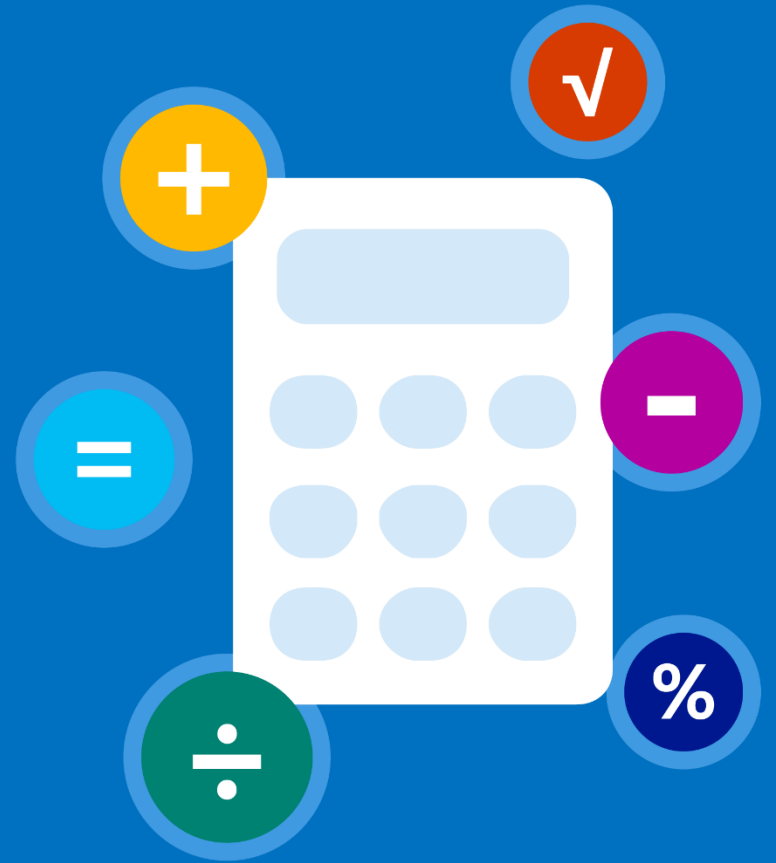


# Azure Total Cost of Ownership (TCO) summary

Sample Report for Data Center Migration  
(Windows and Linux servers)



# Assumptions and inputs

## Compute

### Physical servers

# Servers	OS	Proc(s) per server	Total cores	RAM (GB)	Optimize by	GPU
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### Virtual machines

# VMs	OS	Virtualization	Core(s)	RAM (GB)	Optimize by
500	Windows	VMware	8	16	CPU
500	Linux	VMware	8	16	CPU

## Storage

Storage type	Disk type	Capacity	Backup	Archive	Accessibility %
Local Disk/SAN	HDD	60 TB	0 TB	0 TB	100

## Networking

### Outbound bandwidth (GB)/Month

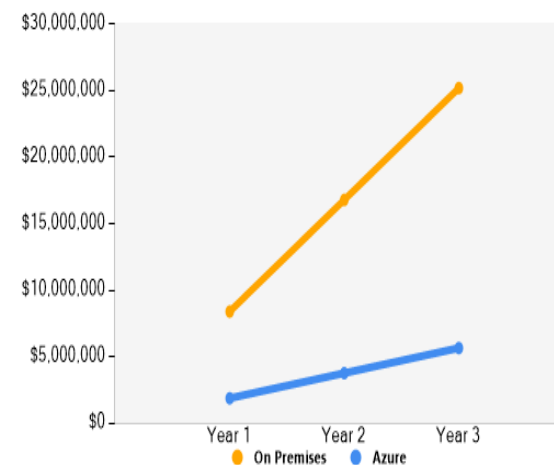
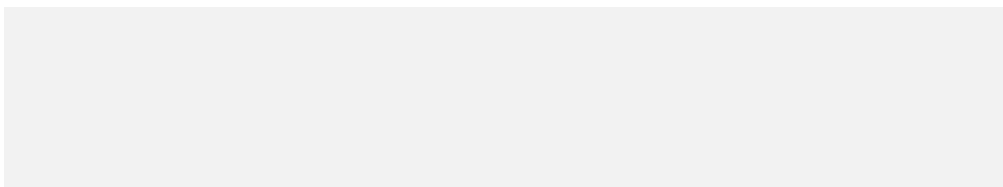
15 TB

### Azure region

US East 2

DISCLAIMER: The TCO Calculator output is only an estimate of on-premises costs and equivalent Microsoft Azure services prices. Final Microsoft Azure costs will be based on your actual usage of Azure services, and may be different from the TCO estimates. This document is for informational purposes only. Microsoft makes no warranties, express or implied, in this summary.

Your estimated savings are **\$ 19,549,683 (78%)** over **3** year(s) with Microsoft Azure.



