

Dell EMC Red Hat OpenStack NFV Solution

**Bill of Materials Guide
Version 6.0**



Dell EMC Validated Solutions

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Notes, Cautions, and Warnings



A **Note** indicates important information that helps you make better use of your system.



A **Caution** indicates potential damage to hardware or loss of data if instructions are not followed.



A **Warning** indicates a potential for property damage, personal injury, or death.

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Chapter 1

Overview

Topics:

- [Nodes Overview](#)

This guide provides Bill of Material information necessary to purchase the proper hardware to deploy the Dell EMC Red Hat OpenStack NFV Solution.

Nodes Overview

The minimum hardware needed is:

- 1 Solution Admin Host (SAH)
- 3 Controller nodes
- 3 Compute nodes
- 3 Storage servers

The hardware includes:

- Dell PowerEdge R630 and PowerEdge R730xd.
- Dell Networking S4048T and S6010-ON network switches
- All Build of Materials for Computes and Storage are written for the minimum needed for the Validated Solution, additional nodes of these can be in a quantity of one (1) or more.
- Optional hardware: there are optional hardware available for the Compute and Storage nodes. When designing a solution all nodes of a class (Compute or Storage) must be the same.
- In addition to the network switches listed above, the Dell Networking S6000-ON is available - [Technical Guide Using Dell Networking S6000-ON Switches Version 6.0](#)

Please consult with your Dell EMC sales representative to ensure proper preparation and submission of your hardware and software orders.

Chapter

2

Bill of Material for PowerEdge R Solution

Topics:

- *Solution Bundle Bill of Materials - SAH*
- *Solution Bundle Bill of Materials - 3 Controller Nodes*
- *Solution Bundle Bill of Materials - 3 Compute Nodes*
- *Solution Bundle Bill of Materials - 3 Storage Nodes*
- *Bill of Materials - 2 Dell Networking S6010-ON Switches*
- *Bill of Materials - Dell Networking S4048T Switch*
- *Bill of Materials - Cables for Solution*

Solution Bundle Bill of Materials - SAH

Table 1: Bill of Materials - Solution Admin Hosts

SKU	Description	Quantity
370-AAIP	Performance Optimized	1
405-AAEG	PH730 Intg RD CTL,1GB Cache	1
385-BBHO	iDRAC8, Enterprise	1
634-BBWU	OpenManage Essentials,Server ConfigMgmt	1
384-BBBL	Performance BIOS Settings	1
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	1
976-7728	HW WRTY + SVC,PE R630,UNY	1
976-7761	PSP NBD OS,PE R630,UNY,3YR	1
976-7768	PSP TECH SPT,PE R630,3YR	1
900-9997	ONSITE INSTL DECLINED	1
332-1286	US Order	1
321-BBKM	Chas,10HD,3PCI	1
780-BBJN	R10,H330/H730/H730P	1
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	1
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	1
770-BBBC	Slide RdyRL,No CMA	1
450-ADWQ	Dual,Redundant,Hot-plug PS,495W	1
631-AACK	No Systems Docs, No OM DVD Kit	1
800-BBDM	UEFI BIOS with GPT Partition	1
429-AAIQ	No Internal Optical Drive	1
325-BBIL	Quick Sync Bezel 10/24 Drive Chassis	1
340-AKPR	PowerEdge R630 Ship-10/24 Drive Chassis	1
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	2
900-9997	ONSITE INSTL DECLINED	1
210-ACXS	PowerEdge R630 Server	1
329-BCZI	PowerEdge R630 Motherboard MLK	1
461-AADZ	No Trusted Platform Module	1
370-ACPH	2400MT/s RDIMMs	1
370-ABWE	DIMM Blanks for System with 2 Processors	1
412-AAEE	120W Heatsink for PowerEdge R630	1

