



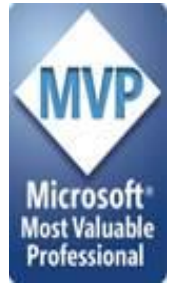
Microsoft 365 SDLC Best Practices (Part 2 of 2)

Tuesday, May 4, 2021
12 - 1 PM Eastern Time

Peter Carson



- President, Extranet User Manager
- Office Apps and Services Microsoft MVP
- peter.carson@extranetusermanager.com
- blog.petercarson.ca
- www.extranetusermanager.com
- Twitter @carsonpeter
- President Toronto SharePoint User Group



2008

Envision IT built custom Extranet solution

2010



2012

Extranet User Manager (EUM) Installer created



Office 365 support

2014

2015

EUM Brand and Website launched



2016



Azure B2B support

2017

Partner Program launched

2018

EUM V4 Launched



2019

User-Centric EUM Login Teams, SPFx, and Flow

2009



2011

Productization of code base begins

2021

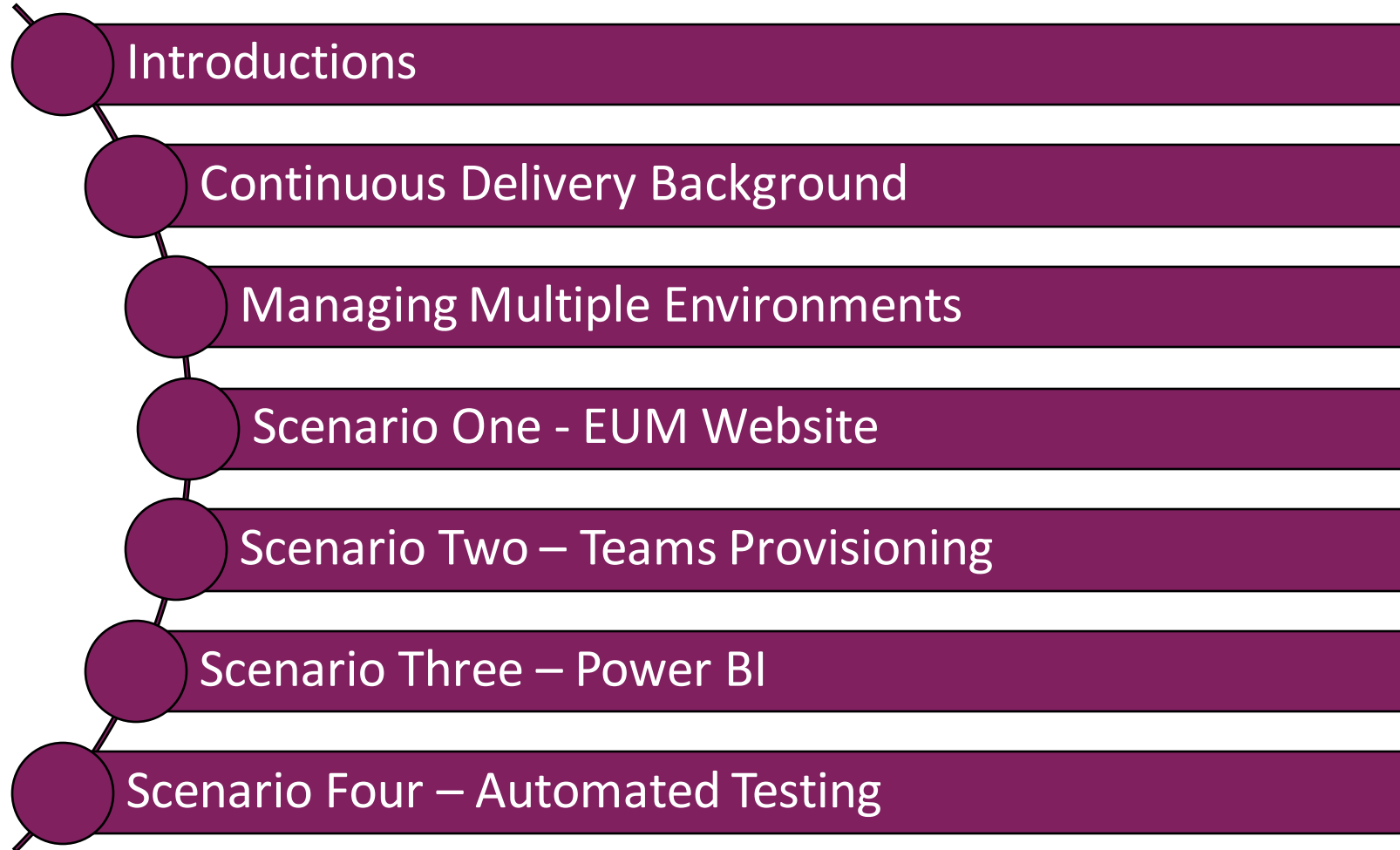
EUM Products Website Relaunched

Customers around the Globe



