CS553 Cloud Computing

Project- Fall 2017

- **Sivasenthil Namachivayan(A20391478)**
- **Abinaya Janakan(A20376287)**
- **Meghana Subbanna(A20381262)**

Contents

General Statistics of AWS Cloud of the given Configuration 3

Calculation for AWS Public Cloud Configurations 3

Calculation for Private Cloud to match the AWS Configurations 4

Cost Summary 6

Links with which the private cloud values have been derived 7

Screenshots of the Cart for Private Cloud 10

- Configuration I 10
- Configuration II 13
- Configuration III 17

Assumptions 20

Conclusion 20

References 20

General Statistics of AWS Cloud of the given Configuration

AWS EC2 Instances							
S.No	Name	API Name	Memory	vCPUs	Instance Storage	Network Performance	Linux on Demand
1	D2 Eight Extra Large	d2.8xlarge	244.0 GiB	36 vCPUs	48000 GiB (24 * 2000 GiB HDD)	10 Gigabit	$5.520 hourly
2	R3 High-Memory Large	r3.large	15.25 GiB	2 vCPUs	32 GiB SSD	Moderate	$0.166 hourly
3	P3 16xlarge	p3.16xlarge	488.0 GiB	64 vCPUs	EBS only	25 Gigabit	$24.480 hourly

The above table shares the important statistics of the AWS Public cloud for the given configuration in the requirement.

Calculation for AWS Public Cloud Configurations

Configuration I				
Node	Components	Per Hour	Instances	5 years
d2.8xlarge	Core	5.520	889	$214,938,864.00
	Memory	5.520	1050	$253,864,800.00
	HDD	5.520	1042	$251,930,592.00
	Network	0.020	Over 500 TB/Month Plan	$3,000,000.00
S3	Network/Ethernet			$311,040,000.00
	Storage			$126,000,000.00
Total for 5 Years (Memory+Network+S3)				$693,904,800.00

The Maximum instances needed for obtaining the given configuration will be considered among the components in d2.8xlarge apart from network

Configuration II				
Node	Components	Per Hour	Instances	5 years
r3.large	Core	0.166	1000000	$7,270,800,000.00
	Memory	0.166	1000000	$7,270,800,000.00
	HDD	0.166	1000000	$7,270,800,000.00
	Network	0.050	350 TB/Month Plan	$1,050,000.00
S3	Network/Ethernet			$15,552,000.00
	Storage			$12,600,000.00
Total for 5 Years (Core+Network+S3)				$7,300,002,000.00

The Maximum instances needed for obtaining the given configuration will be considered among the components in r3.large apart from network

Configuration III				
Node	Components	Per Hour	Instances	5 years
p3.16xlarge	GPU	24.480	1000	$1,072,224,000.00
	Memory	24.480	1000	$1,072,224,000.00
	Network	0.020	Over 500 TB/Month Plan	$93,750,000.00
S3	Network/Ethernet			$363,540,000.00
	Storage			$1,260,000.00
Total for 5 Years (GPU+Network+S3)				$1,530,774,000.00

The Maximum instances needed for obtaining the given configuration will be considered among the components in p3.16xlarge apart from network

Calculation for Private Cloud to match the AWS Configurations

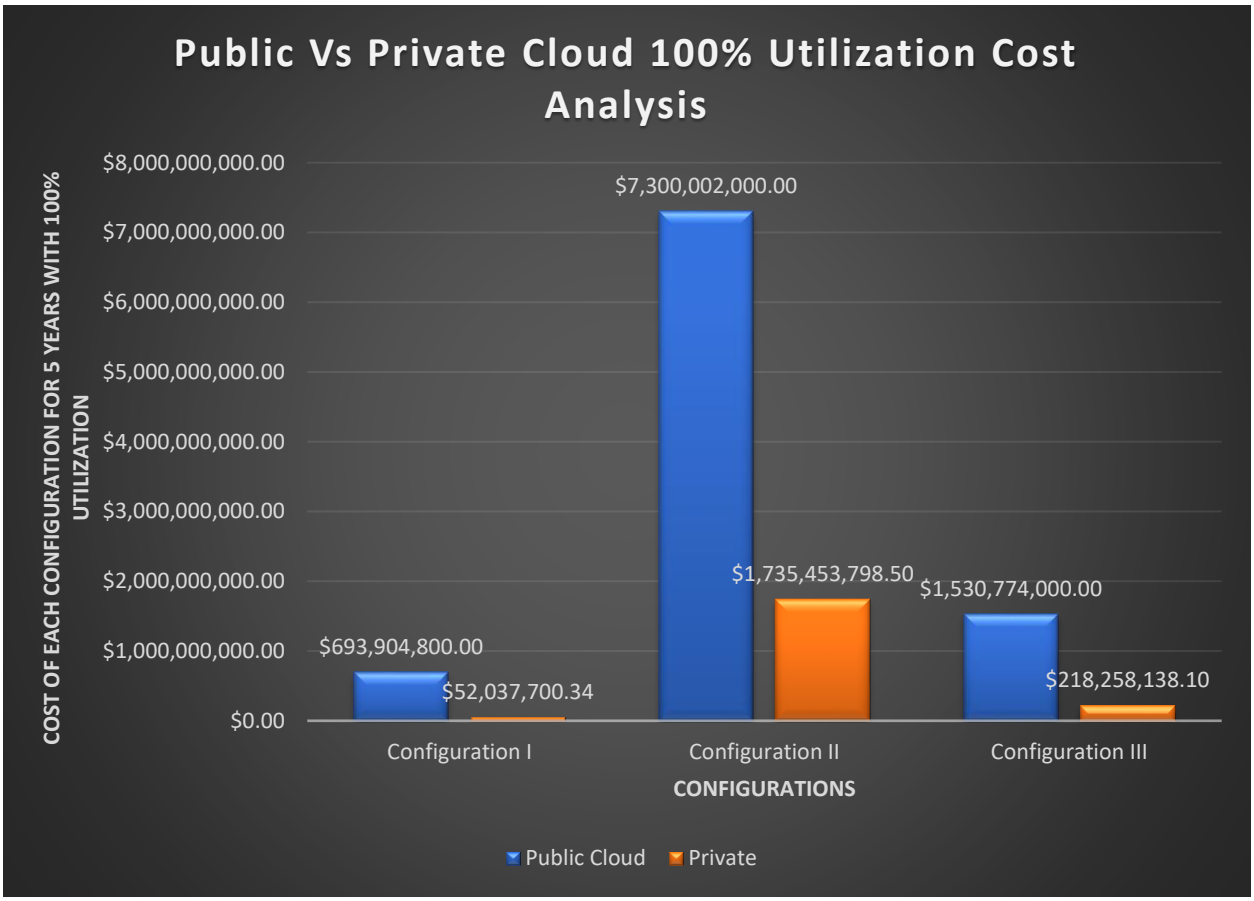
Configuration I					
S.No	Details	Description	Price/Unit	Quantity	Total Price
1	Compute Servers				
1.1	Cores				
1.1.1	8-core	Intel Xeon E7-4809 v3 Processor LGA2011 20M Cache 2.0 GHz 8 Core/ 16 Thread CM8064501551526 TRAY	$1,306.60	3499.00	$4,571,793.40
1.1.2	6-core	Intel Xeon E5-2643 v3 Processor LGA2011-3 Haswell 6 Core 3.40GHz 20MB 9.6GT/s CM8064401724501 TRAY	$1,657.23	668.00	$1,107,029.64
1.2	Memory 64 GB	64GB PC4-21300 DDR4-2666Mhz Load Reduced ECC Quad Ranked 1.2V Major Brand	$899.99	4167.00	$3,750,258.33
1.3	HDD	12TB Western Digital WD121KRYZ - WD Gold Datacenter Hard Drive SATA 6.0 GB/s 7200rpm 256MB 3.5-inch Bulk	$663.99	4167.00	$2,766,846.33
2	Network Switches 48 Port	NETGEAR ProSAFE XS748T 48-Port 10-Gigabit Ethernet Smart Managed Switch	$3,642.00	204.00	$742,968.00
3	Network Cables	7m (23ft) Extreme Networks 10GB-C07-SFPP Compatible 10G SFP+ Passive Direct Attach Copper Twinax Cable	$42.00	201164.00	$8,448,888.00
4	Distributed Storage:				
4.1	Network Switches 36 Port	Mellanox SwitchX-2 SX1036 - Switch - L3 - managed - 36 x QSFP - rack-mountable	$15,883.00	6	$95,298.00
4.2	Network Cables	Mellanox MCP7F00-A003 Passive Copper Hybrid Cable Ethernet 100GbE to 4x25GbE QSFP28 to 4xSFP28 3m 28AWG	$145.00	139.00	$20,155.00
5	Racks 42 U	APC NetShelter SX 42U Deep Rack Enclosure - 3006 lbs.	$1,464.99	121.00	$177,263.79
6	Storage Servers				
6.1	J4601S - HGST 4U 60 Bay JBOD with 60 x 10TB Helium SAS HDD:		$38,942.98	167.00	$6,503,477.66
6.2	HDD	10TB Western Digital WD101KRYZ - WD Gold Datacenter Hard Drive SATA 6.0 GB/s 7200rpm 256MB 3.5-inch Bulk	$483.99	10020.00	$4,849,579.80
7	Electric Power (For 5 years)		$874,407.50	5.00	$4,372,037.50
8	Cooling (For 5 years)		$874,407.50	5.00	$4,372,037.50
9	Administration (For 5 years)		$70,000.00	5.00	$350,000.00
10	AMC	Annual Maintenance Charges	$4,955,033.69	2.00	$9,910,067.39
		Total			**$52,037,700.34**

Configuration II					
S.No	Details	Description	Price/Unit	Quantity	Total Price
1	Compute Servers (1 VM)				
1.1	Processor - 2 Core	Intel Core i3-6100 Desktop Processor LGA1151 3M Cache 3.70 GHz 2 Core/ 4 Thread CM8066201927202 TRAY	$129.99	1.00	$129.99
1.2	Memory- 16 GB	8GB DDR3 PC3-14900 240-pin DIMM DDR3-1866 Un-Buffered ECC 1.5V major Brand	$199.99	1.00	$199.99
1.3	HDD	Intel Optane M.2 2280 32GB PCIe NVMe 3.0 x2 Memory Module MEMPEK1W032GAXT	$76.99	1.00	$76.99
1.4	Compute Server (1 million VMs')		$406.97	1000000.00	$406,970,000.00
2	Network Switches 52 Port	NETGEAR ProSAFE 52-Port PoE Gigabit Stackable Smart Managed Switch (GS752TXP) - Lifetime Warranty	$1,625.85	85867.00	$139,606,861.95
3	Network Cables	Cat6 Blue Ethernet Patch Cable, Snagless/Molded Boot, 5 foot	$1.78	1105192.00	$1,967,241.76
4	Racks- 42 U	APC NetShelter SX 42U Deep Rack Enclosure - 3006 lbs.	$1,464.99	23809.00	$34,879,946.91
5	Storage Servers :				
5.1	J4601S - HGST 4U 60 Bay JBOD with 60 x 10TB Helium SAS HDD:		$38,942.98	17.00	$662,030.66
5.2	HDD(for 1 Storage server):	10TB Western Digital WD101KRYZ - WD Gold Datacenter Hard Drive SATA 6.0 GB/s 7200rpm 256MB 3.5-inch Bulk	$483.99	1020.00	$493,669.80
6	Electric Power (5 years)		$90,550,000.00	5.00	$452,750,000.00
7	Cooling (For 5 years)		$90,550,000.00	5.00	$452,750,000.00
8	Administration (For 5 years)		$70,000.00	1000.00	$70,000,000.00
9	AMC	Annual Maintenance Charges	$87,687,023.71	2.00	$175,374,047.42
		Total			**$1,735,453,798.50**

