

[CHICAGO] CODER CONFERENCE

INNOVATION. THOUGHT LEADERSHIP. TRAINING.

Leveraging Microsoft ASR for Disaster Recovery

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Session Goals

- Understanding of DR and DRaaS
- Gartner's Magic Quadrant for DRaaS Solutions
- Microsoft Azure Site Recovery

About me

- Application Tech Arch Senior Manager @ Accenture in Chicago
 - Disaster Recovery Lead
 - Modern Engineering Lead
 - Next Gen Cloud Architect
 - Development Architecture Lead
 - Automated Testing Lead
- Microsoft ALM MVP since 2013
- Microsoft ALM Ranger since May 2011
- Friend of Red Gate since Jan 2006
- Eagle Scout

Our Disaster Recovery Plan Goes Something Like This...



Disaster Recovery

Recovering from catastrophic failure of a location that exceeds an identified acceptable time to be without key business systems.

Backups are for recovery of data. DR is for failure.

Is it applicable in the ransomware world we are in today?

DRaaS

Disaster Recovery as a Service is vendor hosted DR; 250 providers and growing.

Gartner Magic Quadrant for DRaaS from June 2016

*“From 2016 through 2020, the use of either DRaaS or IaaS to support the failover of production applications will grow by more than 200%.” **

Gartner Magic Quadrant for DRaaS



Source: Gartner (June 2016)

Azure Site Recovery

- Available in All US Regions except DOD East & Central
- 99.9% availability
- 2 hour Recovery Time Objective (RTO)

Azure Site Recovery

- **DR in the cloud:** Replicate/protect workloads running on VMs & physical servers to Azure rather than to a secondary site, eliminating cost/complexity
- **Simple approach:** Single location in the Azure portal for managing replication. Run simple failovers and failback of 1 to many servers.
- **Resiliency:** Replicated data is stored in Azure storage; when failover occurs, Azure VMs are created based on the replicated data.
- **Replication performance:** Continuous replication for Azure & VMware VMs; reduced recovery time objective (RTO)
- **Application consistency:** Configure application-consistent snapshots for the recovery points.

Azure Site Recovery

- **Testing without disruption:** Run test failovers for DR drills without affecting production environments and the ongoing replication.
- **Flexible failover & recovery:** Run planned failovers for expected outages with no data loss or unplanned failovers with minimal data loss
- **Custom recovery plans:** Recovery plans to model & customize failover and recovery of multi-tier apps.
- **Multi-tier apps:** Recovery plans for sequenced failover/recovery customize how each group fails over and starts up.
- **Network management:** Simplified application network requirements, including reserving IP addresses, configuring load-balancers & integrating Azure Traffic Manager.

