



APPENDIX A

Bill of Materials As Validated

Revised: October 20, 2010

Table A-1 presents the product part numbers for the components in the Compact Pod, as well as the network infrastructure required to build out the Cisco VMDC solution, version 2.0.

Table A-1 Cisco VMDC Solution, Version 2.0. Compact Pod 1 Gbps or 10 Gbps Configuration

Part Number	Description	Quantity
Cisco Nexus 7010		
N7K-C7010-BUN	Nexus 7010 Bundle (Chassis,SUP1,(3)FAB1,(2)AC-6KW PSU)	2
N7K-SUP1	Nexus 7000 - Supervisor, Includes External 8 GB Log Flash	2
N7K-M132XP-12	Nexus 7000 - 32 Port 10GbE, 80 G Fabric (req. SFP+)	8
SFP-10G-SR	10GBASE-SR SFP Module	64
CON-OSP-C7010	ONSITE 24X7X4 10 Slot Chassis, No Power Supplies, Fans	2
DC3 COMPACT FLASH	Compact Flash Option	2
N7K-CPF-2GB	Nexus Compact Flash Memory 2 GB (Expansion Flash - Slot 0)	2
N7KS1K9-50	Cisco NX-OS Release 5.0	2
CON-OSP-N7FAB	ONSITE 24X7X4 Nexus 7000 - 10 Slot Chassis	6
CON-OSP-N732XP	ONSITE 24X7X4 Nexus 7000 - 32 Port 10 GbE, 80G Fabric	8
CON-OSP-N7SUP1	ONSITE 24X7X4 Nexus 7000 - Supervisor, Includes Ext	4
Cisco Nexus 5020		
N5k-C5020P-BF	N5000 2RU Chassis no PS 5 Fan Modules 40 ports (req SFP+)	2
N5K-M1008	N5000 1000 Series Module 8xFC 4/2/1 G (req SFP)	2
SFP-10G-SR	10GBASE-SR SFP Module	
N5K PS OPT	Nexus 5 K Power Supply Options	2
N5K-PAC-1200W	Nexus 5020 PSU module, 100-240VAC 1200W	4
N5K CAB OPT	Power Cables	4
CAB-C13-C14-JMPR	Recessed receptacle AC power cord 27	4
N5K EXPAND	N5K Expansion Class	2
N5K-M1-BLNK	N5000 1000 Series Expansion Module Blank	2

Table A-1 Cisco VMDC Solution, Version 2.0. Compact Pod 1 Gbps or 10 Gbps Configuration (continued)

Part Number	Description	Quantity
N5KUK9-413N1.1	Nexus 5000 Base OS Software Rel 4.1(3)N1(1)	2
N5020-ACC-KIT	Generic accessory kit for Nexus 5020	2
SFP-H10GB-CU3M or SFP-H10GB-CU5M	10GBASE-CU SFP+ Cable 3 Meter - or 10GBASE-CU SFP+ Cable 5 Meter	64
Cisco Nexus 1000V and VMware (Supporting 1 PoD)		
L-N1K-VLCPU-32	Nexus 1000V eDelivery CPU License Qty 32 (1YR Min Service)	2
VMW-VCS-3A	VMware vCenter Server Standard, 3yr 24x7 support	1
VMW-VS-ENTP-3A	VMware vSphere Enterprise Plus (1 CPU), 3yr 24x7 support	64
Cisco Nexus 2148		
N2K-C2148T-1GE	N2K 1GE FEX, 1PS, 1 Fan Module, 48x1G-BaseT+4x10GE (req SFP+)	2
SFP-10G-SR	10GBASE-SR SFP Module	4
CAB-AC-250V/13A	North America, NEMA L6-20 250V/20A plug-IEC320/C13 receptacle	4
N2K-PAC-200W	N2K-C2148 Series FEX 200W AC Power Supply	2
SFP-H10GB-CU3M or SFP-H10GB-CU5M	10GBASE-CU SFP+ Cable 3 Meter - or 10GBASE-CU SFP+ Cable 3 5 Meter	4
Cisco UCS C200 Support 2 Clusters 16 Servers/Total 32 Servers (1-Gbps Compute Layer)		
R200-1120402	UCS C200M1 Rack Srvr w/1PSU,DVD, w/o CPU, mem, HDD, PCIe crd	32
C200 CPU OPT	Processor Options	32
N20-X00006	2.66GHz Xeon X5550 95W CPU/8MB cache/DDR3 1333MHz	64
C200 MEM OPT	Memory Options	32
N01-M304GB1	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1 GB DRAMs	192
C2XX PCI EXP	PCI Express Card Options	32
N2XX-AQPCI03 or N2XX-AEPCI03	- Qlogic QLE2462, 4Gb dual port Fibre Channel Host Bus Adapter - or - Emulex LPe 11002, 4Gb Fibre Channel PCIe Dual Channel HBA	32
C2XX RAIL KIT ACC	Rail Kit Accessories	32
R250-SLDRAIL	Rail Kit for the UCS 250 M1 Rack Server	32
R250-CBLARM	Cable Management for UCS 250 M1 Rack Server	32
C200 PWR SUP	Power Supply	32
R2X0-PSU2-650W	650W power supply unit for UCS C200 M1 or C210 M1 Server	32
C2XX PWR CAB	Power Cables	32
CAB-C13-C14-JMPR	Recessed receptacle AC power cord 27	32
C2XX EXPAND OPT	Expansion (Hidden)	32
R200-BBLKD	HDD slot blanking panel for UCS C200 M1 Rack Servers	128

