



Azure Stack Marketplace Syndication

Technical Publisher Guide

Version 2.0

This document will be updated often, and requirements may change at any time.

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Overview

Welcome to the **Azure Stack Marketplace Syndication Technical Publishing Guide**. This guide is designed to help existing Azure Marketplace publishers reach Azure Stack Customers by enabling Syndication of vetted offers to Azure Stack Marketplaces (Public, Government, China cloud).

The following key topics will be addressed within this document with links to additional supporting materials for a deeper dive:

- What are the benefits of participating in the Azure Stack Marketplace?
- Business and technical requirements to enable Azure Stack Marketplace Syndication of your Azure Marketplace offers
- What is the Syndication Process for publishing applications to Azure Marketplace?
- Technical Criteria your solution must meet to support Syndication
- Testing your proposed Syndicated offer

Benefits of participating in the Azure Stack Marketplace

New listings in the Marketplace are eligible for a diverse set of free benefits that can help partners grow their business in the Marketplace. Find some of the Azure benefits listed [here](#).

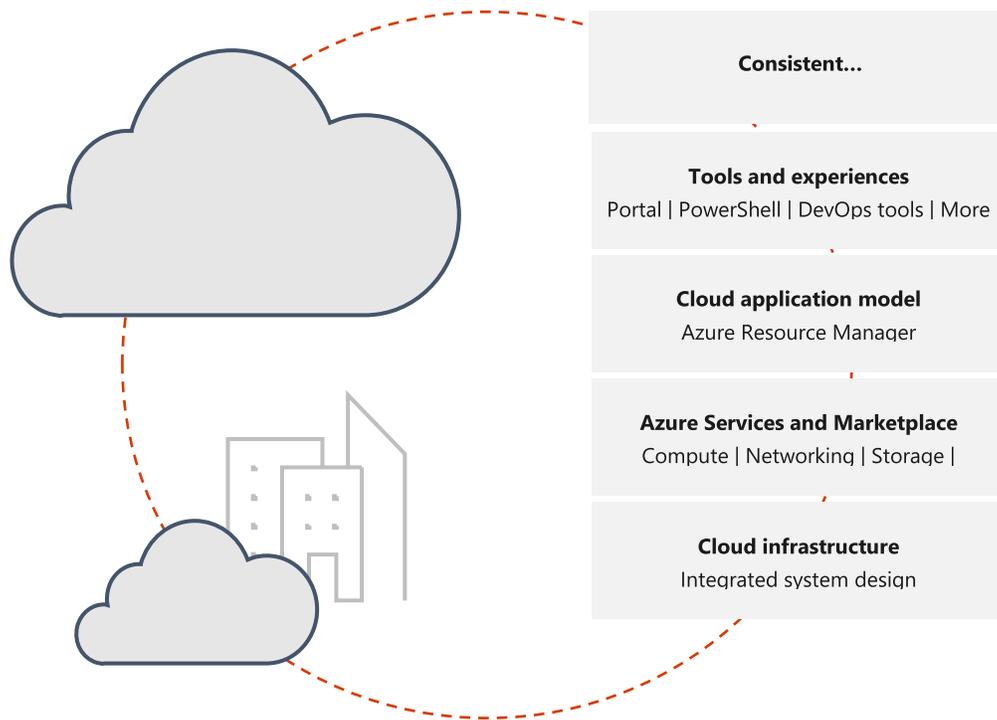
- 1- Technical resources: We will provide you everything you need to get your application ready to be published.
- 2- Co-marketing: Access free Microsoft Go-To-Market Launch Fundamentals to help you launch and promote your solution.
- 3- Co-selling: Access programs and support to drive joint sales with Microsoft teams.

In addition to these benefits, joining the Azure Stack Marketplace will help you unlock completely new scenarios and business opportunities:

- Enhance business value and Increase deal size with Azure Stack customers (Public, Government and China cloud)
- Expand to hybrid scenarios and generate new sales opportunities
- Expand to edge and disconnected scenarios
- Meet every regulatory and sovereignty requirement

Overview of Azure Stack

Azure Stack is an extension of the Azure platform. It brings the agility and innovation of cloud computing to on-premises environments. Organizations can build modern applications across hybrid cloud environments with the right flexibility and control.



It is the only consistent and comprehensive hybrid cloud. Our partners can take advantage of the broadest set of hybrid capabilities and deliver true hybrid consistency in your applications, data, identity, security and management across on-premises and cloud environments.

Azure Stack is managed by customer or a service provider like Microsoft manages Azure. In order to enable customers to manage their Azure Stack, we have an administrator portal which can be accessed by admins of the Azure Stack environment. An Azure Stack Operator uses the administration portal to do administrative tasks like onboarding users and setting their quotas, updating Azure Stack versions and populating Marketplace. Likewise, user portal (which is the equivalent of Azure portal) provides a self-service experience for consumption of cloud resources such as virtual machines, storage accounts, and web apps.

Offers available to Azure Stack customers are controlled by the Azure Stack Administrator. An Azure Stack administrator can add their own [custom offers](#) into their local Azure Stack Marketplace and they can also, with the click of a mouse, deliver pre-vetted and validated offers from the Azure Marketplace via [Azure Marketplace Syndication](#). Once an offer is downloaded by the administrator, all users on the Azure Stack instance will be able to view it in the Marketplace in user portal and create resources using Marketplace offer.

- [Build your own hybrid cloud solution](#)
- [Become part of the Azure Stack ecosystem](#)

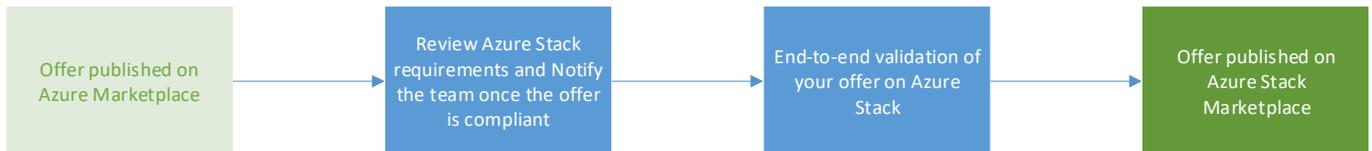
What is the process for an ISV to be on Azure Stack?

If your offer is already on the Azure Marketplace, it should be very quick to have you onboarded to the Azure Stack Marketplace. Please review [the technical requirements](#) in order to verify your offer is compatible on Azure Stack.

If you are not on the Azure Marketplace, then follow the [Azure Publishing Process](#) first so that we can help onboard you on the Azure Stack Marketplace.