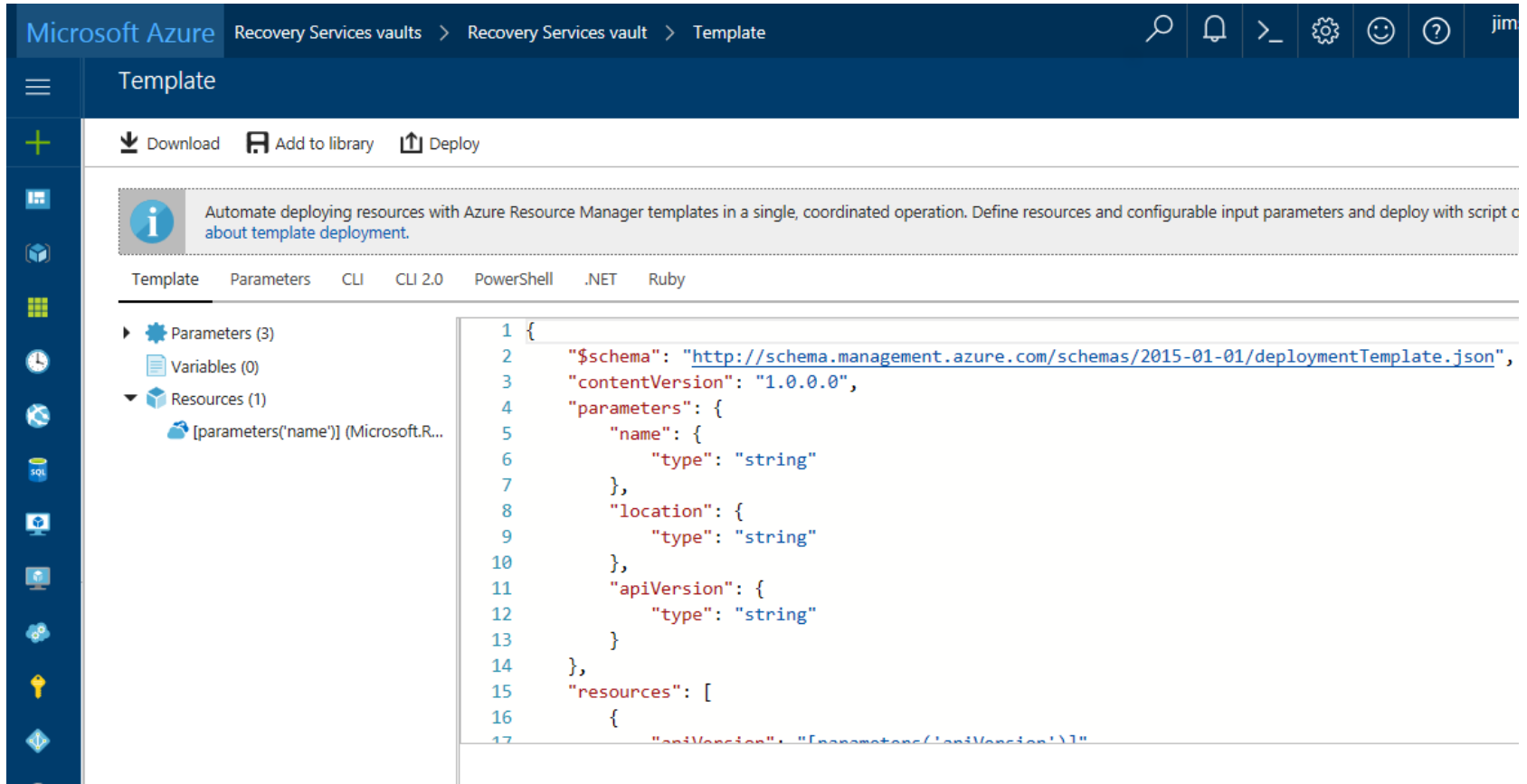
Setting Up A Vault

The screenshot displays the Microsoft Azure portal interface for managing Recovery Services vaults. The left-hand navigation pane shows the 'Recovery Services vaults' section, which is currently empty, displaying '0 items' and a 'Create Recovery Services vaults' button. The right-hand pane shows the configuration form for a new vault, with the following fields and values:

- Name:** DRVaultUSWest
- Subscription:** Windows Azure MSDN - Visual Studio Ultim
- Resource group:** rgDRWestUS
- Location:** West US

At the bottom of the configuration pane, there is a 'Pin to dashboard' checkbox (checked) and a 'Create' button. A link for 'Automation options' is also present.

Setting Up A Vault



The screenshot shows the Microsoft Azure portal interface for editing an ARM template. The breadcrumb navigation at the top reads: Microsoft Azure > Recovery Services vaults > Recovery Services vault > Template. The page title is "Template".

Below the navigation bar, there are action buttons: Download, Add to library, and Deploy. An information banner states: "Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Define resources and configurable input parameters and deploy with script c [about template deployment.](#)"

Below the banner, there are tabs for different template languages: Template (selected), Parameters, CLI, CLI 2.0, PowerShell, .NET, and Ruby.

On the left side, there is a navigation pane with a tree view showing:

- Parameters (3)
- Variables (0)
- Resources (1)
 - [parameters('name')] (Microsoft.R...

The main area displays the ARM template JSON code:

```
1 {
2   "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "name": {
6       "type": "string"
7     },
8     "location": {
9       "type": "string"
10    },
11    "apiVersion": {
12      "type": "string"
13    }
14  },
15  "resources": [
16    {
17      "apiVersion": "[parameters('apiVersion')]"
```

Setting Up A VM

The screenshot displays the Microsoft Azure portal interface for creating a virtual machine. The top navigation bar shows the path: Microsoft Azure > Windows Server 2016 Datacenter > Create virtual machine > Summary > Template. The user's profile is identified as jimszubryt@hotmail.c... SZUBRYT DIRECTORY.

The **Summary** tab is active, showing a 'Validation passed' status. The configuration is organized into sections:

- Basics:**
 - Subscription: Windows Azure MSDN - Visual Studio Ultimate
 - Resource group: (new) rgEast
 - Location: East US
- Settings:**
 - Computer name: vmUSEast
 - Disk type: HDD
 - User name: A2AAdminSource
 - Size: Standard D1
 - Managed: Yes
 - Virtual network: (new) rgEast-vnet
 - Subnet: (new) default (10.1.0.0/24)
 - Public IP address: (new) vmUSEast-ip
 - Network security group (firewall): (new) vmUSEast-nsg
 - Availability set: None
 - Guest OS diagnostics: Enabled
 - Boot diagnostics: Enabled
 - Diagnostics storage account: (new) rgeastdiag807

At the bottom of the Summary tab, there is an 'OK' button and a 'Download template and parameters' button.

The **Template** tab is also visible, showing options to Download, Add to library, or Deploy. It includes an information icon and a link to 'Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. De about template deployment.' Below this, there are tabs for Template, Parameters, CLI, CLI 2.0, PowerShell, .NET, and Ruby. The 'Template' tab is selected, displaying a tree view of the ARM template structure:

- Parameters (16)
- Variables (3)
- Resources (7)
 - [parameters('virtualMachineName'...
 - [concat(parameters('virtualMachin...
 - [parameters('diagnosticsStorageA...
 - [parameters('virtualNetworkName'...
 - [parameters('networkInterfaceNa...
 - [parameters('publicIpAddressNam...
 - [parameters('networkSecurityGrou...

The JSON code for the template is visible in the right pane, starting with:

```
1 {
2   "$schema": "http://schema.management.azure.com/...",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "location": {
6       "type": "string"
7     },
8     "virtualMachineName": {
9       "type": "string"
10    },
11    "virtualMachineSize": {
12      "type": "string"
13    },
14    "adminUsername": {
15      "type": "string"
16    },
17    "virtualNetworkName": {
```

THANK YOU!

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Leveraging Microsoft ASR for Disaster Recovery

Track #9 • 2:30pm • Room #406

Social



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Email

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References

- Gartner's Magic Quadrant for DRaaS
<https://www.gartner.com/doc/reprints?ct=160617&id=1-39NNEX2&st=sb>
- Microsoft's What is Site Recovery
<https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-overview>