100+ Customers Deployed Globally

Agenda

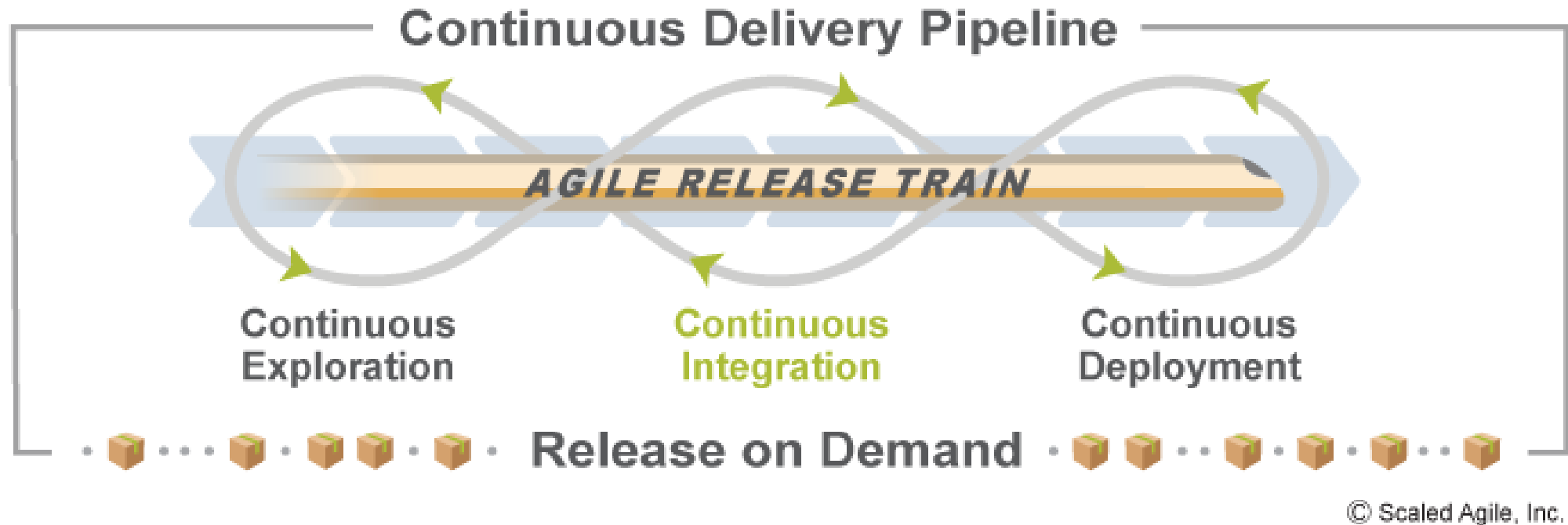


Microsoft Forms Poll



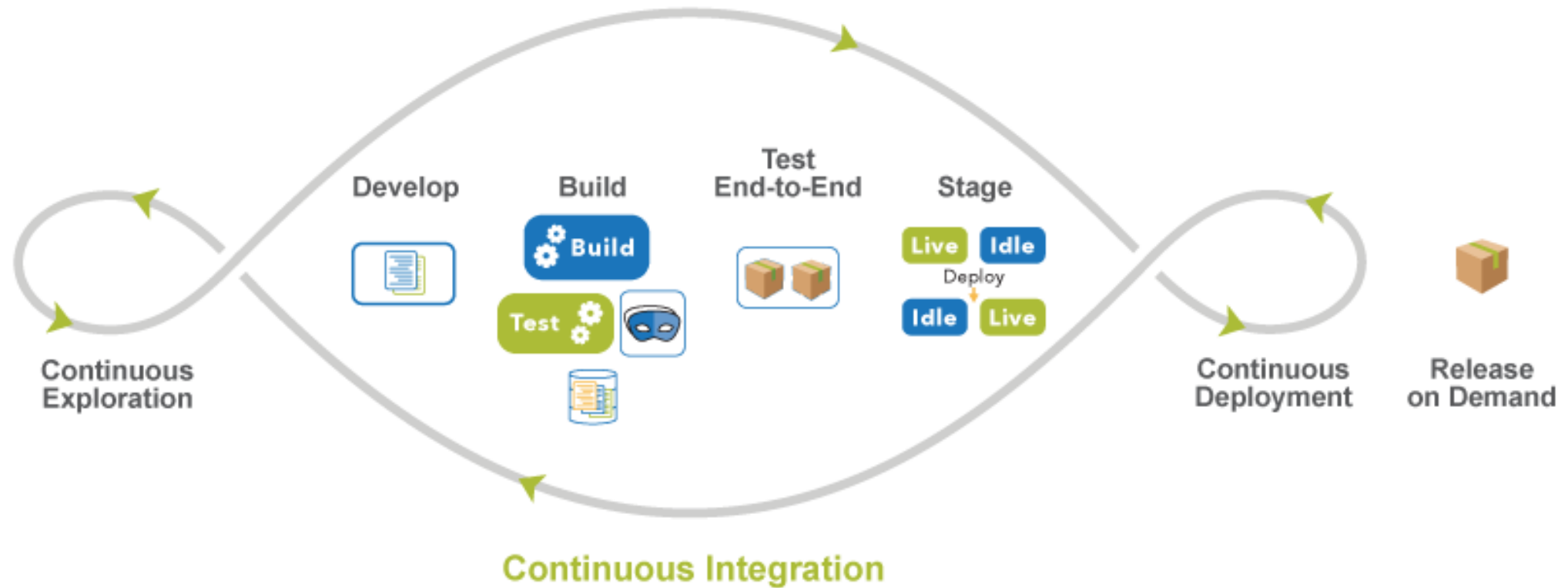
<https://bit.ly/3xHJUjC>

Continuous Delivery Pipeline



<https://www.scaledagileframework.com/continuous-integration>

Continuous Integration



© Scaled Agile, Inc.

<https://www.scaledagileframework.com/continuous-integration>

Importance of Managing Multiple Environments

Development



Azure AD

QA



Azure AD

Production

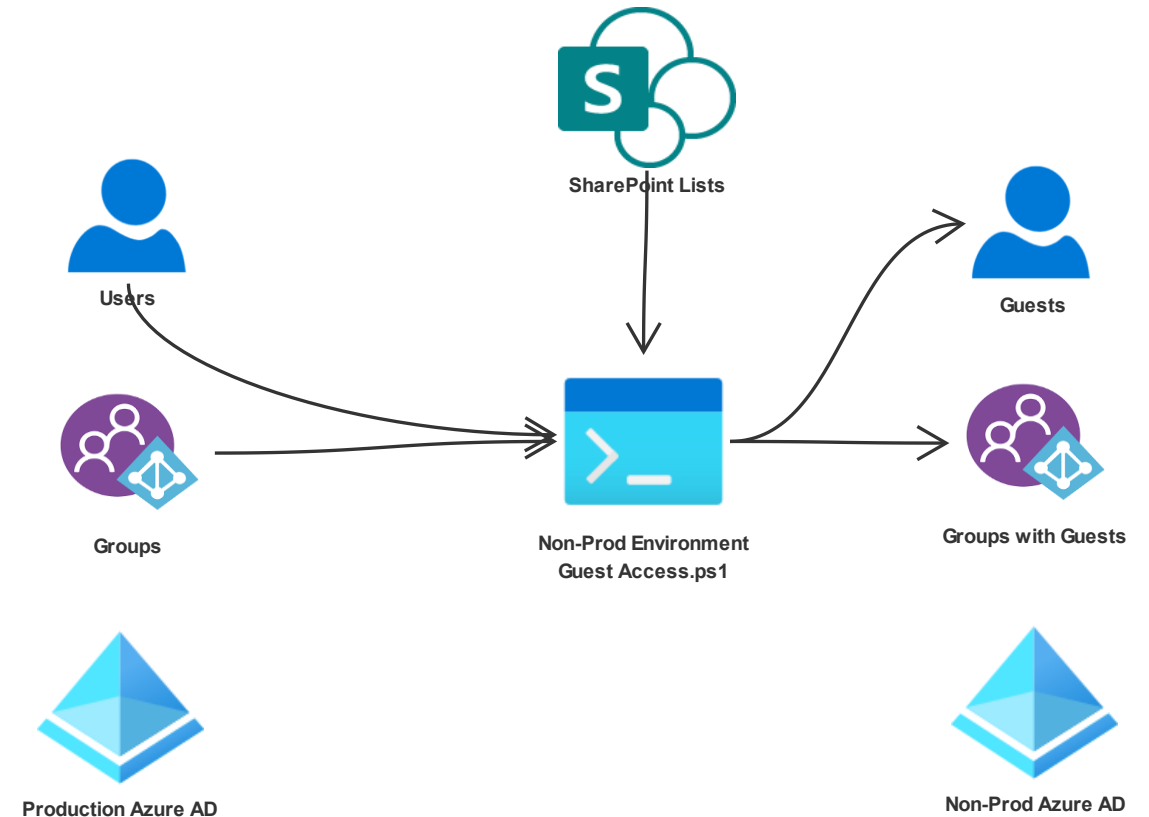


Azure AD

- **Completely separate tenants for each environment**
- **Not just another site collection**
- **Full isolation between environments**
- **Developer subscriptions are free - [Developer Program - Microsoft 365](#)**
 - These do expire if left unused
- **May want to consider paid tenants for non-prod with 1-2 users**
 - ~ \$10 / month