SKU	Description	Quantity
412-AAEE	120W Heatsink for PowerEdge R630	1
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	1
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	1
370-ACNX	16GB RDIMM,2400MT/s,DR,x8	4
619-ABVR	No Operating System	1
421-5736	No Media Required	1
400-AJOW	HDD,600GB 10K SAS,12G,2.5,HP	8
469-3879	ESO ORDER ONLY Send PO to ACES	1
331-6781	ACES QUALITY REVIEW	1
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	3
331-3286	DCS, INFO MOD ,OPENSTACK	1

Solution Bundle Bill of Materials - 3 Controller Nodes

Table 2: Bill of Materials - Controller Nodes

SKU	Description	Quantity
370-AAIP	Performance Optimized	3
405-AAEG	PH730 Intg RD CTL,1GB Cache	3
385-BBHO	iDRAC8, Enterprise	3
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
384-BBBL	Performance BIOS Settings	3
619-ABVR	No Operating System	3
421-5736	No Media Required	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
976-7728	HW WRTY + SVC,PE R630,UNY	3
976-7761	PSP NBD OS,PE R630,UNY,3YR	3
976-7768	PSP TECH SPT,PE R630,3YR	3
900-9997	ONSITE INSTL DECLINED	3
332-1286	US Order	3
321-BBKM	Chas,10HD,3PCI	3
780-BBJN	R10,H330/H730/H730P	3
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	3
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	3
770-BBBC	Slide RdyRL,No CMA	3

SKU	Description	Quantity
450-ADWQ	Dual,Redundant,Hot-plug PS,495W	3
631-AACK	No Systems Docs, No OM DVD Kit	3
800-BBDM	UEFI BIOS with GPT Partition	3
340-AKPR	PowerEdge R630 Ship-10/24 Drive Chassis	3
325-BBIL	Quick Sync Bezel 10/24 Drive Chassis	3
429-AAIQ	No Internal Optical Drive	3
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	6
900-9997	ONSITE INSTL DECLINED	3
210-ACXS	PowerEdge R630 Server	3
329-BCZI	PowerEdge R630 Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
370-ACPH	2400MT/s RDIMMs	3
370-ACNX	16GB RDIMM,2400MT/s,DR,x8	24
370-ABWE	DIMM Blanks for System with 2 Processors	3
412-AAEE	120W Heatsink for PowerEdge R630	3
412-AAEE	120W Heatsink for PowerEdge R630	3
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3
400-AJOW	HDD,600GB 10K SAS,12G,2.5,HP	24
331-3286	DCS, INFO MOD ,OPENSTACK	3
469-3879	ESO ORDER ONLY Send PO to ACES	3
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	9
331-6781	ACES QUALITY REVIEW	3

Solution Bundle Bill of Materials - 3 Compute Nodes

The base Solution supports the PowerEdge R630 Server for Compute nodes. See [Table 3: Bill of Materials - PowerEdge R630 Compute Nodes](#) on page 11.



Note: For other Compute node server options see [Optional Compute Nodes](#) on page 17.

Table 3: Bill of Materials - PowerEdge R630 Compute Nodes

SKU	Description	Quantity
370-AAIP	Performance Optimized	3
405-AAEG	PH730 Intg RD CTL,1GB Cache	3
385-BBHO	iDRAC8, Enterprise	3