Table A-1 Cisco VMDC Solution, Version 2.0. Compact Pod 1 Gbps or 10 Gbps Configuration (continued)

Part Number	Description	Quantity
R200-BHTS1	CPU heat sink for UCS C200 M1 Rack Server	64
R200-PCIBLKF1	PCIe Full Height blanking panel for UCS 200 M1 Rack Server	32
R200-SATACBL-001	Internal SATA Cable for a base UCS C200 M1 Server	32
Cisco UCS B-Series - Support 1 Full PoD- 4 Clusters - 64 Servers (10-Gbps Compute Layer)		
N10-S6100	UCS 6120XP 20-port Fabric Interconnect/0 PSU/2 fans/no SFP+	4
B SW IMG OPT	Software Image Options	4
N10-MGT001	UCS Manager v1.0.1	4
B SLOT 0 OPT	Slot Options	4
N10-E0080	8-port 4Gb FC/Expansion module/UCS 6100 Series	4
B PWR SUP OPT	Power Supply Options	4
N10-PAC1-550W	550W power supply unit for UCS 6120XP/100-240VAC	8
B PWR CAB OPT	Power Cables	4
CAB-C13-C14-JMPR	Recessed receptacle AC power cord 27	8
B ACC KIT OPT	Accessory Kit Options	4
N10-SACCA	Accessory kit for UCS 6120XP Fabric Interconnect	4
N20-C6508	UCS 5108 Blade Server Chassis/0 PSU/8 fans/0 fabric extender	8
SC IO OPT	I/O Module Addons	8
N20-I6584	UCS 2104XP Fabric Extender/4 external 10Gb ports	16
SC PWR SUP OPT	Power Supply	8
N20-PAC5-2500W	2500W power supply unit for UCS 5108	32
SC PWR CAB OPT	Power Cables	8
CAB-C19-CBN	Cabinet Jumper Power Cord, 250 VAC 16A, C20-C19 Connectors	32
SC EXPANSION OPT	Expansion Options (Hidden)	8
N20-BBLKD	HDD slot blanking panel for UCS B-Series Blade Servers	128
N20-FAN5	Fan module for UCS 5108	64
N01-UAC1	Single phase AC power module for UCS 5108	8
N20-FW001	UCS 5108 Blade Server Chassis FW package/DO NOT PUBLISH	8
BLADE 0	Blade Options 0	64
N20-B6620-1	UCS B200 M1 Blade Server w/o CPU, memory, HDD, mezzanine	64
G PROC OPT	Processor Options	64
N20-X00001	2.93GHz Xeon X5570 95W CPU/8MB cache/DDR3 1333MHz	128
G MEM OPT	Memory Options	64
N01-M304GB1 or N01-M308GB2	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs - or 8GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 2Gb DRAMs (12 slots per blade)	64 * 12 = 768

Table A-1 Cisco VMDC Solution, Version 2.0. Compact Pod 1 Gbps or 10 Gbps Configuration (continued)

