

# **CS 553 Cloud Computing**

**Project**

**Report**

**submitted by:**

Chiranjeevi Ankamreddy  
A20359837

## **Understanding the cost of computing in the cloud:**

In this Project ,we have to use cloud computing instead of building own infrastructure. Since, There Is consensus that a cloud computing software stack at the layer of IaaS will be used, but its not Clear whether the computing resources Should be rented from a public cloud on-demand, or whether A private cloud should be purchased. We need to find the cost breakdown of a private cloud, and Compare that to what Amazon would charge for the following instance types: m4.10xlarge, m3.large, m3.2xlarge,c3.8xlarge, g2.2xlarge, r3.4xlarge, i2.8xlarge,and d2.8xlarge.

Since we have to estimate the cost of the hardware when building a private cloud, I used hardware prices found at Newegg.com as a good source for low cost and large variety of hardware.And each vCPU is a hyper-thread of an Intel Xeon core for M3,M4,C3,R3,D2,G2,and I2.

The above table describes about the Ec2 instances of AWS. We use the concept of EC2 compute units to denote the compute capacity in Gflops of each instance. We have eight instances m4.10xlarge.Private, m3.large.Private,m3.2xlarge.Private,c3.8xlarge.Private,g2.2xlarge. .Private, r3.4xlarge.Private, 2.8xlarge.Private, and d2.8xlarge.Private which are compared to the amazon ec2 instances m4.10xlarge,m3.large, m3.2xlarge, c3.8xlarge,g2.2xlarge,r3.4xlarge,i2.8xlarge, and d2.8xlarge. We have to build a private cloud for all the eight amazon instances and compare the cost of each instance per hour. To build a private cloud the factors we consider are Processor, Storage,Memory, Network Adapter, Network Switch, System Admin, Cooling Power, System Power, Chassis, Rack, UPS ,Motherboard and Firewall. While building the private cloud we check the compatibility of the hardware with the other factors. The total mentioned in the table is the cost of the instance amortized for 5 years. All the considered processors support hyper threading and while considering GFlops we also multiply the number of hyper threads which is 2 to the number of cores \* instructions per cycle \* processor speed.

### **Private Instances:**

#### **1)m4.10xlarge.Private**

<b>Device</b>	<b>Details</b>	<b>Cost</b>
Processor Cost	2 INTEL XEON E5-2676 V3 2.40GHz SR1Y5 30Mb 12 Cores 24 Thread E5-2670	\$3601.99
Storage	WD Blue 1TB Desktop Hard Disk Drive - 7200 RPM SATA 6 Gb/s 64MB Cache 3.5 Inch - WD10EZEX - OEM	\$53.99
Memory	10 Kingston 16GB 240-Pin DDR3 SDRAM ECC Registered DDR3 1333 System Specific Memory Model KTM-SX313LV/16G	\$890.97
Network Adapter	Intel X540T2 Ethernet Converged Network Adapter 100Mbps/1Gbps/10Gbps PCI Express 2.1 x8 2 x RJ45	\$449.99
Network Switch	Buffalo BS-GS2048 48-Port Gigabit Green Ethernet Web Smart Switch with 2 SFP Slots	\$429.00
System Admin	74,904	\$374,520.00
Cooling Power	504.42	\$3,689.63
System Power	1681.4	\$12,298.77
Chassis	iStarUSA D-1101-ITX Black Material of Front Bezel : SECC 1.0mm Material of Main Chassis: Steel 1U Rackmount 1U 5.25" bay Compact Rackmount mini-ITX Chassis 1 External 5.25" Drive Bays	\$93.99
Rack	Tripp Lite SR2400 42U 42U SmartRack Value Series Rack Enclosure Cabinet (includes doors and side panels)	\$1048.00
UPS	APC Smart-UPS SMC1500-2U 900w 6 outlets	\$529.99
Motherboard	Intel S2600CP4 SSI EEB Server Motherboard Dual LGA 2011 DDR3 1600	\$550.00
Firewall	Cisco Meraki MX400 1U	\$29,049.00

Total		\$427,205.32

For One Instance,

GFlops = No.of cores\*ipc\*Processor Speed

=12\*16\*2.4\*2

=921.6

GFLOPS	INSTANCES	COST/GFLOP/HOUR
1	1	\$9.12
10	1	\$0.92
100	1	\$0.092
1000	2	\$0.0102
10000	11	\$0.0020
100000	108	\$0.00126
1000000	1085	\$0.00120

This instance is specific for general purpose computing. The m4.10xlarge.Private has a 12 core processor which can be shared between 16 instances which implies we dedicate 0.75 core to each instance. The memory, storage, chassis, rack, motherboard, are also considered to fit 16 instances. When we calculate the Gflops of this private instance it is 921.6, so each instance has a compute capacity of 57.56 Gflops. The total amortized cost for 5 years is \$427,205.32 and cost for a single instance is \$9.12 per hour.

## 2.m3.large

Device	Details	Cost
Processor Cost	Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz 25MB L3 Cache LGA 2011 115W BX80635E52670V2 Server Processor	\$1,559.99
Storage	Intel 535 series 2 5'120 GBsata III MLC Internal Solid State Drive	\$59.99
Memory	G SkillRipjaws series 8GB 204 pin DDR3SODIMMDDR3L 1600	\$34.99
Network Adapter	Lenavo thinkServer 1gbps Ethernet i350-T2 server Adapter By Intel	\$189.99
Network Switch	Cisco SG300-20 Gigabit managed Switch	\$250.00
System Admin	74,904	\$374,520.00
Cooling Power	399.42	\$2,921.60
	1331.4	\$9,738.66
Chassis	2U SC823TQ-653LPB 650W	\$360.41
Rack	StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management Hooks	\$229.99
UPS	APC Smc1500-2U -1440 VA 900w UPS	\$489.99
Motherboard	SUPERMICRO X9SRL-F ATX Server Motherboard –Intel C602 chipset-SocketR LGA-2011-Bulk Pack	\$270.99
Firewall	Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support	\$38,219.00
Adapter	ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD	\$49.98
Total		\$428,895.58

For One Instance,

GFlops = No.of cores\*ipc\*Processor Speed

=8\*8\*2.5\*1

=160

GFLOPS	INSTANCES	COST/ GFLOPS/HOUR
1	1	\$9.792
10	1	\$0.979

100	4	\$0.391
1000	48	\$0.0047
10000	480	\$0.0041
100000	4807	\$0.0019
1000000	48076	\$0.0008

This instance is specific for general purpose computing. The rm3.large.private has an 8 core processor which can be shared between 8 instances implies we dedicate 1 core to each instance. The memory, storage, chassis, rack, motherboard are also considered to fit 8 instances. . The adapter is considered because the tray size is 3.5 but the SSD is only 2.5 so, we put the SSD in the adapter and put this in the rack. We calculate the Gflops of this private instance it is  $8*8*2.5*1=160.4$ , so each instance has a compute capacity of 20.5 Gflops. The total amortized cost for 5 years is \$428,895.58 and cost for a single instance is \$9.79 per hour.

### **3) m3.2xlarge.Private**

Device	Details	Cost
Processor Cost	Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz 25MB L3 Cache LGA 2011 115W BX80635E52670V2 Server Processor	\$1,559.99
Storage	ADATA Premier sp550 2 5'240GBsata III TLC Internal Solid State Drive	\$58.99
Memory	G SkillRipjaws series 8GB 204 pin DDR3SODIMMDDR3L 1600	\$34.99
Network Adapter	Lenavo thinkServer 1gbps Ethernet i350-T2 server Adapter By Intel	\$189.99
Network Switch	Cisco SG300-20 port Gigabit managed Switch	\$250.00
System Admin	74,904	\$374,520.00
Cooling Power	399.42	\$2,921.60
	1331.4	\$9,738.66
Chassis	2U SC823TQ-653LPB 650W	\$360.41
Rack	StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management Hooks	\$229.99
UPS	APC Smc1500-2U -1440 VA 900w UPS	\$489.99
Motherboard	SUPERMICRO X9SRL-F ATX Server Motherboard –Intel C602 chipset-SocketR LGA-2011-Bulk Pack	\$270.99
Firewall	Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support	\$38,219.00
Adapter	ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD	\$49.98

Total		\$428,894.58

For One Instance,

GFlops = No.of cores\*ipc\*Processor Speed

=10\*8\*2.5\*1

=200

This instance is specific for general purpose computing. The rm3.large.private has an 8 core processor which can be shared between 8 instances implies we dedicate 1 core to each instance. The memory, storage, chassis, rack, motherboard are also considered to fit 8 instances. . The adapter is considered because the tray size is 3.5 but the SSD is only 2.5 so, we put the SSD in the adapter and put this in the rack. We calculate the Gflops of this private instance it is 8\*8\*2.5\*1=160.4, so each instance has a compute capacity of 20.5 Gflops. The total amortized cost for 5 years is \$428,895.58 and cost for a single instance is \$9.89 per hour.