SKU	Description	Quantity
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
384-BBBL	Performance BIOS Settings	3
619-ABVR	No Operating System	3
421-5736	No Media Required	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
976-7728	HW WRTY + SVC,PE R630,UNY	3
976-7761	PSP NBD OS,PE R630,UNY,3YR	3
976-7768	PSP TECH SPT,PE R630,3YR	3
900-9997	ONSITE INSTL DECLINED	3
332-1286	US Order	3
321-BBKM	Chas,10HD,3PCI	3
780-BBJN	R10,H330/H730/H730P	3
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	3
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	3
770-BBBC	Slide RdyRL,No CMA	3
450-ADWQ	Dual,Redundant,Hot-plug PS,495W	3
631-AACK	No Systems Docs, No OM DVD Kit	3
800-BBDM	UEFI BIOS with GPT Partition	3
340-AKPR	PowerEdge R630 Ship-10/24 Drive Chassis	3
325-BBIL	Quick Sync Bezel 10/24 Drive Chassis	3
429-AAIQ	No Internal Optical Drive	3
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	6
900-9997	ONSITE INSTL DECLINED	3
210-ACXS	PowerEdge R630 Server	3
329-BCZI	PowerEdge R630 Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
370-ACPH	2400MT/s RDIMMs	3
370-ACNX	16GB RDIMM,2400MT/s,DR,x8	24
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
370-ABWE	DIMM Blanks for System with 2 Processors	3
412-AAEE	120W Heatsink for PowerEdge R630	3
412-AAEE	120W Heatsink for PowerEdge R630	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3
400-AJOW	HDD,600GB 10K SAS,12G,2.5,HP	24

SKU	Description	Quantity
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	9
331-3286	DCS, INFO MOD ,OPENSTACK	3
331-6781	ACES QUALITY REVIEW	3
469-3879	ESO ORDER ONLY Send PO to ACES	3

Solution Bundle Bill of Materials - 3 Storage Nodes

Table 4: Bill of Materials - Storage Nodes

SKU	Description	Quantity
340-AKPM	PowerEdge R730xd Shipping	3
370-AAIP	Performance Optimized	3
450-ADWS	Dual,Redundant,Hot-plug PS,750W	3
384-BBBL	Performance BIOS Settings	3
350-BBEJ	Bezel	3
631-AAJG	Edocs and OpenManage DVD, R730/xd	3
385-BBHO	iDRAC8, Enterprise	3
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
332-1286	US Order	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
976-9007	HW WRTY + SVC,PE R730xd,UNY	3
976-9029	PSP NBD OS,PE R730xd,UNY,3YR	3
976-9030	PSP TECH SPT,PE R730xd,3YR	3
900-9997	ONSITE INSTL DECLINED	3
350-BBEX	Chassis up to 12+4Int,3.5HD,and 2,2.5FB	3
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	3
330-BBCO	R730/xd PCIe Riser 2, Center	3
374-BBHT	R730xd PCIe Riser 1 Filler Blank, Right	3
540-BBCT	X520 DP 10Gb DA/SFP+ Svr Adpt	3
770-BBBQ	Slide RdyRL,No CMA	3
800-BBDM	UEFI BIOS with GPT Partition	3
780-BBLR	R1/Ucnfg RD,H330/H730/H730P	3
370-ABWE	DIMM Blanks for System with 2 Processors	3
374-BBHR	Heatsink for 12 + 4 Chassis PE R730xd	3
374-BBHR	Heatsink for 12 + 4 Chassis PE R730xd	3

SKU	Description	Quantity
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	6
405-AAEH	PH730P Intg RD CTL,2GB Cache	3
900-9997	ONSITE INSTL DECLINED	3
400-AJRD	300GB 15K SAS,12Gb,2.5,FB	6
210-ADBC	PowerEdge R730xd Server	3
329-BCZK	PowerEdge R730/xd Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
370-ACPH	2400MT/s RDIMMs	3
400-ALOV	HDD, 4TB 7.2K NLSAS, 12G, 512n, 3.5, HP	27
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3
400-ALPR	HDD, 4TB 7.2K NLSAS, 12G, 512n, 3.5,IB	9
619-ABVR	No Operating System	3
421-5736	No Media Required	3
400-AMKI	HDD,400 SSD SAS,WI,MLC,12,2.5,HYB,PX04SH	9
370-ACNS	32GB RDIMM,2400MT/s,DR,x4	12
331-6781	ACES QUALITY REVIEW	3
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	9
469-3879	ESO ORDER ONLY Send PO to ACES	3
331-3286	DCS, INFO MOD ,OPENSTACK	3

