APPENDIX D

Glossary of Terms

All Routes Broadcast (ARB)
A communication that is addressed to all of the LANs on an internetwork or to all the segments of a virtual LAN.

The Catalyst 1600 Token Ring switch buffers each ARB frame into memory, then copies it to each Token Ring switch port. Each Token Ring switch port updates the Routing Information Field (RIF) of the frame in memory with the bridge number and ring number, to reflect that the frame has been copied to the attached ring.

backbone network
A network that connects several different networks together, often using a high-speed networking technology such as Fiber Distributed Data Interface (FDDI) or Asynchronous Transfer Mode (ATM).

beaconing
A warning signal that a Token Ring station sends to all the other stations on the ring when it detects a hard error on the ring.

boot code
The firmware for booting and initialization that resides in the system ROM. When you want to upgrade the firmware, instead of replacing the system ROM, you can download new software using TrueView Catalyst 1600 Manager.

bridge
A device that connects one LAN to another at the Datalink Layer of the OSI model. The two main types of bridges are source routing bridges and transparent bridges. The traditional method for connecting multiple Token Ring networks is by using a source routing bridge.

broadcast filtering
The method by which the Catalyst 1600 restricts broadcast frames to a group of rings defined by the user.

broadcast frames
Frames that are addressed to multiple devices on an internetwork. the Catalyst 1600 can forward broadcast frames efficiently by transmitting frames simultaneously on multiple Token Ring switch ports.

buffering
The method by which the Catalyst 1600 stores incoming data in memory before transmitting it on the output port.

Controlled Access Unit (CAU)
An intelligent wiring concentrator, such as the IBM 8230 Token Ring Network Controlled Access Unit or Madge SmartCAU Plus. You connect the CAU to Lobe Attachment Modules (LAMs) to attach Token Ring stations.

collapsed backbone
A single device that can replace a backbone network, such as the Catalyst 1600, or a multiport bridge. A collapsed backbone device supports the direct attachment of network segments, which typically provides better performance than connecting segments to a backbone ring using bridges.

concentrator mode
The mode in which a port behaves like a LAM port and detects the phantom drive signal that is generated when the connected device inserts.

cut-through
The technique by which the Catalyst 1600 starts to forward a frame on the output port before the entire frame is received into memory.

Cut-through switching incurs considerably less inter-station latency than the store-and-forward technique associated with bridges and routers.

cyclic redundancy check (CRC)
A check to ensure that the data in a frame is not corrupted. Bridges and routers perform a CRC on incoming data, and typically discard corrupted frames.

hop count
The total number of bridge hops a broadcast frame can make. If a frame that has exceeded its hop count is passed to the Catalyst 1600, the frame is not forwarded.

internetwork
Two or more LANs connected by one or more switches, routers, or bridges.

latency
The time taken by a bridge, router, or switch to transmit a frame onto its output port after the frame has been received into the input buffer.

lobe attachment module (LAM)
An expansion module that allows you to attach Token Ring stations, such as the IBM 8230 Token Ring Network Lobe Attachment Module or the Madge SmartLAM. A LAM is attached to a controlled access unit (CAU).

multistation access unit (MAU)
A hub, also known as a passive hub or a wiring concentrator, that is used to attach nodes to a Token Ring network.

microcode
See boot code; run-time microcode.

multiport bridge
A bridge that has more than two ports.

node mode
The mode in which a port behaves like an adapter card and generates a phantom drive signal to insert into the device that is connected.

nonbroadcast frame
A frame that the Catalyst 1600 does not copy onto all of its ports or onto all the ports of a virtual LAN. If the ring and bridge numbers in the RIF match, the Catalyst 1600 forwards the frame to the output port using the cut-through technique if possible.

phantom drive
The signal that an adapter card sends to a concentrator to activate the port into which it is attempting to insert. When the ports of the Catalyst 1600 are configured as node ports, they send aphantom drive. When they are configured as concentrator ports, they receive a phantom drive.

router
A device that connects two or more LANs at the network layer of the OSI model.

Like bridges, routers operate in store-and-forward mode, buffering each packet into memory before determining the destination of the frame. A router also amends the header on each frame once it buffered the frame into memory, to reflect the routing decision that was made.

routing information field (RIF)
The field in the header of an incoming frame that the Catalyst 1600 uses to determine the correct output port.

run-time microcode
The software that the Catalyst 1600 needs to enable it to perform switching functions. You can download upgrade software to the Catalyst 1600 using TrueView Catalyst 1600 Manager software.

single-route broadcast (SRB)
A communication addressed to all of the LANs on an internetwork or to all the segments of a virtual LAN.

The Catalyst 1600 buffers each SRB frame into memory, then copies it to the Token Ring switch port subject to defined virtual LANs. The Token Ring switch port updates the frame in memory with its ring number, to reflect that the frame has been copied to the attached ring.

source-routing bridge
A bridge that uses information in the header of each frame to establish a route between devices on different LANs.

spanning-tree algorithm
The method that determines which bridge forwards single-route broadcast frames onto each ring, and ensures that no single-route broadcast frames appear more than once on the same ring.

switching
Like bridging, switching provides a connection between LAN segments. However, a cut-through switch forwards packets on direct connections between the input and output ports, without buffering them into memory.

Telnet

The IP terminal-emulation protocol that you can use to connect a terminal to the Catalyst 1600, to perform simple management tasks. You cannot use the Telnet interface to set up virtual LANs.

transparent bridge

A transparent bridge discovers which MAC addresses are attached to each of its ports, and stores this information in tables that it updates. When a transparent bridge receives a frame, it checks to see which output port the frame's destination address is on, and transfers the frame onto that output port.

virtual LAN

A virtual LAN consists of two or more Token Ring segments that are joined by devices, where stations can only make connections to other stations or servers that are part of the same virtual LAN. Therefore, broadcast traffic originating on any ring is only received by stations on rings that belong to the same virtual LAN.