a network operating system designed to connect Apple computers. Its components are built on Macintosh operating systems.

There are two main versions of AppleTalk depending on how many years in the past the network was implemented, Phase 1 and Phase 2. Phase 2 is the current installation as of about 2002. If anyone knows of something more current they should let me know. AppleTalk/Local Talk networks make use of CSMA/CA a media access control method.

STP cabling is usually used. But it is possible to use UTP or Fiber Optic cabling depending on cost and/or performance issues. The network topology is a bus or tree.

A Local Talk network is limited to 32 nodes. Local Talk is the data link layer protocol originally used for Macintoshes. Macintosh computers using Local Talk are linked together using their printer ports.

AppleShare is used as the file and print sharing protocol on AppleTalk networks.

Rules of Engagement

AppleTalk networks make use of an addressing scheme in which each computer when it comes online:

• looks for a stored address that it used in a previous session
• if one isn't available then it chooses an address at random from those that are available
• then it broadcasts the address to make sure no other computer is using it
• if it is being used then it tries another
• if it isn't being used then it stores the address to potentially be used again when it returns online the next time.

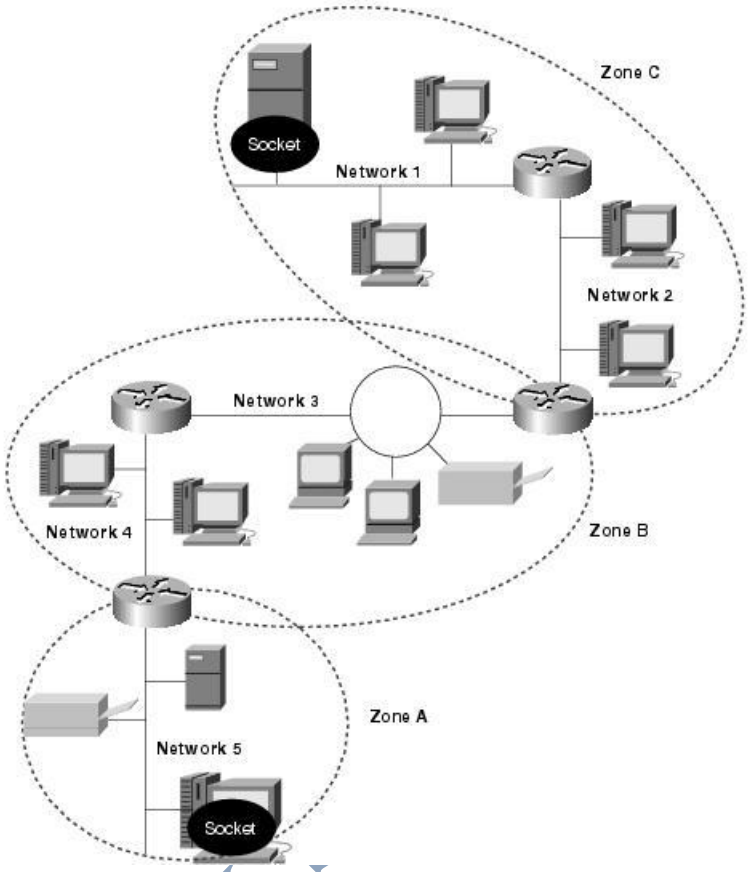
AppleTalk was designed for small networks. Fortunately, these small networks can be connected together. Each subnetwork is called a zone and has a name for identification. Resources in other zones can be configured so that they can be accessed by a click on the zone name.

AppleTalk networks can be fairly directly connected to networks of other architectures such as Ethernet or Token Ring.

Apple has developed EtherTalk or TokenTalk, which are cards that enable Macintosh computers to connect to networks operating under 802.3 and 802.5 specifications, respectively.

AppleTalk Network Components

AppleTalk networks are arranged hierarchically. Four basic components form the basis of an AppleTalk network: sockets, nodes, networks, and zones.