GFLOPS	INSTANCES	COST/ GFLOPS/HOUR
1	1	\$9.892
10	1	\$0.989
100	4	\$0.451
1000	48	\$0.0052
10000	480	\$0.0048
100000	4807	\$0.0022
1000000	48076	\$0.0014

#### **4) c3.8xlarge.Private**

Device	Details	Cost
Processor Cost	2 Intel Xeon E5-2680 v2 Ten-Core Processor 2.8GHz 8.0GT/s 25MB LGA 2011 CPU BX80635E52680V2	\$3506.02
Storage	Samsung 950 PR0 M.2512gb PCI-Express x4 Internal Solid State Drive	\$467.21

Memory	ASUS Desktop Computer G20AJ-US002 T Intel core i7 4790 8 GB DDR3 1TB HDD &GB SSD	\$799.99
Network Adapter	Intel E10G42BT X520-T2 10Gigabit Ethernet Card 10Gbps	\$757.47
Network Switch	Cisco Refresh SG200-18, SLM2016T-NA, Smart Switch 16 x 10/100/1000	\$273.05
System Admin	74,904	\$374,520.00
Cooling Power	464.22	\$3,402.10
System Power	1547.4	\$11,315.69
Chassis	SuperChasis 825TQ-600LPB	\$349.99
Rack	42u Rack	\$70.00
Motherboard	ASRock EP2C602-2T/D16 SSI EEB Server Motherboard Dual LGA 2011 DDR3 1600/1333/1066	\$499.99
UPS	APC Smart-UPS SMC1500-2U 900watts UPS	\$489.99
Adapter	ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD &HSD Converter	\$47.99
Firewall	Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support	\$38,219.00
Total		\$434,718.49

For One Instance,

$$\begin{aligned}
 \text{GFlops} &= \text{No.of cores} * \text{ipc} * \text{Processor Speed} \\
 &= 10 * 8 * 2.8 * 2 \\
 &= 448
 \end{aligned}$$

GFLOPS	INSTANCES	COST/GFLOPS/HOUR
1	1	\$9.792
10	1	\$0.979
100	1	\$0.391
1000	2	\$0.0047
10000	22	\$0.0041
100000	223	\$0.0019
1000000	2232	\$0.0008

This instance is compute optimized with high performing processors. The rc3.8xlarge.private has a 20 core processor. Each instance is allocated 20 cores. So we take two 10 core processors and for



memory we take eight 8GB DDR3 RAM's. When we calculate the Gflops of this private instance it is  $10 \times 8 \times 2.8 \times 2$ , so each instance has a compute capacity of 448 Gflops. The total amortized cost for 5 years is \$434,718.49 and cost for a single instance is \$9.79 per hour.

### **5)g2.2xlarge.private**

Device	Details	Cost
Processor Cost	Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.6GHz 25MB L3 Cache LGA 2011 115W BX80635E52670V2 Server Processor	\$1,599.99
Storage	Crucial M4 2.5" 64GB SATA III MLC Internal Solid State Drive (SSD) CT064M4SSD2	\$131.00
Memory	8*Crucial 2GB (2 x 1GB) 240-Pin DDR3 SDRAM DDR3 1600 (PC3 12800) Desktop Memory Model CT2KIT12864BA160B	\$224.94
Network Adapter	Lenavo thinkServer 1gbps Ethernet i350-T2 server Adapter By Intel	\$189.99
Network Switch	Cisco SG200-18 Switch 16 10/100/1000 Ports, Gigabit Ethernet	\$250.05
System Admin	74,904	\$374,520.00
Cooling Power	576.72	\$4,218.48
System Power	1922.4	\$14,061.59
Chassis	2U SC823TQ-653LPB 650W	\$360.41
Rack	StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management Hooks	\$229.00
UPS	APC Smart-UPS SMC1500-2U 900w 6 UPS	\$489.99
Adapter	ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps	\$24.99
Motherboard	ASUS Z9PE-D16 SSI EEB Server Motherboard Dual LGA 2011 DDR3 1600	\$479.99
GPU	NVIDIA TESLA K20 3.52 Tflops Workstation Video Card - OEM	\$3,499.99
Firewall	Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support	\$38,219.00
Total		\$400,280.41

For One Instance,

$$\begin{aligned}\text{GFlops} &= \text{No.of cores} * \text{ipc} * \text{Processor Speed} \\ &= 8 * 8 * 2.6 * 1 \\ &= 166.4\end{aligned}$$

This instance is intended for GPU computations with high performance NVIDIA TESLA K20 with 3.52 Tflops. The g2.2xlarge.private has an 8 core processor and the number of cores for the gpu processor is 2496 cores. For compute capacity we consider the gflops of both cpu and gpu. Cpu single precision performance= 166.4 GFLOPS, Gpu single precision performance=3520GFLOPS. TOTAL GFLOPS= 3686.4. The total amortized cost for 5 years is \$400,280.41 and cost for a single instance is \$9.13 per hour.

GFLOPS	INSTANCES	COST/GFLOPS/HOUR
1	1	\$9.13
10	1	\$0.913
100	1	\$0.0913
1000	1	\$0.0091
10000	2	\$0.0045
100000	27	\$0.0022
1000000	271	\$0.00108

## **6) r3.4xlarge.private**

Device	Details	Cost
Processor Cost	Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz 25MB L3 Cache LGA 2011 115W BX80635E52670V2 Server Processor	\$1,665.99
Storage	256GB SSD	\$258.14
Memory	NEMIX RAM 128GB DDR3 1600MHz PC3-12800 ECC Registered memory	\$1,888.00

Network Adapter	qlogic QLE3242-CU-CK PCIE-Ex8 2x1000Mbps/1gbps/10gbps	\$432.99
Network Switch	Cisco SG200-18 Switch 16 10/100/1000 Ports, Gigabit Ethernet	\$466.05
System Admin	74,904	\$374,520.00
Cooling Power	416.22	\$3,042.87
System Power	1387.4	\$10,148.28
Chassis	Supermicro SuperChassis 514-R400C	\$686.27
Rack	StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management Hooks	\$229.00
Motherboard	ASUS ROG RAMPAGE IV BLACK EDITION LGA 2011 Intel X79 SATA 6Gb/s USB 3.0 Extended ATX Intel Gaming Motherboard	\$374.99
UPS	APC Smart-UPS SMC1500-2U 900w 6 UPS	\$489.99
Adapter	ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD	\$24.99
Firewall	Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support	\$38,219.00
Total		\$432,446.56

For One Instance,

GFlops = No.of cores\*ipc\*Processor Speed

=10\*4\*2.5\*2

=200

GFLOPS	INSTANCES	COST/GFLOPS/HOUR
1	1	\$9.87
10	1	\$0.987
100	1	\$0.0987
1000	4	\$0.0364
10000	44	\$0.0332
100000	446	\$0.0306
1000000	4464	\$0.0026

This instance is intended for memory intensive applications. The r3.4xlarge.private has a 10 core processor. Each instance is allocated 10 cores. The RAM is 128 GB DDR3. When we calculate the Gflops of this private instance it is 200, so each instance has a compute capacity of 200 Gflops. The total amortized cost for 5 years is \$432,446.56 and cost for a single instance is \$9.87 per hour.