Part Number	Description	Quantity
G MEZZ OPT	Mezzanine Options	64
N20-AC0002 or N20-AE0002	- UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb - or - UCS M71KR-E Emulex Converged Network Adapter/PCIe/2port 10Gb	64
G EXPAND OPT	Expansion (Hidden)	64
N20-BHTS1	CPU heat sink for UCS B200 M1 Blade Server	128
Cisco Catalyst 6509-VSS Data Center Services Node		
WS-C6509-E	Catalyst 6500 Enhanced 9-slot chassis, 15RU, no PS, no Fan Tray	2
SV33AEK9-12233SXI	Cisco CAT6000-VSS720 IOS ADVANCED ENTERPRISE SERVICES SSH	2
VS-S720-10G-3CXL	Cat 6500 Supervisor 720 with 2 ports 10GbE MSFC3 PFC3C XL	2
VS-F6K-MSFC3	Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	2
VS-F6K-PFC3CXL	Catalyst 6500 Sup720-10G Policy Feature Card 3CXL	2
VS-S720-10G	Catalyst 6500 Supervisor 720 with 2 10GbE ports	2
MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	2
BF-S720-64MB-RP	Bootflash for SUP720-64MB-RP	2
CF-ADAPTER-SP	SP adapter for SUP720 and SUP720-10G	2
MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	2
WS-C6509-E-FAN	Catalyst 6509-E Chassis Fan Tray	2
WS-CAC-6000W	Cat6500 6000W AC Power Supply	4
CAB-AC-2500W-US1	Power Cord, 250Vac 16A, straight blade NEMA 6-20 plug, US	8
ACE20-MOD-K9=	Application Control Engine 20 Hardware	2
ACE20 SW OPT	ACE Module Software Options	2
SC6K-3.0.0A16-ACE	ACE 3.0.0A1(6) Software Release	2
ACE20 PERF LIC OPT	Performance License Options	2
ACE-04G-LIC	Application Control Engine (ACE) 4Gbps License	2
ACE-VIRT-050	Application Control Engine Virtualization 50 Contexts	2
WS-X6708-10G-3CXL	C6K 8 port 10 Gigabit Ethernet module with DFC3CXL (req. X2)	4
WS-F6700-DFC3CXL	Catalyst 6500 Dist Fwd Card- 3CXL, for WS-X67xx	4
WS-X6708-10GE	Cat6500 8 port 10 Gigabit Ethernet module (req. DFC and X2)	4
X2-10GB-SR	10GBASE-SR X2 Module	20
GLC-T	1000BASE-T SFP	4
WS-SVC-NAM-2-250S	Cisco Catalyst 6500 and Cisco 7600 Network Analysis Module	2
SC-SVC-NAM-4.2	Cisco NAM 4.2 for Cat6500/C7600 NAM	2
WS-SVC-FWM-1-K9	Firewall blade for 6500 and 7600, VFW License Separate	6
SC-SVC-FWM-4.0-K9	Firewall Module Software 4.0 for 6500 and 7600, 2 free VFW	6
FR-SVC-FWM-VC-T2	Catalyst 6500 and 7600 virtual FW licensing for 50 VF	6

Table A-1 Cisco VMDC Solution, Version 2.0. Compact Pod 1 Gbps or 10 Gbps Configuration (continued)

