

# CCIE Service Provider Hardware Specification

Internetwork Expert's CCIE Service Provider Lab Workbook Volume II uses the same hardware specification that is used in the actual CCIE lab exam. This includes seven routers with Ethernet, FastEthernet, GigabitEthernet, ATM, and Serial interfaces. The routers run a combination of 12.2S, 12.3T, and 12.4 IOS. In addition to the seven routers, two Catalyst 3550 series switches running the enhanced multilayer software image (EMI) are also included.

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

The physical topology of IEWB-SP-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 generic devices used in IEWB-SP-VOL2 include the following:

Device	Software Version	Software Feature Set	Interfaces
R1	12.2(25)S9	Service Provider Secure Shell 3DES	1 - FastEthernet 2 - Serial 1 - ATM
R2	12.2(25)S9	Service Provider Secure Shell 3DES	1 - FastEthernet 2 - Serial 1 - ATM
R3	12.3(14)T7	Enterprise Plus/H323 MCM	2 - Ethernet 4 - Serial
R4	12.3(14)T7	Enterprise Plus/H323 MCM	2 - Ethernet 2 - Serial
R5	12.3(14)T7	Enterprise Plus/H323 MCM	2 - Ethernet 2 - Serial
R6	12.4(5)	Advanced Enterprise Services	2 - GigabitEthernet 1 - Serial
R7	12.2(25)SEC	EMI	24 - FastEthernet 2 - GigabitEthernet
R8	12.2(25)SEC	EMI	24 - FastEthernet 2 - GigabitEthernet
R9	12.3(14)T7	Enterprise Plus/H323 MCM	1 - ATM

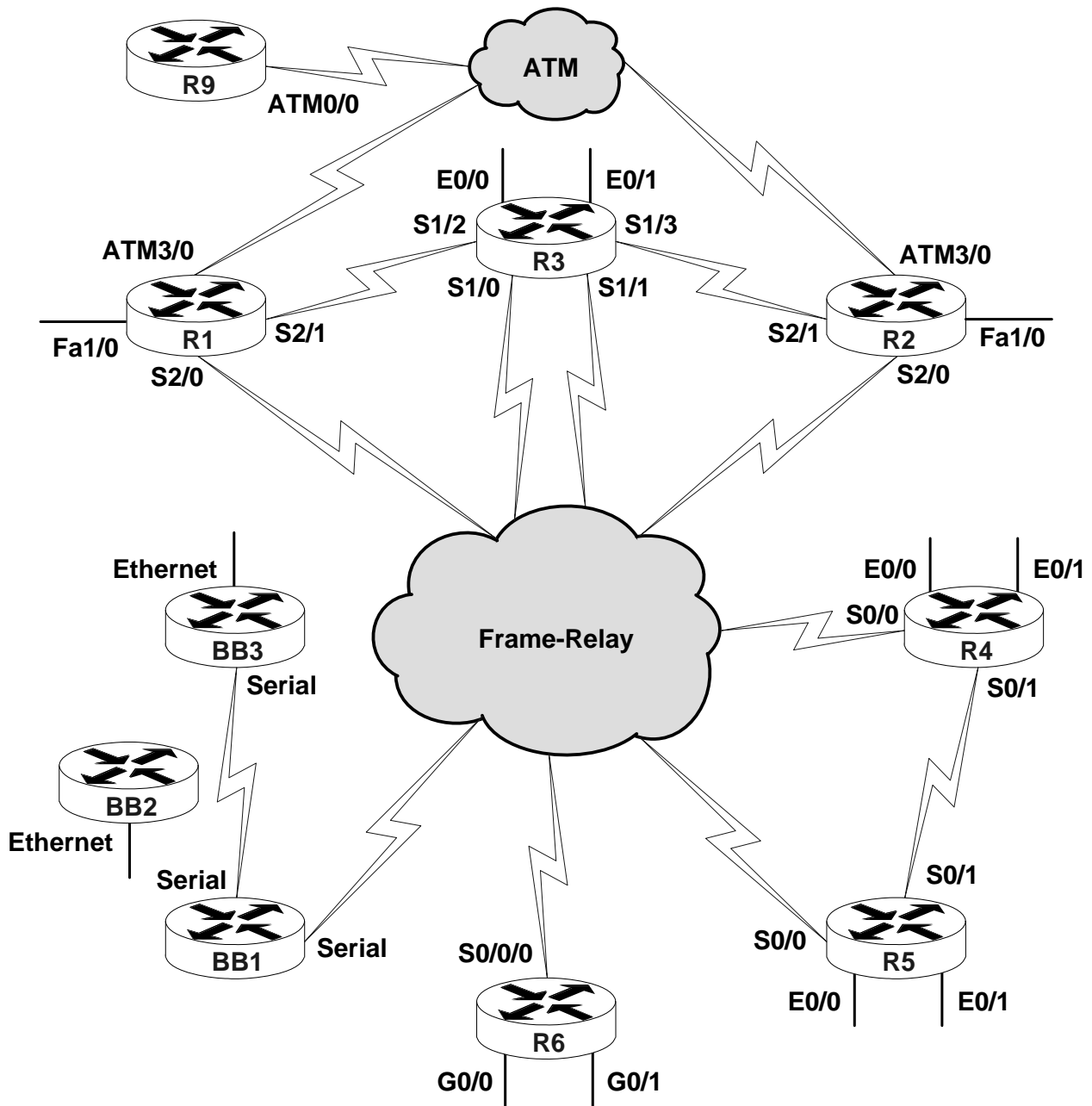
The specific devices used in design of IEWB-SP-VOL2 were the following