## **7) i2.8xlarge.Private**

Device	Details	Cost
Processor Cost	2 Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz 25MB L3 Cache LGA 2011 115W BX80635E52670V2 Server Processor	\$3,119.99
Storage	2TB SSD SATA III 6Gbps + 8 512GB SATA III 3gbps	\$4,751.98
Memory	DELL Desktop PC OptiPlex 3020 Intel Core i5 4th Gen 4590 (3.30 GHz) 4 GB DDR3 500 GB HDD Intel HD Graphics 4400 Windows 7 Professional 64-Bit	\$519.99
Network Adapter	Intel E10G42BT X520-T2 10Gigabit Ethernet Card 10Gbps PCI Express x8 2 x RJ45	\$757.47
Network Switch	Cisco Refresh SG200-18, SLM2016T-NA, Smart Switch 16 x 10/100/1000	\$273.00
System Admin	74,904	\$374,520.00
Cooling Power	560.22	\$1,639.11
System Power	1867.4	\$13,659.28
Chassis	SUPERMICRO SYS-7047GR-TPRF 4U Rackmountable / Tower Server Barebone Dual LGA 2011 Intel C602 DDR3 1333/1066/800	\$2118.99
Rack	StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management Hooks	\$229.99
motherboard	ASUS Z10PE-D16/4L SSI EEB Server Motherboard Dual LGA 2011 R3	\$549.99
ups	APC Smart-UPS SMC1500-2U 900w 6 outlets	\$529.99
adapter	ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD	\$47.99
Firewall	Cisco Meraki MX400 Security Appliance + 5yr of Enterprise License and Support	\$29049.00
Total		\$431,766.77

For One Instance,

$$\begin{aligned}
 \text{GFlops} &= \text{No.of cores} * \text{ipc} * \text{Processor Speed} \\
 &= 8 * 8 * 2.5 * 2 \\
 &= 320
 \end{aligned}$$

GFLOPS	INSTANCES	COST/GFLOPS/HOUR
1	1	\$9.85
10	1	\$0.985
100	1	\$0.098
1000	4	\$0.0368
10000	31	\$0.0124
100000	312	\$0.0096
1000000	316	\$0.0084

This instance is storage optimized with high FLOPS that is used for random IO operations. The i2.8xlarge.private has a 16 core processor. Each instance is allocated 16 cores. So we take two 8core processors and for memory we take eight 12 GB DDR3 RAM's. The storage is 2TB. When we calculate the Glops of this private instance it is 320, so each instance has a compute capacity of 320 Gflops. The total amortized cost for 5 years is \$431,766.77 and cost for a single instance is \$9.85 per hour.

## **8)d2.8xlarge.Private**

Device	Details	Cost
Processor Cost	2 INTEL XEON E5-2676 V3 2.40GHz SR1Y5 30Mb 12 Cores 24 Thread E5-2670	\$3601.01
Storage	2*4TB+8*2TB	\$1,319.98
Memory	Axion 8GB 240 pin DDR3 SDRAM DDR3 1333 ECC Registered specific memory model	\$1,469.85
Network Adapter	Intel X540T2 Ethernet Converged Network Adapter 100Mbps/1Gbps/10Gbps PCI Express 2.1 x8 2 x RJ45	\$449.99
Network Switch	Cisco SG200-18 Switch 20 10/100/1000 Ports, Gigabit Ethernet	\$250.00
System Admin	74904/year	\$374,520.00
Cooling Power	497	\$3,635.00
System Power	1647.4	\$12,050.00
Chassis	Supermicro CSE-825TQ-R700LPB BLACK 2U Rackmount server case.	\$569.99
Rack	StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management Hooks	\$229.99

motherboard	Super Micro MBD-X10SL-f Server Motherboard LGA 2011R3	\$270.00
ups	APC Smart-UPS SMC1500-2U 900w 6 UPS	\$529.99
Firewall	Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support	\$38,219.00
Total		\$437,114.80

For One Instance,

GFlops = No.of cores\*ipc\*Processor Speed

=12\*16\*2.4\*2

=921.6

GFLOPS	INSTANCES	COST/GFLOP/HOUR
1	1	\$9.26
10	1	\$0.92
100	1	\$0.092
1000	2	\$0.0112
10000	11	\$0.0034
100000	108	\$0.00142
1000000	1085	\$0.00134

This instance is specific for general purpose computing. The d2.8xlarge.Private has a 12 core processor which can be shared between 16 instances which implies we dedicate 0.75 core to each instance. The memory, storage, chassis, rack, motherboard, are also considered to fit 16 instances. When we calculate the Gflops of this private instance it is 921.6, so each instance has a compute capacity of 57.56 Gflops. The total amortized cost for 5 years is \$427,114.80 and cost for a single instance is \$9.26 per hour.

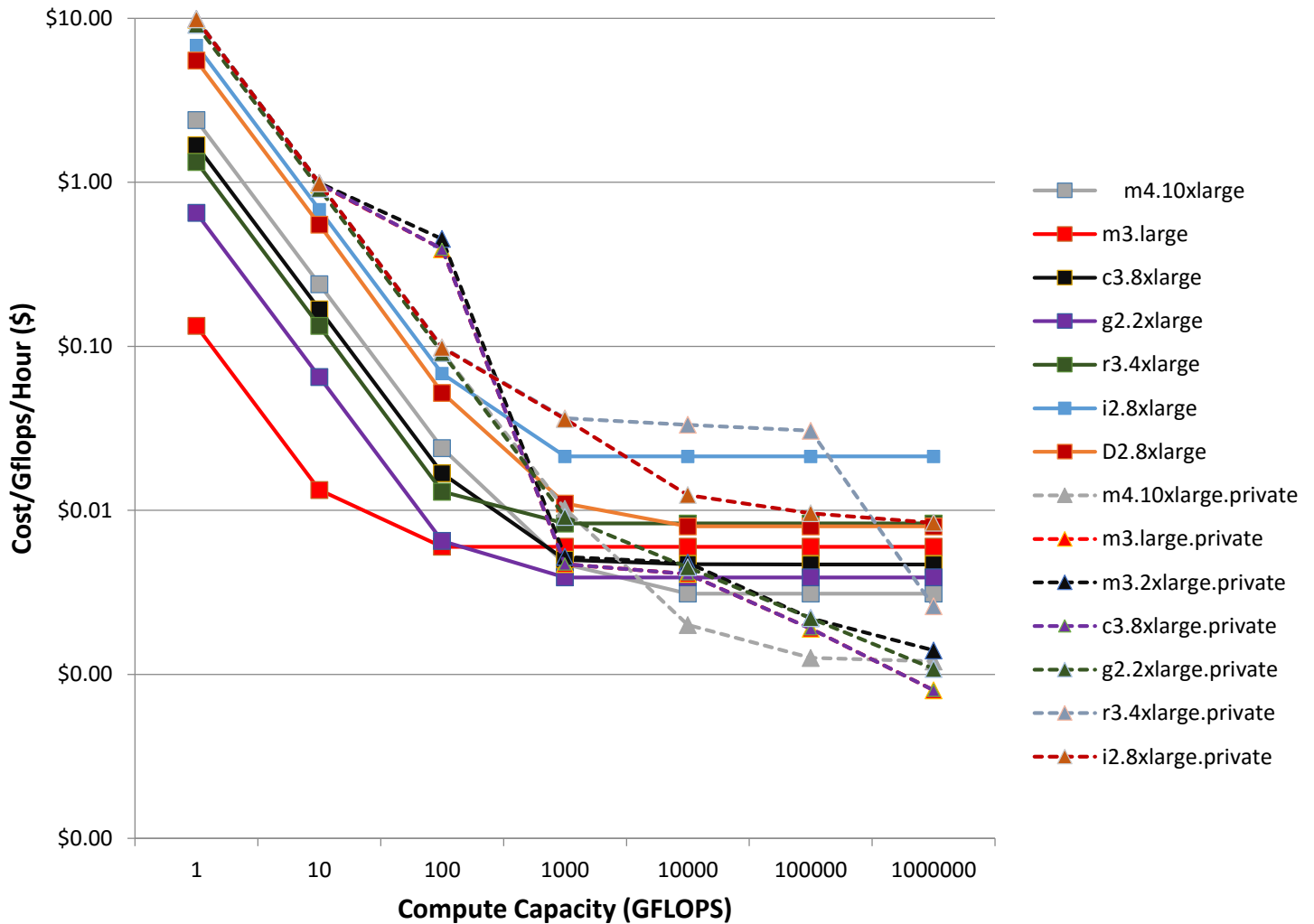
### **Cost Comparison of Public Cloud vs. Private Cloud:**