Configuration III					
S.No	Details	Description	Price/Unit	Quantity	Total Price
1	Compute Servers				
1.1	GPU	nVIDIA 8-GPU/512GB DGX-1 DL WITH V100	$154,766.06	1000.00	$154,766,060.00
1.2	CPU- 64 Core	Intel Xeon Phi™ Processor 7210 LGA3647 32 MB L2 Cache 16GB 1.30 GHz 64 Core HJ8066702859300 TRAY	$2,130.00	1000.00	$2,130,000.00
1.3	Memory- 64GB	64GB PC4-21300 DDR4-2666Mhz Load Reduced ECC Quad Ranked 1.2V Major Brand	$899.99	8000.00	$7,199,920.00
2	Network Switches - 52 Port	NETGEAR ProSAFE 52-Port PoE Gigabit Stackable Smart Managed Switch (GS752TXP) - Lifetime Warranty	$1,625.85	26.00	$42,272.10
3	Network Cables	5m(16ft) 100G QSFP28 to QSFP28 AOC(Active Optical Cable), Parallel, Customized #AOC-Q4Q4-005	$339.00	1059.00	$359,001.00
4	Racks 42 U	APC NetShelter SX 42U Deep Rack Enclosure - 3006 lbs.	$1,464.99	58.00	$84,969.42
5	Storage Servers				
5.1	J4601S - HGST 4U 60 Bay JBOD with 60 x 10TB Helium SAS HDD		$38,942.98	2.00	$77,885.96
5.2	HDD	10TB Western Digital WD101KRYZ - WD Gold Datacenter Hard Drive SATA 6.0 GB/s 7200rpm 256MB 3.5-inch Bulk	$483.99	102.00	$49,366.98
6	Electric Power (5 years)		$381,650.00	5.00	$1,908,250.00
7	Cooling (For 5 years)		$381,650.00	5.00	$1,908,250.00
8	Administration (For 5 years)		$70,000.00	1.00	$319,320.00
9	AMC	Annual Maintenance Charges	$24,706,421.32	2.00	$49,412,842.64
		Total			**$218,258,138.10**

Cost Summary

Private Vs Cloud	Configuration I	Configuration II	Configuration III
Public Cloud (including EC2 and S3) Cost over 5 years, 24/7 operation, with 100% usage	$693,904,800.00	$7,300,002,000.00	$1,530,774,000.00
Private Cloud cost over 5 years, 24/7 operation, with 100% usage	$52,037,700.34	$1,735,453,798.50	$218,258,138.10
What utilization must be achieved with the private cloud to make the private cloud option more attractive than the public cloud?	Private Cloud is approximately 13x cost effective than the public cloud. But the Utilization of both cloud and private is kept to 100% in which the private cloud is more attractive without any changes in the value but the utilization is less than 1% of the current utilization of the public cloud, the public cloud will be more effective.	Private Cloud is approximately 4x cost effective than the public cloud. But the Utilization of both cloud and private is kept to 100% in which the private cloud is more attractive without any changes in the value but the utilization is less than 25% of the current utilization of the public cloud, the public cloud will be more effective.	Private Cloud is approximately 7x cost effective than the public cloud. But the Utilization of both cloud and private is kept to 100% in which the private cloud is more attractive without any changes in the value but the utilization is less than 15% of the current utilization of the public cloud, the public cloud will be more effective.



Links with which the private cloud values have been derived

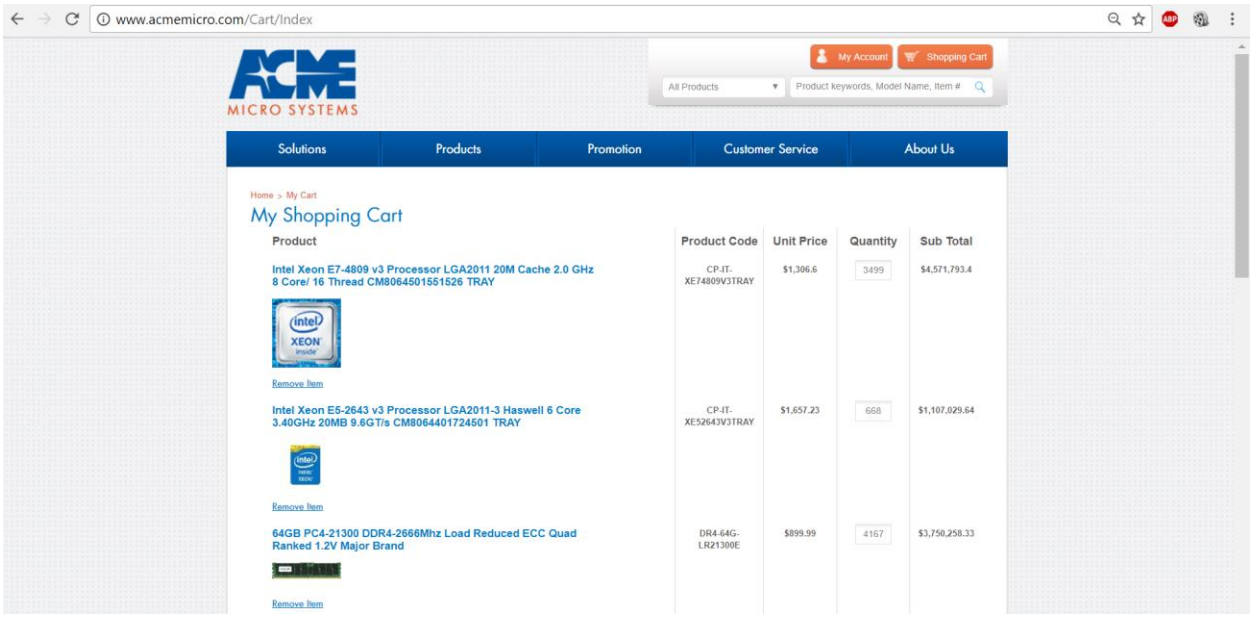
Configuration I		
S.No	Details	Links
1	Compute Servers	
1.1	Cores	
1.1.1	8-core	http://www.acmemicro.com/Product/14811/Intel-Xeon-E7-4809-v3-Processor-LGA2011-20M-Cache-2-0-GHz-8-Core-16-Thread-CM8064501551526-TRAY?c_id=17
1.1.2	6-core	http://www.acmemicro.com/Product/14371/Intel-Xeon-E5-2643-v3-Processor-LGA2011-3-Haswell-6-Core-3-40GHz-20MB-9-6GT-s-CM8064401724501-TRAY?c_id=17
1.2	Memory 64 GB	http://www.acmemicro.com/Product/15498/64GB-PC4-21300-DDR4-2666Mhz-Load-Reduced-ECC-Quad-Ranked-1-2V-Major-Brand?c_id=21
1.3	HDD	http://www.acmemicro.com/Product/16078/12TB-Western-Digital-WD121KRYZ---WD-Gold-Datacenter-Hard-Drive-SATA-6-0-GB-s-7200rpm-256MB-3-5-inch-Bulk?c_id=2
2	Network Switches 48 Port	https://www.newegg.com/Product/Product.aspx?item=N82E16833122845
3	Network Cables	http://www.fs.com/products/40164.html
4	Distributed Storage:	
4.1	Network Switches 36 Port	https://www.newegg.com/Product/Product.aspx?Item=9SIA4M540K3265
4.2	Network Cables	https://store.mellanox.com/products/mellanox-mcp7f00-a003-passive-copper-hybrid-cable-ethernet-100gbe-to-4x25gbe-qsfp28-to-4xsfp28-3m-28awg.html
5	Racks 42 U	https://www.cdw.com/shop/products/APC-NetShelter-SX-42U-Deep-Rack-Enclosure-3006-lbs/920140.aspx?cm_cat=GoogleBase&cm_ite=920140&cm_pla=NA-NA-AME_RQ&cm_ven=acquirgy&ef_id=WhItwwAAAiqElGpc:20171127221525:s&gclid=Cj0KCQiAjO_QBRC4ARIsAD2FsXN9KPGKa4_ASrNayG-3GF5Gl0A9ty8ZWXXjFN1wSgnDuF5HblRH_wgaAlzAEALw_wcB&s_kwcid=AL!4223!3!47981653339!!!g!299939437660!
6	Storage Servers	
6.1	J4601S - HGST 4U 60 Bay JBOD with 60 x 10TB Helium SAS HDD:	http://www.pogolinux.com/quotes/editsys?sys_id=1067899
6.2	HDD	http://www.acmemicro.com/Product/15217/10TB-Western-Digital-WD101KRYZ---WD-Gold-Datacenter-Hard-Drive-SATA-6-0-GB-s-7200rpm-256MB-3-5-inch-Bulk?c_id=2
7	Electric Power (For 5 years)	https://www.electricitylocal.com/states/illinois/chicago/
8	Cooling (For 5 years)	
9	Administration (For 5 years)	https://www.glassdoor.com/Salaries/data-systems-administrator-salary-SRCH_KO0,26.htm
10	AMC	http://erp.ittoolbox.com/groups/strategy-planning/erp-general-sp/standard-percentage-rate-for-annual-software-maintenance-5516117

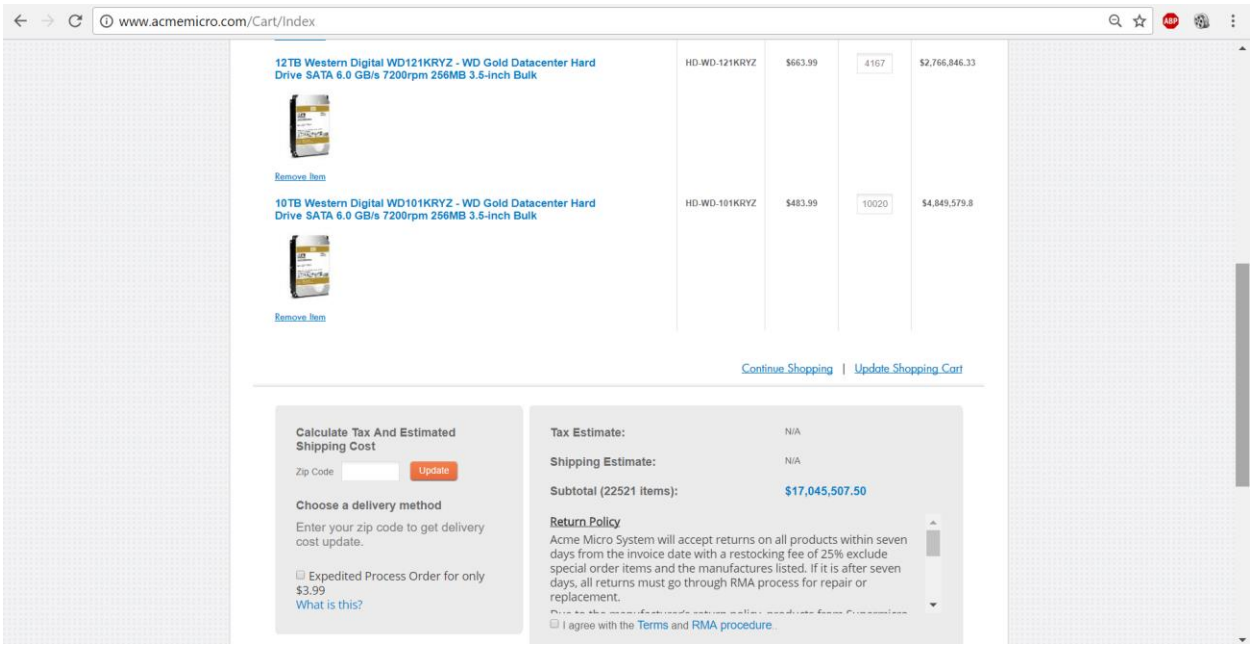
Configuration II		
S.No	Details	Links
1	Compute Servers (1 VM)	
1.1	Processor - 2 Core	http://www.acmemicro.com/Product/14864/Intel-Core-i3-6100-Desktop-Processor-LGA1151-3M-Cache-3-70-GHz-2-Core-4-Thread-CM8066201927202-TRAY?Crits_CheckValue=Core+Quantity%7C2&pager_index=
1.2	Memory- 16 GB	http://www.acmemicro.com/Product/13824/8GB-DDR3-PC3-14900-240-pin-DIMM-DDR3-1866-Un-Buffered-ECC-1-5V-major-Brand?c_id=21
1.3	HDD	https://www.newegg.com/Product/Product.aspx?Item=N82E16820167427&ignorebbr=1&nm_mc=KNC-GoogleAdwords-PC&cm_mmc=KNC-GoogleAdwords-PC-_-pla-_-Solid+State+Disk-_-N82E16820167427&gclid=Cj0KCQiAjO_QBRC4ARIsAD2FsXPBK4lyDtU6FXgzhRBYXpIJd25925-VTeMpCBqeIcry9WsTTcy21M8aAjU3EALw_wcB&gclsrc=aw.ds
1.4	Compute Server (1 million VMs')	
2	Network Switches 52 Port	https://www.neweggbusiness.com/Product/Product.aspx?Item=9B-0XP-001M-000M2&nm_mc=KNC-GoogleBiz-PC&cm_mmc=KNC-GoogleBiz-PC-_-pla-_-Network+-+Switches-_-9B-0XP-001M-000M2&gclid=Cj0KCQiAjO_QBRC4ARIsAD2FsXMURNu8E5wiI1upLCIueQdra7t8RWt63Vvsmk6STcw9soOTMKTnNM4aAvqtEALw_wcB
3	Network Cables	https://www.cablewholesale.com/products/network-phone/cat-6-cable/product-10x8-06101.php?utm_source=GoogleShopping&utm_medium=cpc&utm_term=10X8-06101&utm_campaign=Cat6%20Blue%20Ethernet%20Patch%20Cable%2C%20Snagless%2FMolded%20Boot%2C%201%20foot&gclid=Cj0KCQiA6enQBRDUARIsAGs1YQhbDcxJItqJqUjFlyRE5pDhCF9owUtNNwTstONfFHO8tsnaHzBeXoUaAkKoEALw_wcB
4	Racks- 42 U	https://www.cdw.com/shop/products/APC-NetShelter-SX-42U-Deep-Rack-Enclosure-3006-lbs/920140.aspx?cm_cat=GoogleBase&cm_ite=920140&cm_pla=NA-NA-AME_RQ&cm_ven=acquirgy&ef_id=WhItwwAAAiqElGpc:20171127221525:s&gclid=Cj0KCQiAjO_QBRC4ARIsAD2FsXN9KPGKa4_ASrNayG-3GF5Gl0A9ty8ZWXXjFN1wSgnDuF5HblRH_wgaAlzAEALw_wcB&s_kwcid=AL!4223!3!47981653339!!!g!299939437660!
5	Storage Servers	
5.1	J4601S - HGST 4U 60 Bay JBOD with 60 x 10TB Helium SAS HDD:	http://www.pogolinux.com/quotes/editsys?sys_id=1067899
5.2	HDD(for 1 Storage server):	http://www.acmemicro.com/Product/15217/10TB-Western-Digital-WD101KRYZ---WD-Gold-Datacenter-Hard-Drive-SATA-6-0-GB-s-7200rpm-256MB-3-5-inch-Bulk?c_id=2