In order to publish your offer to the Azure Stack Marketplace, you will only need to follow these 3 steps:

- 1- Publish your offer on Azure
- 2- Review requirements for Azure Stack and [Notify the Azure Stack Syndication team](#)
- 3- Test your offer on Azure Stack



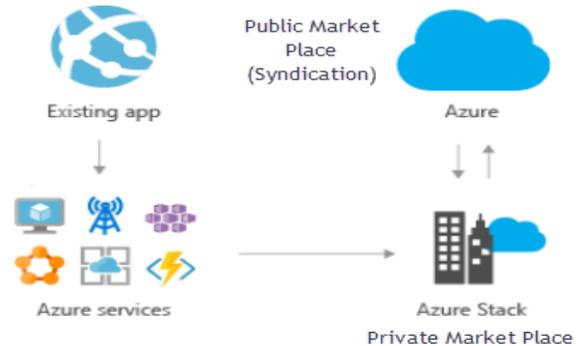
If you have successfully followed these 3 steps, your offer can now become available to all Azure Stack customers and can be added in our [public documentation](#) which lists all the Azure Marketplace items that can be downloaded from the Azure Stack Marketplace.

This guide will provide you more details on how to successfully complete all the respective steps and prerequisites to publish your offer on the Azure Stack Marketplace.

Azure Stack Marketplace Overview

Azure Stack and Azure: A consistent solution

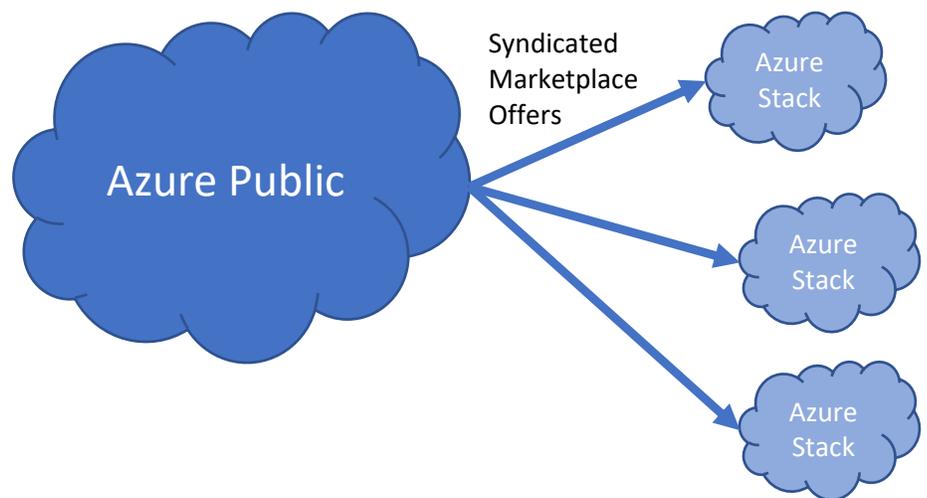
Azure Stack is a version of Azure that can be purchased as a hardware appliance and installed directly in an enterprise or hosted datacenter and deliver Azure Services on premise. It has many of the same basic architectural features as the Azure Public Cloud, delivered from Microsoft Azure datacenters, including an Azure Stack Marketplace. Although Azure Stack is intended to deliver a similar experience, it is recommended that you validate that the services your application will depend on are available in Azure Stack. See the section below called "[Key Services Available in Azure Stack](#)" to see what services are currently available as of the writing of this document.



Another way to think about Azure Stack is that they are like micro versions of our independent, special purpose Azure Clouds, like Azure GovCloud or Azure China.

It is important to note that Azure Stack can be deployed in two different modes in relation to Azure Public:

- **Azure Connected Mode** enables pay per use for Azure Stack Services and it is also required to enable Azure Stack Marketplace Syndication. In this mode an Azure Stack is registered against an Azure Subscription from the Azure Public Cloud, Azure Government Cloud or Azure China Cloud, and from a networking perspective, the instance of Azure Stack must have connectivity to that Azure cloud.



- **Disconnected Mode** is used where there can be no public network. Marketplace content can be downloaded to a different, connected system, and then uploaded to an Azure Stack instance. But anything that depends on downloading content during or after deploying the virtual machine(s), such as application installations or patches, will not work. In this mode, customers must use ADFS for authentication, which is different than on Azure which only supports Azure Active Directory. If Marketplace images are needed, customers will need to download them on another internet connected system and then move them to the target Azure Stack. The Technical implementation for supporting this can be found in [Appendix B](#).

All Azure Stack instances must be registered with Azure, regardless if they are using connected or disconnected mode.

Offers available to Azure Stack customers are controlled by the Azure Stack Administrator. An Azure Stack administrator can add their own custom offers into their local Azure Stack Marketplace and they can also, with the click of a mouse, deliver pre-vetted and validated offers from the Azure Marketplace via Azure Marketplace Syndication. All items on an Azure Stack instance will be available to all users of that instance.

What is Azure Stack Marketplace Syndication?

Azure Stack Marketplace Syndication (hereafter referred to as “Syndication”) is the technical means by which your Azure Marketplace offer is downloaded and can become available on the Azure Stack Marketplace.

In short, it is an option for you, as a publisher, to allow your *existing* Azure Marketplace solution to be made available in a list of validated and vetted solutions that an Azure Stack administrator might choose to offer to users of their own Azure Stack Marketplace.

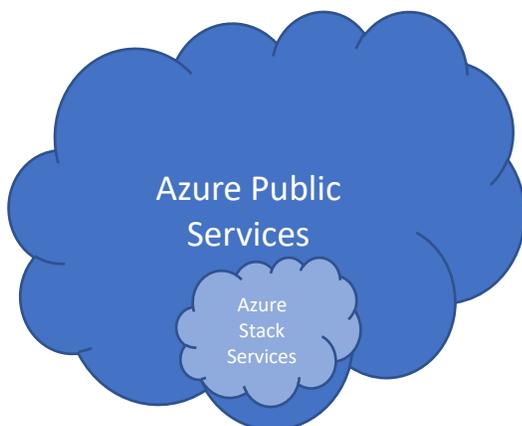
The customer experience of deploying your Syndicated offer is identical to what they would see if they were deploying your offer on Azure Public as it is, literally, a copy of your Azure Offer. You do not need to enter into or execute an additional Azure Publishing Agreement as the terms of your current Azure Agreement cover Azure Stack Syndication should you choose to opt-in. To make life simpler for Azure Stack, Administrators wishing to populate their private marketplaces from Azure can use the [Marketplace Management UI](#) (or equivalent [Marketplace syndication offline tools](#)), select the required offer and download it.