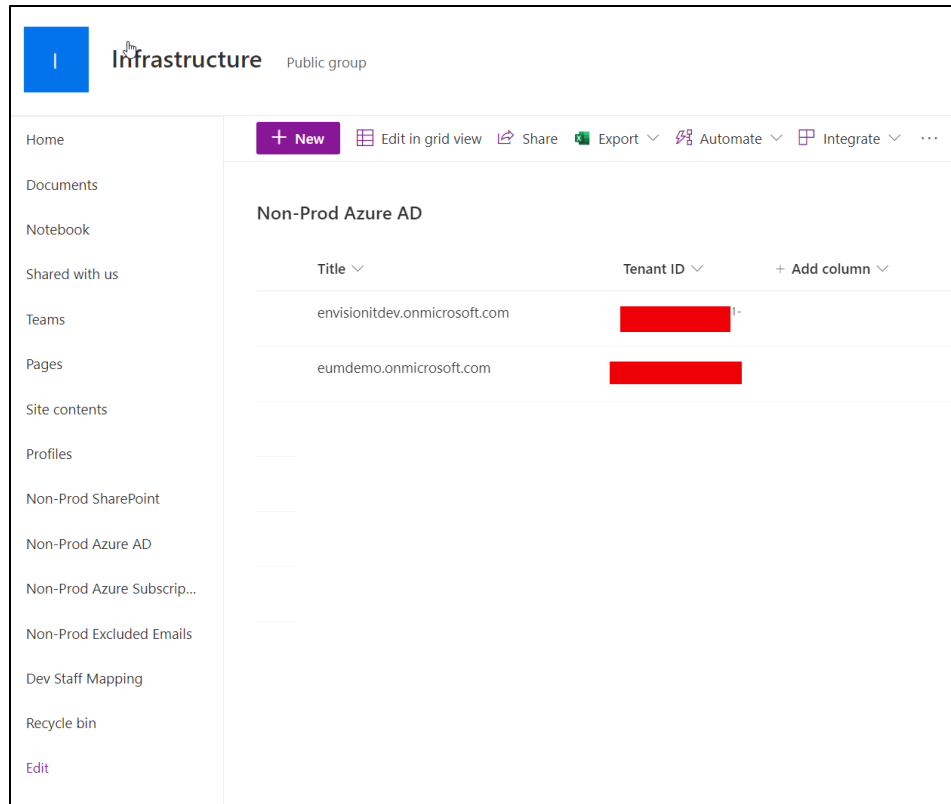
Using Azure AD B2B to Manage Access to Environments

- PowerShell script syncs prod groups and users as Guests in non-prod
- Rights can be assigned in SharePoint and Azure to these groups
- Developers use their prod credentials
 - No browser profiles or InPrivate sessions needed



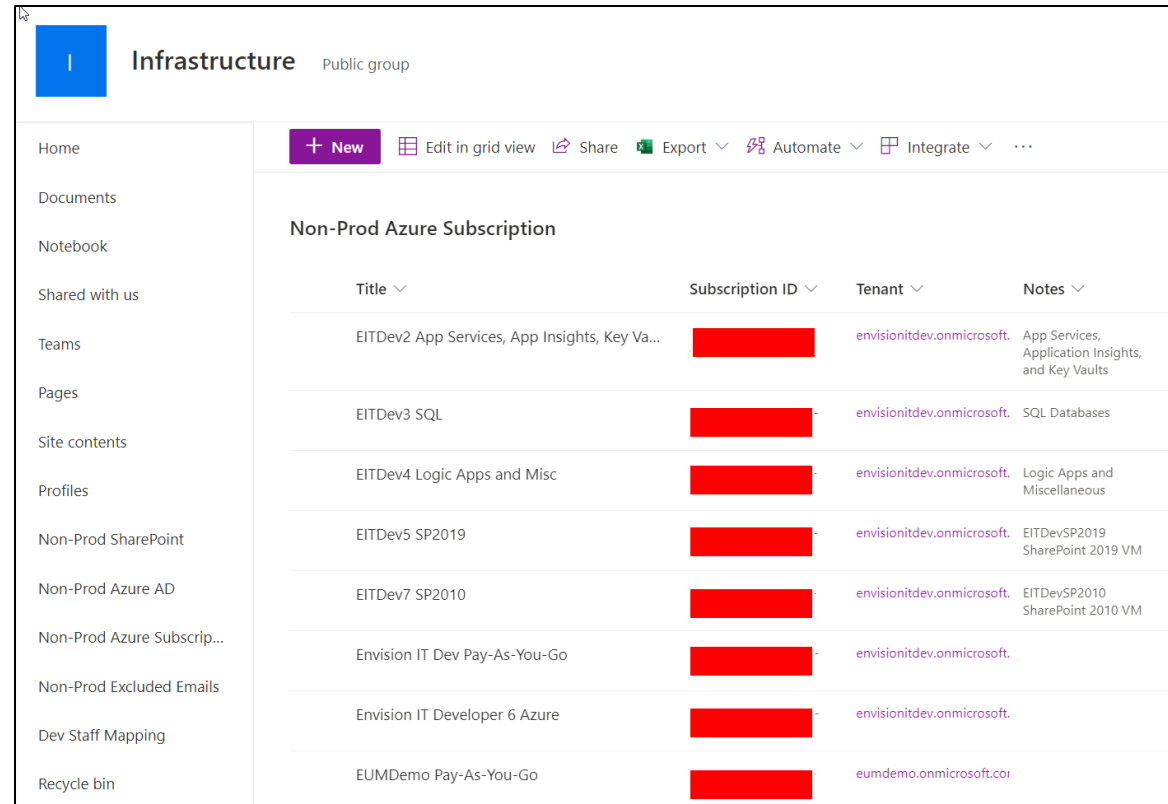
SharePoint Lists to Manage Environment Info

- SharePoint Lists to manage all different tenants and subscriptions
- Single tenant can have multiple Azure subscriptions



The screenshot shows a SharePoint list titled "Non-Prod Azure AD" within the "Infrastructure" public group. The list has two columns: "Title" and "Tenant ID". There are two items in the list, both with redacted Tenant IDs.

Title	Tenant ID
envisionitdev.onmicrosoft.com	[REDACTED]
eumdemo.onmicrosoft.com	[REDACTED]



The screenshot shows a SharePoint list titled "Non-Prod Azure Subscription" within the "Infrastructure" public group. The list has four columns: "Title", "Subscription ID", "Tenant", and "Notes". There are eight items in the list, with redacted Subscription IDs and Tenant IDs.

Title	Subscription ID	Tenant	Notes
EITDev2 App Services, App Insights, Key Va...	[REDACTED]	envisionitdev.onmicrosoft.	App Services, Application Insights, and Key Vaults
EITDev3 SQL	[REDACTED]	envisionitdev.onmicrosoft.	SQL Databases
EITDev4 Logic Apps and Misc	[REDACTED]	envisionitdev.onmicrosoft.	Logic Apps and Miscellaneous
EITDev5 SP2019	[REDACTED]	envisionitdev.onmicrosoft.	EITDevSP2019 SharePoint 2019 VM
EITDev7 SP2010	[REDACTED]	envisionitdev.onmicrosoft.	EITDevSP2010 SharePoint 2010 VM
Envision IT Dev Pay-As-You-Go	[REDACTED]	envisionitdev.onmicrosoft.	
Envision IT Developer 6 Azure	[REDACTED]	envisionitdev.onmicrosoft.	
EUMDemo Pay-As-You-Go	[REDACTED]	eumdemo.onmicrosoft.co	