#### **Plot 1:**

	1	10	100	1000	10000	100000	1000000
m4.10xlarge	2.394	0.2394	0.02394	0.0047	0.00311	0.00311	0.00311
m3.large	0.133	0.0133	0.006	0.0066	0.006	0.006	0.006
m3.2xlarge	0.532	0.0532	0.010	0.00685	0.00685	0.00685	0.00685
c3.8xlarge	1.680	0.168	0.0168	0.005	0.0047	0.00468	0.00468

g2.2xlarge	0.650	0.065	0.0065	0.0039	0.0039	0.0039	0.0039
r3.4xlarge	1.33	0.133	0.013	0.00831	0.00831	0.00831	0.00831
i2.8xlarge	6.82	0.682	0.0682	0.0213	0.0213	0.0213	0.0213
D2.8xlarge	5.52	0.552	0.052	0.011	0.00798	0.00798	0.00798
m4.10xlarge.private	9.12	0.92	0.092	0.0102	0.002	0.00126	0.00120
m3.large.private	9.79	0.97	0.391	0.0047	0.0041	0.0019	0.0008
m3.2xlarge.private	9.89	0.989	0.451	0.0052	0.0048	0.0022	0.0014
c3.8xlarge.private	9.79	0.979	0.391	0.0047	0.0041	0.0019	0.0008
g2.2xlarge.private	9.13	0.913	0.091	0.0091	0.0045	0.0022	0.00108
r3.4xlarge.private	9.87	0.987	0.0987	0.0364	0.0332	0.0306	0.0026
i2.8xlarge.private	9.85	0.985	0.098	0.036	0.0124	0.0096	0.0084
D2.8xlarge.private	9.26	0.92	0.092	0.0112	0.0034	0.00142	0.00134

## Cost Comparision

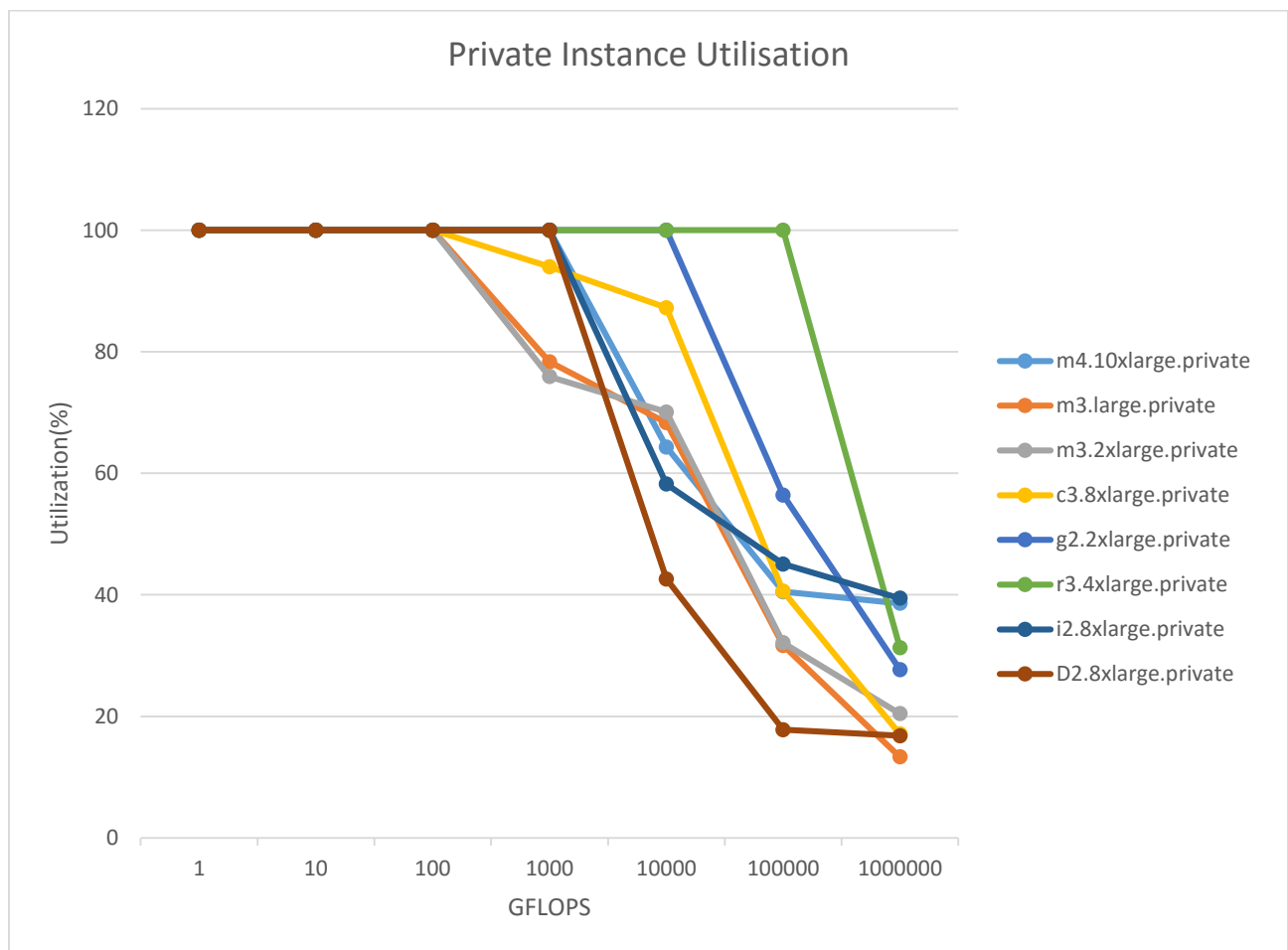


The above graph shows the cost per instance per hour in dollars for each of the amazon instances and the private cloud across 1Gflop to 1PFlop. The instances rt2.small and prm3.large are never cost effective to buy compared to the amazon small instances. It is observed that as the compute capacity is scaled from 1GFLOP to 1PFLOP, the cost per instance per hour decreases gradually, as the initial administration costs, house rental costs and other fixed costs are amortized.



**Plot 2:**

	1	10	100	1000	10000	100000	1000000
m4.10xlarge.private	100	100	100	100	64.30	40.51	38.58
m3.large.private	100	100	100	78.33	68.33	31.667	13.33
m3.2xlarge.private	100	100	100	75.91	70.07	32.11	20.43
c3.8xlarge.private	100	100	100	94	87.23	40.59	17.09
g2.2xlarge.private	100	100	100	100	100	56.4	27.69
r3.4xlarge.private	100	100	100	100	100	100	31.2
i2.8xlarge.private	100	100	100	100	58.21	45.07	39.43
D2.8xlarge.private	100	100	100	100	42.06	17.79	16.79



The above plot shows the utilization of the private cloud as the compute capacity is scaled from 1GFLOP to 1PFLOP. It describes how much of the private instances are used to break-even the cost. The instances m3.large.private and m3.2xlarge.private are not cheap enough to buy compared to what amazon EC2 has to offer.

The c3.large.private instance breaks even between 10000Gflops and 1000000GFlops. At the utilization is 13% which means if it is recommended to buy this instance if the work load present uses more than 13% of the instance compute capacity. At 1PFlop the utilization is 40% which means if it is recommended to buy this instance if the work load present uses more than 40% of the instance compute capacity.

The g2.2xlarge.private GPU instance is utilized 100% upto 1000000GFLOPS. . At the utilization is 40% which means if it is recommended to buy this instance if the work load present uses more than 4% of the instance compute capacity. At 1PFlop the utilization is 27% which means if it is recommended to buy this instance if the work load present uses more than 27% of the instance compute capacity.

The r3.4xlarge.private memory instance is utilized 100% upto 100000Gflops. At 1Pflop the utilization is 31.2% which means if it is recommended to buy this instance if the work load present uses more than 31.2% of the instance compute capacity.