Syndication Begins with Azure

Azure Marketplace is the launch pad for all your joint marketing and co-selling opportunities with Microsoft as a partner. Once you have successfully published your Azure Marketplace artifact, you will be on the path to take advantage of these benefits. Additionally, your published Azure Marketplace offer is now eligible to reach Azure Stack customers in Azure Stack Marketplaces via “Syndication.”

This document assumes you have a certified Azure Marketplace solution. That is a pre-requisite for Azure Stack syndication.

The process of enabling Azure Stack Syndication for your Azure Marketplace offer is an optional, manual process that you can begin once you have a successfully published an Azure Marketplace offer.

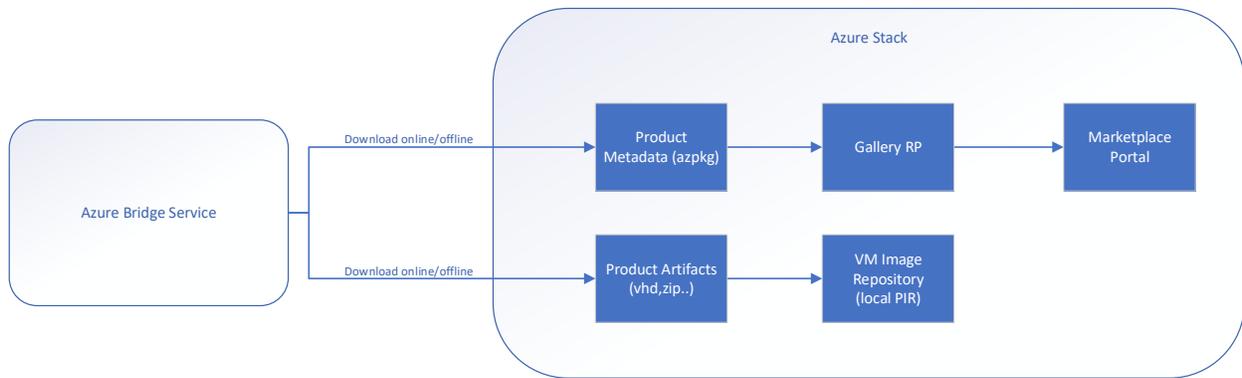


Not all offers in the Azure Marketplace can be syndicated at this time. There are Azure Public services and capabilities that are not available on Azure Stack.

If you are creating a new offer from scratch this guide will help you ensure that an offer meets the Syndication requirements. In addition to the Azure Marketplace requirements. This will help you validate and potentially update the existing artifacts to meet the Syndication requirements.

Success Factors for Azure Stack Syndication

Whether you are looking to find out if your existing Azure Marketplace offer will qualify for Azure Stack Syndication, or you are still designing and creating your Azure Offer, this guide provides the guidance you will need to enable a Syndicated offer.



In Azure Stack, you can add a virtual machine (VM) image to the marketplace to make available to your users. You can add VM images by using Azure Resource Manager templates for Azure Stack. You can also add VM images to the Azure Marketplace UI as a Marketplace item. You can either use an image from the global Azure Marketplace or your own custom VM image.

The product metadata is extracted in order to populate the UX gallery experience in the Azure Stack Marketplace. The product artifacts are stored locally in the VM image repository.

Unlike Azure, Azure stack has its own local platform image repository here called VM Image Repository. If you would like to read more about how to add your VM image to the local repository on Azure Stack through read this [document](#). This can be done using the Administration portal or Windows PowerShell.

Business and Technical Service Requirements

The following requirements have been identified to support this guide.

Whether your product is brand new on the Azure Stack marketplace or you wish to update it you will have to go through this Business and Technical review.

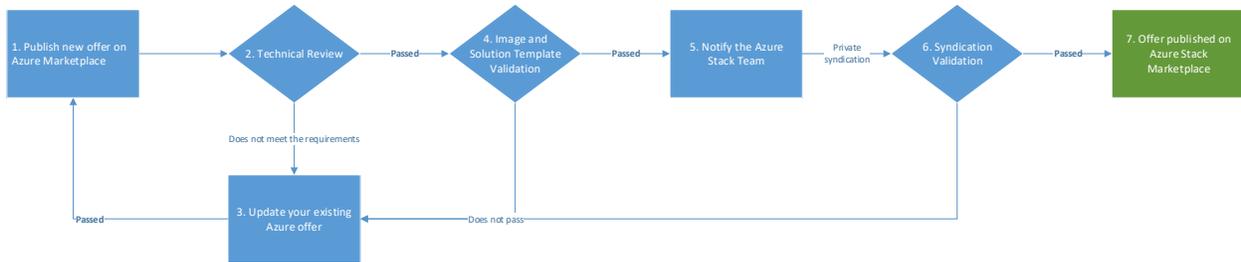
Area	Requirement	Details
Business Requirement	BYOL Licensed offers only	The current version of Azure Stack assumes that each subscription will leverage their own license for each implementation. Although the Azure Public Marketplace supports both sell through and BYOL models, currently, only the BYOL model is available on Azure Stack. In this model, you control whatever licensing or enablement you desire for your Azure/Azure Stack offer.
Business Requirement	Geographic regions	Azure Stack is available in many countries. The marketplace has no ability to restrict product availability by country. China: please contact us if you intend to make your product available in China. We will not syndicate by default and different rules apply.
Support	You must provide technical support for your products	The Azure Stack product is supported by Microsoft and our hardware partners. Additional software must be supported by the software vendor if the problem is determined to be with the product. This is covered in your Azure Marketplace publishing agreement.
Business Requirement	Either Connected or Disconnected Mode to Azure	All Azure Stacks must be registered . This is a pre-requisite for obtaining syndicated content from the Azure Marketplace. If your solution does not work with disconnected Azure Stack instances, you will need to inform our Azure Stack syndication team and add this to your product description.
Technical Requirement	<ul style="list-style-type: none"> - SaaS - PaaS (Primarily Microsoft 1st party Azure Services) 	If you own a SaaS offer and you would like to make it available on Azure Stack, you will need to consider a few things. Azure Stack presents a subset of the the Azure Global Services. If your offer consumes Azure Services outside of a VM, then your goal, in creating an offer that can be Syndicated, is scoping to the