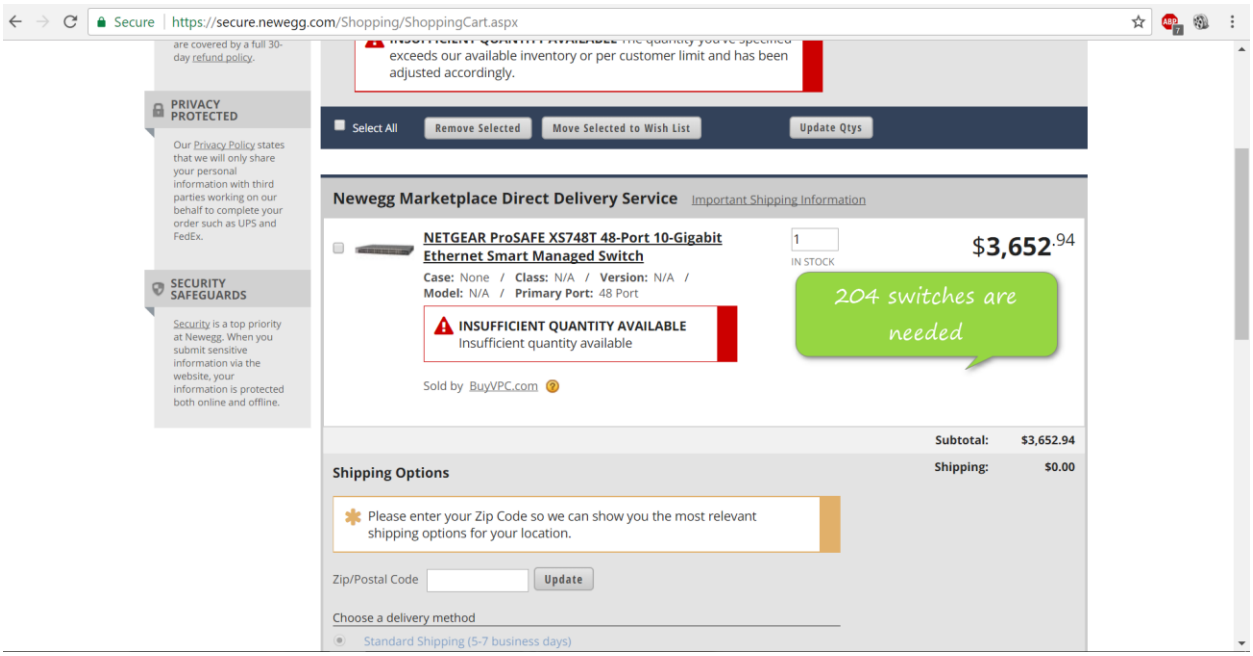
6	Electric Power (5 years)	https://www.electricitylocal.com/states/illinois/chicago/
7	Cooling (For 5 years)	
8	Administration (For 5 years)	https://www.glassdoor.com/Salaries/data-systems-administrator-salary-SRCH_KO0,26.htm
9	AMC	http://erp.ittoolbox.com/groups/strategy-planning/erp-general-sp/standard-percentage-rate-for-annual-software-maintenance-5516117
Configuration III		
S.No	Details	Links
1	Compute Servers	
1.1	GPU	http://www.nextwarehouse.com/item/?2707240_g10e
1.2	CPU- 64 Core	http://www.acmemicro.com/Product/15180/Intel-Xeon-Phi-Processor-7210-LGA3647-32-MB-L2-Cache-16GB-1-30-GHz-64-Core-HJ8066702859300-TRAY?c_id=653
1.3	Memory- 64GB	http://www.acmemicro.com/Product/15498/64GB-PC4-21300-DDR4-2666Mhz-Load-Reduced-ECC-Quad-Ranked-1-2V-Major-Brand?Crits_CheckValue=Memory+Type%7CDDR4&pager_index=
2	Network Switches - 52 Port	https://www.neweggbusiness.com/Product/Product.aspx?Item=9B-0XP-001M-000M2&nm_mc=KNC-GoogleBiz-PC&cm_mmc=KNC-GoogleBiz-PC-_-pla-_-Network+-+Switches-_-9B-0XP-001M-000M2&gclid=Cj0KCQiAjO_QBRC4ARIsAD2FsXMURNu8E5wiI1upLCIueQdra7t8RWt63Vvsmk6STcw9soOTMKTnNM4aAvqtEALw_wcB
3	Network Cables	https://www.hifiber.com/item/AOC-Q4Q4-005/5m-16ft-100g-qsfp28-to-qsfp28-aoc-active-optical-cable-parallel-customized.html
4	Racks 42 U	https://www.cdw.com/shop/products/APC-NetShelter-SX-42U-Deep-Rack-Enclosure-3006-lbs/920140.aspx?cm_cat=GoogleBase&cm_ite=920140&cm_pla=NA-NA-AME_RQ&cm_ven=acquirgy&ef_id=WhItwwAAAiqElGpc:20171127221525:s&gclid=Cj0KCQiAjO_QBRC4ARIsAD2FsXN9KPGKa4_ASrNayG-3GF5Gl0A9ty8ZWXXjFN1wSgnDuF5HblRH_wgaAlzAEALw_wcB&s_kwcid=AL!4223!3!47981653339!!!g!299939437660!
5	Storage Servers	
5.1	J4601S - HGST 4U 60 Bay JBOD with 60 x 10TB Helium SAS HDD	http://www.pogolinux.com/quotes/editsys?sys_id=1067899
5.2	HDD	10TB Western Digital WD101KRYZ - WD Gold Datacenter Hard Drive SATA 6.0 GB/s 7200rpm 256MB 3.5-inch Bulk
6	Electric Power (5 years)	https://www.electricitylocal.com/states/illinois/chicago/
7	Cooling (For 5 years)	
8	Administration (For 5 years)	https://www.glassdoor.com/Salaries/data-systems-administrator-salary-SRCH_KO0,26.htm
9	AMC	http://erp.ittoolbox.com/groups/strategy-planning/erp-general-sp/standard-percentage-rate-for-annual-software-maintenance-5516117

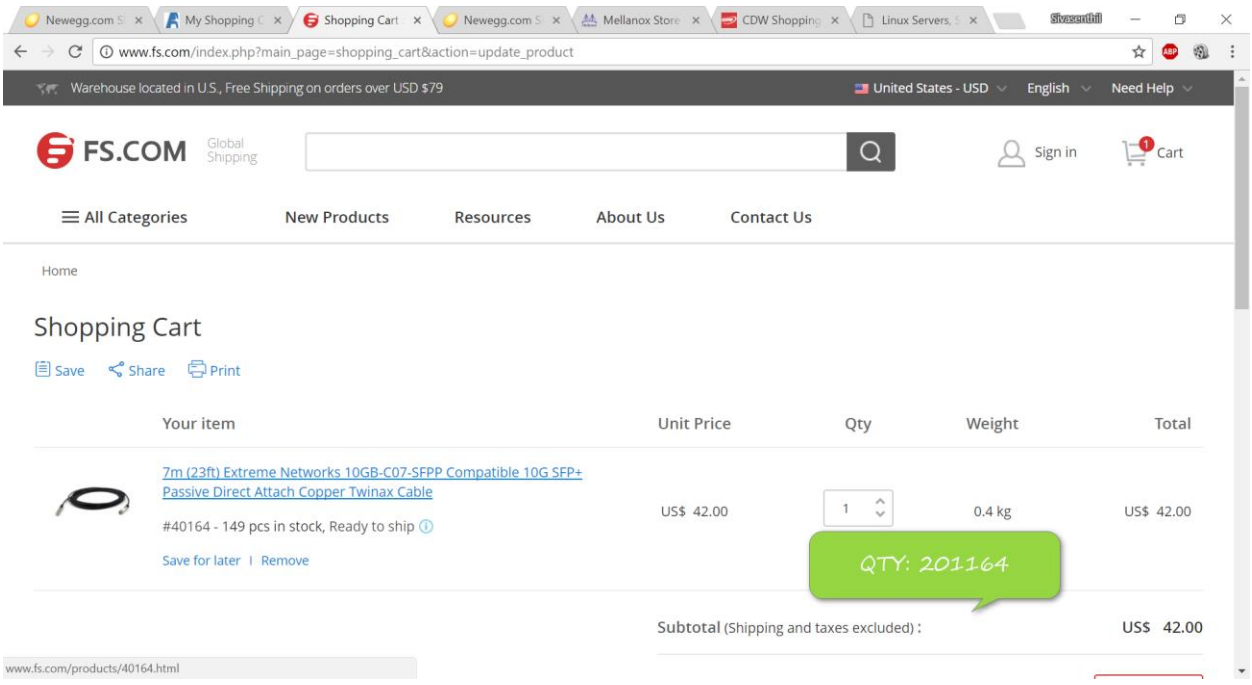
Screenshots of the Cart for Private Cloud