Bill of Materials - 2 Dell Networking S6010-ON Switches

Table 5: Bill of Materials - Dell Networking S6010-ON Switches

SKU	Description	Quantity
210-AGMN	Dell Networking S6010-ON, 1U, 32x 40GbE QSFP+, 2x AC PSUs,IO to PSU Airflow, OS9	2
634-BHCU	Software, Rights to use L3, S6010-ON	2
450-AASX	Dell Networking, Jumper Cord, 250V, 12A, 2 Meters, C13/C14, US	4
343-BBEP	Dell Networking S6010-ON User Guide	2
808-8209	ProSupport: Next Business Day Onsite Service After ProblemDiagnosis, 1 Year	2
808-8233	ProSupport: 7X24 HW/SW Tech Support and Assistance, 3 Years	2
808-8123	Dell Hardware Limited Warranty 1 Year	2

SKU	Description	Quantity
808-8232	ProSupport: Next Business Day Onsite Service After ProblemDiagnosis, 2 Years Extended	2
997-6306	Info 3rd Party Software Warranty provided by Vendor	2
975-3461	Dell Limited Hardware Warranty Extended Year(s)	2
805-2402	ProDeploy Dell Networking S Series 6XXX Switch - Deployment	2
805-2404	ProDeploy Dell Networking S Series 6XXX Switch - Deployment Verification	2
332-1286	US Order	2

Bill of Materials - Dell Networking S4048T Switch

Table 6: Bill of Materials - Dell Networking S4048T Switches

SKU	Description	Quantity
210-AHMOV	Dell Networking S4048T-ON, 48x 10GBASE-T and 6x 40GbE QSFP+ ports, PSU to IO air, 2x AC PSU, OS9	1
634-BCXM	Software, Rights to use L3 on OS9, S4048-ON/S4048T-ON	1
450-AASX	Dell Networking, Jumper Cord, 250V, 12A, 2 Meters, C13/C14, US	2
343-BBEM	Dell Networking S4048T-ON User Guide	1
407-BBSI	Dell Networking, 40GbE transceivers	2
808-6848	ProSupport Plus:7x24 HW/SW Tech Support and Assistance,3 Years	1
951-2015	Thank you for choosing Dell ProSupport Plus. For tech support, visit http://www.dell.com/contactdell	1
808-6881	ProSupport Plus:Next Business Day Onsite Service After Problem Diagnosis,1 Year	1
808-6897	ProSupport Plus:Next Business Day Onsite Service After Problem Diagnosis,2 Years Extended	1
332-1286	US Order	1

Bill of Materials - Cables for Solution

SKU	Description	Quantity
470-AAFF	DELL NTWK,CBL,QSFP-QSFP DAC,5M	2
470-AAIB	Dell, QSFP+ Direct Attach Cable, .5m	2
407-BBTT	Transceiver SFP, 1000BASE-T	4
470-AAGN	Dell, 1m SFP+ DAC Cable	12
470-AAGP	Dell, 3m SFP+ DAC Cable	24

SKU	Description	Quantity
470-AAGR	Dell, 5m SFP+ DAC Cable	8
A0375239	C2G Cat6 Snagless Unshielded(UTP) Network Patch Cable - patch cable - 7 ft - white	13
A7459287	C2G Cat6 Snagless Unshielded(UTP) Network Patch Cable - patch cable - 7 ft - green	13

Chapter

3

Optional Compute Nodes

Topics:

- [*Bill of Materials - Optional 3 Compute Node PowerEdge R430*](#)
- [*Bill of Materials - Optional 3 Compute Nodes PowerEdge R730*](#)
- [*Bill of Materials - Optional 3 Compute Nodes PowerEdge R730xd*](#)

In addition to the Compute nodes defined in [*Solution Bundle Bill of Materials - 3 Compute Nodes*](#) on page 11, the Dell EMC Red Hat OpenStack NFV Solution supports optional Dell EMC Compute nodes configurations, as a direct replacement.