		<p>services available on Azure Stack. If these services are not available you will need to convert your offer into an IaaS offer.</p>
<p>Technical Requirement</p>	<p>IaaS key supported artifact type(s)</p> <ul style="list-style-type: none"> Virtual Machines (Single VM) Virtual Machine Extensions Solution Templates (Multi VM) 	<p>Each of these has a different set of steps and requirements.</p> <p>Virtual Machine Image (Single VM) – This is a single virtual machine: Windows or Linux.</p> <p>Virtual Machine Extension – This is a software that is installed in a Virtual Machine Image at customer deployment time or even later.</p> <p>Solution Templates (Multi-VM) – Solution templates enable a much richer and more complex set of deployment options for your solution including a more sophisticated set of customers facing UI tools available to customize your deployment experience. Solution templates deploy one or more VM image(s). If the solution uses a custom virtual machine image, that must be available in the Azure Marketplace as well.</p> <p>Note: Solution Templates and Extensions may need modification. Contact the Azure Stack Syndication team before you begin your efforts.</p> <p>For more details read the Technical Criteria for your item to work on Azure Stack.</p>
<p>Technical Requirement</p>	<p>Run on IaaS instances available on Stack</p>	<p>Not all Azure VM sizes are supported on Azure Stack. Please read the Vm sizes supported in Azure Stack. Solution templates will need to accommodate the available sizes. Virtual machines (Single VM) can be deployed on any available size supported by Azure Stack; recommended sizes may or may not be suggested.</p>
<p>Technical Requirement</p>	<p>Leverage the existing services available on Azure Stack</p>	<p>Identified Services Available but limited are:</p> <ol style="list-style-type: none"> Web, Functions, and API apps (API Profile supported versions) Virtual Machines (Linux & Windows) Networking Storage (Blobs, Tables and Queues)

		<ul style="list-style-type: none">5. Storage Accounts: Premium_LRS and Standard_LRS6. Managed Disks7. Key Vault
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Azure Stack Publishing Process

Process for testing and publishing a brand new or updated solution to the Azure Stack Marketplace



Step	Name	Details
1	Publish new offer on Azure Marketplace	The partner has identified a new or existing application they want to Syndicate. They leverage an existing on-premise Azure Stack developer solution and begin deployment.
2	Obtain your own Azure Stack (ASDK or integrated system)	Partners must have access to an Azure Stack to perform validation. This must be registered.
3	Technical Review	If necessary, the ISV fixes their existing application and/or ARM templates that will be used for their implementation in order to be compatible on Azure Stack.
	Image and Template validation	ISV tests and validates solution locally.
	Update and publish new Azure Offer	If necessary, ISV updates the offer on Azure and republishes in the Azure Marketplace.
	Notify Azure Stack Syndication Team that solution is ready for next step	Once the partner has successfully vetted their solution they notify Microsoft that their application is ready for syndication.
4	Private syndication	The Azure Stack syndication team will make the solution privately available so that only the partner can install it on their environment.
5	Syndication Validation	Partner downloads through Marketplace Management in Admin portal and Validates the offer(s) on their Azure Stack instance.
6	Change from Private to Public Syndication Feed	Once validated, partner notifies Microsoft and the item(s) can be changed to public view.

Updates

Updates are considered an entirely new product on the Azure Stack Marketplace therefore you will need to go through the same process and repeat all the steps above.

Please contact the [Azure Stack syndication team](#) if you've completed all the steps and you are ready to publish your updated product.

Technical Criteria

What Azure Marketplace Artifacts can be Syndicated?

Virtual Machine Image requirements

Virtual Machine images are a basic Azure Marketplace building block and there are a few things to think about when designing an offer for Syndication.

- The base image must be available in the Azure Marketplace with the following requirements:
 - It is a single Virtual Machine
 - It is a [LIVE offer](#) on the Azure Marketplace
 - It is of license type [BYOL](#)
 - It cannot be in preview
 - It can only be the latest available version on Azure
- Linux images – refer to Linux Virtual Machines below
- If your image links to *any* Azure SDKs, check with the syndication team. Only certain SDK versions and functions will work on Azure Stack.
- If your application has requirements for authentication/authorization, you will likely need to modify it to support both AAD and ADFS.
- Blank data disks must be specified with "**createOption**": "**Empty**" – do not add additional VHDs to your offer as these take a long time to download.

Linux Virtual Machines

Linux virtual machines have additional requirements

- [Supported distros](#)
- [Supported Linux agent versions](#)
- [Supported extensions](#)
- Your image or application should not take any dependencies on wireserver protocol or metadata server (not implemented)
- There are known differences in the behavior of the DHCP server between Azure and Azure stack
- If you depend on custom script extensions on a Linux VM, this may fail on customer equipment due to certificate trust configurations. Some customers may use enterprise CA signed certificates, and there is no consistent certificate store on Linux. The root certificate is imported but might need to be imported into other stores.

Virtual Machine Extension Requirements

Virtual Machine Extensions require engagement with the Azure Stack syndication team. The process is entirely manual and will be handled on a case-by-case basis. Your extension must already be available in the Azure Marketplace; extensions cannot be developed specifically for Azure Stack.

Solution Templates (Multi-VM) Requirements

Solution templates offer a lot of flexibility, but they come with a list of requirements.

General Requirements

- As with other items, Solution Templates must be available on the Azure Marketplace.

- Once your solution template is available for Azure, [Contact the Azure Stack syndication team](#) on Solution Templates since the publication process is a manual one and will likely require modifications.
- Solution Templates contain Azure Resource Manager templates. While largely compatible with Azure, not all ARM capabilities are available on Azure Stack. Please follow the guidance in <https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates-cloud-consistency>
 - Templates may be nested or linked, as on Azure. It is recommended that all linked templates and other artifacts are included in the package you submitted to Azure.
 - Solution templates always refer to resource API versions. In many cases, Azure Stack does not support the latest versions of the APIs (see Appendix E – How to use the Resource Explorer in Azure Stack or the [CloudCapabilities](#) tool to determine what API versions are supported). You may need to maintain separate templates for Azure Stack to not violate Azure requirements.
 - In addition to API versions, solution templates can only use resource types and functions supported on Azure Stack.
 - You must never use hard-coded endpoints, e.g., *.blob.windows.net, for any Azure Stack resource (nor should you on Azure either). Unlike an Azure Cloud, every Azure Stack publishes its own management endpoints. Any template that uses hard-coded endpoints for deployment will be rejected for syndication. (Hardcoded URIs for file or artifact downloads can be used but will limit your item to connected installations.)
 - Azure Stack does not support the use of the **condition** element in your ARM template.
- If your templates depend on other marketplace items these will need to also be downloaded separately. You must identify *all* dependencies, including necessary virtual machine images and extensions that are used by your template. These items must be available through syndication, including your own hidden BYOL images (if any). As shipped, there are no default images available – the operator of each Azure Stack must download what is required for users of that instance.
- If you require technical details about a particular Azure Stack instance, recognize that users (not administrators) are the usual target of marketplace offers. They may not have access to this information. It is best to remove any such assumptions.
If you have a dependency on a specific minimum Azure Stack version, you must specify this. Customers may be up to three months behind the latest available patch version.