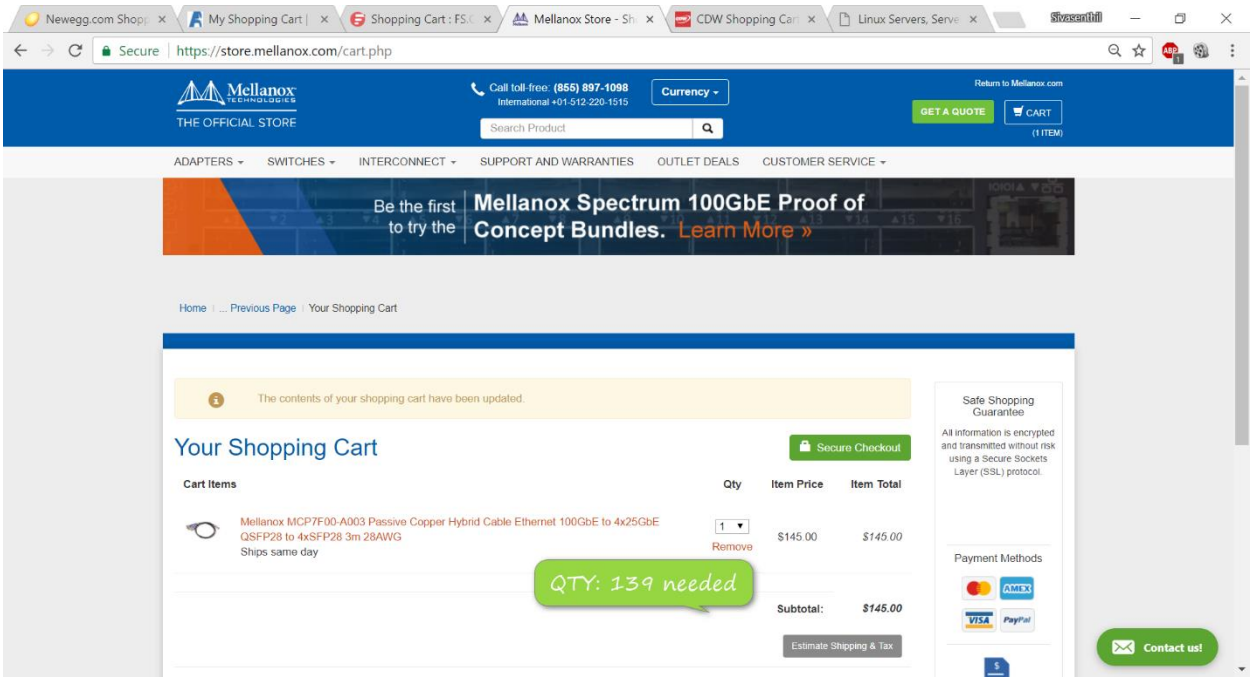
Configuration I

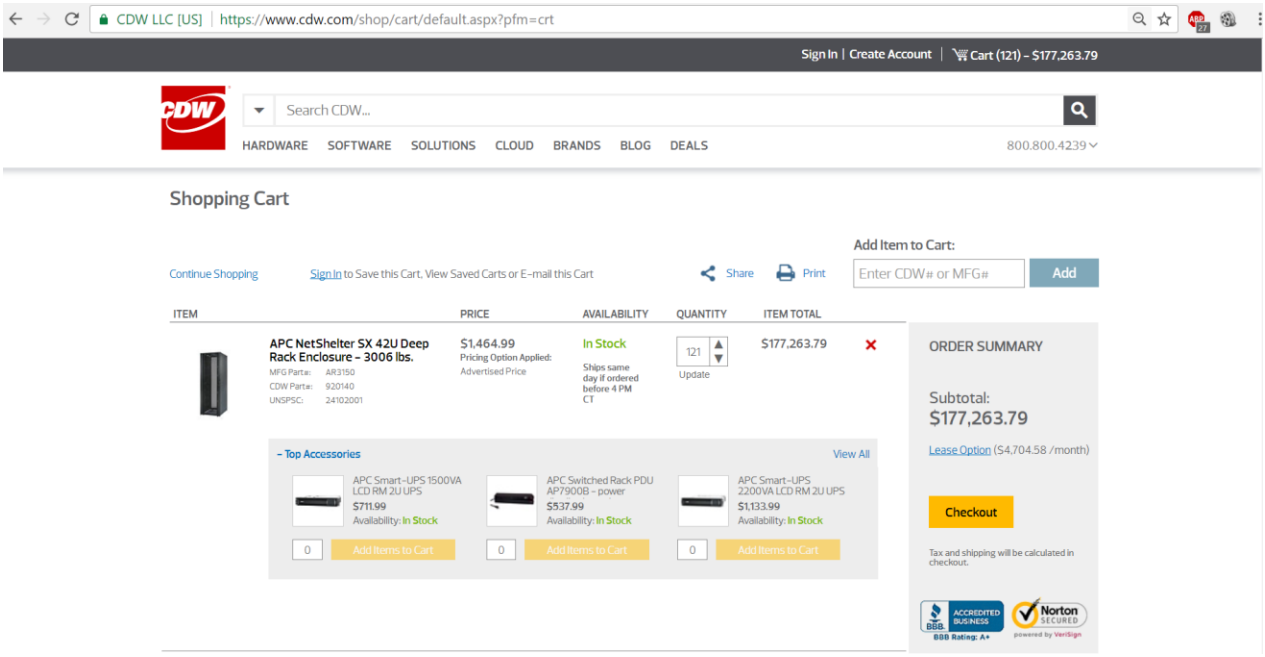


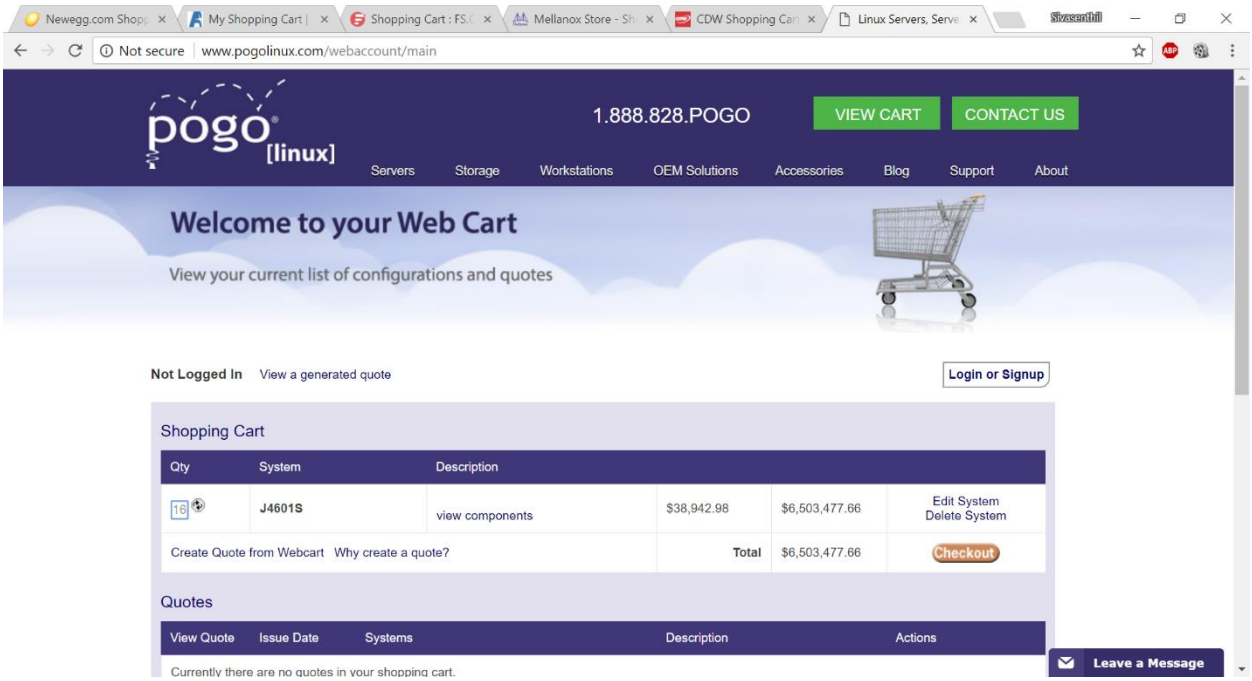



Secure | https://secure.newegg.com/Shopping/ShoppingCart.aspx
exceeds our available inventory or per customer limit and has been adjusted accordingly.
PRIVACY PROTECTED
Our Privacy Policy states that we will only share your personal information with third parties working on our behalf to complete your order such as UPS and FedEx.
SECURITY SAFEGUARDS
Security is a top priority at Newegg. When you submit sensitive information via the website, your information is protected both online and offline.
Select All
Remove Selected
Move Selected to Wish List
Update Qtys
Newegg Marketplace Direct Delivery Service
Important Shipping Information
NETGEAR ProSAFE XS748T 48-Port 10-Gigabit Ethernet Smart Managed Switch
Case: None / Class: N/A / Version: N/A / Model: N/A / Primary Port: 48 Port
IN STOCK
$3,652.94
INSUFFICIENT QUANTITY AVAILABLE
Insufficient quantity available
204 switches are needed
Sold by BuyVPC.com
Subtotal: $3,652.94
Shipping: $0.00
Shipping Options
Please enter your Zip Code so we can show you the most relevant shipping options for your location.
Zip/Postal Code
Update
Choose a delivery method
Standard Shipping (5-7 business days)

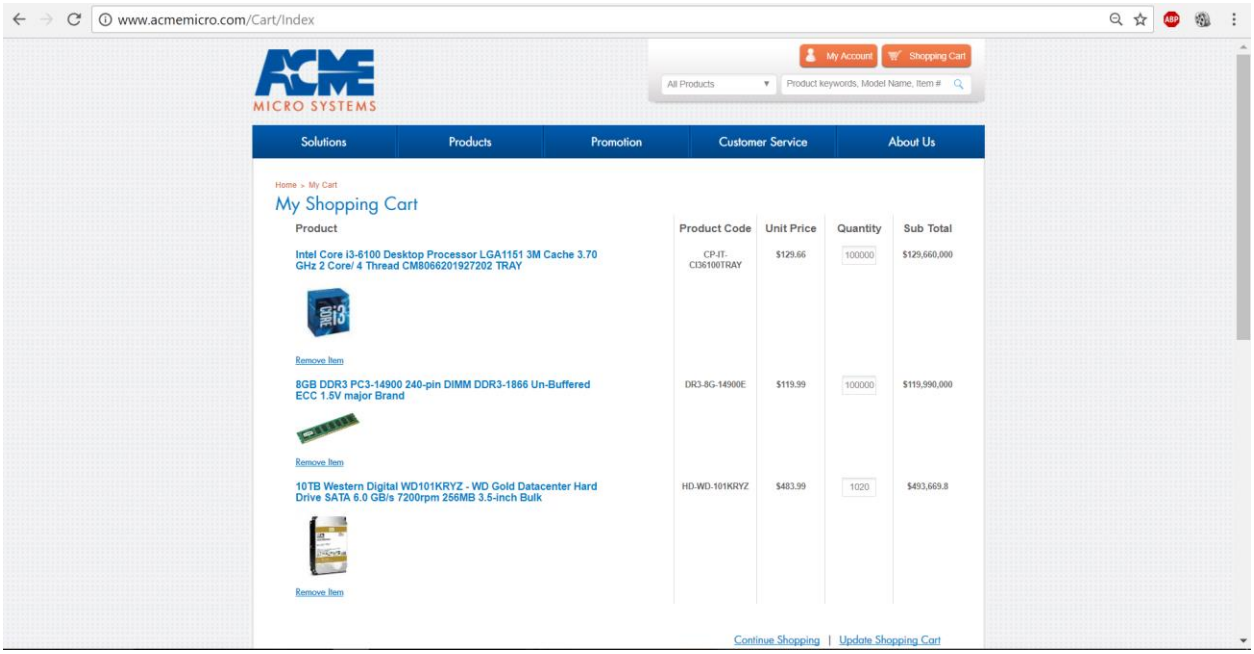

www.fs.com/index.php?main_page=shopping_cart&action=update_product
Warehouse located in U.S., Free Shipping on orders over USD $79
United States - USD
English
Need Help
FS.COM
Global Shipping
Sign in
Cart
All Categories
New Products
Resources
About Us
Contact Us
Home
Shopping Cart
Save
Share
Print
Your item
Unit Price
Qty
Weight
Total
7m (23ft) Extreme Networks 10GB-C07-SFPP Compatible 10G SFP+ Passive Direct Attach Copper Twinax Cable
#40164 - 149 pcs in stock, Ready to ship
US$ 42.00
1
0.4 kg
US$ 42.00
Save for later | Remove
QTY: 201164
Subtotal (Shipping and taxes excluded) :
US$ 42.00
www.fs.com/products/40164.html