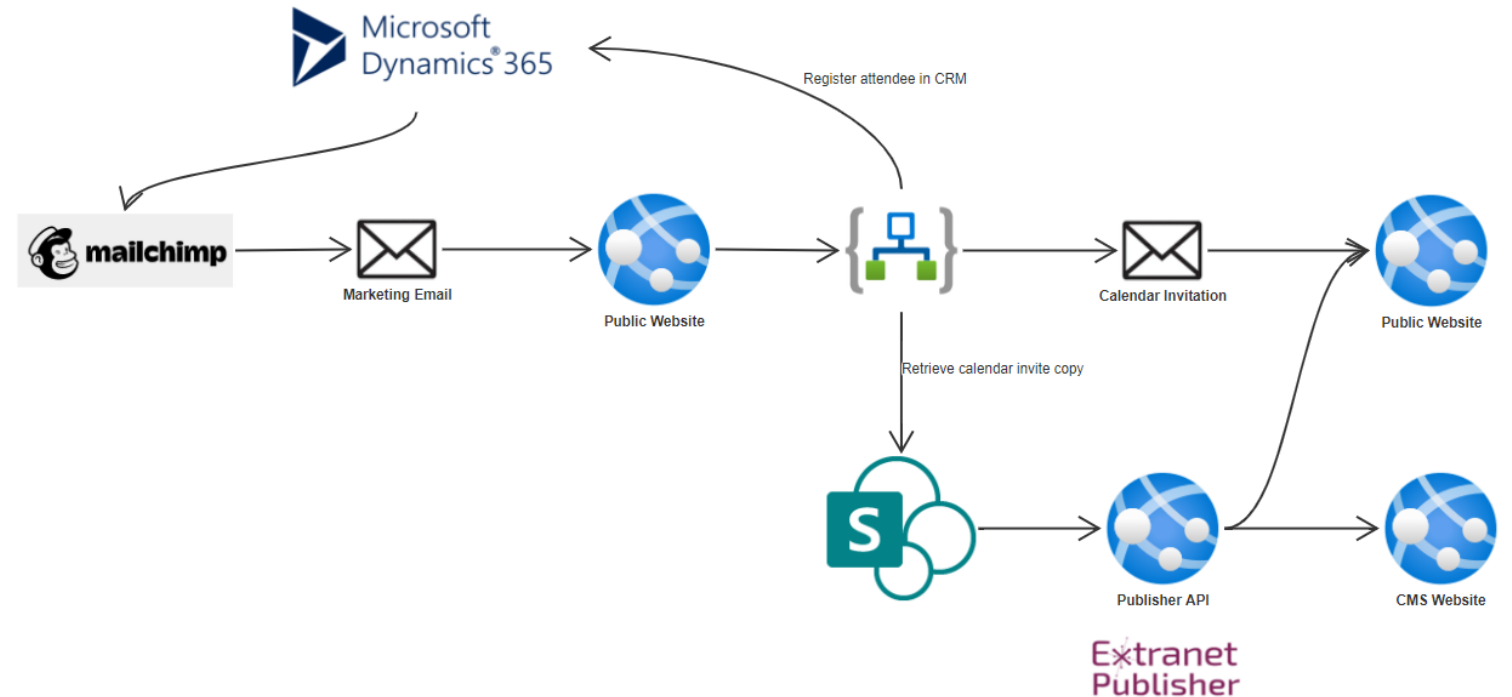
Scenario One

www.extranetusermanager.com

Extranet User Manager Website Project

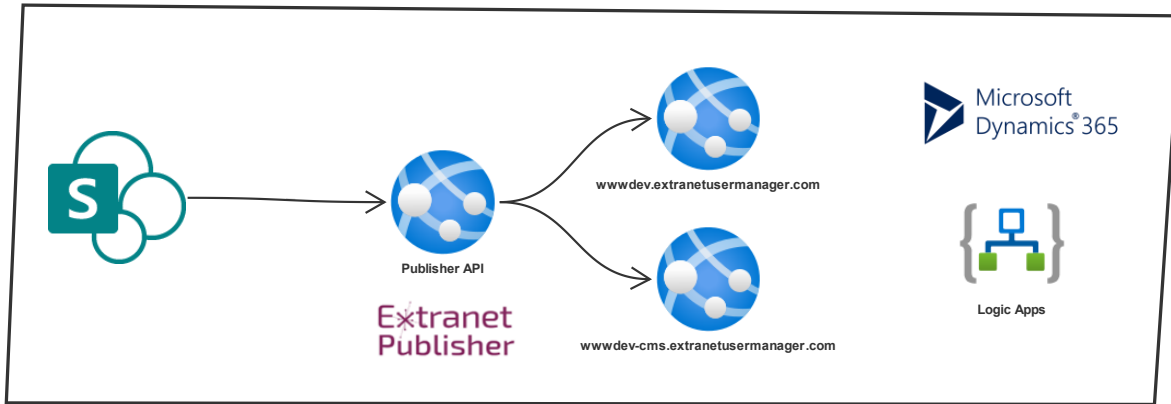
Project Highlights:

- .NET Core 3.1 Website
- SharePoint Online Content Repository
- Extranet Publisher CMS website
- Gated Content and Webinar Custom HTML Forms and underlying Logic App workflows
- Dynamics 365 and MailChimp integrations
- DevOps Project

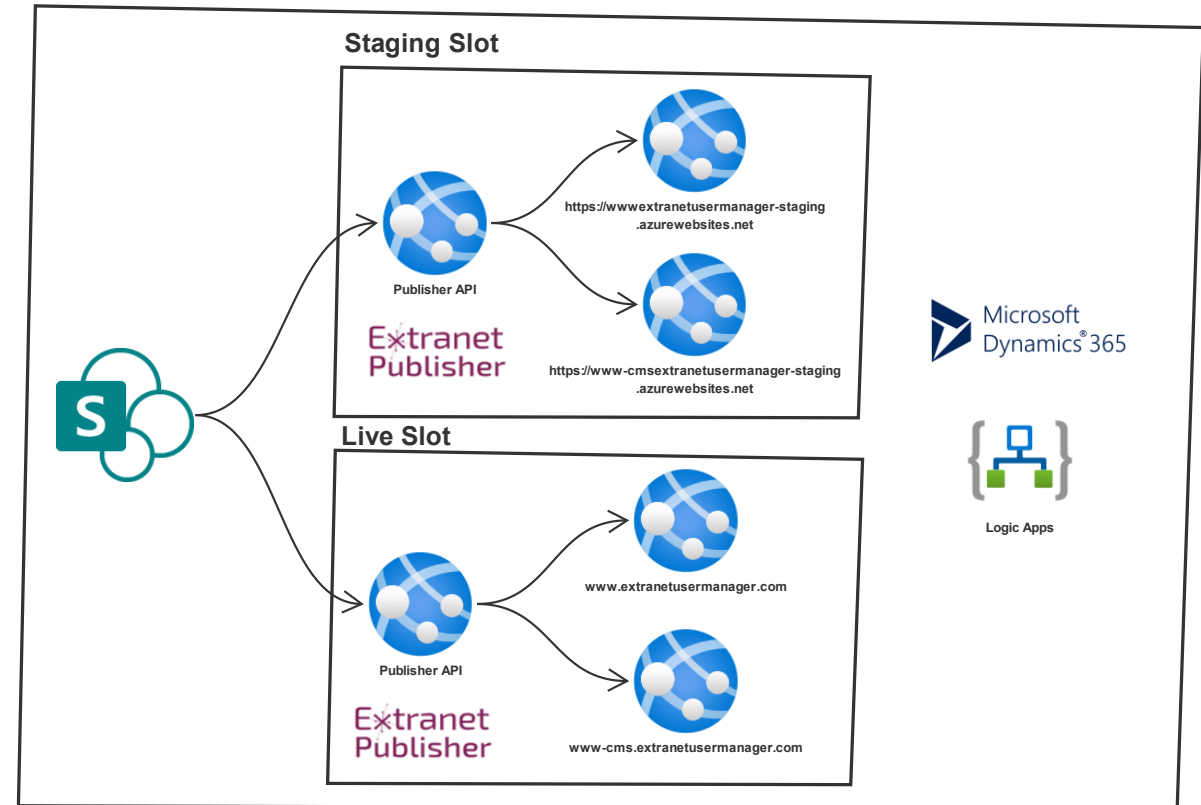


Extranet User Manager Website Environments

Non-Prod



Production



Azure App Service Deployment Slots

The screenshot shows the Azure App Service Deployment Slots interface for the application 'wwwextranetusermanager'. The interface includes a search bar, navigation icons (Save, Discard, Add Slot, Swap, Logs, Refresh), and a left-hand navigation menu with options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Security, Events (preview), Deployment, Quickstart, Deployment slots, and Deployment Center. The main content area is titled 'Deployment Slots' and contains a description: 'Deployment slots are live apps with their own hostnames. App content and configurations elements can be swapped between two deployment slots, including the production slot.' Below this is a table with the following data:

NAME	STATUS	APP SERVICE PLAN	TRAFFIC %
wwwextranetusermanager PRODUCTION	Running	EITProd	100
wwwextranetusermanager-Staging	Running	EITProd	0

Continuous Integration Scenario

1. **Developer works locally in Visual Studio, testing in IIS Express**
2. **Individual elements (JavaScript, CSS) can be published directly to dev integration from within Visual Studio**
3. **Checks changes back into source control**
4. **Run the build pipeline**
 - a. Creates the package from source control
 - b. Deploys to four App Services
 - i. Dev published and CMS
 - ii. Prod staging published and CMS
5. **Perform functional testing in dev integration**
6. **User acceptance testing in Prod staging**
7. **Swap Prod to release it**
8. **Swap back if there are issues**

Azure DevOps Pipelines

The screenshot displays the Azure DevOps Pipelines configuration page. The left sidebar shows the navigation menu with 'Pipelines' selected. The main area is titled 'Pipeline' and shows a list of tasks for the pipeline 'Build EUM Solution'. The tasks listed are:

- Get sources (Run on agent)
- Use NuGet 4.4.1 (NuGet tool installer)
- NuGet restore (NuGet)
- Build solution ***.sln (Visual Studio build)
- Publish symbols path (Index sources and publish symbols)
- Publish Artifact: drop (Publish build artifacts)
- Azure App Service Deploy: wwwdev-cmsextranetuserm... (Azure App Service deploy)
- Restart Web App (Azure App Service manage)
- Azure App Service Deploy: wwwdevextranetusermanager (Azure App Service deploy)

The right-hand pane shows the configuration for the selected pipeline:

- Name ***: www.extranetusermanager.com-Azure Web App for ASP.NET-CI
- Agent pool ***: Azure Pipelines (with a refresh button)
- Agent Specification ***: windows-2019
- Parameters**: Unlink all
- Solution ***: ***.sln

Scenario Two

Teams Provisioning

Home > Products > Teams Provisioning

Teams Provisioning

Avoid Teams sprawl!

Setup for success with Microsoft Teams by creating a simple yet structured process for requesting and automating the creation of Teams.

Microsoft Teams and Office 365 Groups are incredibly powerful productivity tools for modern collaboration! With default self-service turned on, they can also quickly get out of control.

This open source project maintains self-service, but adds a level of control and consistency. Approvals can only be required for certain types of requests, and power users can be auto-approved. Teams are pre-configured with templated tabs, tags, and channels. Templates are further integrated to support OneNote, Planner, and full SharePoint PnP site templates.



Secure Development

TUESDAY 5/4
WEBINAR

Want more info?

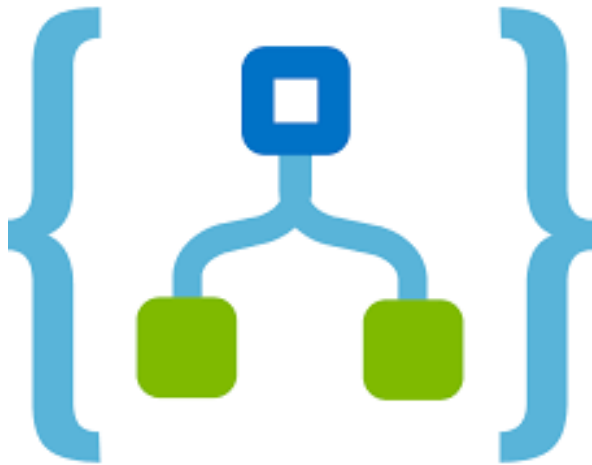
PROVISIONING
WHITEPAPER

<http://eum.co/products/teams-provisioning>

SharePoint Framework Webparts

The screenshot displays a SharePoint Modern Site Landing page. The top navigation bar includes the 'SharePoint' logo, a search box, and utility icons. The main header area shows the site name 'Landing' and a navigation menu with options like 'Home', 'Divisions', 'PnP Templates', 'Site Metadata', 'Teams Channels', 'Site contents', 'Blacklisted Words', 'Channel Templates', 'Planner Templates', 'Site Templates', 'Sites', and 'Edit'. Below the header, there are buttons for '+ New', 'Page details', and 'Analytics'. The main content area is divided into two columns. The left column features a 'Sites' section with 'My sites' and 'All sites' filters, and an alphabetical index. The right column contains a 'Team Request' form with fields for 'Division *', 'Site Template *', 'Title *', 'Purpose', 'Alias *', and 'Site Visibility *', along with a 'Create Team' toggle and an 'Add OneNote Teams Tab' option. A 'Republish' button is visible in the top right corner of the content area.

Azure Logic Apps



- **Platform underneath Power Automate**
- **Same designer**
- **Slightly different set of actions**
 - Simple built-in approval step
- **Visual Studio integration**

	Price per Execution
Actions	\$0.000,032
Standard Connector	\$0.000,160
Enterprise Connector	\$0.001,280