Virtual Machines

- Not all Azure Virtual Machine sizes are supported. Please refer to this [article](#) for details.
- Availability Sets and Scale Sets are supported.

Virtual Machine Extensions

- Templates which deploy extensions must set the **autoUpgradeMinorVersion** parameter to “true” (Azure requirement as well). Not all extensions are available on Azure Stack; contact the syndication team and we can assist.

Resource Types

- Only resource types that are available on Azure Stack may be used (Compute, Storage, Network, Key Vault, and App Services – if installed by the customer). Other services may be introduced in the future. Any template that uses services that are not supported on Azure Stack cannot be syndicated.
- Support for database-as-a-service is not available to marketplace solutions. If you depend on an external database, you will need to provision a database server as part of your solution.
- Your *hybrid* applications can depend on Azure services for connected Azure Stacks. For example, backup applications may use Azure storage accounts for backing up applications or virtual machines from Azure Stack.

Disconnected Environments

- If your solution template requires access to the internet to download artifacts, you need to identify that dependency. Be aware that many customers are deploying their Azure Stacks in disconnected environments, so your templates will not work if they need external network access.

Storage

- Managed disks are available on Azure Stack. Understand the [difference between Azure and Azure Stack as well as the key considerations](#).
- Only Standard_LRS and Premium_LRS are available storage account types.
- Blobs, tables and queues are supported; files are not available.

Network

While Azure Stack implements many of the features of Azure network, there are additional limitations see [Considerations for Azure Stack networking](#).

Authentication

Azure Stack can be deployed with different authentication models. If you depend on Azure Active Directory, this will not work on disconnected or ADFS-connected Azure Stacks. Please contact the syndication team if you have this dependency and we can help you support both models.

Testing locally your Image and Solution template on Azure Stack

Please complete all the prerequisites below to be able to support this scenario.

- Ensure that the existing Azure Stack environment is operational and running the latest released version of the ASDK (or your integrated system is up to date)
- You have registered the Azure Stack. You will need an Azure Subscription and be a global administrator on your Azure Active Directory.

ASDK: <https://docs.microsoft.com/en-us/azure/azure-stack/asdk/asdk-register>

Integrated system: <https://docs.microsoft.com/en-us/azure/azure-stack/azure-stack-registration>

- You are the administrator of the Azure Stack – or the administrator will be assisting you with these tasks.
- You have *already published* your solution or virtual machine to the Azure Marketplace.
- You have reviewed all the technical differences between Azure and Azure Stack VM offers.

To validate your solution on Azure Stack platform locally, first test whether your Azure image or solution template works on an Azure Stack environment using the below guidance:

For single VM images,

1. Upload your VHD to a storage blob account first and copy the URI
2. Create a managed disk and pass the VHD URI
3. Create a VM using the managed disks to validate deployment

For solution templates,

1. Begin with the template that you created for Azure
2. Typical changes you will need to make:
 - a. API versions that are compatible with Azure Stack
 - b. You may need to make changes to point to VHDs in storage accounts/disks in your local environment. Look for storageprofile under compute/virtualmachines resource type and ensure the correct URI is being used. Here is a sample from a [github template](#):

```
"osDisk":  
{  
    "name": "[concat(variables('vmName'), '-osDisk')]",  
    "osType": "[parameters('osType')]",  
    "caching": "ReadWrite",  
    "createOption": "FromImage",  
    "image": {  
        "uri": "[variables('osDiskUrl')]"  
    },  
    "vhd": {  
        "uri": "[variables('osDiskVhdName')]"  
    }  
}
```

}

3. Try to deploy this template in the Azure Stack environment. If using the UX, follow Create a resource -> Template deployment and paste your template.

Once you have verified that your image or solution template works in an Azure Stack environment, next step is to test the Marketplace offer itself which includes the product metadata and image/template that gets deployed. Follow steps on [Syndication Validation](#) from this guide, to test your Marketplace offer before making it available to all customers.

Syndication Validation

1. Request that your item be privately syndicated from the Azure Marketplace.
[Notify the Azure Stack syndication team](#) :
 - You must provide your registration subscription ID.
 - If you are syndicating a virtual machine, your offer will need to be a Single VM of licensing type BYOL and currently "Live" on Azure. We cannot publish previews. Also you must provide your <https://cloudpartner.azure.com/> offer link. More details can be found in [Appendix B](#) regarding how to find this offer link.
Note: This publishing portal is moving to [Partner Center](#) in the future
 - If you are syndicating a solution template, you will need to send any [ARM templates](#) to the syndication team.
 - If you are syndicating an extension, you will need to follow the [following process](#) and send your artifacts including the extension zip file to the Azure Stack syndication team.
2. Once this is done, our syndication team will make your offer(s) privately available only for you to test on your Azure Stack environment. This can take up to a week.
3. Download through the Marketplace Management blade under the Admin portal your offer(s)
4. Validate the whole end-to-end experience, including deploying through admin and the tenant portal.
5. Verify that all artifacts deploy.
6. Verify that your application(s) function as expected.
7. Once all the test passed, request that your item be made public by contacting the [Azure Stack syndication team](#). This can take up to a week. Also provide us a logo, the name of the product and a 1-line description for the syndication team to add it to the Azure Stack public documentation.
8. Verify that your item is listed in [Azure Marketplace items available for Azure Stack](#).

Appendix A Key Services Available in Azure Stack

Below is a table with some supported and unsupported scenarios. We recommend you leverage the links identified for additional updates.

