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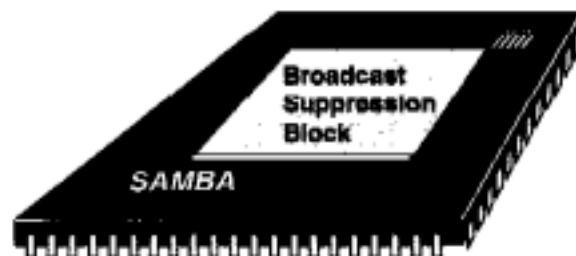
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This information comes from the Cisco Lan Switch and Configuration course material which was provided by one of the subscribers (name withheld to protect the not so innocent), however until Cisco gets around to releasing its books this is the ONLY way your going to get this information. Please read it, memorize it, and burn it. The pictures at the bottom were sent via facsimile to me by a TAC Engineer (love those guys), the document had didn't have anything saying I couldn't redistribute it, so enjoy! -bh

1. NMP-Network Management Processor. The NMP uses system software that governs the control of the hardware, its configuration, and diagnostics routines, including the loading of run time code to the line modules. The NMP performs the following:
 - a. System Control
 - b. System Configuration
 - c. System Diagnostics
 - d. Spanning tree per VLAN
 - e. Network Management (CLI, SNMP)
2. MCP-Master Control Processor. The primary function of the MCP is to communicate information between the NMP and the line module communication processors (LCPs) distributed on the Cat5000 line modules. This occurs across the management bus, which is a serial bus at 761 kbps. Functions of the MCP include:
 - a. Test and configuration of local ports
 - b. Control local ports using local target logic (LTL) and color blocking logic (CBL)
 - c. Local diagnostics of onboard RAM, SAINT, ASICs, LTL and CBL
 - d. Support download of run-time code
3. LCP-Line Module Communication Processor. It processes information sent to it by the MCP.
4. SAINT- Synergy Advanced Interface and Network Termination. Used to perform encapsulation of the Ethernet frames before they cross the switching bus. Each dedicated Ethernet and Fast Ethernet port has its own SAINT ASIC and 192 KB of dedicated frame buffer. The only line module that are not dedicated is the group switching module, this uses four SAINTs.
5. SAGE-Synergy Advanced Gate Array Engine. This is similar to the SAINT without Ethernet MAC. It is used with the ATM and FDDI MAC layers, has 1 to 2 MB of additional buffering.
6. SAMBA-Synergy Advanced Multipurpose Bus Arbiter. Located on both the Supervisor and Line Modules. Provides arbitration to the switching bus. Works in either master or slave mode. SAMBA in master mode is located on the Sup and SAMBA in slave mode is on the line module. Master can support 13 line cards and slave can support 48 ports on a single device. Supports broadcast suppression when SAMBA is in slave mode. Counters gather statics.
7. EARL-Encoded Address Recognition Logic. This is similar in function to the learning bridges or content addressable memory (CAM) used on other systems. Listens and learns MAC addresses. Associates source port, VLAN ID, and MAC address. The EARL stores up to 128,000 addresses. Stores addresses for 300 seconds (default), can configure between 60 to 1200 seconds.

SAMBA ASIC

- Provides arbitration to Synergy switching bus
- Works in either master or slave mode
- Supports broadcast suppression (slave mode)
- Counters gather statistics



The SAMBA ASIC located on both line modules and the Supervisor engines, provides arbitration to the switching bus both among the ports and among the line modules in the chassis. Its dual usage is accomplished by strapping on external device pins.

The SAMBA can be strapped in either master mode or slave mode. SAMBA in master mode is located on the Supervisor engine, and SAMBA in slave mode is on the line module and the Fast Ethernet ports on the Supervisor engine. A master can support up to 13 line cards and a slave can support up to 48 ports on a single device.

An arbitration process starts with ports on the line cards requesting access to the bus through the slave SAMBA, which forwards the requests to the master SAMBA on the Supervisor engine. Slave SAMBA then waits for permission from the master SAMBA before issuing grants to the ports.

Broadcast/multicast suppression capability is available when SAMBA is in slave mode. This capability allows SAMBA to monitor the number of broadcast packets going through every port on the line card, and removes the entire broadcast packet if the total number of broadcast packet words reaches a threshold within a given time period. The threshold number and the time period are both initialized by the CPU.

Counters are set up to gather statistics in either slave or master mode. A slave SAMBA counts the number of grants received for each level. The same counter is used in master mode to keep track of the total number of grants issued for each level.