### On-premises cost breakdown summary

Category	Costs
<b>Compute</b>	\$19,681,307
Hardware	\$11,493,625
Software	\$2,315,160
Electricity	\$1,317,022
Virtualization	\$4,555,500
<b>Data Center</b>	\$487,500
<b>Networking</b>	\$4,250,635
<b>Storage</b>	\$159,744
<b>IT labor</b>	\$634,139
<b>Total</b>	<b>\$25,213,325</b>

### Azure cost breakdown summary

Category	Web direct cost	1 Year Reserved VM	3 Years Reserved VM
Compute	\$5,256,000	\$7,812,000	\$4,958,000
Data center	\$0	\$0	\$0
Networking	\$42,577	\$42,577	\$42,577
Storage	\$55,296	\$55,296	\$55,296
IT labor	\$607,768	\$607,768	\$607,768
<b>Total</b>	<b>\$5,961,642</b>	<b>\$8,517,642</b>	<b>\$5,663,642</b>

\*The Azure Compute pre-purchase (CPP) plan offers you discounts up to 63 percent off standard prices on virtual machines in Azure, for an upfront pre-purchase of 12 months of a particular instance (instance family, size, region, and operating system).

# Estimated on-premises cost (three years) vs. estimated Azure cost (three years)

## Compute cost

### Hardware cost

Virtual Machine Costs	
Virtual machine density - Number of virtual cores that can be created per physical core	2
Cost Per 2 Proc 32 Core 1000 GB RAM virtualization server	\$35,365
Number of servers needed for 500 virtual machine(s) - 8 vCPU, 16 GB RAM, Compute	125
Cost Per 2 Proc 32 Core 1000 GB RAM virtualization server	\$35,365
Number of servers needed for 500 virtual machine(s) - 8 vCPU, 16 GB RAM, Compute	125
<b>Total cost for virtualization server(s)</b>	<b>\$8,841,250</b>
Cost of maintaining virtualization server(s) - 10% of cost of virtualization server(s)	\$884,125
<b>Total cost of maintaining server(s) over 3 year(s)</b>	<b>\$2,652,375</b>
<b>Total hardware costs over 3 year(s)</b>	<b>\$11,493,625</b>

### Software cost

Virtual Machine Costs	
Cost of Windows Data Center license per 2 Proc, 32 core, 1000 RAM virtualization server	\$18,521.28

### Web direct cost

Number of hours per month	730
Average utilization	100%
Virtual Machines Costs	
A8v2 Standard (8 vCPU, 16 GB RAM) Windows(Azure Hybrid Benefit)	\$0.4/ hr
	SKU# AAA-21427
Number of virtual machine(s) needed	1,000
<b>Total virtual machine costs per month</b>	<b>\$146,000</b>
<b>Total web direct virtual machine costs over 3 year(s)</b>	<b>\$5,256,000</b>
<b>1 Year Reserved VM</b>	
Number of hours per month	730
Average utilization	100%
Virtual Machines Costs	
F8 Standard (8 vCPU, 16 GB RAM) Windows(Azure Hybrid Benefit)	\$0.297/ hr
Number of virtual machine(s) needed	1,000
<b>Total 1-Year Reserved Cost over3 year(s)</b>	<b>\$7,812,000</b>
<b>3 Years Reserved VM</b>	
Number of hours per month	730
Average utilization	100%

Number of servers needed for 500 virtual machine(s) - 8 vCPU, 16 GB RAM, Compute	125
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<b>Total Windows licensing costs over 3 year(s)</b>	<b>\$2,315,160</b>
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**Electricity cost**

Price of electricity per kWh	\$0.1
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**Virtual Machine Costs**

Power rating of 2 proc 32 core, 1000 GB RAM server	2,005 Watts
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Total electricity cost consumed by 125 server(s) - 2 proc, 32 core, 1000 GB RAM server per month	\$18,295.62
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Power rating of 2 proc 32 core, 1000 GB RAM server	2,005 Watts
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Total electricity cost consumed by 125 server(s) - 2 proc, 32 core, 1000 GB RAM server per month	\$18,295.62
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<b>Total electricity costs over 3 year(s)</b>	<b>\$1,317,022</b>
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**Virtualization cost**

Per virtual machine, per month, cost to load balance, backup and patch virtual machines	\$52
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Number of virtual machine(s)	1,000
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Virtual machine management cost per month	\$52,000
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Virtualization software license cost	\$1,747,500
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Virtual machine management cost per year	\$936,000
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<b>Total virtual machine management costs over 3 year(s)</b>	<b>\$4,555,500</b>
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<b>Total compute cost over 3 year(s)</b>	<b>\$19,681,307</b>
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**Virtual Machines Costs**

F8 Standard (8 vCPU, 16 GB RAM) Windows(Azure Hybrid Benefit)	\$0.189/ hr
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Number of virtual machine(s) needed	1,000
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<b>Total 3-Year Reserved Cost over 3 years</b>	<b>\$4,958,000</b>
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<b>Total Azure compute cost over 3 year(s)</b>	<b>\$4,958,000</b>
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## Datacenter cost