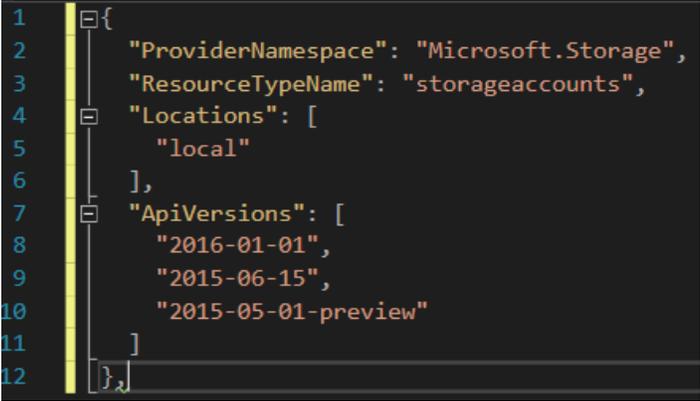
Category	Services	Feature	Azure	Azure Stack	Link
Compute	A, D, DS, Dv2, DSv2, Av2-series and F-series virtual machines in Azure Stack	Virtual Machines	Supported	Supported	Link
Compute	Managed Disks in Azure Stack	Managed Disks	Supported	Supported	Link
Networking	DNS	Multi-tenant DNS	Supported	Not yet supported	Link
Networking	DNS	DNS AAAA records	Supported	Not yet supported	Link
Networking	DNS	DNS zones per subscription. 100 (default) can be increased on request	Supported	Supported (Up to 100)	Link
Networking	DNS	DNS record sets per zone. 5000 (default) can be increased on request.	Supported	Supported (Up to 5000)	Link
Networking	DNS	Name servers for zone delegation	Azure provides four name servers for each user (tenant) zone that is created.	Azure Stack provides two name servers for each user (tenant) zone that is created.	Link
Networking	Virtual network	Virtual network peering	Connect two virtual networks in the same region through the Azure backbone network.	Not yet supported	Link
Networking	Virtual network	IPv6 addresses	You can assign an IPv6 address as part of the Network Interface Configuration.	Only IPv4 is supported.	Link
Networking	VPN gateways	Point-to-Site VPN Gateway	Supported	Not yet supported	Link
Networking	VPN gateways	Vnet-to-Vnet Gateway	Supported	Not yet supported	Link
Networking	VPN gateways	VPN Gateway SKUs	Support for Basic, GW1, GW2, GW3, Standard High Performance,	Support for Basic, Standard, and High-	Link

			Ultra-High Performance.	Performance SKUs.	
Networking	Load balancer	IPv6 public IP addresses	Support for assigning an IPv6 public IP address to a load balancer.	Only IPv4 is supported.	Link
Networking	Application gateway	Layer-7 load balancing	Supported	Not yet supported	Link
Networking	Traffic Manager	Route incoming traffic for optimal application performance and reliability.	Supported	Not yet supported	Link
Networking	Express Route	Set up a fast, private connection to Microsoft cloud services from your on-premises infrastructure or colocation facility.	Supported	Supported	Link
WebApps	App Service	Quickly build powerful web, mobile, and API apps using .NET, .NET Core, Java, Ruby, Node.js, PHP, Python and Docker.	Supported	Supported	Link
WebApps	Azure App Service and Functions on Azure Stack	Azure App Service enables you to quickly build, deploy, and scale enterprise-grade web and API apps. Applications and services deployed on App Service can meet rigorous performance, scalability, and security requirements.	Supported	Supported	Link
Functions	General availability of App Service and Functions on Azure Stack	Azure Functions on Azure Stack provides you the ability to build applications faster, using the same event-driven programming model that enables serverless compute experiences in the cloud. You can create functions in the language you choose, such as JavaScript, C#, and F#, and scripting options such as PHP, Bash, Batch, and PowerShell.	Supported	Supported	Link
Storage	Including Tables, BLOBs, and Queues.	How to manage storage accounts in Azure Stack to find, recover, and reclaim storage capacity based on business needs.	Supported	Supported	Link
ADFS and Active Directory Graph	Azure Stack uses either Azure Active Directory (AAD) or Active Directory Federation Services (AD FS) as an identity provider.	<p>Azure Active Directory Azure Active Directory is Microsoft's cloud-based, multi-tenant identity provider. Most hybrid scenarios use Azure Active Directory as the identity store.</p> <p>Active Directory Federation Services You may choose to use Active Directory Federation Services (AD FS) for disconnected deployments of Azure Stack. Azure Stack, resource providers, and other applications work much the same way with AD FS as they do with Azure Active Directory. AD FS supports only a single tenant and, therefore, only a single organization.</p>	AAD only	Supported	Link

Key Vault	Manage Key Vault in Azure Stack by using the portal	You can manage Key Vault in Azure Stack by using the Azure Stack portal. This article helps you get started to create and manage a key vault in Azure Stack.	Supported	Supported	Link
Endpoints, Protocols and Ports	Azure Stack datacenter integration - Publish endpoints	Azure Stack sets up virtual IP addresses (VIPs) for its infrastructure roles. These VIPs are allocated from the public IP address pool. Each VIP is secured with an access control list (ACL) in the software-defined network layer. ACLs are also used across the physical switches (TORs and BMC) to further harden the solution. A DNS entry is created for each endpoint in the external DNS zone that was specified at deployment time.	Supported	Supported	Link

Appendix B – Helpful Syndication Questions and Answers

We are working with partners individually on Azure Stack offers at this point but the good news is that as an Azure Marketplace publisher, the Azure publishing agreement already includes the terms for Azure Stack, so from an agreements perspective, you are already eligible.

Question	Answer
<p>If my offer uses PaaS/SaaS services will it work on Azure Stack?</p>	<p>If your Azure Offer consumes an Azure PaaS/SaaS Service, there are two key things for you to think about in relation to Syndication:</p> <p>Azure Stack presents a subset of the of the Azure Global Services. If your offer consumes Azure Services outside of a VM, then your goal, in creating an offer that can be Syndicated, is scoping to the services available on Azure Stack.</p>
<p>How do I discover what Azure Stack services are running and what API Version to use for Syndicated offers?</p>	<p>Azure Services are continually updated on Azure Public. New API versions including new Azure capabilities appear all the time. Azure Stack lags Azure Public from an API version perspective, meaning that there may be a more current version of any given service on Azure than the most current version available on Azure Stack.</p> <p>Both Azure and Azure Stack support multiple API versions at the same time. Any API Versions available on Azure Stack are completely consistent with the corresponding API version on Azure. Your goal is to scope your application to using versions available on BOTH Azure and Azure Stack and you will be creating a solution that runs in Azure Public, unmodified.</p> <p>If you have not already installed the PowerShell tools for Azure Stack the Repo and deployment instructions are found here: https://github.com/Azure/AzureStack-Tools/.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;">  <pre> 1 { 2 "ProviderNamespace": "Microsoft.Storage", 3 "ResourceTypeName": "storageaccounts", 4 "Locations": [5 "local" 6], 7 "ApiVersions": [8 "2016-01-01", 9 "2015-06-15", 10 "2015-05-01-preview" 11] 12 } </pre> </div> <div style="flex: 0.5; padding-left: 10px;"> <p>At any point in time you can</p> </div> </div> <p>generate a JSON file representation of all the capabilities of an Azure Stack by using the Azure Stack PowerShell tools. See https://github.com/Azure/AzureStack-Tools/tree/master/CloudCapabilities. There is also a template validation tool which depends on the output of Cloud capabilities. Note: The Azure Stack portal also provides this information interactively with the Resource Explorer service.</p>
<p>What is connected vs. not connected?</p>	<p>Azure Stack disconnected deployment planning decisions for Azure Stack integrated systems - With the disconnected from Azure deployment option, you can deploy and use Azure Stack without a connection to the Internet. However, with a disconnected deployment, you are limited to an AD FS identity store and the capacity-based billing model.</p>