The i2.8xlarge.private storage optimized instance breaks even round 1000GFlops. At 10Tflop the utilization is 45% which means if it is recommended to buy this instance if the work load present uses more than 45% of the instance compute capacity. At 1000000GFlops the utilization is 39% which means if it is recommended to buy this instance if the work load present uses more than 39% of the instance compute capacity.

The d2.8xlarge.private storage optimized instance breaks even between 10000Gflops and 1000000GFlops. At 10000Gflops the utilization is 42% which means if it is recommended to buy this instance if the work load present uses more than 42% of the instance compute capacity. At 100000GFlops the utilization is 17% which means if it is recommended to buy this instance if the work load present uses more than 17% of the instance compute capacity. At 1PFlop the utilization is 16% which means if it is recommended to buy this instance if the work load present uses more than 16% of the instance compute capacity.

**Cart Snapshots:**

1. **m4.10xlarge**


Submit=view


Zip/Postal Code

Choose a delivery method 

- ☐ APO/FPO-Military ONLY
- ☒ **Super Eggsaver (4-7 Business Days)**
- ☐ Newegg 3 Business Days
- ☐ Newegg 2 Business Days
- ☐ Newegg Next Business Day
- ☐  **FREE 2-Day Shipping** [learn more](#) | [sign in](#)

### Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)

☐ 

**Kingston 16GB 240-Pin DDR3 SDRAM DDR3  
1333 ECC Registered System Specific Memory  
Model KTM-SX313LV/16G**  
Type: 240-Pin DDR3 SDRAM  
Sold by [antonline.com](#) 

IN STOCK


~~\$824.00~~  
**\$89.99**  
Save: 89.04%


	<b>Subtotal:</b>	<b>\$89.99</b>
<b>Shipping Options</b>	<b>Shipping:</b>	<b>\$0.00</b>

Choose a delivery method

- ☒ **Standard Shipping (5-7 business days)**

### Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)

☐ 

**Tripp Lite SR2400 42U 42U SmartRack Value  
Series Rack Enclosure Cabinet (includes doors  
and side panels)**  
Sold by [Compute4Less Corp](#) 

IN STOCK


**\$1,047.50**


	<b>Subtotal:</b>	<b>\$1,047.50</b>
<b>Shipping Options</b>	<b>Shipping:</b>	<b>\$0.00</b>

Choose a delivery method

- ☒ **Standard Shipping (5-7 business days)**


Zip/Postal Code


Choose a delivery method 

- ☐ APO/FPO-Military ONLY
- ☒ Super Eggsaver (4-7 Business Days)
- ☐ Newegg 3 Business Days
- ☐ Newegg 2 Business Days
- ☐ Newegg Next Business Day
- ☐  **FREE 2-Day Shipping** [learn more](#) | [sign in](#)

### Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)

☐



**Kingston 16GB 240-Pin DDR3 SDRAM DDR3 1333 ECC Registered System Specific Memory Model KTM-SX313LV/16G**  
Type: 240-Pin DDR3 SDRAM  
Sold by [antonline.com](#) 

IN STOCK

~~\$821.00~~  
**\$89.99**  
Save: 89.04%

Subtotal: **\$89.99**

#### Shipping Options


Shipping: **\$0.00**


Choose a delivery method

- ☒ Standard Shipping (5-7 business days)

### Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)

☐



**Tripp Lite SR2400 42U 42U SmartRack Value Series Rack Enclosure Cabinet (includes doors and side panels)**  
Sold by [Compute4Less Corp](#) 

IN STOCK

**\$1,047.50**

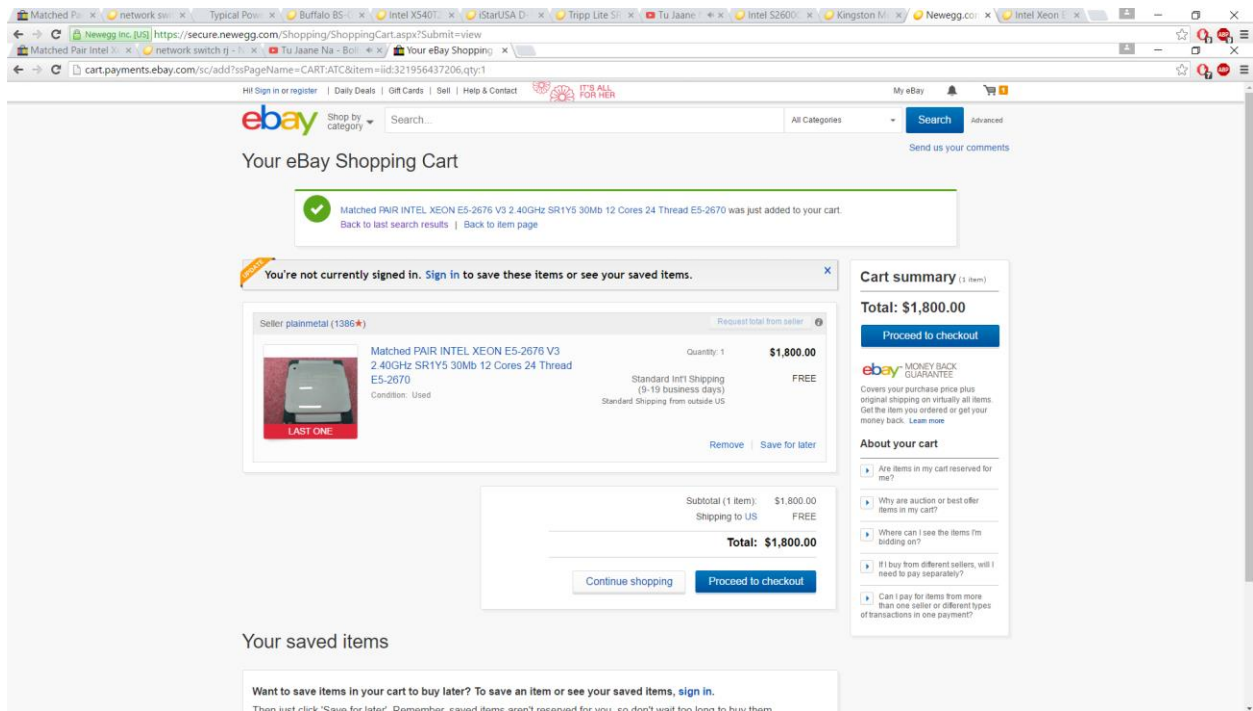
Subtotal: **\$1,047.50**

#### Shipping Options


Shipping: **\$0.00**

Choose a delivery method

- ☒ Standard Shipping (5-7 business days)



## 2. m3.large

- 

**SUPERMICRO CSE-825TQ-R700LPB Black 2U Rackmount Server Case**


[Manufacturer Only Return Policy](#)

1

IN STOCK

\$599.99


\$569.99

Save: 5.00%
- 


**Intel 535 Series 2.5" 120GB SATA III MLC Internal Solid State Drive (SSD)**

**SSDSC2BW120H6R5**

[Standard Return Policy](#)

 Recover Your Data

[View Details](#)

☐ Send this item as a gift 


1


IN STOCK  
LIMIT 2

\$69.99

\$59.99


Save: 14.29%

 PREMIER

[JOIN TODAY](#)
- 

**Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz LGA 2011 115W BX80635E52670V2 Server Processor**

[Replacement Only Return Policy](#)

 Protect Your Investment

[View Details](#)


1


IN STOCK

\$1,599.99

\$1,559.99

Save: 2.50%

 PREMIER

[JOIN TODAY](#)
- 

**StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management**

\*\*\*  
[Standard Return Policy](#)

1

IN STOCK


\$229.99

Subtotal: \$3,405.92

Shipping Options

Shipping: \$0.00

Zip/Postal Code

Choose a delivery method 

☐ APO/FPO-Military ONLY

☒ Next Business Day

Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)



**Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support**

Sold by [Flytec Computers](#)

1

IN STOCK

**\$38,219.00**

Subtotal: **\$38,219.00**

**Shipping Options**

Shipping: **\$0.00**

Choose a delivery method

- ☒ Standard Shipping (5-7 business days)

Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)



**Cisco SG300-20 (SRW2016-K9-NA) 20-port Gigabit Managed Switch**

Sold by [American Telecom Headquarters](#)

1

IN STOCK

**\$250.00**

Subtotal: **\$250.00**

**Shipping Options**

Shipping: **\$0.00**

Choose a delivery method

- ☒ Standard Shipping (5-7 business days)
- ☐ Expedited Shipping (3-5 business days)
- ☐ Two-Day Shipping (2 business days)
- ☐ Next Day Shipping (One business day)

Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)



**ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD & HDD Converter / Adapter / Mounting Kit / Bracket**

Color: Black

Sold by [Office Equipment](#)

1

IN STOCK

**\$47.09**

Subtotal: **\$47.09**



Newegg.com Shopping Cart - Google Chrome

TRY **PREMIER** Free 30-day trial when you sign up for a 12-month membership. Download mobile app & get a free 3-month membership.

