CCIE Routing & Switching Hardware Specification

Internetwork Expert's CCIE Routing & Switching Lab Workbook Volume II uses the same hardware specification that is used in the actual CCIE lab exam. This includes six routers with Ethernet, FastEthernet, GigabitEthernet, and Serial interfaces. The routers IOS 12.4 and the switches run 12.2. In addition to the six routers, four Catalyst series switches running the enhanced multilayer software image (EMI) are also included. Although 4 3560s were used for developed of the workbook all of the labs can be completed using a combination of two 3560s (SW1 and SW2) and two 3550s (SW3 and SW4). Currently the CCIE lab contains a mixture of 3560s and 3550s but will phase out the 3550s in the future.

As per the actual CCIE lab hardware specification IEWB-RS-VOL2 also includes various external devices that are not within the control of the candidate. These devices include a Frame Relay switch and three backbone routers to inject routes and facilitate in the testing of configurations.

The physical topology of IEWB-RS-VOL2 remains the same throughout the entire workbook. Therefore once your lab has been physically cabled to meet the workbook's specification, there is no need to change the cabling in order to complete each lab.

The specific devices used in design of IEWB-RS-VOL2 were the following

Device	Platform	DRAM	Flash	Installed WICs / Modules
R1	2610XM	128	32	2 - WIC-1T
R2	2610XM	128	32	2 - WIC-1T
R3	3640	128	32	1 - NM-2E2W 1 - NM-4A/S
R4	3640	128	32	1 - NM-2E2W 2 - WIC-1T
R5	3640	128	32	1 - NM-2E2W 2 - WIC-1T
R6	3825	256	64	1 - WIC-1T
SW1	3560-24TS-E	Default	Default	N/A
SW2	3560-24TS-E	Default	Default	N/A
SW3	3550-24-EMI	Default	Default	N/A
SW4	3550-24-EMI	Default	Default	N/A

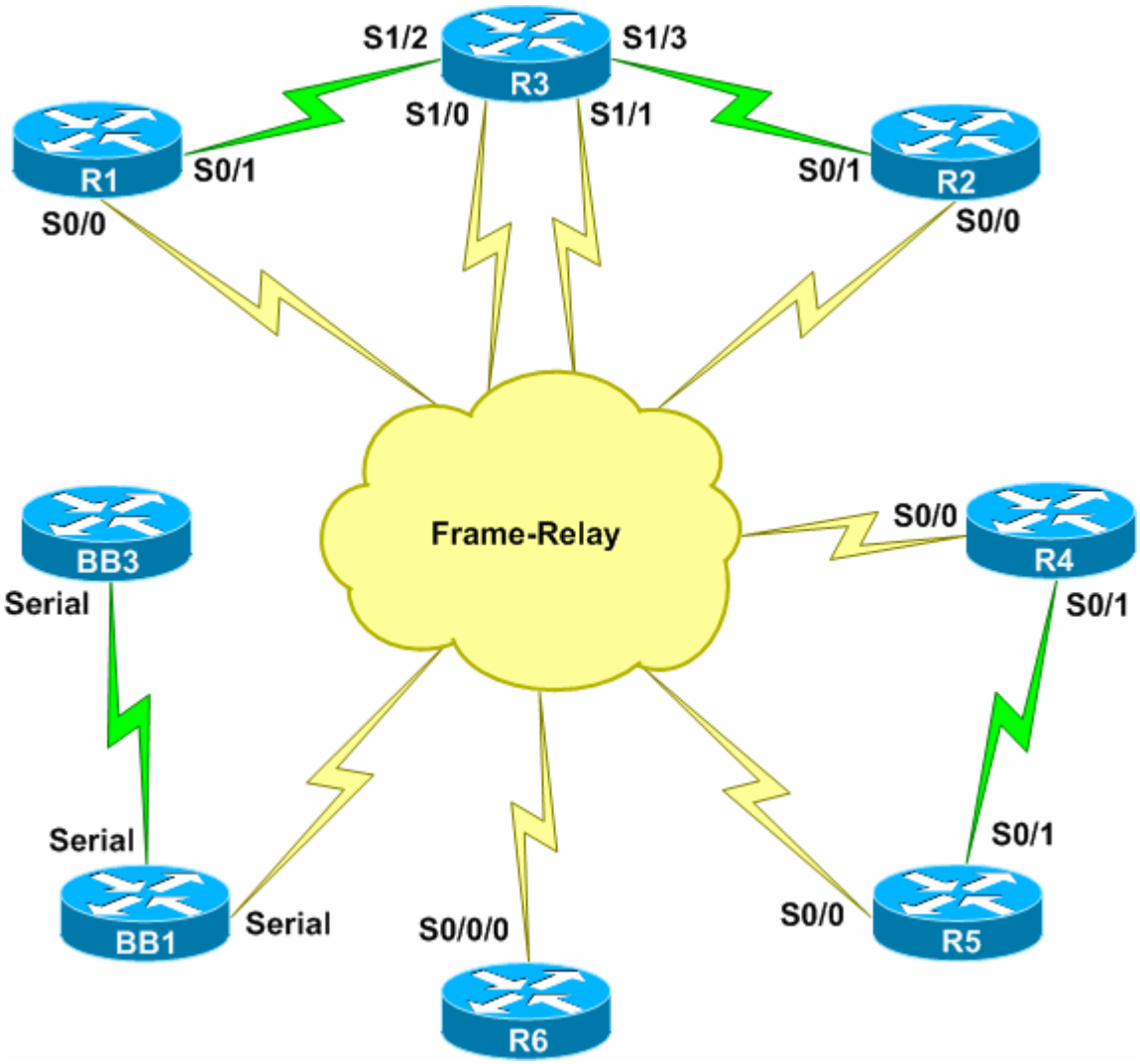
The generic devices used in IEWB-RS-VOL2 include the following:

Device	Software Version	Software Feature Set	Interfaces
R1	12.4(10)A	Advanced Enterprise Services	1 - FastEthernet 2 - Serial
R2	12.4(10)A	Advanced Enterprise Services	1 - FastEthernet 2 - Serial
R3	12.4(10)A	Enterprise/FW/IDS Plus IPSec 3DES	2 - Ethernet 4 - Serial
R4	12.4(10)A	Enterprise/FW/IDS Plus IPSec 3DES	2 - Ethernet 2 – Serial
R5	12.4(10)A	Enterprise/FW/IDS Plus IPSec 3DES	2 - Ethernet 2 - Serial
R6	12.4(10)A	Advanced Enterprise Services	2 - GigabitEthernet 1 - Serial
SW1	12.2(25)SEE2	EMI	24 - FastEthernet 2 - GigabitEthernet
SW2	12.2(25)SEE2	EMI	24 - FastEthernet 2 - GigabitEthernet
SW3	12.2(25)SEC2	EMI	24 - FastEthernet 2 - GigabitEthernet
SW4	12.2(25)SEC2	EMI	24 - FastEthernet 2 - GigabitEthernet

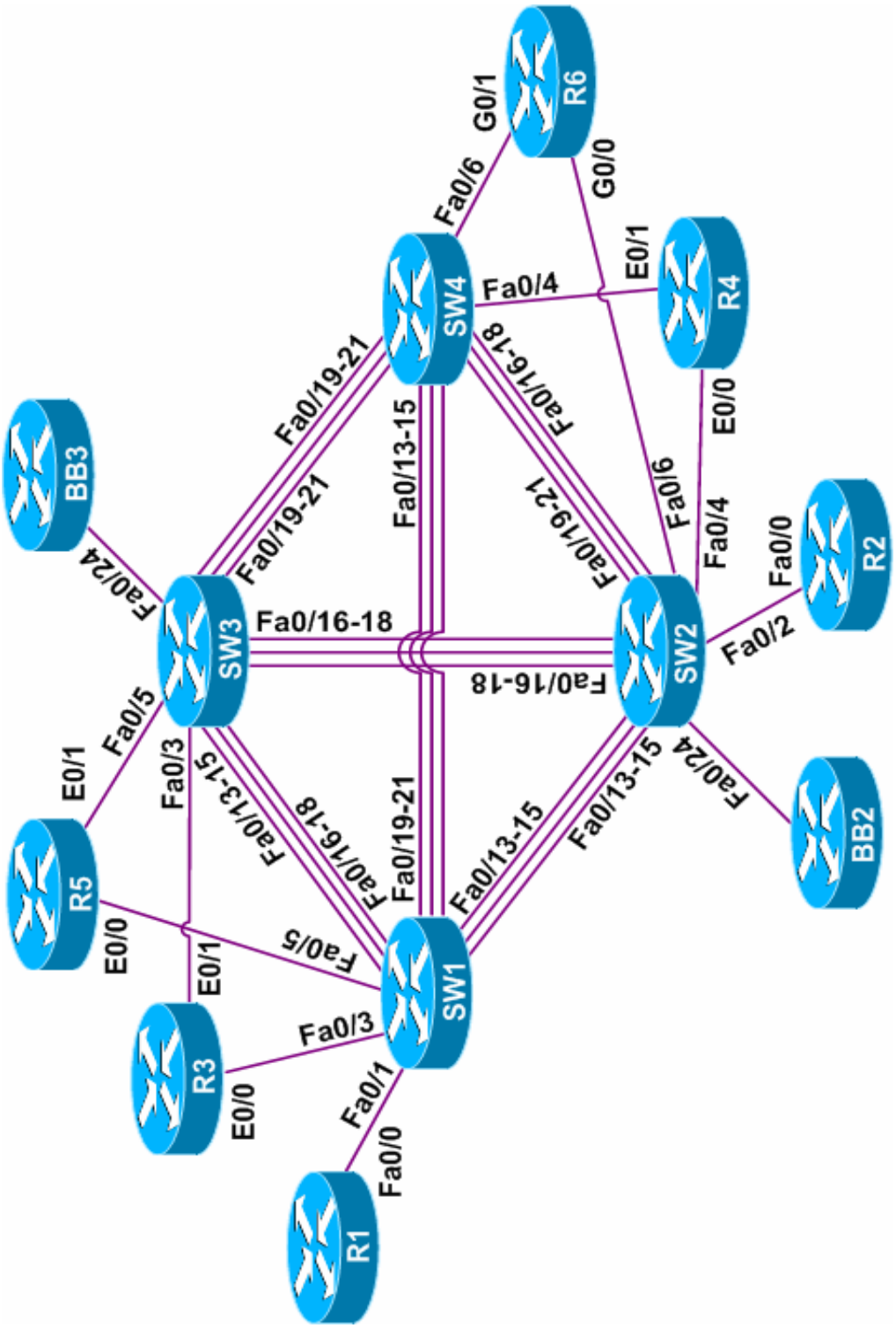
The external core devices used in IEWB-RS-VOL2 include the following

Device	Software Version	Software Feature Set	Interfaces
BB1*	12.2(15)T17	IP Plus	1 - Ethernet
BB2	12.2(15)T17	IP Plus	1 - Ethernet
BB3*	12.2(15)T17	IP Plus	1 - Ethernet
Frame Relay Switch	N/A	N/A	8 - Serial
* BB1 and BB3 will need to peer via iBGP with each other			

