



Optimize your SAP on Azure cost

Get better ROI

Many of the SAP customers are migrating their mission critical SAP workload to the Microsoft enterprise ready cloud – Azure! By running your SAP workload on Azure, you not only save your upfront CAPEX (Capital Expenses), but you also get other benefits like speed, agility, and the performance.

However, your company is constantly looking for avenues to further optimize the OPEX (Operational Expenses). One way to save on OPEX is to optimize your infrastructure cost on Azure. But *how do you do it?*

It is simple!

The cost optimization is a continuous process of assessing and adjusting the resources in Azure. Here are the **top 10 techniques** which can help you to further optimize your run cost in Azure.

1. Reserved instances

When you deploy your SAP workload to Azure, you normally plan ahead. You perform the right sizing. Azure offers you *pay-as-you-use* option. However, when you know that you are going to use those VMs for longer term, better to use reserved instances. Reserved instances may **reduce the VMs cost up-to 80%**.

When you reserve a VM, you already get reservation for that VM size series group. For example, if you reserve a VM Standard_DS5_v2, then you get the reservation discount for all the four VMs (Standard_DS1_v2, Standard_DS2_v2, Standard_DS3_v2, and Standard_DS4_v2). But that reservation discount doesn't apply to VM sizes that are listed in different tables, like what's in the DSv2-series high memory table: Standard_DS11_v2, Standard_DS12_v2, and so on. Get more details about [Virtual machine size flexibility with Reserved VM Instances](#).

The following are key considerations for the Reserved Instances (RI):

- You may reserve it for 1 year or 3 years
- You get prioritized compute capacity
- You can exchange or cancel the RIs
- You know upfront compute consumption cost

[Reserve your instance now.](#)

Save up to **80%** with RIs and Azure Hybrid Benefit

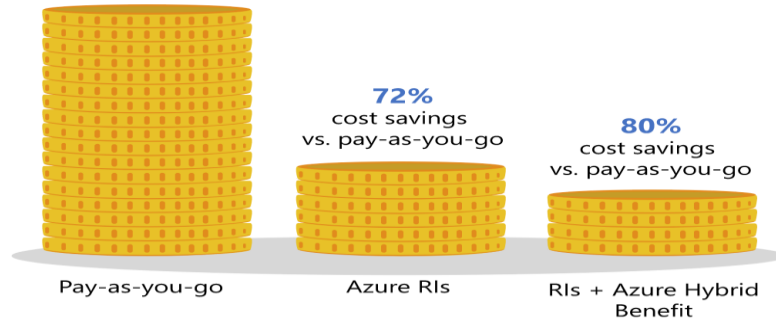


Image1: P-A-Y-G Vs. RIs

2. Region selection

Generally, you use the Azure region which is near to your on-premises to avoid the network latency. You also consider the compliance requirements like GDPR while selecting a region.

In Azure, there may be a region where compute resources may be cheaper as compared to the other regions.

For example, here are the price estimates (as of May 2019) with pay-as-you-go option in US regions for DS12 v2 (4vCPU with 56GB RAM) with Windows OS under standard tier:

- West US: \$0.528/hour
- West US2: \$0.486/hour

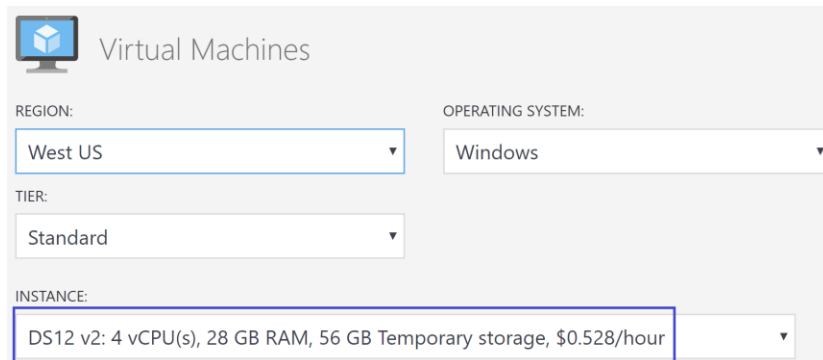


Image 2a: DS12 v2 cost in West US region

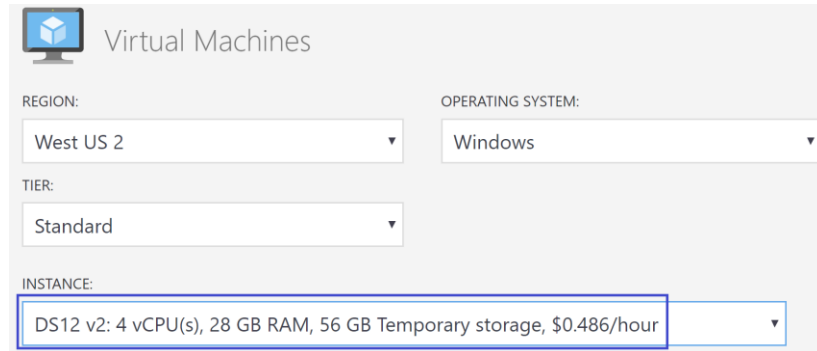


Image 2b: DS12 v2 cost in West US2 region

You can see that just by changing the region in same US West geography, **you save \$367.92 a year for one DS12 v2 unit alone.**

Please note, not necessarily all the VM SKUs are available in all the Azure regions.

[Calculate your cost here.](#)

3. Carefully select a VM

The right sizing is crucial to determine the required resources like vCPU, and RAM for the VM. Sometimes, there are multiple VM SKUs available for you in the region to select. You may carefully choose a VM which suites to your requirement best.

For example, if you are looking for HANA deployment, there are several certified VMs are available. In West US2 region, VM SKU GS5 (32 vCPU, 448GB RAM) cost \$8.253/hour, and M64ls (64vCPU, 512GB) cost \$5.825/hour. Essentially, by choosing M64ls over GS5, you not only get more CPUs and extra memory, but **you save \$21,269.28 per year on just one VM.**

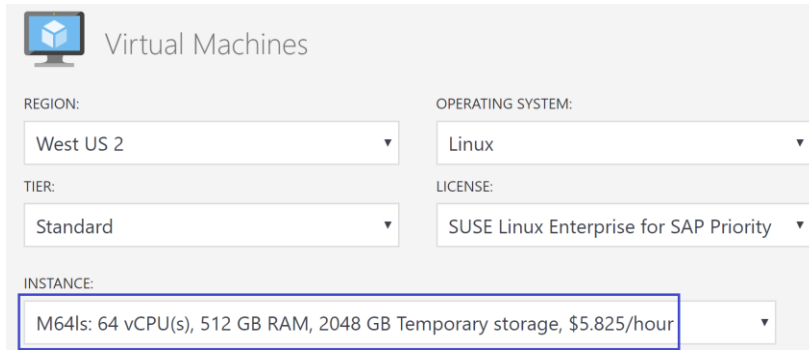


Image 3a: M64ls cost in West US 2 region

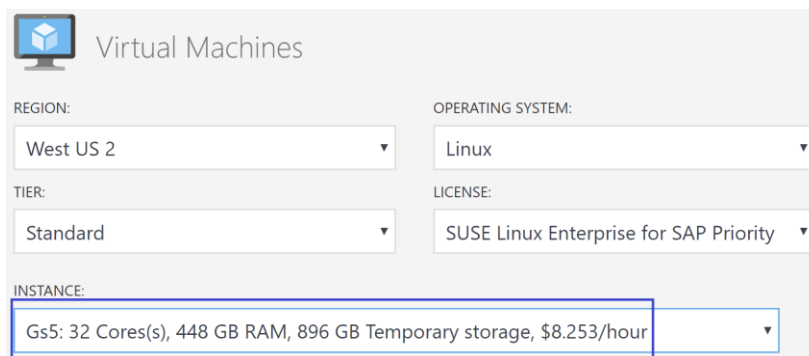


Image 3b: G5s cost in West US 2 region

4. Certified and non-certified VMs

In the SAP landscape, there are several systems like sandbox, Development, Demo, training etc. which does not need to run on the SAP certified VMs. You can review your landscape and assess the systems which can run on the non-SAP certified VMs.