Log in or Register \$41,922.01 (11 Items) Wish List Customer Service

newegg

ALL PRODUCTS DEALS & SERVICES FEATURED SELLERS Keywords, Model # or Item # Search all SEARCH

Home > My Shopping Cart

11 Item(s) in your shopping cart: \$41,922.01

FREE Shipping and Return Join Newegg **PREMIER** for only \$19.99 and get orders in 3 Days or faster. [Learn More](#)

Select All Remove Selected Move Selected To... Update Qty

Newegg Standard Shipping Service Important Shipping Information

	1	IN STOCK	\$194.00 <b>\$189.99</b> Save: 2.56% <b>PREMIER</b> <a href="#">Join Today!</a>
	1	IN STOCK	\$529.99 <b>\$489.99</b> Save: 7.55% <b>PREMIER</b> <a href="#">Join Today!</a>
	1	IN STOCK	\$270.99 <b>\$270.99</b> <b>PREMIER</b> <a href="#">Join Today!</a>
	1	IN STOCK	\$34.99 <b>\$34.99</b> <b>PREMIER</b> <a href="#">Join Today!</a>

[kat.cr]th...torrent

Show all downloads...

### 3. m3.2xlarge

Newegg.com Shopping Cart - Google Chrome

TRY **PREMIER** Free 30-day trial when you sign up for a 12-month membership. Download mobile app & get a free 3-month membership.

Log in or Register \$42,005.51 (11 Items) Wish List Customer Service

newegg

ALL PRODUCTS DEALS & SERVICES FEATURED SELLERS Keywords, Model # or Item # Search all SEARCH

Home > My Shopping Cart

11 Item(s) in your shopping cart: \$42,005.51

FREE Shipping and Return Join Newegg **PREMIER** for only \$19.99 and get orders in 3 Days or faster. [Learn More](#)

Select All Remove Selected Move Selected To... Update Qty



Newegg Standard Shipping Service Important Shipping Information

	1	IN STOCK	\$194.00 <b>\$189.99</b> Save: 2.56% <b>PREMIER</b> <a href="#">Join Today!</a>
	1	IN STOCK	\$529.99 <b>\$489.99</b> Save: 7.55% <b>PREMIER</b> <a href="#">Join Today!</a>
	1	IN STOCK LIMITED	\$134.99 <b>\$119.99</b> Save: 11.11% <b>PREMIER</b> <a href="#">Join Today!</a>
	1	IN STOCK	\$270.99 <b>\$270.99</b> <b>PREMIER</b> <a href="#">Join Today!</a>

[kat.cr]th...torrent

Show all downloads...



**Cisco Meraki MX400 Security Appliance + 7yr of Enterprise License and Support**  
 Sold by [Flytec Computers](#)



IN STOCK

**\$38,219<sup>.00</sup>**

**Subtotal:** \$38,219.00

**Shipping:** \$0.00

**Shipping Options**  
 Choose a delivery method  
☒ Standard Shipping (5-7 business days)

**Cisco SG300-20 (SRW2016-K9-NA) 20-port Gigabit Managed Switch**  
 Sold by [American Telecom Headquarters](#)



IN STOCK

**\$250<sup>.00</sup>**

**Subtotal:** \$250.00

**Shipping:** \$0.00

**Shipping Options**  
 Choose a delivery method  
☒ Standard Shipping (5-7 business days)  
☐ Expedited Shipping (3-5 business days)  
☐ Two-Day Shipping (2 business days)  
☐ Next Day Shipping (One business day)


**ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD & HDD Converter / Adapter / Mounting Kit / Bracket**  
 Color: Black  
 Sold by [Office Equipment](#)

IN STOCK

**\$47<sup>.09</sup>**

4. c3.8xlarge

Sold by [Flytec Computers](#) ?



**Cisco Refresh SG200-18, SLM2016T-NA, Smart Switch 16 x 10/100/1000**

Sold by [Flytec Computers](#) ?

IN STOCK

**\$273<sup>00</sup>**


**Subtotal: \$29,322.00**

**Shipping: \$0.00**

Choose a delivery method

☒ Standard Shipping (5-7 business days)

**Newegg Marketplace Direct Delivery Service** [Important Shipping Information](#)



**StarTech.com 2-Post Server Rack with Sturdy Steel Construction and Casters - 42U**

Sold by [NothingButSavings.com](#) ?

IN STOCK

~~\$183.99~~  
**\$144<sup>86</sup>**  
Save: 21.27%


**Subtotal: \$144.86**

**Shipping: \$0.00**

Choose a delivery method

☒ Standard Shipping (5-7 business days)

**Newegg Marketplace Direct Delivery Service** [Important Shipping Information](#)



**ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD & HDD Converter / Adapter / Mounting Kit / Bracket**

Color: Black

Sold by [Office Equipment](#) ?

IN STOCK

**\$47<sup>09</sup>**

**Subtotal: \$47.09**


**Shipping: \$0.00**

Choose a delivery method

☒ Ship from Overseas (8-15 business days)

submit=ChangeItem

Sold by [Flytec Computers](#)



**Cisco Refresh SG200-18, SLM2016T-NA, Smart Switch 16 x 10/100/1000**

Sold by [Flytec Computers](#)

1

IN STOCK

~~\$273.00~~

Subtotal: \$29,322.00


Shipping: \$0.00

Shipping Options

Choose a delivery method

☒ Standard Shipping (5-7 business days)

Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)



**StarTech.com 2-Post Server Rack with Sturdy Steel Construction and Casters - 42U**

Sold by [NothingButSavings.com](#)

1

IN STOCK

~~\$183.99~~  
**\$144.86**  
Save: 21.27%

Subtotal: \$144.86


Shipping: \$0.00

Shipping Options

Choose a delivery method

☒ Standard Shipping (5-7 business days)

Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)



**ICY DOCK EZConvert MB882SP-1S-2B 2.5" to 3.5" SATA 6Gbps SSD & HDD Converter / Adapter / Mounting Kit / Bracket**

Color: Black

Sold by [Office Equipment](#)

1

IN STOCK

~~\$47.09~~

Subtotal: \$47.09

Shipping: \$0.00

Shipping Options

Choose a delivery method

☒ Ship from Overseas (8-15 business days)



uTorrent - D: 0.0 kbSent Mail - vanired...Understanding the...Microsoft Word - p...Newegg.com Shopp...Newegg Inc. [US]https://secure.newegg.com/Shopping/ShoppingCart.aspx?submit=ChangeItem

TRY **PREMIER**Free 30-day trial when you sign up for a 12-month membershipDownload mobile app & get a free 3-month membership

Log in or Register\$46,021.01 (12 Items)Wish ListCustomer Service

ALL PRODUCTSDEALS & SERVICESFEATURED SELLERSKeywords, Model # or Item #Search allSEARCH

Home > My Shopping Cart

SHOPPING SATISFACTION

Nearly all of Newegg.com's offerings are covered by a full 30-day return policy.

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.

12 Item(s) in your shopping cart: \$46,021.01

FREE Shipping and Return Join Newegg **PREMIER** for only \$19.99 and get orders in 3 Days or faster. [Learn More](#)

Select AllRemove SelectedMove Selected To...Update Ops


Newegg Standard Shipping ServiceImportant Shipping Information

	1	IN STOCK	<del>\$194.00</del> <b>\$189.99</b> Save: 2.56% <b>PREMIER</b> <a href="#">Join Today</a>
	1	IN STOCK	<del>\$529.00</del> <b>\$489.99</b> Save: 7.55%
	1	IN STOCK LIMIT 3	<del>\$299.00</del> <b>\$270.99</b> Save: 9.36% <b>PREMIER</b> <a href="#">Join Today</a>
	1	IN STOCK	<del>\$559.00</del> <b>\$569.99</b> Save: 5.00%


[kat.cr]th...torrent

Show all downloads...

