CLSC Cisco™ Hardware Quick Reference

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1900 – Basic Properties

2 100BaseTX ports
1024 addresses
LED is Green during normal Operation
The 232 console connector is on the rear panel of the catalyst switch
Good for creating several workgroups with 10Mbps clients and 100Mbps servers

2820 – Basic Properties

24 10BaseT ports
Expansion Slot LED green/off is running POST
FDDI Modules: Fiber DAS, Fiber SAS, UTP SAS
100Base TX Module =one switched or eight shared 100-Mbps ports
Four VLANs

Tidbits:
If destination address on same port as source address packet is filtered
If you are experience FCS or Alignment errors switch to Store-and-Forward.
Secure Port = 132 addresses
To double performance of 100Mbps server use FULL-DUPLEX
Source Port Filtering restricts what addresses on what ports

Configuration of Catalyst 1900 and 2820

Menus:

Menu	Purpose
Main Menu	Network Management
System Config Menu	Switching mode options
Network Mgmt Menu	IP configuration
SNMP Config Menu	Read and write community strings
Multi-cast Registration menu	Register a Multicast address

In-band mgmt requires an IP Address
Out-of-band mgmt = console port
Port monitor enables you to route a copy of incoming and outgoing port traffic to a monitor port for analysis.
Changes on 1900: take effect immediately, might not be permament for 30 sec, when an IP address is changes must reset the switch

Catalyst 3000 Switches

Basic Properties	
Input Buffer Per High-Speed Port	256KB
total buffer space for temp packet storage between communicating ports	512KB
Max Switched Ports	24
Max Mac Addresses with 4MB memory	6000
Max Mac Addresses stack of 8 cat 3000's	6000
Max switched ports at 10-Mbps is stact of 8 cat 3000's	192
Max bandwidth of Stackport Module	280 Mbps

1 port on WS-X3002 100BaseT modules
4 UTP 100VG AnyLAN port is MAX on Cat 3000
1 Meter is Max Length of SCSI-2 cable for Cat 3000's
Catalyst Matrix = 8 SCSI-2 Ports

Configuration Catalyst 3000 Switches

Switch Info Screen = set port duplex mode
Auto Switch Mode allows to switch between cut-through and store-and-forward
There are 4 filter types
VLAN Admin Config Screen -> Exam details of a Domain and make changes
The full/half duplex dip switches are over-ridden if set to software control

Troubleshooting 1900 and 2820

Port stat LED flash GREEN/OFF = device is communicating with switch
Possible cause of FCS and Alignment Errors = switch port at Full , attached device at Half-duplex
Turning of Cat switch during upgrade could corrupt firmware
CAT 2820 firmware upgrade not effect FDDI module firmware
Upgrade firmware via : tftp client, tftp server, serial connection (X-modem)
Cross over cable = when transceiver is used or hub marked with an 'X'

Catalyst 5000 Processors

NMP - Network Management Process	General control of hardware, config, and Diagnostics Executes Separate instance of STP pre VLAN SNMP agent is Here
MCP - Master Communication Processor	On Supervisor Engine Communication between the NMP and LCP Supports download of run-time code
LCP - Line Control Processor	8051 processor It processes info from MCP (using SCP)

	Execute boot code in ROM
SAINT ASIC (Ethernet)	Permits use of half-duplex and full-duplex Encapsulation of Ethernet frame before crossing bus (12 bytes of VLAN ID, port origin, FCS) Each port has its own ASIC 192KB of dedicated RAM Performs ISL Encapsulation
SAGE ASIC (FDDI, ATM…)	Same as SAINT but non-Ethernet
SAMBA ASIC	On both line modules and supervisor module On Supervisor = MASTER (support 13 line cards) On line card = SLAVE (support 48 ports) Supports broadcast suppression Counters gather statistics
EARL - Encoded Address Recognition Logic	Learns network addresses Associates Port, VLAN, and MAC Controls Address Aging (300 seconds) Determines where to send frame LTL helps EARL find destination Port CBL = Color Blocking Logic , Block VLANS, STP Blocking
PHEONIX ASIC - Supervisor III	Enable 3.6-GBPS Crossbar Fabric Layer 3 Switching with EARL II Cisco IOS Software Modular Uplink Support

Flow Through the Switch

• **A ports DMA controller stores a frames in buffer**
SAINT ASIC requests Permission from BUS Arbiter
Bus Arbiter Grants Permission
Frame IS tramitted on BUS
All ports receive it
EARL tells non-destination ports to flush it
Others forward it