For example, to run HANA on 256GB VM, E32s (not SAP certified) costs \$2.426/hour, whereas M32ls (SAP certified for HANA) costs \$3.283/hour. i.e. Deploying E32sV3 over M32ls in West US2 **saves you \$7,507.32/year just for a single VM.**

[Learn SAP supported products and Azure VM types here.](#) Also, look [certified HANA machines on Azure here.](#)

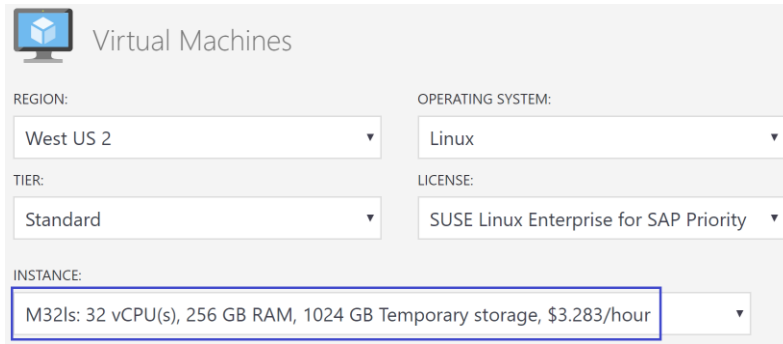


Image 4a: M32ls cost in West US 2 region

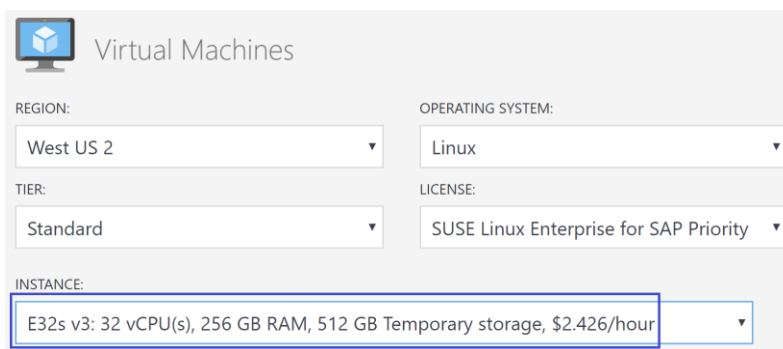


Image 4b: E32s v3 cost in West US 2 region

5. Storage selection

Your production SAP system needs to be high performant unit which can process the online transaction and analytical processing quickly. One of the most important factors to get high performance (IOPS/throughput) is the storage performance. Selecting a premium or ultraSSD disks over standard disk allows you to achieve higher IOPS, however, premium/ultraSSD disks are expensive. For the non-production systems of your landscape like development, sandbox, training etc. use the standard disks.

For example, in West US2 region, 1TiB of premium storage costs \$122.88/month, and standard (HDD) storage costs \$40.96/month. So, for 100TiB, you save \$98,304 per year.

[Asses your storage cost here.](#)

Redundancy:	Region:	Currency:
LRS	West US 2	US Dollar (\$)
S30	1 TiB	\$40.96
Redundancy:	Region:	Currency:
LRS	West US 2	US Dollar (\$)
P30	1 TiB	\$122.88

Image 5: Standard and Premium storage cost in West US 2 region

6. Snoozing

One of the biggest advantages with the cloud is that you pay for what you use. There may be a times when your VMs are not utilized. For instance, if your users are in US West region, you can plan to snooze those set of VMs in the night hours. You can also plan to snooze such VMs over the weekend.

You can define and configure the snooze schedule once and azure takes care of stop and start of the VMs. You can also configure the alerts, so azure notifies you when the VMs are stopped and started back. Please note, you can't leverage snoozing with the reserved instances.