- ☐



**NVIDIA Tesla K80 2 x Kepler GK210 900-22080-0000-000 24GB (12GB per GPU) 384-bit GDDR5 PCI Express 3.0 x16 GPU Accelerators ...**  
[Manufacturer Only Return Policy](#)  

 **Protect Your Investment**


[View Details](#)

IN STOCK


~~\$4,999.99~~

**\$4,949.99**


Save: 1.00%

 **PREMIER**

[JOIN TODAY](#)
- ☐



**Axiom 16GB 240-Pin DDR3 SDRAM DDR3 1333 (PC3 10600) ECC Registered Specific Memory Model MC730G/A-AX**  
[Standard Return Policy](#)  


 **Protect Your Investment**

[View Details](#)


IN STOCK

~~\$189.99~~


**\$189.99**

 **PREMIER**


[JOIN TODAY](#)
- ☐



**ADATA Premier SP550 2.5" 120GB SATA III TLC Internal Solid State Drive (SSD) ASP550SS3-120GM-C**  
[Standard Return Policy](#)  

 **Protect Your Investment**

[View Details](#)

 **Recover Your Data**


[View Details](#)

IN STOCK  
LIMIT 20


~~\$59.99~~

**\$38.99**

Save: 35.01%

 **PREMIER**

[JOIN TODAY](#)
- ☐











**StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management ...**  
[Standard Return Policy](#)

IN STOCK

**\$229.99**

	Subtotal:	\$6,929.92
Shipping Options	Shipping:	\$0.00



<input type="checkbox"/> 	<p><b><u>NVIDIA Tesla K80 2 x Kepler GK210 900-22080-0000-000 24GB (12GB per GPU) 384-bit GDDR5 PCI Express 3.0 x16 GPU Accelerators ...</u></b></p> <p><a href="#">Manufacturer Only Return Policy</a></p> <div>  <b>Protect Your Investment</b> <a href="#">View Details</a> </div>	<div>1</div> <p>IN STOCK</p>	<p><del>\$4,999.99</del></p> <p><b>\$4,949.99</b></p> <p>Save: 1.00%</p> <p><b>PREMIER</b></p> <p><a href="#">JOIN TODAY</a></p>
<input type="checkbox"/> 	<p><b><u>Axiom 16GB 240-Pin DDR3 SDRAM DDR3 1333 (PC3 10600) ECC Registered Specific Memory Model MC730G/A-AX</u></b></p> <p><a href="#">Standard Return Policy</a></p> <div>  <b>Protect Your Investment</b> <a href="#">View Details</a> </div>	<div>1</div> <p>IN STOCK</p>	<p><b>\$189.99</b></p> <p><b>PREMIER</b></p> <p><a href="#">JOIN TODAY</a></p>
<input type="checkbox"/> 	<p><b><u>ADATA Premier SP550 2.5" 120GB SATA III TLC Internal Solid State Drive (SSD) ASP550SS3-120GM-C</u></b></p> <p><a href="#">Standard Return Policy</a></p> <div>  <b>Protect Your Investment</b> <a href="#">View Details</a> </div> <div>  <b>Recover Your Data</b> <a href="#">View Details</a> </div>	<div>1</div> <p>IN STOCK LIMIT 20</p>	<p><del>\$59.99</del></p> <p><b>\$38.99</b></p> <p>Save: 35.01%</p> <p><b>PREMIER</b></p> <p><a href="#">JOIN TODAY</a></p>
<input type="checkbox"/> 	<p><b><u>StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management ...</u></b></p> <p><a href="#">Standard Return Policy</a></p>	<div>1</div> <p>IN STOCK</p>	<p><b>\$229.99</b></p>
			<p>Subtotal: <b>\$6,929.92</b></p>
Shipping Options			<p>Shipping: <b>\$0.00</b></p>

6. **r3.4xlarge**

**SHOPPING SATISFACTION**  
Nearly all of Newegg.com's offerings are covered by a full 30-day return policy.

**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.


9 Item(s) in your shopping cart: \$34,183.95

**FREE Shipping and Return!** Join Newegg **PREMIER** for only \$19.99 and get orders in 3 Days or faster. [Learn More](#)

Select All Remove Selected Move Selected To... Update Steps


**Newegg Standard Shipping Service** [Important Shipping Information](#)


	<b>APC SMC1500-2U 1440 VA 900 Watts UPS</b> <a href="#">Standard Return Policy</a>	1 IN STOCK	\$929.99 <b>\$489.99</b> Save: 7.55%
	<b>SAMSUNG 950 PRO M.2 256GB PCI-Express 3.0 x4 Internal Solid State Drive (SSD) MZ-VP256BW</b> <a href="#">Standard Return Policy</a> <a href="#">Recover Your Data</a> <a href="#">View Details</a> <input type="checkbox"/> Send this item as a gift	1 IN STOCK LIMIT 2	\$199.99 <b>\$181.99</b> Save: 9.00% <b>PREMIER</b> JOIN TODAY
	<b>Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz LGA 2011-115W BX80635452670V2 Server Processor</b> <a href="#">Business-Only Return Policy</a> <a href="#">Protect Your Investment</a> <a href="#">View Details</a>	1 IN STOCK	\$1,599.99 <b>\$1,559.99</b> Save: 2.50% <b>PREMIER</b> JOIN TODAY

- ☐
- 

**Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz LGA 2011 115W BX80635E52670V2 Server Processor**

[Replacement Only Return Policy](#)

 **Protect Your Investment**

[View Details](#)
- 
- IN STOCK
- ~~\$1,599.99~~  
**\$1,559.99**  
Save: 2.50%
-   
JOIN TODAY

☐

**StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management**

\*\*\*  
[Standard Return Policy](#)

IN STOCK


**\$229.99**

Subtotal: **\$2,461.96**

Shipping: **\$0.00**

### Shipping Options

Zip/Postal Code

Choose a delivery method 

- ☐ APO/FPO-Military ONLY
- ☒ **Newegg 3 Business Days**
- ☐ Newegg 2 Business Days
- ☐ Newegg Next Business Day
- ☐  **FREE 2-Day Shipping** [learn more](#) | [sign in](#)

### Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)

- ☐
- 

**Ubiquiti TS-16-CARRIER 16 Port Gigabit TOUGHSwitch PoE CARRIER Managed L3 300W**

Sold by [Flytec Computers](#) 
- 
- IN STOCK
- \$369.00**











☐

**Cisco Meraki MX400 Security Appliance + 5yr of Enterprise License and Support**

Sold by [Flytec Computers](#) 

IN STOCK

**\$29,049.00**

	<b>Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz LGA 2011 115W BX80635E52670V2 Server Processor</b> <a href="#">Replacement Only Return Policy</a> <div>  <b>Protect Your Investment</b> <a href="#">View Details</a> </div>	<input type="text" value="1"/> IN STOCK	<del>\$1,599.99</del> <b>\$1,559.99</b> Save: 2.50%  <b>PREMIER</b> <a href="#">JOIN TODAY</a>
	<b>StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management</b> *** <a href="#">Standard Return Policy</a>	<input type="text" value="1"/> IN STOCK	<b>\$229.99</b>
<b>Shipping Options</b> Zip/Postal Code <input type="text"/> <input type="button" value="Update"/> Choose a delivery method  <ul style="list-style-type: none"> <li><input type="radio"/> APO/FPO-Military ONLY</li> <li><input checked="" type="radio"/> <b>Newegg 3 Business Days</b></li> <li><input type="radio"/> Newegg 2 Business Days</li> <li><input type="radio"/> Newegg Next Business Day</li> <li><input type="radio"/>  <b>FREE 2-Day Shipping</b> <a href="#">learn more</a>   <a href="#">sign in</a></li> </ul>			Subtotal: <b>\$2,461.96</b> Shipping: <b>\$0.00</b>
<b>Newegg Marketplace Direct Delivery Service</b> <a href="#">Important Shipping Information</a>			
	<b>Ubiquiti TS-16-CARRIER 16 Port Gigabit TOUGHSwitch PoE CARRIER Managed L3 300W</b> Sold by <a href="#">Flytec Computers</a> 	<input type="text" value="1"/> IN STOCK	<b>\$369.00</b>
	<b>Cisco Meraki MX400 Security Appliance + 5yr of Enterprise License and Support</b> Sold by <a href="#">Flytec Computers</a> 	<input type="text" value="1"/> IN STOCK	<b>\$29,049.00</b>