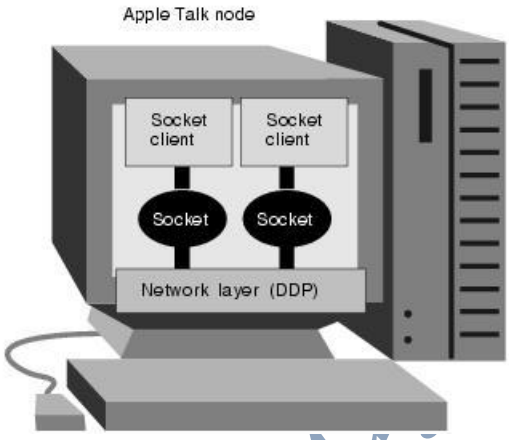


Sockets

An AppleTalk socket is a unique, addressable location in an AppleTalk node. It is the logical point at which upper-layer AppleTalk software processes and the network layer Datagram Delivery Protocol (DDP) interact.

These upper-layer processes are known as socket clients. Socket clients own one or more sockets, which they use to send and receive datagrams. Sockets can be assigned statically or dynamically.

Statically assigned sockets are reserved for use by certain protocols or other processes. Dynamically assigned sockets are assigned by DDP to socket clients upon request. An AppleTalk node can contain up to 254 different socket numbers.



Nodes

An AppleTalk node is a device that is connected to an AppleTalk network. This device might be a Macintosh computer, a printer, an IBM PC, a router, or some other similar device. Within each AppleTalk node exist numerous software processes called sockets. As discussed earlier, the function of these sockets is to identify the software processes running in the device. Each node in an AppleTalk network belongs to a single network and a specific zone.

Networks

it consists of a single logical cable and multiple attached nodes. A single physical cable or multiple physical cables interconnected by using bridges or routers may be found. They can be-

-Non extended Networks

It is a physical network segment that is assigned only a single network number, which can range between 1 and 1024. Each node number in a non extended network must be

unique, and a single non extended network segment cannot have more than one AppleTalk Zone configured on it.

-Extended Networks

Also known as a cable range. It is a physical network segment that can be assigned multiple network numbers.
It can indicate a single network number or multiple consecutive network numbers.

Zones

An AppleTalk zone is a logical group of nodes or networks that is defined when the network administrator configures the network.

The nodes or networks need not be physically contiguous to belong to the same AppleTalk zone.

Implications of the end of AppleTalk routing

Legacy operating systems and devices that only support AppleTalk should be replaced if at all possible. If they cannot be replaced, they need to be placed on the RIT network with forethought.

As long as any two legacy AppleTalk devices are within the same network segment, AppleTalk communications between them will still work. However, after July 24, 2006, the addresses change because AppleTalk zones will no longer be present
.
There will no longer be a way to use two AppleTalk-only devices between campus buildings, and in many cases, between hallways within buildings.

If you are browsing for AppleTalk resources, you will no longer see zones, such as the "GEM Bldg Zone" or "JE Booth Bldg Zone."

You will not be able to connect with AppleTalk resources that were previously in a different zone, unless you can switch to an IP-based protocol.

Devices that were within your own AppleTalk zone may also be inaccessible, because multiple network segments were often combined into one zone.

Since 2003, AppleTalk has only been activated by request for subnets where there was a demonstrated need (with no reasonable IP-based alternatives) for this network service. AppleTalk was never routed on the RIT residential network, dial-in services, Virtual Private Network (VPN), or the wireless network.

Security

AppleTalk, like many network protocols, makes no provisions for network security. The design of the AppleTalk protocol architecture requires that security measures be implemented at higher application levels.

Cisco supports AppleTalk distribution lists, allowing control of routing updates on a per-interface basis. This security feature is similar to those that Cisco provides for other protocols.

Note that the Cisco implementation of AppleTalk does not forward packets with local source and destination network addresses. This behavior does not conform to the definition of AppleTalk in the Apple Computer inside AppleTalk publication.

However, this behavior is designed to prevent any possible corruption of the AARP table in any AppleTalk node that is performing address gleaning Through MAC.

Advantages

- Apple automatically includes AppleTalk in the Macintosh operating system.
- Easy to implement and configure
- Setting up a small workgroup is simple and inexpensive

Disadvantages

- It is not suitable for very large networks
- It is very slow compared to other LAN links at 230.4 Kbps
- It is unsuitable for bandwidth intensive applications

Conclusion

AppleTalk includes an address-resolution method much like TCP/IP's ARP. The AppleTalk version is called AARP. AARP uses broadcasts to discover the hardware address of a node.

The primary network layer routing protocol in AppleTalk is the Datagram Delivery Protocol (DDP). DDP provides a best-effort connectionless datagram service.

There are five key implementations of the transport layer in AppleTalk: RTMP, NBP, AURP, ATP, and AEP.