Part Number	Description	Quantity
SF-FWM-ASDM-6.1F	Device Manager for FWSM 4.0 for Catalyst 6500 and 7600	2
Catalyst 6509 WAN Edge Layer		
WS-C6509-E	Catalyst 6500 Enhanced 9-slot chassis, 15RU, no PS, no Fan Tray	2
SV33AEK9-12233SXI	Cisco CAT6000-VSS720 IOS ADVANCED ENTERPRISE SERVICES SSH	2
VS-S720-10G-3CXL	Cat 6500 Supervisor 720 with 2 ports 10GbE MSFC3 PFC3C XL	2
VS-F6K-MSFC3	Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	2
VS-F6K-PFC3CXL	Catalyst 6500 Sup720-10G Policy Feature Card 3CXL	2
VS-S720-10G	Catalyst 6500 Supervisor 720 with 2 10GbE ports	2
MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	2
BF-S720-64MB-RP	Bootflash for SUP720-64MB-RP	2
CF-ADAPTER-SP	SP adapter for SUP720 and SUP720-10G	2
MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	2
WS-C6509-E-FAN	Catalyst 6509-E Chassis Fan Tray	2
WS-CAC-6000W	Cat6500 6000W AC Power Supply	4
CAB-AC-2500W-US1	Power Cord, 250Vac 16A, straight blade NEMA 6-20 plug, US	8
WS-X6708-10G-3CXL	C6K 8 port 10 Gigabit Ethernet module with DFC3CXL (req. X2)	4
WS-F6700-DFC3CXL	Catalyst 6500 Dist Fwd Card- 3CXL, for WS-X67xx	4
WS-X6708-10GE	Cat6500 8 port 10 Gigabit Ethernet module (req. DFC and X2)	4
X2-10GB-SR	10GBASE-SR X2 Module	20
MDS 9513		
MDS 9513	Cisco MDS 9513 Multilayer Director Switch	2
DS-X9224-96K9	MDS 9000 24-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC connectors	4
DSX9704		6
DS-X9530-SF2-K9	MDS 9500 Series Supervisor-2 module	4
DS-X9304-18K9	18-port Fibre Channel/4-port Gigabit Ethernet Multiservice (MSM-18/4) module	2
MDS 91XX Fiber Channel Switches		
DS-C9148D-8G32P-K9	MDS 9148 with 32p enabled, 32x8GFC SW optics, 2 PS	2
CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	4
DS-SFP-FC8G-SW	8 Gbps Fibre Channel SW SFP+, LC	64
DS-9148-KIT-CSCO	Accessory Kit for Cisco MDS 9148	2
DS-C9134AP-K9	MDS 9134 with 24 ports enabled with 24 SW SFPs - PL PID	2
M91S2K9-5.0.1A	MDS 9100 Supervisor/Fabric-2, NX-OS Software Release 5.0(1A)	2
M9100FMS1K9	MDS 9100 Fabric Manager Server license for 1 MDS 9100 switch	2
CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	4
DS-9134-KIT-CSCO	Accessory Kit for MDS 9134 Cisco Option	2

Table A-1 Cisco VMDC Solution, Version 2.0. Compact Pod 1 Gbps or 10 Gbps Configuration (continued)

Part Number	Description	Quantity
DS-SFP-FC4G-SW	4 Gbps Fibre Channel-SW SFP, LC	48
EMC V-Max		
SB-DE15-DIR	V-MAX 15SLT DR ENCL	16
SB-DB-SPS	V-MAX SB SPS	4
SB-FE80000	V-MAX 8M FC-NO PREM	4
SB-32-BASE	V-MAX BASE-32 GB	1
SB-ADD32NDE	V-MAX ADD ENGINE-32 GB	1
NF4103001B	V-MAX 4G 10 K300GB DRIVE	88
SB-PCBL3DHR	50A 3PH DELTA HBL-RSTOL	2
SB-ACON3P-50	ADPTR AC 3PH 50A W/3/4IN CONDUIT ADPTR	4
SB-CONFIG05	V-MAX CONFIG 05	1
PP-SE-SYM	PPATH SE SYM	1
ESRS GW 100	SECURE REMOTE SUPPRT GW	1
SYMVP-RN-OPN	SYMM VIRTUAL PROV RUNTIME	1
ENGTY-SB-BAS	V-MAX ENGINUITY BASE LICENSE	1
ENGTY-SB-C02	V-MAX ENGINUITY 1TB (15-25TB)	24
M-PRESW-001	PREMIUM SOFTWARE SUPPORT	1
NF4106001BU	V-MAX 4G 10K600GB DRV UPG	48
SYMVP-RN-OPN	SYMM VIRTUAL PROV RUNTIME	1
ENGTY-SB-UPG	V-MAX ENGINUITY BASE UPGRADE	1
SYM-MIGR-BAS	SYMMETRIX MIGRATION PKG BASE LICENSE	1
ENGTY-SB-C04	V-MAX ENGINUITY 1TB (41-60TB)	25
457-100-183	POWERPATH/VE, STD X86 T2 (8+ CPUs)	128
POWERPATH-VE	POWERPATH FOR VIRTUAL ENVIRONMENT	64
NetApp (Network Attached Storage)		
FAS6080A-IB-BS2-R5	FAS6080A,IB,ACT,ACT,HW/SW, 220V,R5	1
X1107A-R6-C	NIC 2-PORT BARE CAGE SFP+ 10GbE SFP+ PCIe, -c	2
DS4243-0724-12A-R5-C	DSK SHLF, 12x2.0TB,7.2K,SATA, IOM3,-C,45	2