Bill of Materials - Optional 3 Compute Node PowerEdge R430

Table 7: Bill of Materials - Optional Compute PowerEdge R430

SKU	Description	Quantity
340-AMJF	PowerEdge R430 Shipping	3
330-BBEF	Riser, 2LP, R430	3
370-AAIP	Performance Optimized	3
405-AAEG	PH730 Intg RD CTL,1GB Cache	3
330-BBDX	iDRAC Port Card	3
385-BBHO	iDRAC8, Enterprise	3
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
325-BBII	Bezel up to 8 Drive Chassis	3
384-BBBL	Performance BIOS Settings	3
450-AEGZ	Dual Hot Plug Pwr Sply 550W	3
619-ABVR	No Operating System	3
421-5736	No Media Required	3
900-9997	ONSITE INSTL DECLINED	3
332-1286	US Order	3
370-ABXP	DIMM Blanks for System w/ 2 Processors	3
370-ABXV	Cooling Fan	3
374-BBIJ	135W Heatsink	3
374-BBIJ	135W Heatsink	3
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	6
770-BBBC	Slide RdyRL,No CMA	3
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	6
631-AACK	No Systems Docs, No OM DVD Kit	3
800-BBDM	UEFI BIOS with GPT Partition	3
321-BBNK	2.5" Chas up to 8HDs,HP	3
780-BBPP	R10,H330/H730/H730P	3
429-AAQN	No Optical Drive,Int 8HD Chassis	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
997-2924	HW WRTY + SVC,PE R430,UNY	3
997-2983	PSP NBD OS,PE R430,UNY,3YR	3
997-2992	PSP TECH SPT,PE R430,3YR	3

SKU	Description	Quantity
900-9997	ONSITE INSTL DECLINED	3
210-ADLO	PowerEdge R430 Server	3
384-BBMW	PowerEdge R430/R530 Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
370-ACPH	2400MT/s RDIMMs	3
370-ACNX	16GB RDIMM,2400MT/s,DR,x8	24
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3
400-AJOW	HDD,600GB 10K SAS,12G,2.5,HP	24
973-2426	INFO Declined Remote Consulting Service	3
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	9
331-3286	DCS, INFO MOD ,OPENSTACK	3
469-3879	ESO ORDER ONLY Send PO to ACES	3
331-6781	ACES QUALITY REVIEW	3

Bill of Materials - Optional 3 Compute Nodes PowerEdge R730

Table 8: Bill of Materials - Optional Compute PowerEdge R730

SKU	Description	Quantity
350-BBEN	Chassis with up to 8, 2.5 HDs	3
340-AKKB	PowerEdge R730 Shipping	3
370-AAIP	Performance Optimized	3
405-AAEG	PH730 Intg RD CTL,1GB Cache	3
350-BBEJ	Bezel	3
384-BBBL	Performance BIOS Settings	3
619-ABVR	No Operating System	3
421-5736	No Media Required	3
385-BBHO	iDRAC8, Enterprise	3
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
332-1286	US Order	3
900-9997	ONSITE INSTL DECLINED	3
780-BBJX	R10,H330/H730/H730P	3
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	3
429-AAOJ	No Internal Optical Drive	3