Device	Platform	DRAM	Flash	Installed WICs / Modules
R1	7206	128	24	1 - NPE-200 1 - PA-1FE-TX 1 - PA-4T 1 - PA-A1-OC3MM
R1	7206	128	24	1 - NPE-200 1 - PA-1FE-TX 1 - PA-4T 1 - PA-A1-OC3MM
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
R7	3550-24-EMI	Default	Default	N/A
R8	3550-24-EMI	Default	Default	N/A
R9	3640	128	32	1 - NM-A1-OC3MM

The external core devices used in IEWB-SP-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
LS1010 ATM Switch	12.1(27b)E1	N/A	3 - ATM OC3
* BB1 and BB3 will need to peer via iBGP with each other. This can be done over any interface, such as Ethernet, Serial, or even an AUX port to AUX port connection			

## IEWB-SP-VOL2 Physical Cabling Connections



## IEWB-SP-VOL2 Physical Interface Connections

Frame Relay Switch Configuration					
Local Router	Local Interface	Local DLCI	Remote Router	Remote Interface	Remote DLCI
R1	S2/0	102	R2	S2/0	201
R1	S2/0	103	R3	S1/0	301
R1	S2/0	113	R3	S1/1	311
R1	S2/0	104	R4	S0/0	401
R1	S2/0	105	R5	S0/0	501
R2	S2/0	202	R1	S2/0	102
R2	S2/0	203	R3	S1/0	302
R2	S2/0	213	R3	S1/1	312
R2	S2/0	204	R4	S0/0	402
R2	S2/0	205	R5	S0/0	502
R3	S1/0	301	R1	S2/0	103
R3	S1/0	302	R2	S2/0	203
R3	S1/0	304	R4	S0/0	403
R3	S1/0	305	R5	S0/0	503
R3	S1/1	311	R1	S2/0	113
R3	S1/1	312	R2	S2/0	213
R3	S1/1	314	R4	S0/0	413
R3	S1/1	315	R5	S0/0	513
R4	S0/0	401	R1	S2/0	104
R4	S0/0	402	R2	S2/0	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	S2/0	105
R5	S0/0	502	R2	S2/0	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 Router	Local Interface	Remote Router	Remote Interface
R1	Fa1/0	R7	Fa0/1
R2	Fa1/0	R7	Fa0/2
R3	E0/0	R7	Fa0/3
R3	E0/1	R8	Fa0/3
R4	E0/0	R7	Fa0/4
R4	E0/1	R8	Fa0/4
R5	E0/0	R7	Fa0/5
R5	E0/1	R8	Fa0/5
R6	G0/0	R7	Fa0/6
R6	G0/1	R8	Fa0/6
R7	Fa0/1	R1	Fa1/0
R7	Fa0/2	R2	Fa1/0
R7	Fa0/3	R3	E0/0
R7	Fa0/4	R4	E0/0
R7	Fa0/5	R5	E0/0
R7	Fa0/6	R6	G0/0
R7	Fa0/13	R8	Fa0/13
R7	Fa0/14	R8	Fa0/14
R7	Fa0/15	R8	Fa0/15
R7	Fa0/24	BB3	N/A
R8	Fa0/3	R3	E0/1
R8	Fa0/4	R4	E0/1
R8	Fa0/5	R5	E0/1
R8	Fa0/6	R6	G0/1
R8	Fa0/13	R7	Fa0/13
R8	Fa0/14	R7	Fa0/14
R8	Fa0/15	R7	Fa0/15
R8	Fa0/24	BB2	N/A

## IEWB-SP-VOL2 Physical Interface Connections

ATM Switch Configuration					
Local Router	Local Interface	Local VPI/VCI	Remote Router	Remote Interface	Remote VPI/VCI
R1	ATM3/0	0/102	R2	ATM3/0	0/201
R1	ATM3/0	0/109	R9	ATM0/0	0/901
R2	ATM3/0	0/201	R1	ATM3/0	0/102
R2	ATM3/0	0/209	R9	ATM0/0	0/902
R9	ATM0/0	0/901	R1	ATM3/0	0/109
R9	ATM0/0	0/902	R2	ATM3/0	0/209