7. i2.8xlarge

10 Item(s) in your shopping cart: \$35,310.45

FREE Shipping and Return! Join Newegg PREMIER for only \$19.99 and get orders in 3 Days or faster. [Learn More](#)

Select All Remove Selected Move Selected To... Update Qty

Newegg Standard Shipping Service [Important Shipping Information](#)

	1	IN STOCK	\$519.99	<del>\$599.99</del> Save: 13.33%
<a href="#">Standard Return Policy</a>				
<a href="#">Protect Your Investment</a> <a href="#">View Details</a>				
<a href="#">Recover Your Data</a> <a href="#">View Details</a>				
	1	IN STOCK	\$40.00	



**Cisco Meraki MX400 Security Appliance + 5yr of Enterprise License and Support**

Sold by [Flytec Computers](#)

1  
IN STOCK

**\$29,049.00**

submit=Changeltem



**ASUS Z10PE-D16/4L SSI EEB Server Motherboard Dual LGA 2011 R3**

[Manufacturer Only Return Policy](#)

[Protect Your Investment](#)

[View Details](#)

1  
IN STOCK

~~\$555.99~~  
**\$549.99**

Save: 1.08%

**PREMIER**  
[JOIN TODAY](#)



**Intel Xeon E5-2670 v2 Ivy Bridge-EP 2.5 GHz LGA 2011 115W BX80635E52670V2 Server Processor**

[Replacement Only Return Policy](#)

[Protect Your Investment](#)

[View Details](#)

1  
IN STOCK

~~\$1,599.99~~  
**\$1,559.99**

Save: 2.50%

**PREMIER**  
[JOIN TODAY](#)



**StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management**

...  
[Standard Return Policy](#)


1  
IN STOCK


**\$229.99**

Shipping Options

Subtotal: **\$2,859.96**



Shipping: **\$0.00**




**Cisco Meraki MX400 Security Appliance + 5yr of Enterprise License and Support**  
Sold by [Flytec Computers](#) 


IN STOCK

**\$29,049<sup>.00</sup>**

Xeon E5-2670 v  Amazon.com: Intel C 

submit=ChangeItem



**Cisco Refresh SG200-18, SLM2016T-NA, Smart Switch 16 x 10/100/1000**  
Sold by [Flytec Computers](#) 

IN STOCK

**\$273<sup>.00</sup>**

Subtotal: \$29,322.00

Shipping: \$0.00

Shipping Options

Choose a delivery method

☒ Standard Shipping (5-7 business days)

Newegg Marketplace Direct Delivery Service [Important Shipping Information](#)



**SUPERMICRO SYS-7047GR-TPRF 4U Rackmountable / Tower Server Barebone**  
**Dual LGA 2011 Intel C602 DDR3 1333/1066/800**  
CPU Type: Dual Intel Xeon  
Sold by [CA Server Pro](#) 

IN STOCK

**\$2,118<sup>.20</sup>**



**SUPERMICRO CSE-219A-R920WB Black 2U Rackmount Server Case**  
Sold by [CA Server Pro](#) 

IN STOCK

**\$963<sup>.20</sup>**

Subtotal: \$3,081.40

Shipping: \$0.00

Shipping Options


## 8. D2.8xlarge

A screenshot of a web browser displaying the Newegg.com shopping cart page. The browser's address bar shows the URL "https://secure.newegg.com/Shopping/ShoppingCart.aspx?submit=ChangeItem". The page header includes the Newegg logo, navigation links like "Log In or Register", and a search bar. A sidebar on the left contains sections for "SHOPPING SATISFACTION", "PRIVACY PROTECTED", and "SECURITY SAFEGUARDS". The main content area, titled "52 Item(s) in your shopping cart: \$53,684.00", lists several items with their specifications, prices, and quantities. Items include an Intel X540T2 network adapter (\$449.99), APC SMC1500-2U UPS (\$489.99), G.SKILL Ripjaws X Series RAM (\$599.95), SUPERMICRO MBD-X10SRL-F Server Motherboard (\$270.99), SUPERMICRO CSE-R25TQ-R700L-PB Black 2U Rackmount Server Case (\$569.99), NVIDIA Tesla K80 GPU (\$4,949.99), Axiom 16GB DDR3 SDRAM (\$1,469.99), VisionTek Go Drive SSD (\$3,702.20), and Intel Xeon E5-1620 v3 Processor (\$2,439.92). Each item has a quantity selector and a "Send this item as a gift" checkbox. The bottom of the page shows a "Show all downloads..." link.

Newegg.com Shopping Cart - Google Chrome

uTorrent - D: 0.0 kB | Sent Mail - vanished | Understanding the | Microsoft Word - pr | Newegg.com Shop | Pink Lips Full Vid |

Newegg Inc. [US] | https://secure.newegg.com/Shopping/ShoppingCart.aspx?submit=ChangeItem



StarTech.com 42U Adjustable Depth Open Frame 4 Post Server Rack Cabinet - Flat Pack w/ Casters, Levelers and Cable Management

1 IN STOCK

\$229.99

Standard Return Policy

Subtotal: \$15,167.91


Shipping: \$0.00

Shipping Options

Zip/Postal Code  Update

Choose a delivery method

- ☐ APO/FPO/Military ONLY
- ☒ Newegg 3 Business Days
- ☐ Newegg 2 Business Days
- ☐ Newegg Next Business Day
- ☐ FREE 2-Day Shipping [learn more](#) | [sign in](#)



Cisco Meraki MX400 Security Appliance - 7yr of Enterprise License and Support

1 IN STOCK

\$38,219.00

Sold by [Ebyte Computers](#)


Subtotal: \$38,219.00

Shipping: \$0.00

Shipping Options

Choose a delivery method

- ☒ Standard Shipping (5-7 business days)



Cisco SG300-20 (SRW2016-K9-NA) 20-port gigabit Managed Switch

1 IN STOCK

\$250.00

Sold by [American Telecom Headquarters](#)

Subtotal: \$250.00

Shipping: \$0.00

Shipping Options

Choose a delivery method


- ☒ Standard Shipping (5-7 business days)

[kat.cr]th....torrent

Newegg.com Shopping Cart - Google Chrome

uTorrent - D: 0.0 kB | Sent Mail - vanished | Understanding the | Microsoft Word - pr | Newegg.com Shop | Pink Lips Full Vid |

Newegg Inc. [US] | https://secure.newegg.com/Shopping/ShoppingCart.aspx?submit=ChangeItem



Cisco SG300-20 (SRW2016-K9-NA) 20-port gigabit Managed Switch

1 IN STOCK

\$250.00

Sold by [American Telecom Headquarters](#)


Subtotal: \$250.00

Shipping: \$0.00

Shipping Options

Choose a delivery method

- ☒ Standard Shipping (5-7 business days)
- ☐ Expedited Shipping (3-5 business days)
- ☐ Two-Day Shipping (2 business days)
- ☐ Next Day Shipping (One business day)



ICY DOCK EZConvert M8882SP-15-28 2.5" to 3.5" SATA 6Gbps SSD & HDD Converter / Adapter / Mounting Kit / Bracket

1 IN STOCK

\$47.09

Color: Black

Sold by [Office Equipment](#)

Subtotal: \$47.09

Shipping: \$0.00

Shipping Options

Choose a delivery method

- ☒ Ship from Overseas (8-15 business days)

Are you a Small Business Owner?

[Yes](#)

Get \$25 Back + 1 Year of Newegg Premier

[Apply Now](#)

Credit Card Statement Credit\* - \$25.00

Total After the Statement Credit\* - \$53,699.00

[Apply Now](#)

Apply Promo Codes