For examples, you have M64VM in US West2 region with Linux operating system, it costs you \$10.747/hour. If you plan to snooze it during off business hours (8PM to 8AM), **you can straight save \$47,071.86/year on just one VM!**

[Define snooze schedule here.](#)

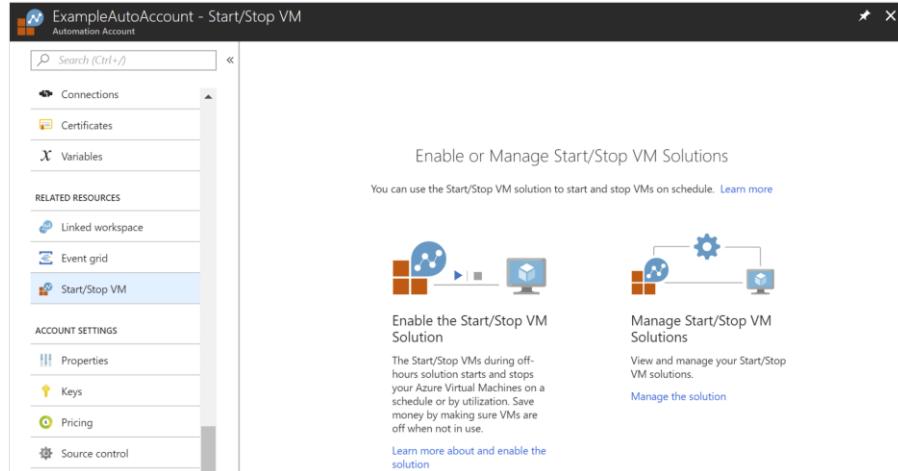


Image 6: Stop/Start a VM

7. Single instance over high availability

The most production systems certainly require a high availability to accomplish the business defined system/application SLA. However, not necessarily, all the systems of your landscape need high availability. The non-critical systems (even some production systems) can run on a single system instead of active/passive setup of a high availability.

Azure already offers 99.9% of single VM availability.

For example, if you change your System Integration Testing (SIT) system from HA to single instance, **you straight away save 50% not only on compute but on the storage as well.**

[See SLA for virtual machines here.](#)

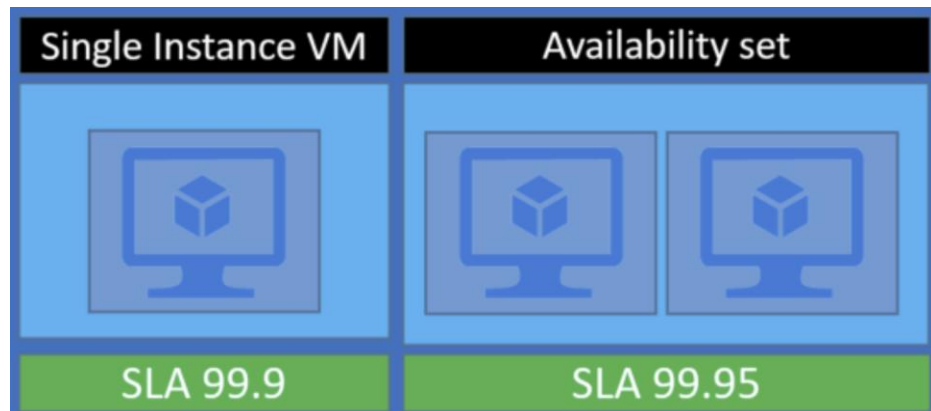


Image 7: Single and High availability VM SLA

8. Cost optimized configuration

The cost optimized configuration is where you leverage the passive node of the high availability node, or the DR node to run the QA/test instance to optimize the cost and to better utilize the passive VMs.

Since, you deployed High Availability, you want your system to be up on current passive node (when needed) ASAP. Please note, deploying QA/test on HA secondary node may bring some additional administrative overhead. You can also deploy your QA/test instance on DR node. The chances of failing over your production system to DR site are slim, so it will reduce administrative efforts to manage production and QA/test on the same (DR) VM. Sure, you may want to perform DR exercise and use DR node to run production, and during that time either QA/test can be down, or brought back on the primary site nodes. By doing this, **you save VM for one full landscape.**