### Datacenter Compute cost

Number of rack units per rack	42
Virtual Machines Costs	
Rack units required per 2 proc 32 core, 1000 GB RAM server	4
Number of 2 proc 32 core, 1000 GB RAM server	500
Total number of rack units required	500
Rack units required per 2 proc 32 core, 1000 GB RAM server	4
Number of 2 proc 32 core, 1000 GB RAM server	500
Total number of rack units required	500
Total number of rack units required for all server(s)	1,000.00
Number of racks required	24
Data Center construction cost per rack amortized over 20 years	\$6,250
<b>Total Data center compute costs over 3 year(s)</b>	<b>\$450,000</b>

### Datacenter storage cost

Rack mounting/installation cost	\$12,500
<b>Total Data center storage costs over 3 year(s)</b>	<b>\$37,500</b>

<b>Total Data Center cost over 3 year(s)</b>	<b>\$487,500</b>
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Total Azure Data center costs over 3 year(s)	\$0
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<b>Total Azure Data center costs over 3 year(s)</b>	<b>\$0</b>
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## Networking cost

### Networking cost

Total hardware + software costs over 3 year(s)	\$13,808,785
Network hardware and software costs assumed to be 25% of hardware and software costs over 3 year(s)	\$3,452,196
Network maintenance cost assumed to be 20% of network hardware and software costs over 3 year(s)	\$690,439
Service provider cost/GB per month	\$0.20
Amount of bandwidth needed (TB) per month	15
<b>Total service provider cost per month</b>	<b>\$3,000</b>
<b>Total network hardware and software cost over 3 year(s)</b>	<b>\$4,250,635</b>

<b>Total estimated on-premises networking cost over 3 year(s)</b>	<b>\$4,250,635</b>
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### Azure Networking cost

Total outgoing bandwidth needed/month	\$1,182.71
Total outgoing bandwidth cost/month	\$1,182.71
<b>Total networking cost for 15 TB / Month over 3 year(s)</b>	<b>\$42,577.38</b>

<b>Total estimated Azure networking cost</b>	<b>\$42,577.38</b>
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## Storage cost

### Storage cost

Hardware infrastructure

### Azure storage cost

Storage maintenance

<b>Local Disk/SAN-HDD</b>	
Cost per GB	\$2
Amount of HDD (RAID 10) storage needed (TB)	61,440.00
<b>Total storage procurement cost over 3 year(s)</b>	<b>122,880</b>
<b>Storage maintenance</b>	
<b>Storage maintenance cost (% of storage procurement cost) over 3 year(s)</b>	<b>\$36,864</b>
<b>Total storage maintenance over3 year(s)</b>	<b>\$36,864</b>

<b>Page Blob storage - LRS</b>	
Usable storage volume (RAID 10 configuration) in GB	30,720.00
Storage cost per GB	\$0.05
<b>Annual storage cost per usable volume</b>	<b>\$18,432</b>
Number of storage transactions required per usable volume	300,000
Azure page blob transaction pricing per 10000 transactions	\$0.00036
	SKU# N9H-00439
<b>Total annual transactions cost</b>	<b>\$0</b>
<b>Total LRS storage maintenance cost over 3 year(s)</b>	<b>\$55,296</b>
<b>Total MySQL Storage cost for over3 year(s)</b>	<b>\$0</b>

<b>Total estimated on-premises storage cost</b>	<b>\$159,744</b>
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<b>Total estimated Azure storage cost</b>	<b>\$55,296</b>
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## IT labor cost

### On-premises IT labor cost

Number of IT admin hour(s) needed per year	4,227.60
Hourly rate for IT administrator	\$50

### Azure IT labor cost

Number of IT admin hour(s) needed per year	4,051.78
Hourly rate for IT administrator	\$50.00



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**Total estimated on-premises IT labor cost**

**\$634,139**

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**Total estimated Azure IT labor cost**

**\$607,768.00**

## Learn more about Azure

### What is Azure?

Learn how Microsoft Azure cloud services enable developers and IT professionals to build, deploy, and manage applications in the cloud, wherever they want, and with the freedom to use their preferred tools, applications, and frameworks. Find out more at:

<https://azure.microsoft.com/en-us/overview/what-is-azure>

### The Trusted Cloud

Microsoft makes security, privacy, and compliance a top priority. With more certifications than any cloud provider, Azure provides the most comprehensive compliance coverage. Learn more at:

<https://azure.microsoft.com/en-us/support/trust-center>

### Customer innovations

World-class organizations all over the world are driving innovation and getting results with Azure. Find out more at:

<https://azure.microsoft.com/en-us/case-studies>

### Azure solutions

With everything you need to get quickly started—from technical documentation to partner resources—Azure provides complete solutions for your needs. Learn more about Azure solutions areas:

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