IEWB-RS-VOL2 Physical WAN Cabling



IEWB-RS-VOL2 Physical LAN Cabling



IEWB-RS-VOL2 Physical Interface Connections

Frame Relay Switch Configuration					
Local Router	Local Interface	Local DLCI	Remote Router	Remote Interface	Remote DLCI
R1	S0/0	102	R2	S0/0	201
R1	S0/0	103	R3	S1/0	301
R1	S0/0	113	R3	S1/1	311
R1	S0/0	104	R4	S0/0	401
R1	S0/0	105	R5	S0/0	501
R2	S0/0	202	R1	S0/0	102
R2	S0/0	203	R3	S1/0	302
R2	S0/0	213	R3	S1/1	312
R2	S0/0	204	R4	S0/0	402
R2	S0/0	205	R5	S0/0	502
R3	S1/0	301	R1	S0/0	103
R3	S1/0	302	R2	S0/0	203
R3	S1/0	304	R4	S0/0	403
R3	S1/0	305	R5	S0/0	503
R3	S1/1	311	R1	S0/0	113
R3	S1/1	312	R2	S0/0	213
R3	S1/1	314	R4	S0/0	413
R3	S1/1	315	R5	S0/0	513
R4	S0/0	401	R1	S0/0	104
R4	S0/0	402	R2	S0/0	204
R4	S0/0	403	R3	S1/0	304
R4	S0/0	413	R3	S1/1	314
R4	S0/0	405	R5	S0/0	504
R5	S0/0	501	R1	S0/0	105
R5	S0/0	502	R2	S0/0	205
R5	S0/0	503	R3	S1/0	305
R5	S0/0	513	R3	S1/1	315
R5	S0/0	504	R4	S0/0	405
R6	S0/0/0	51	BB1	S0	51
R6	S0/0/0	100	BB1	S0	100
R6	S0/0/0	101	BB1	S0	101
R6	S0/0/0	201	BB1	S0	201
R6	S0/0/0	301	BB1	S0	301
R6	S0/0/0	401	BB1	S0	401