SKU	Description	Quantity
770-BBBQ	Slide RdyRL,No CMA	3
450-ADWQ	Dual,Redundant,Hot-plug PS,495W	3
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	6
631-AACK	No Systems Docs, No OM DVD Kit	3
800-BBDM	UEFI BIOS with GPT Partition	3
370-ABWE	DIMM Blanks for System with 2 Processors	3
374-BBHM	Standard Heatsink for PE R730/R730xd	3
374-BBHM	Standard Heatsink for PE R730/R730xd	3
540-BBCT	X520 DP 10Gb DA/SFP+ Svr Adpt	3
330-BBCO	R730/xd PCIe Riser 2, Center	3
330-BBCQ	R730 PCIe Riser 3, Left	3
330-BBCR	R730/xd PCIe Riser 1, Right	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
976-8706	HW WRTY + SVC,PE R730,UNY	3
976-8728	PSP NBD OS,PE R730,UNY,3YR	3
976-8729	PSP TECH SPT,PE R730,3YR	3
900-9997	ONSITE INSTL DECLINED	3
996-3179	EDT CNSLT 1 Yr 1 Pack RCS	3
210-ACXU	PowerEdge R730 Server	3
329-BCZK	PowerEdge R730/xd Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
370-ACPH	2400MT/s RDIMMs	3
370-ACNX	16GB RDIMM,2400MT/s,DR,x8	24
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3
400-AJOW	HDD,600GB 10K SAS,12G,2.5,HP	24
331-6781	ACES QUALITY REVIEW	3
331-3286	DCS, INFO MOD ,OPENSTACK	3
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	9
469-3879	ESO ORDER ONLY Send PO to ACES	3

Bill of Materials - Optional 3 Compute Nodes PowerEdge R730xd

Table 9: Bill of Materials - Optional Compute Node PowerEdge R730xd

SKU	Description	Quantity
210-ADBC	PowerEdge R730xd Server	3
329-BCZK	PowerEdge R730/xd Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
340-AKPM	PowerEdge R730xd Shipping	3
370-ABWE	DIMM Blanks for System with 2 Processors	3
374-BBHM	Standard Heatsink for PE R730/R730xd	3
374-BBHM	Standard Heatsink for PE R730/R730xd	3
370-ACPH	2400MT/s RDIMMs	3
370-AAIP	Performance Optimized	3
405-AAEG	PH730 Intg RD CTL,1GB Cache	3
385-BBHO	iDRAC8, Enterprise	3
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
350-BBEJ	Bezel	3
770-BBBR	Slide RdyRI, with CMA	3
384-BBBL	Performance BIOS Settings	3
450-ADWS	Dual,Redundant,Hot-plug PS,750W	3
631-AAJG	Edocs and OpenManage DVD, R730/xd	3
619-ABVR	No Operating System	3
421-5736	No Media Required	3
332-1286	US Order	3
330-BBCO	R730/xd PCIe Riser 2, Center	3
330-BBCR	R730/xd PCIe Riser 1, Right	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
976-9007	HW WRTY + SVC,PE R730xd,UNY	3
976-9029	PSP NBD OS,PE R730xd,UNY,3YR	3
976-9030	PSP TECH SPT,PE R730xd,3YR	3
900-9997	ONSITE INSTL DECLINED	3
973-2426	INFO Declined Remote Consulting Service	3
400-AMUC	HDD,2TB 7.2K NLSAS,12G,512n,2.5,HP	72
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	3

SKU	Description	Quantity
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	3
387-BBHY	Energy Star, PowerEdge R720	3
780-BBLM	R10,H330/H730/H730P	3
492-BBDH	C13-C14,PDU,12A,2 ft,0.6m,NA	6
370-ACNS	32GB RDIMM,2400MT/s,DR,x4	12
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3
350-BBFD	Chassis with up to 24, 2.5 HD	3
800-BBDM	UEFI BIOS with GPT Partition	3

Chapter

4

Optional Storage Nodes

Topics:

- [Bill of Materials - Optional 3 Storage Nodes](#)

In addition to the Storage nodes defined in [Solution Bundle Bill of Materials - 3 Storage Nodes](#) on page 13, the Dell EMC Red Hat OpenStack Cloud Solution supports optional Dell EMC Storage nodes configurations, as a direct replacement.

Other block storage options have been validated with the solution, Dell Storage PS Series and SC Series. These can be quoted by your Dell EMC sales representative.