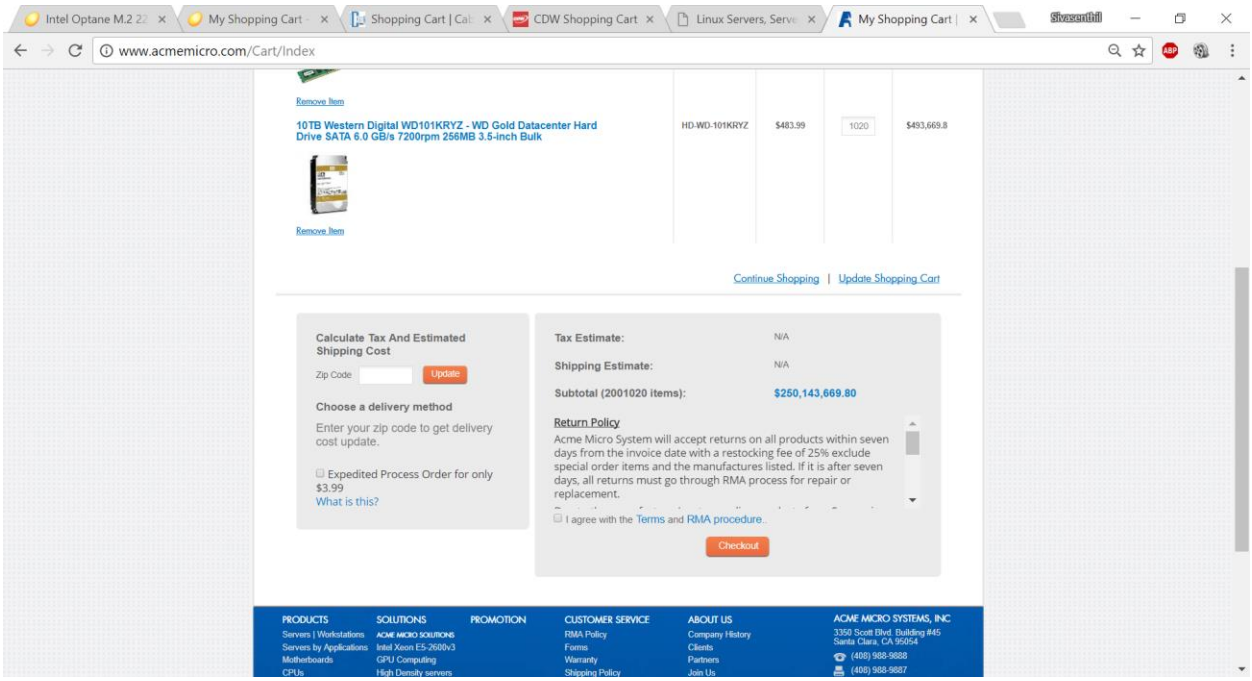

Secure | https://store.mellanox.com/cart.php
Mellanox
THE OFFICIAL STORE
Call toll-free: (855) 897-1098
International +01-512-220-1515
Currency
Search Product
GET A QUOTE
CART
(1 ITEM)
ADAPTERS
SWITCHES
INTERCONNECT
SUPPORT AND WARRANTIES
OUTLET DEALS
CUSTOMER SERVICE
Be the first to try the Mellanox Spectrum 100GbE Proof of Concept Bundles. Learn More »
Home | ... Previous Page | Your Shopping Cart
The contents of your shopping cart have been updated.
Your Shopping Cart
Secure Checkout
Cart Items
Qty
Item Price
Item Total
Mellanox MCP7F00-A003 Passive Copper Hybrid Cable Ethernet 100GbE to 4x25GbE QSFP28 to 4xSFP28 3m 28AWG
Ships same day
Remove
$145.00
$145.00
QTY: 139 needed
Subtotal:
$145.00
Estimate Shipping & Tax
Safe Shopping Guarantee
All information is encrypted and transmitted without risk using a Secure Sockets Layer (SSL) protocol.
Payment Methods
Contact us!

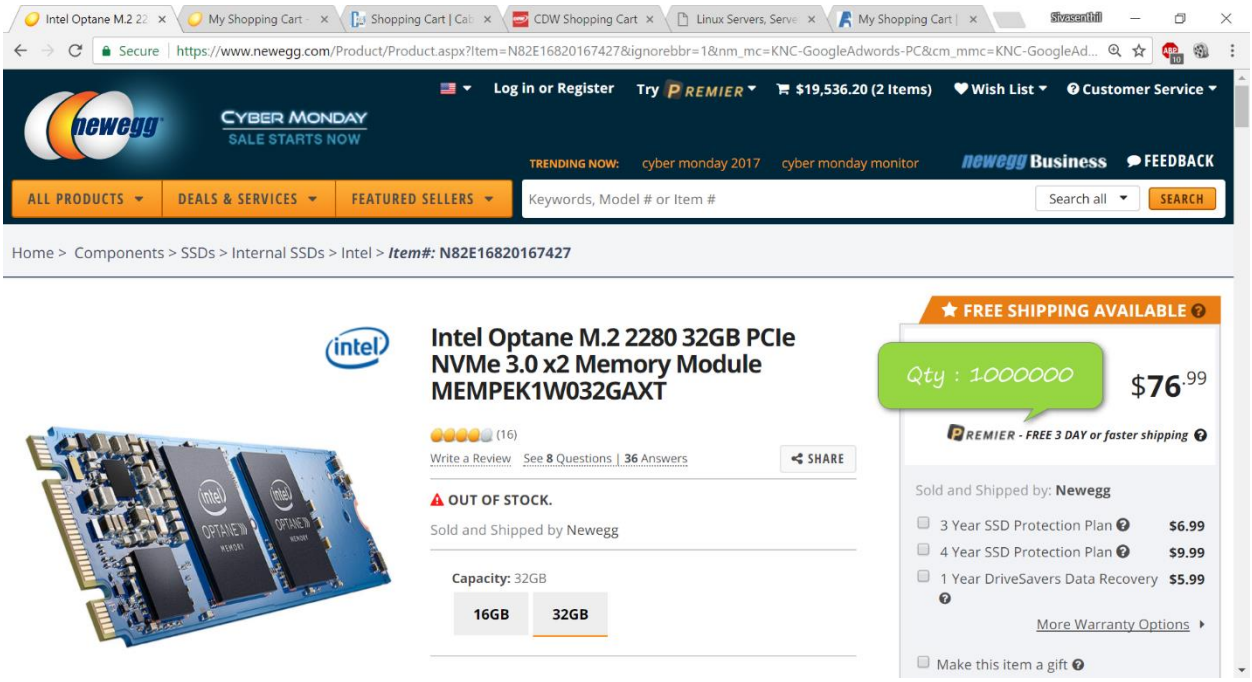

CDW LLC [US] | https://www.cdw.com/shop/cart/default.aspx?pfm=crt
Sign In | Create Account | Cart (121) - $177,263.79
Search CDW...
HARDWARE
SOFTWARE
SOLUTIONS
CLOUD
BRANDS
BLOG
DEALS
800.800.4239
Shopping Cart
Continue Shopping
Sign In to Save this Cart. View Saved Carts or E-mail this Cart
Share
Print
Add Item to Cart:
Enter CDW# or MFG#
Add
ITEM
PRICE
AVAILABILITY
QUANTITY
ITEM TOTAL
APC NetShelter SX 42U Deep Rack Enclosure - 3006 lbs.
MFG Part#: AR3150
CDW Part#: 920140
UNSPSC: 24102001
$1,464.99
Pricing Option Applied:
Advertised Price
In Stock
Ships same day if ordered before 4 PM CT
121
Update
$177,263.79
Top Accessories
View All
APC Smart-UPS 1500VA LCD RM 2U UPS
$711.99
Availability: In Stock
APC Switched Rack PDU AP7900B - power
$537.99
Availability: In Stock
APC Smart-UPS 2200VA LCD RM 2U UPS
$1,133.99
Availability: In Stock
Add Items to Cart
ORDER SUMMARY
Subtotal:
$177,263.79
Lease Option ($4,704.58 /month)
Checkout
Tax and shipping will be calculated in checkout.
BBB Rating: A+
Norton SECURED