Ethernet Connections			
Local Device	Local Interface	Remote Device	Remote Interface
R1	Fa0/0	SW1	Fa0/1
R2	Fa0/0	SW2	Fa0/2
R3	E0/0	SW1	Fa0/3
R3	E0/1	SW3	Fa0/3
R4	E0/0	SW2	Fa0/4
R4	E0/1	SW4	Fa0/4
R5	E0/0	SW1	Fa0/5
R5	E0/1	SW3	Fa0/5
R6	G0/0	SW2	Fa0/6
R6	G0/1	SW4	Fa0/6
SW1	Fa0/1	R1	Fa0/0
SW1	Fa0/3	R3	E0/0
SW1	Fa0/5	R5	E0/0
SW2	Fa0/2	R2	Fa0/0
SW2	Fa0/4	R4	E0/0
SW2	Fa0/6	R6	G0/0
SW2	Fa0/24	BB2	N/A
SW3	Fa0/3	R3	E0/1
SW3	Fa0/5	R5	E0/1
SW3	Fa0/24	BB3	N/A
SW4	Fa0/4	R4	E0/1
SW4	Fa0/6	R6	G0/1

Switch to Switch Connections			
Local Switch	**Local Interface**	**Remote Switch**	**Remote Interface**
SW1	Fa0/13	SW2	Fa0/13
SW1	Fa0/14	SW2	Fa0/14
SW1	Fa0/15	SW2	Fa0/15
SW1	Fa0/16	SW3	Fa0/13
SW1	Fa0/17	SW3	Fa0/14
SW1	Fa0/18	SW3	Fa0/15
SW1	Fa0/19	SW4	Fa0/13
SW1	Fa0/20	SW4	Fa0/14
SW1	Fa0/21	SW4	Fa0/15
Local Switch	**Local Interface**	**Remote Switch**	**Remote Interface**
SW2	Fa0/13	SW1	Fa0/13
SW2	Fa0/14	SW1	Fa0/14
SW2	Fa0/15	SW1	Fa0/15
SW2	Fa0/16	SW3	Fa0/16
SW2	Fa0/17	SW3	Fa0/17
SW2	Fa0/18	SW3	Fa0/18
SW2	Fa0/19	SW4	Fa0/16
SW2	Fa0/20	SW4	Fa0/17
SW2	Fa0/21	SW4	Fa0/18
Local Switch	**Local Interface**	**Remote Switch**	**Remote Interface**
SW3	Fa0/13	SW1	Fa0/16
SW3	Fa0/14	SW1	Fa0/17
SW3	Fa0/15	SW1	Fa0/18
SW3	Fa0/16	SW2	Fa0/16
SW3	Fa0/17	SW2	Fa0/17
SW3	Fa0/18	SW2	Fa0/18
SW3	Fa0/19	SW4	Fa0/19
SW3	Fa0/20	SW4	Fa0/20
SW3	Fa0/21	SW4	Fa0/21
Local Switch	**Local Interface**	**Remote Switch**	**Remote Interface**
SW4	Fa0/13	SW1	Fa0/19
SW4	Fa0/14	SW1	Fa0/20
SW4	Fa0/15	SW1	Fa0/21
SW4	Fa0/16	SW2	Fa0/19
SW4	Fa0/17	SW2	Fa0/20
SW4	Fa0/18	SW2	Fa0/21
SW4	Fa0/19	SW3	Fa0/19
SW4	Fa0/20	SW3	Fa0/20
SW4	Fa0/21	SW3	Fa0/21