	<p>Azure Stack connected deployment planning decisions for Azure Stack integrated systems - Deploying Azure Stack connected to Azure means that you can have either Azure Active Directory (Azure AD) or Active Directory Federation Services (AD FS) for your identity store. You can also choose from either billing model: pay-as-you-use or capacity-based. A connected deployment is the default option because it allows customers to get the most value out of Azure Stack, particularly for hybrid cloud scenarios that involve both Azure and Azure Stack.</p>
<p>When would a customer use AAD vs. ADFS?</p>	<p>You can deploy Azure Stack using Azure Active Directory (Azure AD) or Active Directory Federation Services (AD FS) as the identity providers. You must make the choice before you deploy Azure Stack. Deployment using AD FS is also referred to as deploying Azure Stack in disconnected mode.</p> <p>Software solutions that need to integrate with the authentication on Azure Stack will need to make modifications to work on both AAD and AD FS.</p> <p><i>Here is the link that explains how best to implement both solutions - Link</i></p> <p><i>Note: You cannot switch the identity provider without redeploying the entire Azure Stack solution.</i></p>
<p>Where can I find information about installing Azure Stack?</p>	<p>Microsoft Azure Stack is a hybrid cloud platform that lets you provide Azure services from your datacenter. Azure Stack integrated solutions are delivered with hardware and software services; they are not customer installable. The Azure Stack development kit is a non-production, single system software download that can be used by ISVs and developers. It implements most of the functionality of the integrated systems. Please refer to https://azure.microsoft.com/overview/azure-stack/development-kit/ for the requirements and download links.</p>
<p>Where can I find the Azure Subscription ID that I need to use when attempting to register my subscription?</p>	<p>Just a quick step by step on how to get you Subscription ID:</p> <p>Option A: Through the Azure Portal</p> <ol style="list-style-type: none"> 1. Browse to https://portal.azure.com and Sign into your account. 2. Once you are in the portal you should see the side panel with a tab for 'Subscriptions'. Click on this to get to the next section. If the tab is not visible, then click on the 'More services' tab to find it. 3. In the new open panel, you will see all the subscriptions you have access to and in the 'Subscription ID' column is the what you are looking for. Recommend you copy the ID for later use into notepad. <p>Option B: Through Azure Stack Admin Portal</p> <ol style="list-style-type: none"> 1. Log-in to your Admin Portal and click on Region Management inside your main Dashboard 2. Click on properties 3. Copy the Registration Subscription Id paste it into the same email and send us this information for the syndication team to be able to make your solution available to this specific environment.
<p>How do I test my solution on Azure Stack?</p>	<p>Azure Stack implements portal and PowerShell functionality to allow uploading solutions to the Marketplace. Virtual machine images can be uploaded using</p>

	<p>the Compute blade in the portal, but gallery packages, extensions and solution templates will need to be uploaded using the PowerShell cmdlets.</p> <p>See https://docs.microsoft.com/azure/azure-stack/azure-stack-powershell-install.</p>
<p>How do I find my Azure Offer link to request publishing for a Single VM?</p>	<ol style="list-style-type: none">1. Browse to https://cloudpartner.azure.com/ and Sign into your account2. Click on the offer you wish to publish3. Click on Offer Settings and Copy the web URL and paste it into the same email and send us this information for the syndication team.

Appendix C – Key links by Role

Here are some various links for different organizational roles in your organization that we have found helpful.

Business and Marketing Team Members

Description	Link
Main Site with general information, documentation	https://azure.microsoft.com//overview/azure-stack
Pricing can be found here and is a link on the Main site.	https://azure.microsoft.com//pricing/
Azure Stack Syndicated Software Partners, HW Partners and SIs	https://azure.microsoft.com//overview/azure-stack/partners/
White paper (including GA Functionality and high-level Post GA roadmap):	https://azure.microsoft.com/mediahandler/files/resourcefiles/ebb2fd25-06ec-476b-a29a-bca40f448cf6/Hybrid_application_innovation_with_Azure_and_Azure_Stack.pdf
Launch Whitepaper:	https://azure.microsoft.com//resources/azure-stack-an-extension-of-azure/
(Azure Stack Channel on Channel 9)	https://channel9.msdn.com/Blogs/azurestack
Items published in the Azure. This might lag slightly behind the live Marketplace. Stack Marketplace	https://docs.microsoft.com//azure/azure-stack/azure-stack-marketplace-azure-items

Engineering\IT Team Members

Description	Link
Deploying and Configuring Azure Stack SDK	https://docs.microsoft.com/azure/azure-stack/asdk/
(Our Azure Stack Github repo with Tools, Scripts, and examples for deploying and running Azure Stack Technical Previews and ASDK)	https://github.com/Azure/AzureStack-Tools
Creating AZPKG's and publishing Marketplace gallery item from an already uploaded VM image:	https://docs.microsoft.com//azure/azure-stack/azure-stack-create-and-publish-marketplace-item
PowerShell cmdlets for uploading VM image and then gallery items:	https://docs.microsoft.com//azure/azure-stack/azure-stack-download-azure-marketplace-item#import-the-image-and-publish-it-to-azure-stack-marketplace
As Azure continues to grow, we want to keep you informed—so that we can plan for the future together. This product roadmap is the place to find out what's new and what's coming next. Let us know what you think by providing feedback and voting on items. You can also subscribe to notifications, so you'll always be the in the know.	https://azure.microsoft.com/roadmap
Azure Stack networking has many of the features provided by Azure networking. However, there are some key differences that you should understand before deploying an Azure Stack network.	https://docs.microsoft.com/azure/azure-stack/user/azure-stack-network-differences