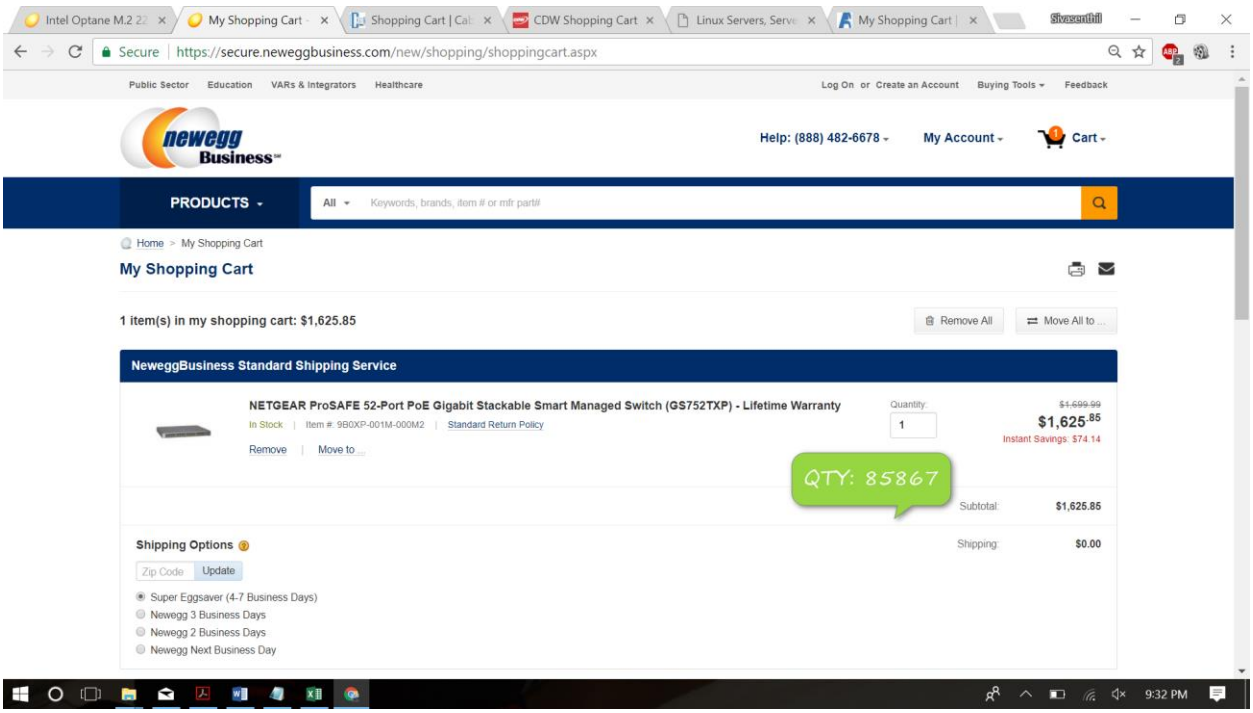


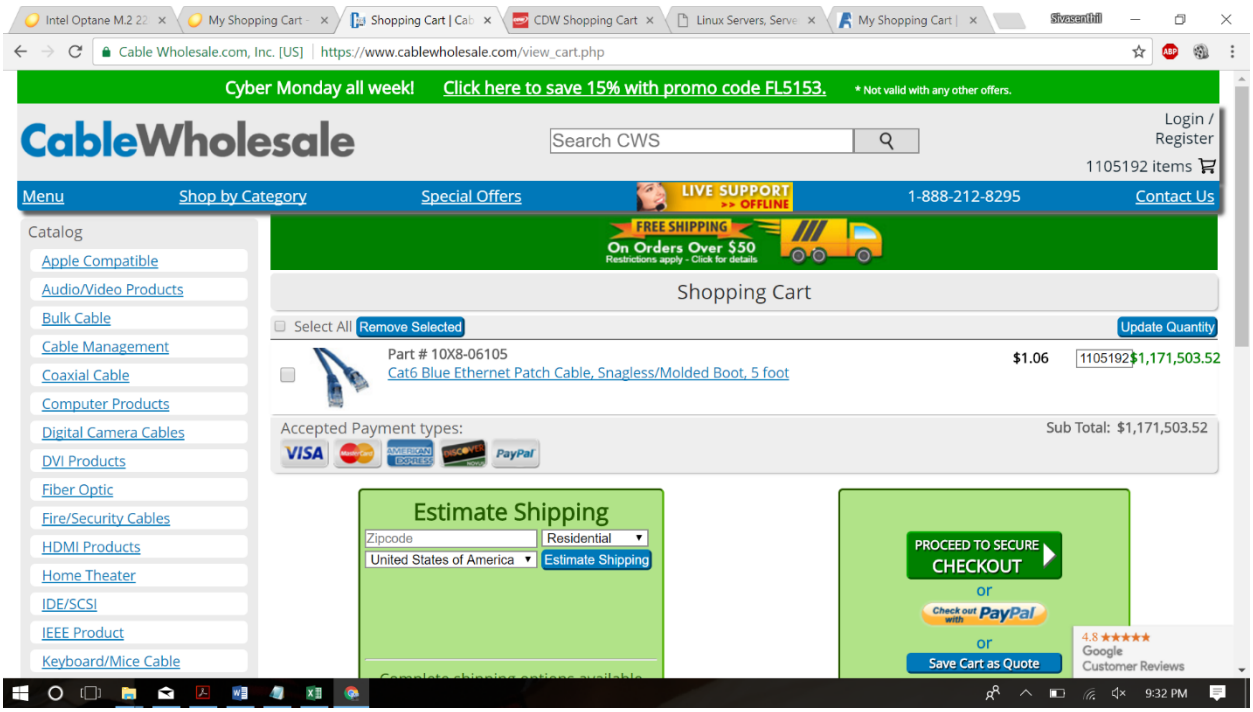
Configuration II

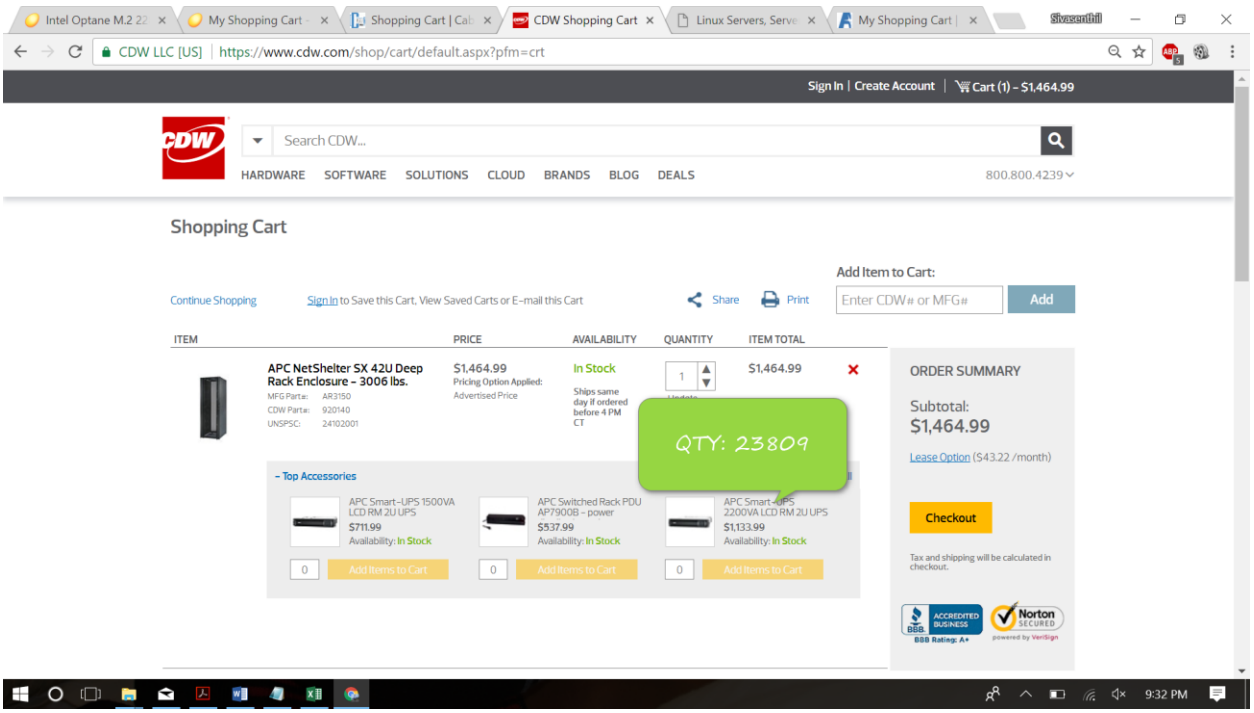


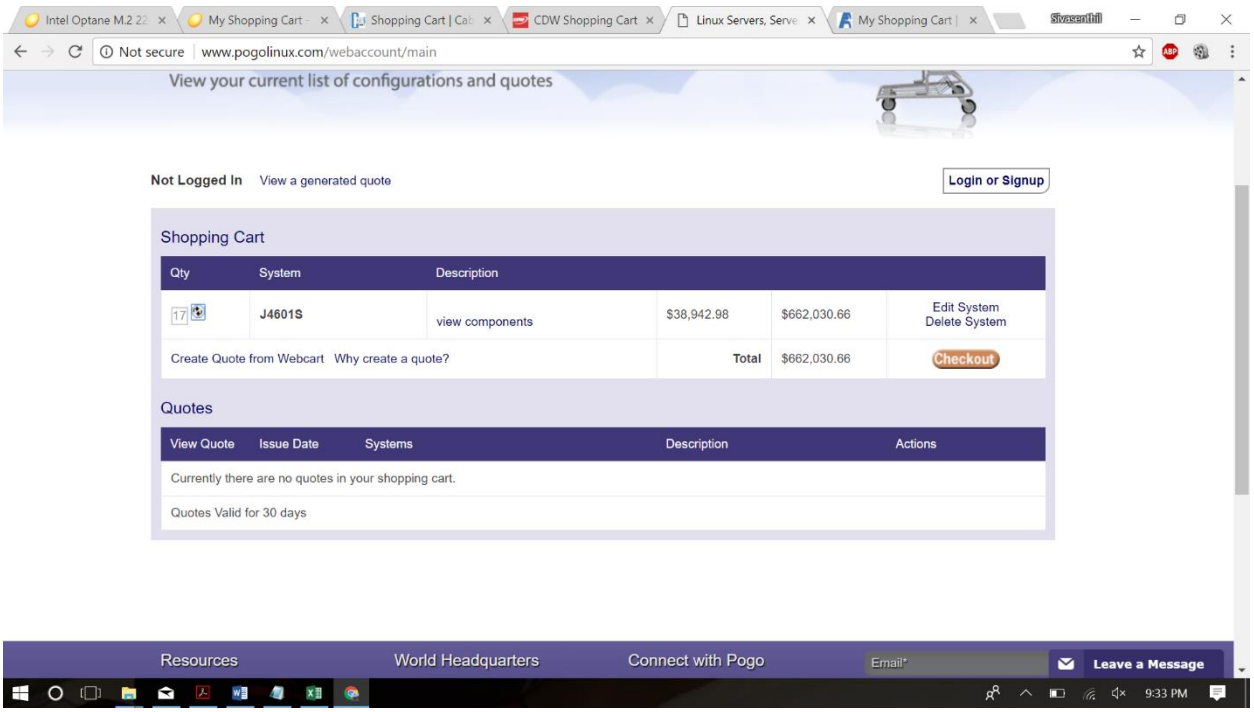

www.acmemicro.com/Cart/Index
Remove Item
10TB Western Digital WD101KRYZ - WD Gold Datacenter Hard Drive SATA 6.0 GB/s 7200rpm 256MB 3.5-inch Bulk
HD-WD-101KRYZ
$483.99
1020
$493,669.8
Remove Item
Continue Shopping | Update Shopping Cart
Calculate Tax And Estimated Shipping Cost
Zip Code
Update
Choose a delivery method
Enter your zip code to get delivery cost update.
Expedited Process Order for only $3.99
What is this?
Tax Estimate: N/A
Shipping Estimate: N/A
Subtotal (2001020 items): $260,143,669.80
Return Policy
Acme Micro System will accept returns on all products within seven days from the invoice date with a restocking fee of 25% exclude special order items and the manufactures listed. If it is after seven days, all returns must go through RMA process for repair or replacement.
I agree with the Terms and RMA procedure..
Checkout
PRODUCTS
Servers | Workstations
Servers by Applications
Motherboards
CPUs
SOLUTIONS
ACME MICRO SOLUTIONS
Intel Xeon E5-2600v3
GPU Computing
High Density servers
PROMOTION
CUSTOMER SERVICE
RMA Policy
Forms
Warranty
Shipping Policy
ABOUT US
Company History
Clients
Partners
Join Us
ACME MICRO SYSTEMS, INC
3350 Scott Blvd. Building #45
Santa Clara, CA 95054
(408) 988-9888
(408) 988-9887


Secure https://www.newegg.com/Product/Product.aspx?Item=N82E16820167427&ignorebbr=1&nm_mc=KNC-GoogleAdwords-PC&cm_mmc=KNC-GoogleAd...
Log in or Register
Try PREMIER
$19,536.20 (2 Items)
Wish List
Customer Service
CYBER MONDAY
SALE STARTS NOW
TRENDING NOW: cyber monday 2017 cyber monday monitor
newegg Business
FEEDBACK
ALL PRODUCTS
DEALS & SERVICES
FEATURED SELLERS
Keywords, Model # or Item #
Search all
SEARCH
Home > Components > SSDs > Internal SSDs > Intel > Item#: N82E16820167427
Intel Optane M.2 2280 32GB PCIe NVMe 3.0 x2 Memory Module MEMPEK1W032GAXT
(16)
Write a Review
See 8 Questions | 36 Answers
SHARE
OUT OF STOCK.
Sold and Shipped by Newegg
Capacity: 32GB
16GB
32GB
FREE SHIPPING AVAILABLE
Qty : 1000000
$76.99
REMIER - FREE 3 DAY or faster shipping
Sold and Shipped by: Newegg
3 Year SSD Protection Plan $6.99
4 Year SSD Protection Plan $9.99
1 Year DriveSavers Data Recovery $5.99
More Warranty Options
Make this item a gift