<https://azure.microsoft.com/en-ca/services/logic-apps/>

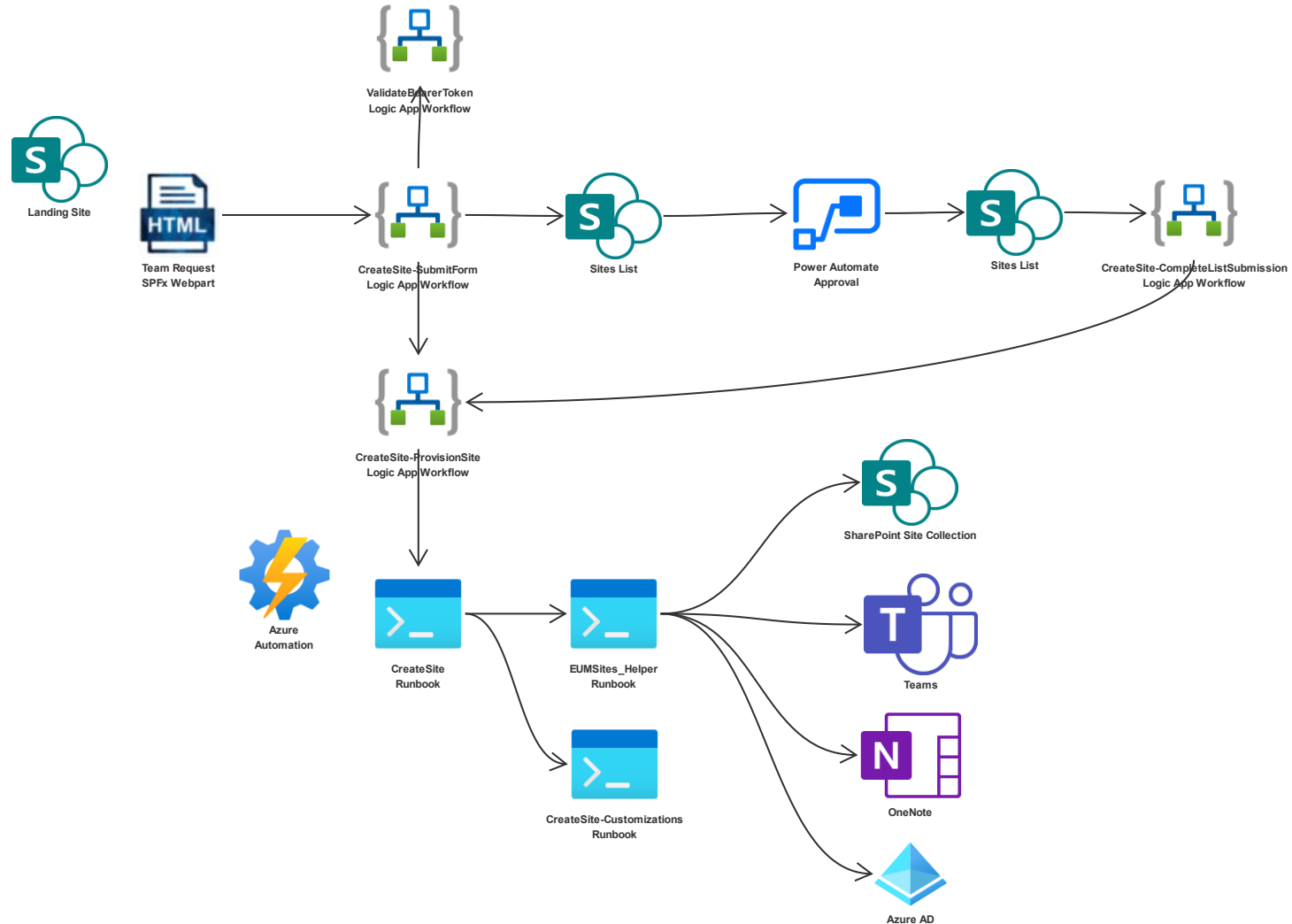
Azure Automation



- **Run PowerShell scripts in the cloud**
- **No management of the VM needed, Azure takes care of that**
- **Very cost effective**
 - 500 minutes of runtime included free per month
 - \$.002/minute USD after that

<https://azure.microsoft.com/en-ca/services/automation>

Logic Apps and Automation Accounts



Teams Provisioning Resource Group

Microsoft Azure

Search resources, services, and docs (G+)

pcarson@envisionit.com
ENVISION IT DEV

Home > **EUMSites**
Resource group

Search (Ctrl+)

+ Add Edit columns Delete resource group Refresh Export to CSV Open query Feedback Open in mobile Assign tags Move Delete Export template

Overview

Activity log

Access control (IAM)

Tags

Events

Settings

Deployments

Security

Policies

Properties

Locks

Cost Management

Cost analysis

Cost alerts (preview)

Budgets

Advisor recommendations

Monitoring

Insights (preview)

Alerts

Metrics

Diagnostic settings

Logs

Essentials

Subscription (change): [Envision IT Dev Pay-As-You-Go](#)

Subscription ID: b906693c-5167-4a56-bbf3-b56142ee7219

Deployments: 10 Succeeded

Location: Canada Central

Tags (change): [Click here to add tags](#)

Filter for any field... Type == all Location == all Add filter

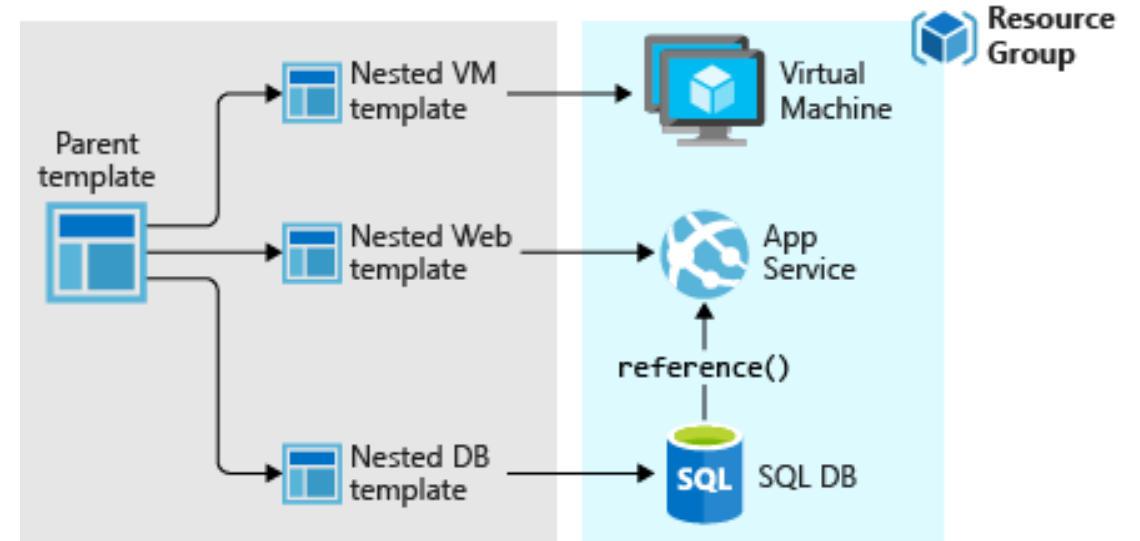
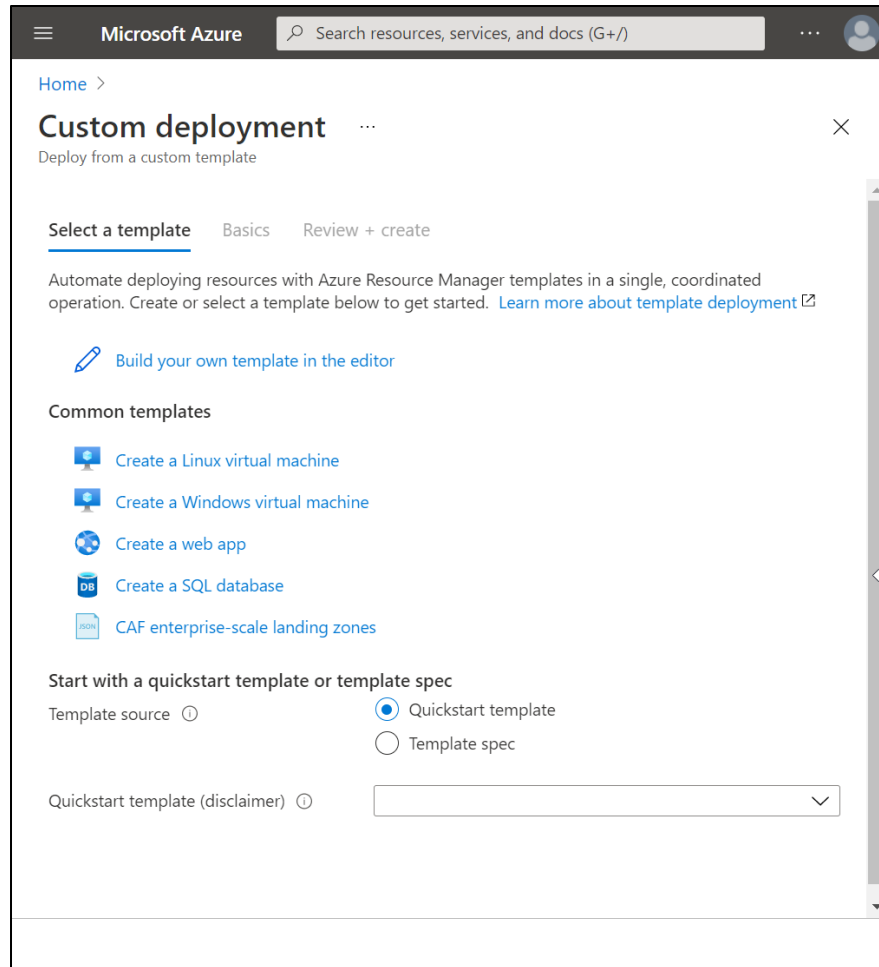
Showing 1 to 13 of 13 records. Show hidden types