Bill of Materials - Optional 3 Storage Nodes

Table 10: Bill of Materials - Optional Storage Node Configuration 24 OSDs and 0 Journals

SKU	Description	Quantity
210-ADBC	PowerEdge R730xd Server	3
329-BCZK	PowerEdge R730/xd Motherboard MLK	3
461-AADZ	No Trusted Platform Module	3
350-BBFE	Chassis up to 24, 2.5 HD and 2, 2.5 FB	3
340-AKPM	PowerEdge R730xd Shipping	3
370-ABWE	DIMM Blanks for System with 2 Processors	3
374-BBHM	Standard Heatsink for PE R730/R730xd	3
374-BBHM	Standard Heatsink for PE R730/R730xd	3
370-ACPH	2400MT/s RDIMMs	3
370-AAIP	Performance Optimized	3
405-AAEG	PH730 Intg RD CTL,1GB Cache	3
385-BBHO	iDRAC8, Enterprise	3
634-BBWU	OpenManage Essentials,Server ConfigMgmt	3
350-BBEJ	Bezel	3
384-BBBL	Performance BIOS Settings	3
450-ADWS	Dual,Redundant,Hot-plug PS,750W	3
631-AAJG	Edocs and OpenManage DVD, R730/xd	3
619-ABVR	No Operating System	3
421-5736	No Media Required	3
332-1286	US Order	3
330-BBCO	R730/xd PCIe Riser 2, Center	3
330-BBCR	R730/xd PCIe Riser 1, Right	3
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	3
976-9007	HW WRTY + SVC,PE R730xd,UNY	3
976-9029	PSP NBD OS,PE R730xd,UNY,3YR	3
976-9030	PSP TECH SPT,PE R730xd,3YR	3
900-9997	ONSITE INSTL DECLINED	3
973-2426	INFO Declined Remote Consulting Service	3
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	3
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	3

SKU	Description	Quantity
370-ACNS	32GB RDIMM,2400MT/s,DR,x4	12
400-AENX	HDD,500GB 7.2K NLSAS,6G,2.5,FB,13G	6
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	3
770-BBBQ	Slide RdyRL,No CMA	3
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	3
400-AMUC	HDD,2TB 7.2K NLSAS,12G,512n,2.5,HP	72
492-BBDH	C13-C14,PDU,12A,2 ft,0.6m,NA	6
780-BBLS	No RAID for H330/H730/H730P + Flex Bay	3
800-BBDM	UEFI BIOS with GPT Partition	3

Chapter

5

Optional VIM Node

Topics:

- [Solution Bundle Bill of Materials - VIM \(Optional\)](#)

In addition to the VIM nodes defined in the below section , the Dell EMC Red Hat OpenStack NFV Solution supports optional Dell EMC VIM nodes, as a direct replacement. These can be quoted by your Dell EMC sales representative.

Solution Bundle Bill of Materials - VIM (Optional)

Table 11: Bill of Materials - VIM Node (Optional)

SKU	Description	Quantity
370-AAIP	Performance Optimized	1
405-AAEG	PH730 Intg RD CTL,1GB Cache	1
385-BBHO	iDRAC8, Enterprise	1
634-BBWU	OpenManage Essentials,Server ConfigMgmt	1
384-BBBL	Performance BIOS Settings	1
951-2015	INFO,PSP TECH SPT CONTACT,ENTERPRISE	1
976-7728	HW WRTY + SVC,PE R630,UNY	1
976-7761	PSP NBD OS,PE R630,UNY,3YR	1
976-7768	PSP TECH SPT,PE R630,3YR	1
900-9997	ONSITE INSTL DECLINED	1
332-1286	US Order	1
321-BBKM	Chas,10HD,3PCI	1
780-BBJN	R10,H330/H730/H730P	1
540-BBBB	X520 DP,10G,DA + I350 DP,1G,DC	1
540-BBHY	X520 DP 10Gb DA/SFP+,SA LP	1
770-BBBC	Slide RdyRL,No CMA	1
450-ADWQ	Dual,Redundant,Hot-plug PS,495W	1
631-AACK	No Systems Docs, No OM DVD Kit	1
800-BBDM	UEFI BIOS with GPT Partition	1
429-AAIQ	No Internal Optical Drive	1
325-BBIL	Quick Sync Bezel 10/24 Drive Chassis	1
340-AKPR	PowerEdge R630 Ship-10/24 Drive Chassis	1
492-BBDI	C13-C14,PDU,12A,6.5 ft ,2m,NA	2
900-9997	ONSITE INSTL DECLINED	1
210-ACXS	PowerEdge R630 Server	1
329-BCZI	PowerEdge R630 Motherboard MLK	1
461-AADZ	No Trusted Platform Module	1
370-ACPH	2400MT/s RDIMMs	1
370-ABWE	DIMM Blanks for System with 2 Processors	1
412-AAEE	120W Heatsink for PowerEdge R630	1