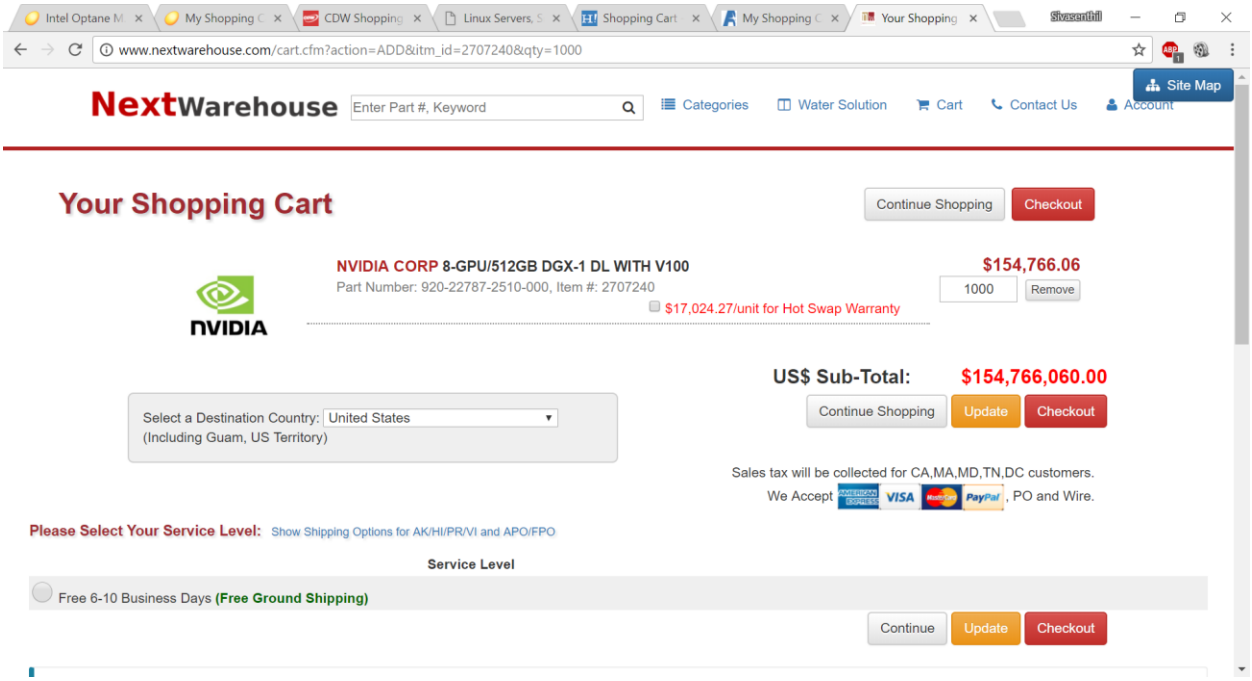

Secure | https://secure.neweggbusiness.com/new/shopping/shoppingcart.aspx
Public Sector
Education
VARs & Integrators
Healthcare
Log On or Create an Account
Buying Tools
Feedback
Help: (888) 482-6678
My Account
Cart
PRODUCTS
Home > My Shopping Cart
My Shopping Cart
1 item(s) in my shopping cart: $1,625.85
Remove All
Move All to ...
NeweggBusiness Standard Shipping Service
NETGEAR ProSAFE 52-Port PoE Gigabit Stackable Smart Managed Switch (GS752TXP) - Lifetime Warranty
In Stock | Item #: 9B0XP-001M-000M2 | Standard Return Policy
Remove | Move to ...
Quantity: 1
$1,699.99
$1,625.85
Instant Savings: $74.14
QTY: 85867
Subtotal: $1,625.85
Shipping Options
Zip Code
Update
Super Eggsaver (4-7 Business Days)
Newegg 3 Business Days
Newegg 2 Business Days
Newegg Next Business Day
Shipping: $0.00
9:32 PM

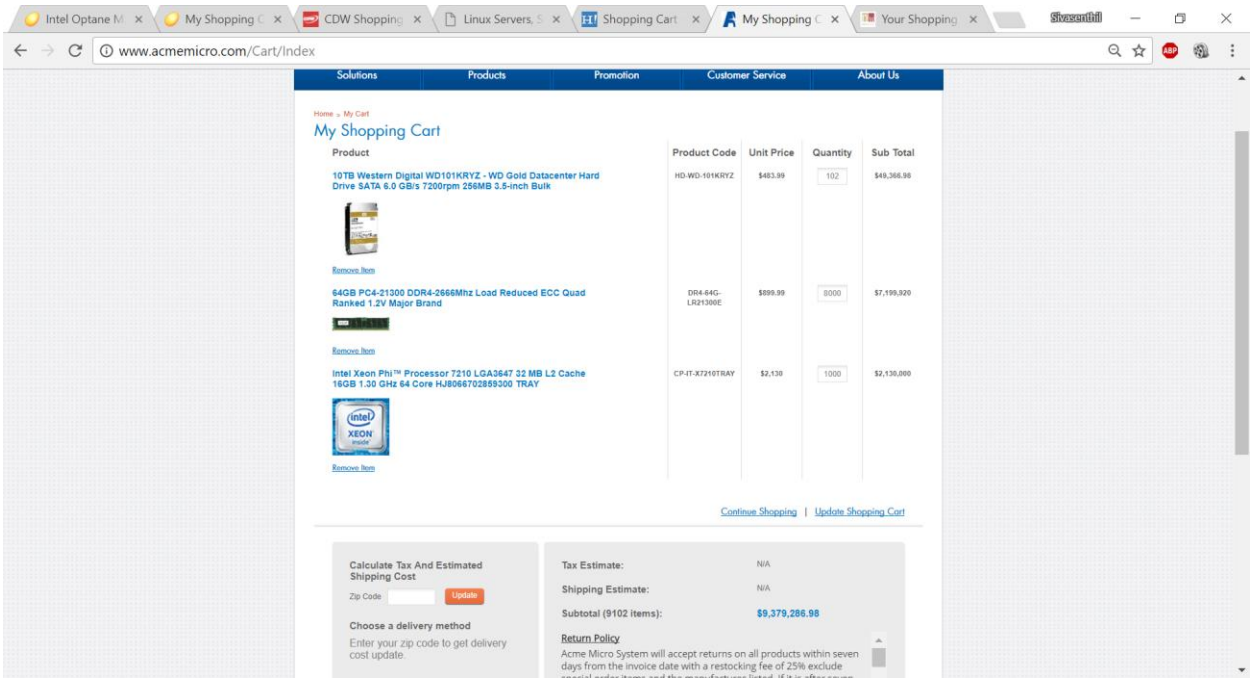

Cable Wholesale.com, Inc. [US] | https://www.cablewholesale.com/view_cart.php
Cyber Monday all week!
Click here to save 15% with promo code FL5153.
* Not valid with any other offers.
CableWholesale
Search CWS
Login / Register
1105192 items
Menu
Shop by Category
Special Offers
LIVE SUPPORT >> OFFLINE
1-888-212-8295
Contact Us
Catalog
Apple Compatible
Audio/Video Products
Bulk Cable
Cable Management
Coaxial Cable
Computer Products
Digital Camera Cables
DVI Products
Fiber Optic
Fire/Security Cables
HDMI Products
Home Theater
IDE/SCSI
IEEE Product
Keyboard/Mice Cable
FREE SHIPPING
On Orders Over $50
Restrictions apply - Click for details
Shopping Cart
Select All
Remove Selected
Update Quantity
Part # 10X8-06105
Cat6 Blue Ethernet Patch Cable, Snagless/Molded Boot, 5 foot
$1.06
1105192
$1,171,503.52
Accepted Payment types:
Sub Total: $1,171,503.52
Estimate Shipping
Zipcode
Residential
United States of America
Estimate Shipping
PROCEED TO SECURE CHECKOUT
or
Check out with PayPal
or
Save Cart as Quote
4.8 ★★★★★ Google Customer Reviews
9:32 PM

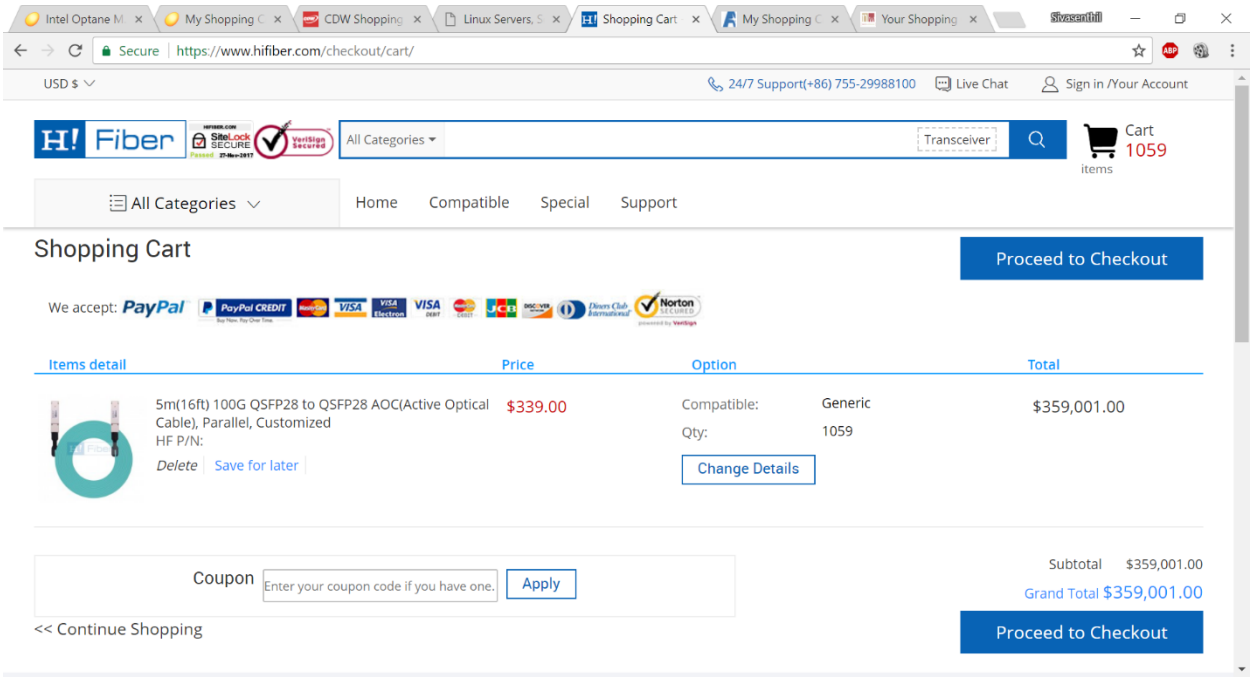

CDW LLC [US] | https://www.cdw.com/shop/cart/default.aspx?pfm=crt
Sign In | Create Account | Cart (1) – $1,464.99
Search CDW...
HARDWARE SOFTWARE SOLUTIONS CLOUD BRANDS BLOG DEALS
800.800.4239
Shopping Cart
Continue Shopping
Sign In to Save this Cart, View Saved Carts or E-mail this Cart
Share
Print
Add Item to Cart:
Enter CDW# or MFG#
Add
ITEM
PRICE
AVAILABILITY
QUANTITY
ITEM TOTAL
APC NetShelter SX 42U Deep Rack Enclosure – 3006 lbs.
$1,464.99
In Stock
$1,464.99
QTY: 23809
ORDER SUMMARY
Subtotal:
$1,464.99
Lease Option ($43.22 /month)
Checkout
Tax and shipping will be calculated in checkout.
– Top Accessories
APC Smart-UPS 1500VA LCD RM 2U UPS
$711.99
APC Switched Rack PDU AP7900B - power
$537.99
APC Smart-UPS 2200VA LCD RM 2U UPS
$1,133.99
Add Items to Cart
9:32 PM

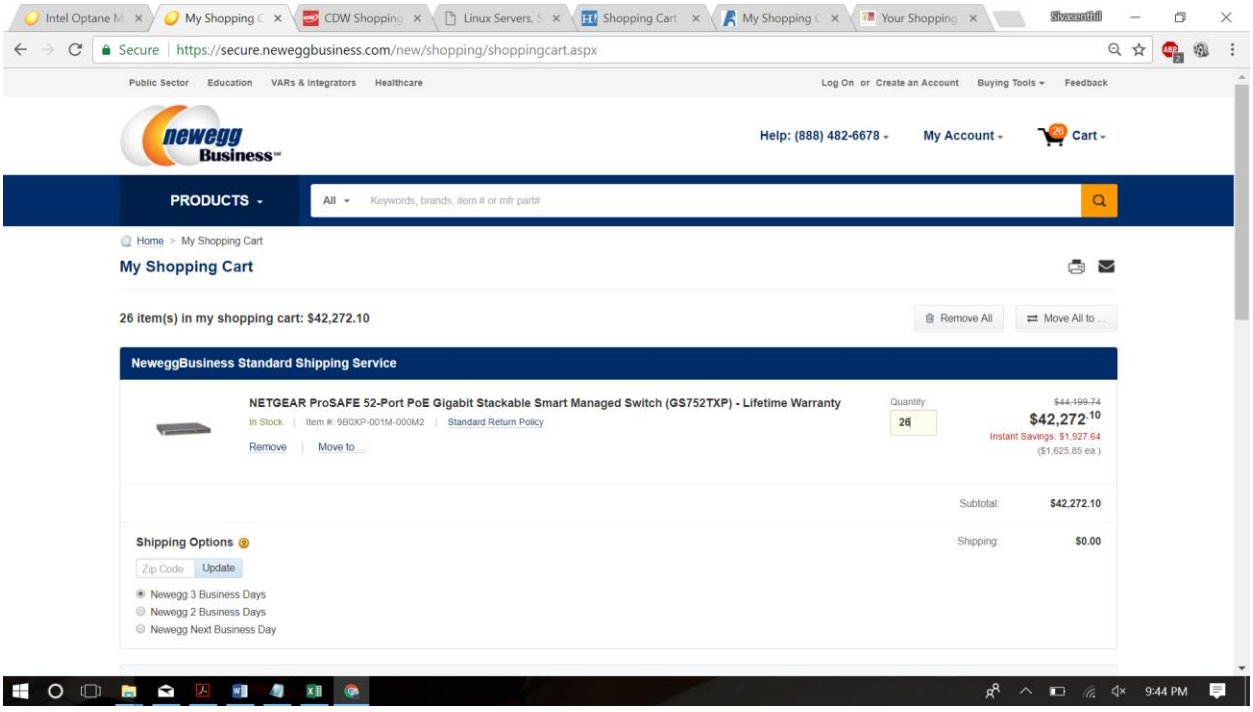

Not secure | www.pogolinux.com/webaccount/main
View your current list of configurations and quotes
Not Logged In
View a generated quote
Login or Signup
Shopping Cart
Qty
System
Description
17
J4601S
view components
$38,942.98
$662,030.66
Edit System
Delete System
Create Quote from Webcart
Why create a quote?
Total
$662,030.66
Checkout
Quotes
View Quote
Issue Date
Systems
Description
Actions
Currently there are no quotes in your shopping cart.
Quotes Valid for 30 days
Resources
World Headquarters
Connect with Pogo
Email*
Leave a Message
9:33 PM