General User (Getting Familiar with Azure Stack)

Description	Link
<i>Using the administrator portal in Azure Stack</i>	Link
<i>Connect to Azure Stack Development Kit</i>	Link
<i>Using the privileged endpoint in Azure Stack</i>	Link
<i>Monitor health and alerts in Azure Stack</i>	Link
<i>View public IP address consumption in Azure Stack</i>	Link
<i>Change the Owner for an Azure Stack user subscription</i>	Link
<i>Azure Stack infrastructure security posture</i>	Link
<i>Azure Stack Plans, offers, quotas, and subscription overview</i>	Link
<i>Run a validation test for Azure Stack</i>	Link

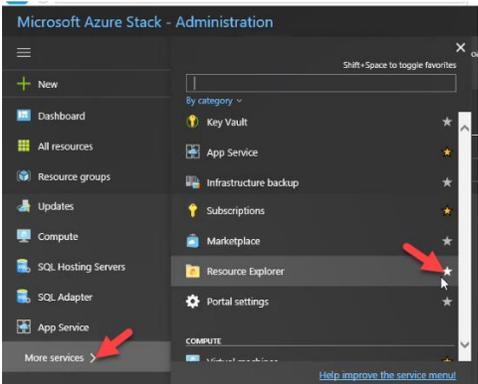
Appendix D – Helpful PowerShell Commands and Links

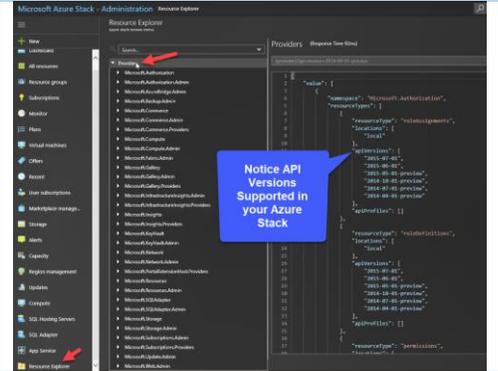
The following is a list of helpful PowerShell commands we have found useful when working with Azure Stack.

Name	Description	Command
Deploy a template to Azure Stack using PowerShell	<i>You can use PowerShell to deploy Azure Resource Manager templates to Azure Stack. This example uses AzureRM PowerShell cmdlets and a template stored on GitHub. The template creates a Windows Server 2012 R2 Datacenter virtual machine.</i>	https://docs.microsoft.com//azure/azure-stack/user/azure-stack-deploy-template-powershell
Install PowerShell for Azure Stack	<i>PowerShell commands for Azure Stack are installed through the PowerShell Gallery. You can use the following procedure to validate if PSGallery is registered as a repository, open an elevated PowerShell session and run the following commands outlined in the link.</i>	https://docs.microsoft.com//azure/azure-stack/azure-stack-powershell-install
Deploy templates in Azure Stack using Visual Studio	<i>You can use Visual Studio to deploy Azure Resource Manager templates to Azure Stack.</i>	https://docs.microsoft.com//azure/azure-stack/user/azure-stack-deploy-template-visual-studio
Configure the Azure Stack user's PowerShell environment	<i>Use the instructions in this article to configure the PowerShell environment for an Azure Stack user. After you configure the environment, you can use PowerShell to manage Azure Stack resources. For example, you can use PowerShell to subscribe to offers, create virtual machines, and deploy Azure Resource Manager templates.</i>	https://docs.microsoft.com//azure/azure-stack/user/azure-stack-powershell-configure-user
Add a platform image to the repository	<i>You can add images to the PIR using the Compute Admin blade or using PowerShell</i>	https://docs.microsoft.com/powershell/module/azs.compute.admin/add-azsplatformimage You must ensure that your parameters are correct and match the gallery item/template values.
Add a gallery item	<i>Gallery items are special zip (AZPKG) files that are created by the Azure publishing process. The syndication team can help you obtain the AZPKG file for your items</i>	https://docs.microsoft.com/powershell/module/azs.gallery.admin/add-azsgalleryitem

Appendix E – How to use the Resource Explorer in Azure Stack

The following details outline what, how and when to leverage the Resource Explorer tool with Azure Stack.

Focus	Details	Benefits
<p>What is the Resource Explorer?</p>	<p>Azure Resource Explorer is a new web site where you can easily:</p> <ul style="list-style-type: none"> Discover the Azure Resource Management APIs Get API documentation Make actual API calls directly in your own subscriptions for testing purposes <p>This link provides additional details for leveraging this new site: https://azure.microsoft.com//blog/azure-resource-explorer-a-new-tool-to-discover-the-azure-api/</p>	<ul style="list-style-type: none"> Helps Developers understand what existing APIs are available by version Helps test out customized configurations in their subscriptions without finalizing their approach.
<p>How does it work?</p>	<p>In Azure and Azure Stack, the Azure Resource Manager is the management layer (API) where you connect to for deploying resources.</p> <p>When deploying resources with Azure Resource Manager keep in mind the following aspects. It is:</p> <ul style="list-style-type: none"> Template-driven – Using templates to deploy all resources. Declarative – You declare the resources you want to have instead of imperative where you need to make rules. Idempotent – You can deploy the template over and over again without affecting the current state of resources. Multi-service – All services can be deployed using Azure Resource Manager, Website, Storage, VMs etc. Multi region- You can choose in which region you would like to deploy the resources. Extensible – Azure Resource Manager is extensible with more resource providers and thus resources. 	<ul style="list-style-type: none"> IT\Dev's can leverage Resource Manager (Preview) to build dependent resources like "Resource Groups" in their subscription.  <ul style="list-style-type: none"> IT\Dev's can also view the providers using the Microsoft Azure Stack – Administration – Resource Explorer view as shown below. 

		
<p>When should I use it?</p>	<p>When IT\Dev's are working to deploy any customize template it is recommended that they leverage the Resource Manager to help get you familiar with the APIs and facilitate this.</p>	<p>Provides a means for helping you get familiar with discovering APIs, Documentation around API and Error Handling when testing changes to JSON using your own subscription.</p>
<p>Additional Details</p>	<p>The following links provide additional details that you might find handy when wanting to leverage Azure Resource Manager</p>	<ul style="list-style-type: none"> • Azure Resource Explorer • Azure Resource Manager – Templates (JSON) • Azure Resource Explorer: a new tool to discover the Azure API