SKU	Description	Quantity
412-AAEE	120W Heatsink for PowerEdge R630	1
338-BJDV	E5-2650 v4 2.2GHz,30M C,105W	1
338-BJDW	E5-2650 v4 2.2GHz,30M C,105W	1
370-ACNX	16GB RDIMM,2400MT/s,DR,x8	4
619-ABVR	No Operating System	1
421-5736	No Media Required	1
400-AJOW	HDD,600GB 10K SAS,12G,2.5,HP	8
469-3879	ESO ORDER ONLY Send PO to ACES	1
331-6781	ACES QUALITY REVIEW	1
973-0922	CSTM,CSO - ACES,AMER,SPT,SRVS	3
331-3286	DCS, INFO MOD ,OPENSTACK	1

Chapter

6

Software Licenses for All Solutions

Topics:

- [Bill of Materials - Software Licenses](#)

This topic lists the software licenses required for all supported variations of the Dell EMC Red Hat OpenStack Cloud Solution.

Bill of Materials - Software Licenses

Table 12: Software

Quantity	SKU	Description
5	460-0864	SOC QUALITY REVIEW
7	A7727165	CS DELL 1YR SUB RHEL OPENSTACK PLATFORM FOR CONTROL NODE OS PREM 2SCTS
1	A7200475	Download - Red Hat Ceph Storage 1 Year Subscription Gold 24x7 Coverage 1 hour SLA 128TB
1	A7200474	Download - Red Hat Ceph Storage 1 Year Subscription Gold 24x7 Coverage 1 hour SLA 64TB
1	421-4757	"Red Hat Enterprise Linux,2SKT,4Guest,1Yr Subscription PREMIUM,No Media,Customer Kit"
3	421-4756	"Red Hat Enterprise Linux,2SKT,1Guest,1Yr PREMIUMSubscription,No Media,Customer Kit"

Please consult with your Dell EMC sales representative to ensure software orders match the actual solution being ordered.

Chapter 7

Switch and Cable Notes

Topics:

- [Server Racks and Power](#)

[Bill of Materials - Cables for FX2 Solution](#) includes the cables required for connecting the individual servers into the cluster, since the exact cables required depend on the final chosen rack layout, and choice of cable is often based on customer preference, quantities and specific cables will have to be updated.

Server Racks and Power

Both I/O to PSU SKU numbers and PSU to I/O side options are available for reverse air flow. Redundant *fans* (other than the minimum supplied with chassis) should also be same direction as the base switch. The airflow cannot be reversed in the field at this time



Note: The networking SKUs lists show the AC power supplies only. All switch models are available in DC as well.

All Bill of Materials do not include racks or power distribution units, as they are usually site-specific. The physical dimensions and power requirements need to be reviewed.

Appendix

A

References

Topics:

- [To Learn More](#)

Additional information can be obtained at <http://www.dell.com/nfv> or by e-mailing nfv@dell.com.

If you need additional services or implementation help, please contact your Dell EMC sales representative.

To Learn More

For more information on the Dell EMC Red Hat OpenStack Cloud Solution visit <http://www.dell.com/learn/us/en/04/solutions/red-hat-openstack>.

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