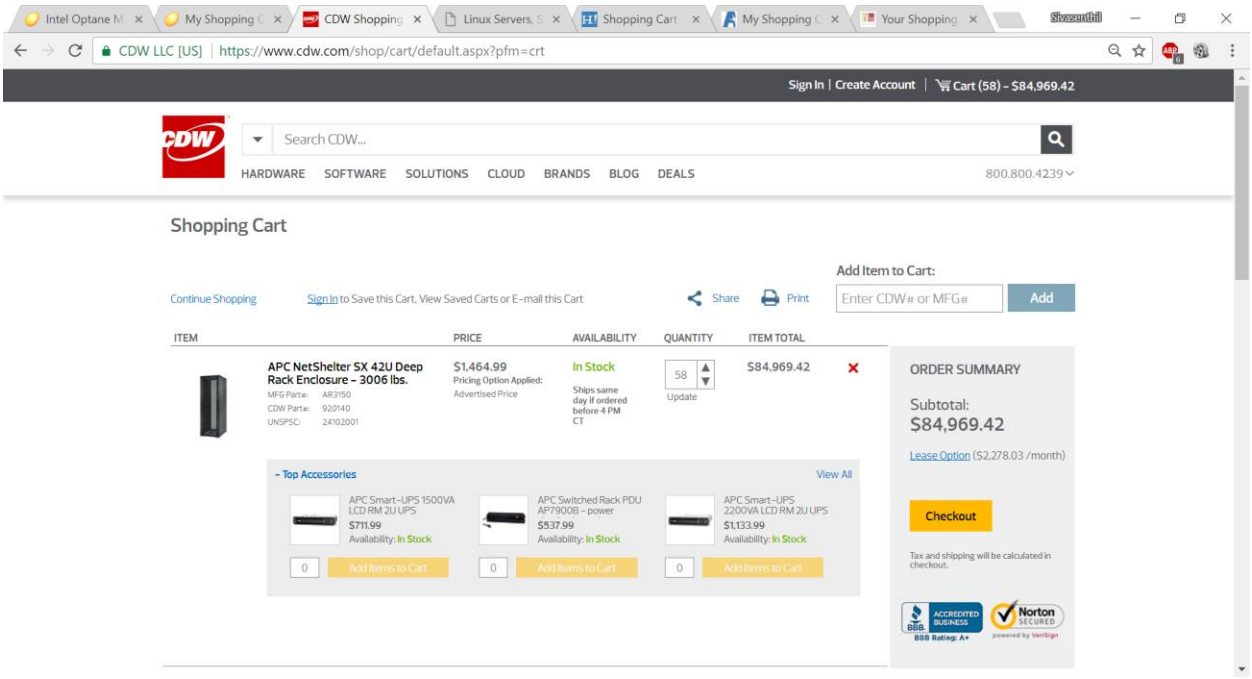
Configuration III

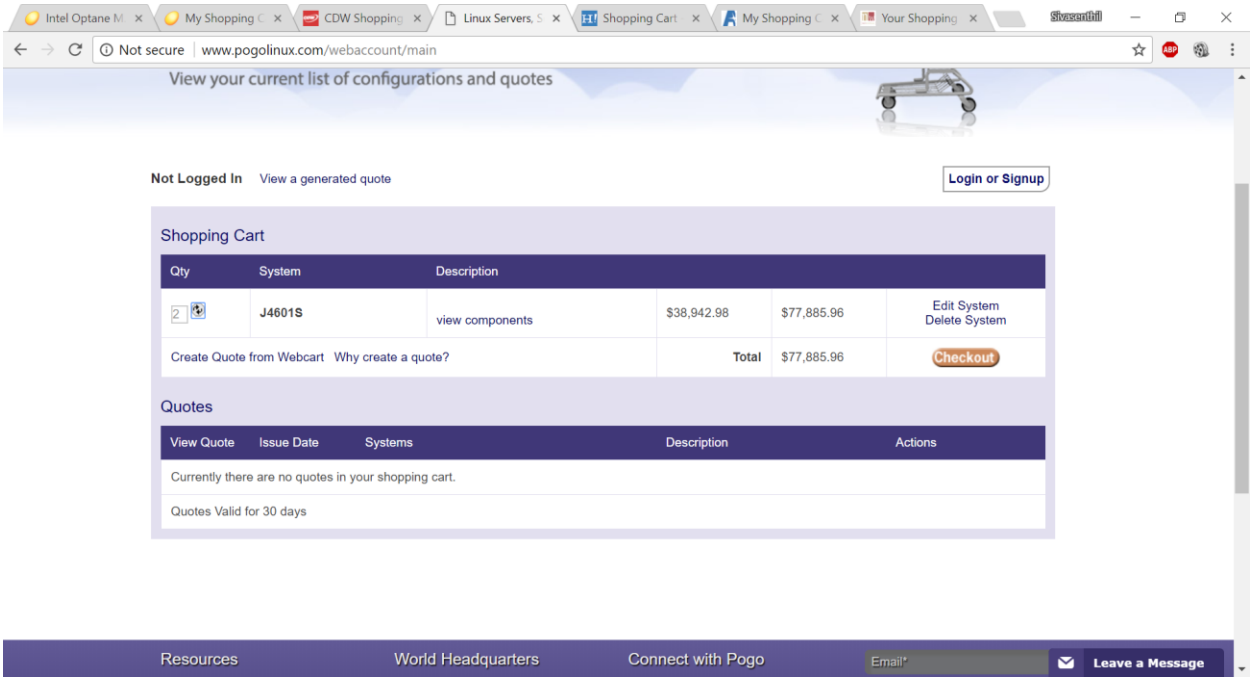





Secure | https://www.hifiber.com/checkout/cart/
USD $
24/7 Support(+86) 755-29988100
Live Chat
Sign in /Your Account
H! Fiber
All Categories
Transceiver
Cart
1059
items
All Categories
Home
Compatible
Special
Support
Shopping Cart
Proceed to Checkout
We accept: PayPal
Items detail
Price
Option
Total
5m(16ft) 100G QSFP28 to QSFP28 AOC(Active Optical Cable), Parallel, Customized
$339.00
HF P/N:
Delete
Save for later
Compatible:
Generic
Qty:
1059
Change Details
$359,001.00
Coupon
Enter your coupon code if you have one.
Apply
Subtotal
$359,001.00
Grand Total
$359,001.00
<< Continue Shopping
Proceed to Checkout


Secure | https://secure.neweggbusiness.com/new/shopping/shoppingcart.aspx
Public Sector
Education
VARs & Integrators
Healthcare
Log On or Create an Account
Buying Tools
Feedback
newegg Business
Help: (888) 482-6678
My Account
Cart
PRODUCTS
All
Keywords, brands, item # or mfr part#
Home > My Shopping Cart
My Shopping Cart
26 item(s) in my shopping cart: $42,272.10
Remove All
Move All to ...
NeweggBusiness Standard Shipping Service
NETGEAR ProSAFE 52-Port PoE Gigabit Stackable Smart Managed Switch (GS752TXP) - Lifetime Warranty
In Stock
Item #: 9B0XP-001M-000M2
Standard Return Policy
Remove
Move to ...
Quantity:
26
$44,199.74
$42,272.10
Instant Savings: $1,927.64
($1,625.85 ea.)
Subtotal:
$42,272.10
Shipping Options
Zip Code
Update
Newegg 3 Business Days
Newegg 2 Business Days
Newegg Next Business Day
Shipping:
$0.00
9:44 PM


CDW LLC [US] | https://www.cdw.com/shop/cart/default.aspx?pfm=crt
Sign In | Create Account | Cart (58) - $84,969.42
Search CDW...
HARDWARE SOFTWARE SOLUTIONS CLOUD BRANDS BLOG DEALS
800.800.4239
Shopping Cart
Add Item to Cart:
Continue Shopping
Sign In to Save this Cart, View Saved Carts or E-mail this Cart
Share
Print
Enter CDW# or MFG#
Add
ITEM
PRICE
AVAILABILITY
QUANTITY
ITEM TOTAL
APC NetShelter SX 42U Deep Rack Enclosure - 3006 lbs.
$1,464.99
In Stock
58
$84,969.42
ORDER SUMMARY
Subtotal:
$84,969.42
Lease Option ($2,278.03 /month)
Checkout
Tax and shipping will be calculated in checkout.
Top Accessories
View All


Not secure | www.pogolinux.com/webaccount/main
View your current list of configurations and quotes
Not Logged In
View a generated quote
Login or Signup
Shopping Cart
Qty
System
Description
J4601S
view components
$38,942.98
$77,885.96
Edit System
Delete System
Create Quote from Webcart
Why create a quote?
Total
$77,885.96
Checkout
Quotes
View Quote
Issue Date
Systems
Description
Actions
Currently there are no quotes in your shopping cart.
Quotes Valid for 30 days
Resources
World Headquarters
Connect with Pogo
Email*
Leave a Message

Assumptions

- The System Power consumption is assumed to be the same as the cooling power consumption and the cost is the same for both power and cooling components
- The Commercial charges of Chicago electrical charges is being considered for the electric power consumption as on November 2017
- The UPS costing is not considered which will have a more incremented costing on the Private cloud. As of this set up is considered the UPS costing is not worked
- The cost of the S3 network/ Ethernet is not given in the AWS Website (Asked to contact amazon) which is assumed as $0.02/GB as per the deduction with the large amount of usage
- The cost of over 500TB/Month plan for Network in the AWS cloud is assumed to be 0.02/GB since the exact cost is not mentioned in AWS Website

Conclusion

- The Usage of Public cloud is profitable only if the utilization is less and the requirement load is low. This will make the usage of public cloud to less frequency and the cost will be reduced. If the 100% usage of the hardware is to be attained, then as per the theoretical calculation mentioned above Private will be a better option.
- The cost of Private cloud decreases over time based on the fact that the initial investment or cost gets amortized over 5 years and the usage of all the hardware is consistent and continuous for 24/7*365 days*5 years
- The private cloud is profitable and advantageous but there should skilled professional all the time to maintain the data center which is an added burned to the organization

References

- http://www.cpu-world.com
- http://aws.amazon.com/ec2/pricing/
- http://newegg.com
- https://www.ec2instances.info/
- http://www.novatte.com
- http://ark.intel.com/products/
- https://www.microway.com/knowledge-center-articles/
- https://www.glassdoor.com/Salaries
- http://www.techpowerup.com/
- http://www.cisco.com
- https://www.electricitylocal.com/states/illinois/chicago/