Cost Optimization in Azure

Jack Xue
Microsoft

September 26, 2019

Reserved Instances

- In 2018, the general availability of reserved instances on Azure.
- For VM workloads that are static and predictable in nature, this is a fantastic offer that can save upwards of 70% depending on the VM size.
- For workloads that are up and running 24x7x365 and are unlikely to change in VM size this certainly an option that should be looked at.
- Reserved instances are purchased in 1- or 3-year terms, with payment required for the full term up front.
- https://docs.microsoft.com/en-us/azure/virtual-machines/windows/prepay-reserved-vm-instances

Azure Hybrid Benefit

- For customers who have made an investment in Windows Server licenses, the Azure Hybrid Benefit gives customers usage rights for Virtual Machines on Azure.
- When applied to virtual machines in Azure, you will not be charged for the Windows Server license and will instead be billed at the Linux rate.
- https://azure.microsoft.com/en-us/pricing/hybrid-benefit/

Dev/Test Subscriptions

- The Enterprise Dev/Test and Pay-As-You-Go Dev/Test offers are a benefit you can take advantage of to save costs on your non-production environments.
- This benefit gives you several discounts, most notably for Windows workloads, charging you the Linux rate for virtual machines.
- This also applies to SQL Server, and any other Microsoft software that is covered under Visual Studio subscription (formerly known as MSDN).
- https://azure.microsoft.com/en-us/offers/ms-azr-0148p/
- https://azure.microsoft.com/en-us/offers/ms-azr-0023p/

SQL Server Developer Edition

- Microsoft has made SQL Server Developer Edition a free product for non-production use.
- This is yet another way you can save on Azure costs for your non-production environments.
- On the Azure Marketplace you can find SQL Server 2016 and SQL Server 2017 images for Developer Edition, which will eliminate the additional cost for SQL Server.
- https://download.microsoft.com/download/B/C/0/BC0B2EA7-D99D-42FB-9439-2C56880CAFF4/SQL_Server_2017_Licensing_Datasheet.pdf

BYOL SQL Server Licenses

- If you are a customer on an Enterprise Agreement and already have an investment in SQL Server licenses and they have freed up as part of moving resources to Azure, you can provision BYOL images off the Azure Marketplace, giving you the ability to take advantage of these unused licenses and reduce your Azure VM cost.
- https://azure.microsoft.com/en-us/blog/easily-bring-your-sql-server-licenses-to-azure-vms/

Azure Cost Management (Cloudyn)

- In 2017, Microsoft purchased Cloudyn and has since rebranded it Azure Cost Management.
- This is a service that will analyze your Azure workloads and provide recommendations, such as right-sizing VMs and purchasing reserved instances.
- There's a whole host of features that give you the ability to evaluate, report and budget your Azure costs, so it's a great tool to inform you where your money is going.
- https://docs.microsoft.com/en-us/azure/cost-management/overview

Azure Advisor

- Azure Advisor evaluates your environment and provides recommendations on high availability, security, performance and cost.
- It's a good idea to pay attention to the recommendations, but specifically to the recommendations around resizing or shutting down unused VMs.
- It also identifies where you might be able to take advantage of Azure SQL Elastic Pools, and unutilized ExpressRoute circuits that may be costing you money.
- https://docs.microsoft.com/en-us/azure/advisor/advisor-overview

Right-Size/Shut Down/Deallocate VMs

- Cost Management and Advisor recommend right-sizing or shutting down VMs.
- Changing VM size is easy on Azure, and if you have VMs that typically sit idle, this is a great way you can reduce your costs.
- Shutting down unused systems is important as well, as often VMs are created for a test environment or a project that maybe never took off, but nobody went back and cleaned up the environment afterwards.
- It's also important to look at the usage patterns of your systems. If you have systems that are primarily used during business hours (or another regular time period) you should evaluate if you can shut them down when they are not being used.
- *Samples of PowerShell can be provided.*

Use Visual Studio Subscription (MSDN) Keys

- If you have a Visual Studio subscription (formerly known as MSDN) you do have the ability to use the license keys on Azure Virtual Machines.
- You could provision a BYOL image, enter a key from your VS subscription and eliminate the costs for SQL Server for that VM.
- MSDN subscriber can get $50-150/month free Azure credit.
- https://azure.microsoft.com/en-us/pricing/member-offers/credit-for-visual-studio-subscribers/

Migrate to PaaS Services

- As you move workloads to the cloud, a natural evolution is to start with IaaS services and then move them to PaaS as appropriate, and in an iterative process.
- PaaS services typically provide a substantial savings in both resource and operational costs.
- The challenge is that, depending on the type of service, varying levels of effort will be required to move to these services from both a time and resource perspective.
- https://docs.microsoft.com/en-us/azure/architecture/

Q&A

- Further information needed