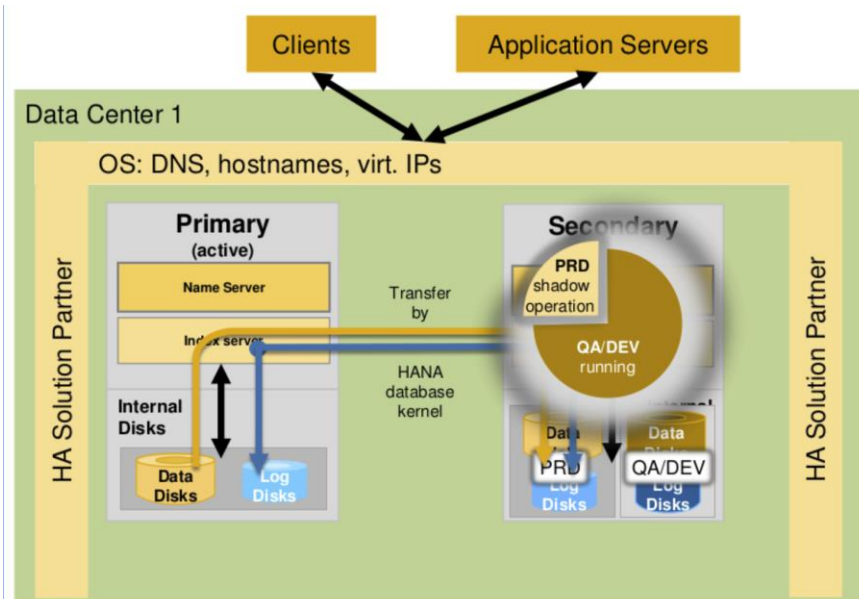


Image 8: Cost optimized scenario for HANA System Replication

9. Existing licenses

If you own Windows licenses with active Software Assurance (SA) or have an active Windows Server subscription, use Azure Hybrid Benefit to save compute cost.

For customers with Software Assurance, Azure Hybrid Benefit for Windows Server allows you to use your on-premises Windows Server licenses and run Windows virtual machines on Azure at a reduced cost.

You can use Azure Hybrid Benefit for Windows Server to deploy new virtual machines with Windows OS.

You **save up to 49%** with a license you already own using Azure Hybrid Benefit.

[Save now on licenses here.](#)

* Already have a Windows license? Yes No

* License type

Image 9: Hybrid licensing in Azure

10. Use scaling on demand

You can predict the load on your SAP system by looking CPU, memory, number of users, transactions running during the time of the day. Few defined events like month end, year-end, payroll processing, financial reporting etc. are the common one when you know for sure you need additional compute power. You can spin up VMs during that time and then shut them down. Remember to add/update those VMs in the various application groups like logon, RFC, SMLG etc.

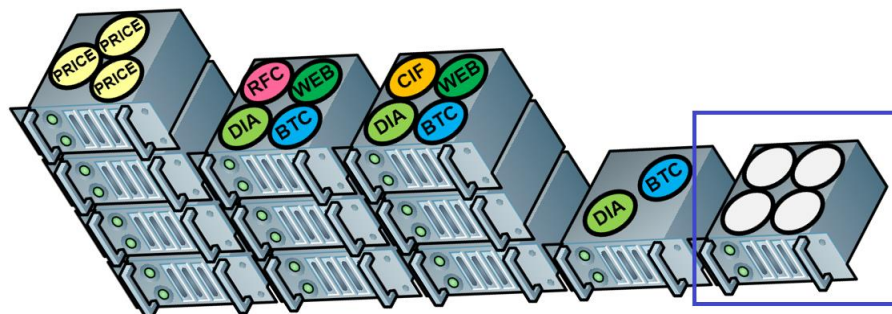


Image 10: Scaling of application instances in Azure

Conclusion

Azure can provide you lots of savings on your infrastructure. You just need to be more creative and be wise with the resources you “really” need. Azure administrator must review and analyze of resources consumption on a periodic basis and act accordingly.

Hope this helps to optimize your Azure cost and you have better return on your investments.

Appendix

- [Azure calculator](#)
- [Azure Hybrid Benefit FAQ](#)
- [Infrastructure Optimization Guide](#)
- [Reference Architecture](#)