No grouping List view

Name	Type	Location
azureautomation	API Connection	Canada Central
office365	API Connection	Canada Central
sharepointonline	API Connection	Canada Central
teams	API Connection	Canada Central
eitdev-siteprovisioning	Automation Account	Canada Central
CreateSite-CompleteListSubmission	Logic app	Canada Central
CreateSite-ProvisionSite	Logic app	Canada Central
CreateSite-SubmitForm	Logic app	Canada Central
ValidateBearerToken	Logic app	Canada Central
CreateSite (eitdev-siteprovisioning/CreateSite)	Runbook	Canada Central
CreateSite-Customizations (eitdev-siteprovisioning/CreateSite-Customizations)	Runbook	Canada Central
EUMSites_Helper (eitdev-siteprovisioning/EUMSites_Helper)	Runbook	Canada Central
UpdateSitesList (eitdev-siteprovisioning/UpdateSitesList)	Runbook	Canada Central

< Previous Page 1 of 1 Next >

ARM Template Deployment



Parameters

Custom deployment ...
Deploy from a custom template

Select a template Basics Review + create

Template
Customized template 16 resources
Edit template Edit parameters

Project details
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

Instance details
Region *

Connections_office365_name *

Connections_office365_name *

Connections_office365_name *

Connections_office365_name *

Workflows_validate_token_name *

Workflows_create_site_submit_form_name *

Workflows_create_site_provision_site_name *

Workflows_create_site_complete_list_submission_name *

Automation
Accounts_eitdev_siteprovisioning_name *

Divisions List GUID

Operator Email

Site Address

Sites List GUID

Automation Account Name

Primary Domain

Resource Group Name

Root URL

Site Collection Administrator

Site Collection Relative URL

Teams SPFx App Id

Review + create < Previous Next: Review + create >



Name *

Type *

Default Value

Actual Value

Name *

Type *

Default Value

Actual Value

Name *

Type *

Default Value

Actual Value

Name *

Type *

Default Value

Actual Value

Name *

Type *

Default Value

Actual Value

Add Parameter

fx eitdev-siteprovisioning | Variables ...

Automation Account

Search (Ctrl+v) + Add a variable Refresh

Shared Resources

- Schedules
- Modules
- Modules gallery
- Python packages
- Credentials
- Connections
- Certificates
- Variables

Name	Type	Value	Last modified
AutomationAccountNa...	String	eitdev-siteprovisioning	4/17/2020, 7:32 PM
PrimaryDomain	String	envisionitdev.onmicrosoft.com	4/11/2021, 2:56 PM
ResourceGroupName	String	EUMSites	4/17/2020, 7:33 PM
RootURL	String	https://envisionitdev.sharepoint.com	4/11/2021, 2:51 PM
SiteCollectionAdminist...	String	pcarson@envisionitdev.onmicrosoft.com	4/17/2020, 7:35 PM
SiteCollectionRelativeU...	String	/sites/landing	4/11/2021, 2:51 PM
TeamsSPFxAppId	String	c62c7bd0-0313-4438-895e-a26ac6a97024	4/17/2020, 7:36 PM



Automation Account
Variables



ARM Template
(JSON)



Logic App
Parameters

Generating the ARM Template

Export from the Azure Portal

- **Export at Resource Group level**
- **Exports all resources into one template**
- **No parameters defined for Logic Apps or Automation Accounts**
- **Manual editing of JSON file to add parameters**
 - Time consuming and error prone
 - Needs to be repeated for each deployment packaging

ARMTemplateGenerator.ps1 PowerShell

- **Targets a Resource Group and exports all resources into one template**
- **Also exports individual templates for source control**
 - Let's you manage and track changes at the resource level
- **Parameter definition file**
 - Defines ARM template parameters to be added
 - Defines mappings to Logic App parameters and Automation variables
- **Repeatable process**

Deploying the ARM Template

Azure Portal

- **Load the template and parameter JSON files into the portal**
- **Adjust the parameters as required**
- **Fix up the Logic Apps and Automation Accounts if not wired into the template parameters**
- **Create the RunAs account for Automation**
- **Set the API permissions and grant consent**
- **Deploy the Runbook scripts**

ARMTemplateDeployer.ps1 PowerShell

- **Deploys the template and parameters into the target Resource Group**
- **Parameters are already properly connected**
- **Create the RunAs account**
 - Certificate
 - Azure AD registration of service principal
 - Provisioning of account
 - Set the API permissions
- **Deploys the Runbook scripts**
- **Admin needs to grant consent for API permissions**

Continuous Integration Scenario

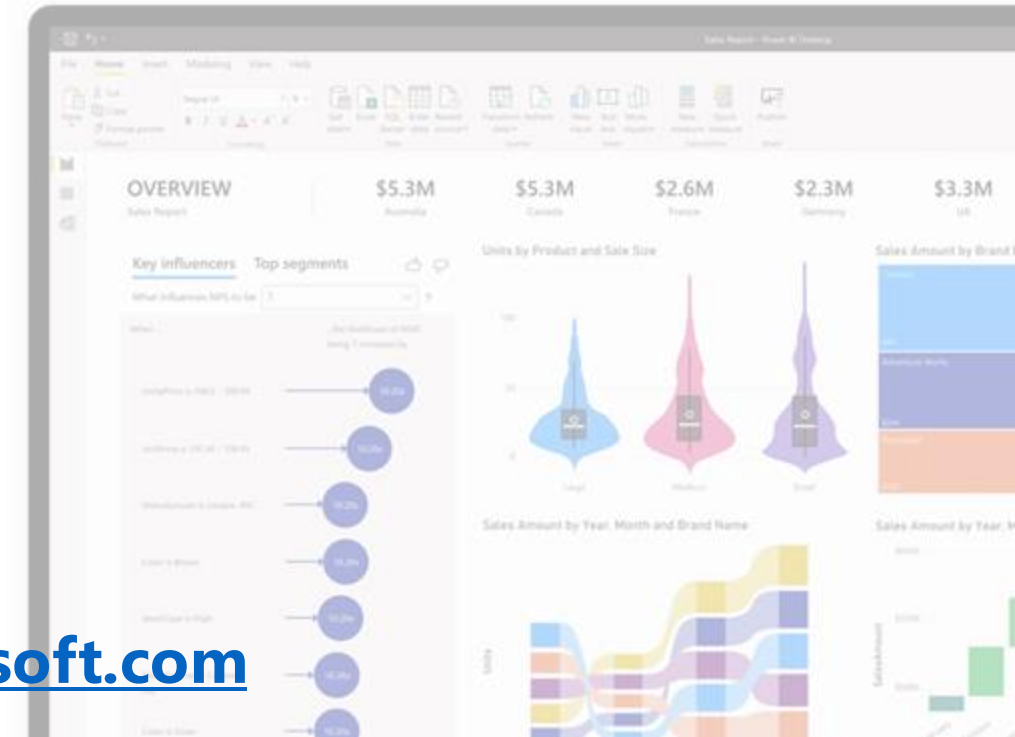
1. **Developer works in Azure portal on Logic Apps, in local PowerShell ISE for Runbooks**
2. **PowerShell scripts can be manually pasted into Dev Integration Runbooks for testing**
3. **Check local PowerShell scripts into source control**
4. **Run ARMTemplateGenerator.ps1 to generate the combined and individual templates**
5. **Check these changes into source control**
6. **Run the build pipeline**
 - a. Creates the package from source control
 - b. Deploys with ARMTemplateDeployer.ps1 to dev integration
7. **Run the release pipeline**
 - a. Deploys with ARMTemplateDeployer.ps1 to the appropriate environment

Scenario Three

Power BI Deployment

Power BI

- **Connect data in Excel, corporate data sources, and external services**
- **Design your reports in Excel or Power BI Designer**
- **Publish them to the web**



<https://powerbi.microsoft.com>

Manual Power BI Deployment Steps

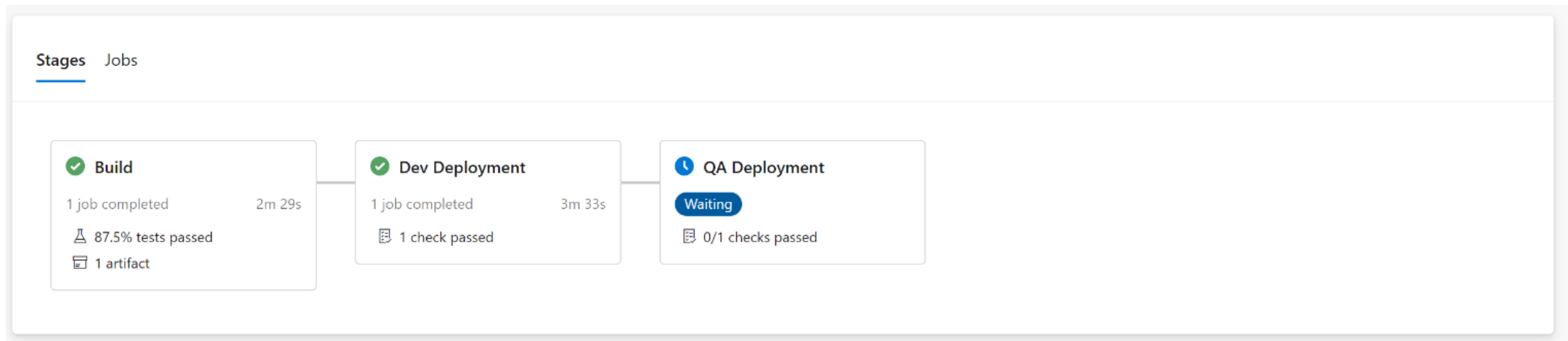
- **Always define parameters in Power BI Desktop for a report**
 - Makes it simple to map to new data sources for a different environment
- **PBIX file can be deployed through Power BI Desktop to a Power BI Online Workspace**
 - Data stored in PBIX is deployed
 - Parameters may need to be reset to reflect the environment
 - Credentials will need to be re-entered
 - Refresh should be triggered
 - Refresh schedule should be defined
- **Reports can also be saved as a PBIT**
 - Report and data model, but not data
 - Prompts for parameters when creating a new report
 - Can't be directly imported into Power BI Online

Automation Goals

- **PBIX or PBIT is checked into source control**
- **Pipeline steps**
 - Creates the package from source control
 - Deploys to the Power BI Service
 - Updates the parameters for the environment deployed to
 - Updates the credentials – this is a challenge
 - Refreshes the data

Azure DevOps YAML Pipelines – Power BI Deployments

- **YAML Pipelines**
 - New design pattern for pipelines
 - Store your pipeline as code
 - Requires Git as the source control repository (not Teams Foundation Version Control)
- **Multi-stage YAML pipelines provide the ability to scale this to CI, CD, or a combination of the two**
- **PBIX and deployment PowerShell are checked into the same repo**
 - Pipeline references this



Deployment of Power BI dashboards

The image displays a Power BI dashboard and an Azure Pipelines pipeline configuration. The dashboard, titled 'Marketing Dashboard', shows data updated on 5/3/21. It features a bar chart 'Attended and Registered by Name' and three pie charts: 'Event Registrations by PeopleCreatedToRegistered', 'Event Registrations by customertypecode', and 'Event Registrations by Attended'. The pipeline configuration, titled 'Demo', shows the deployment of Power BI artifacts to a container.

```

15 | ..... PathtoPublish: '$(Build.ArtifactStagingDirectory)/PowerBI'
16 | ..... ArtifactName: 'PowerBI'
17 | ..... publishLocation: 'Container'
18 |
19 | ### RELEASE - Deploy ###
20 | - stage: DEPLOY
21 |   variables:
22 |     - group: Marketing_Dashboard-PowerBI_Demo # Variable Group used for PowerBI Deployments
23 |   jobs:
24 |     - deployment: DeployWeb
25 |       displayName: Deploy Report
26 |       pool:
27 |         vmImage: 'vs2017-win2016'
28 |         environment: 'Marketing Dashboard - PowerBI Demo'
29 |         strategy:
30 |           runOnce:
31 |             deploy:
32 |               steps:
33 |                 Settings
34 |                 - task: DownloadPipelineArtifact@2
35 |                   displayName: 'Download artefacts'
36 |                   inputs:
37 |                     artifact: 'PowerBI'
38 |                     path: '$(Build.SourcesDirectory)\bin'
39 |                 Settings
40 |                 - task: PowerShell@2
41 |                   displayName: 'Deploying Reports'
42 |                   inputs:
43 |                     filePath: '$(System.DefaultWorkingDirectory)\bin\Scripts\Deploy-PowerBIReports.ps1'
44 |                     arguments: '-PowerBIDirectory "$(Build.SourcesDirectory)\bin" -BuildAgentLogin "$(BuildAgent.Name)" -BuildAgentToken $(BuildAgent.AccessToken)'

```

Attended and Registered by Name

Name	Attended	Registered
Microsoft 365 SDLC Best Practices (Part 2 of 2)	~95	~5

Event Registrations by PeopleCreatedToRegistered

Category	Count	Percentage
> 14 Days	25	29.41%
0 - 1 Days	55	64.71%
2 - 14 Days	5	5.88%

Event Registrations by customertypecode

Category	Count	Percentage
(Blank)	71	83.53%
3	13	15.29%
8	1	1.18%

Event Registrations by Attended

Category	Count	Percentage
0	85	100%

Scenario Four

Automated Testing

Automation Regression Testing with Selenium



- Selenium is an open source browser automation platform for automated testing
- Supports Chrome, Edge, Firefox, Safari, Internet Explorer, ...
- Create robust, browser-based regression automation tests
- Scale and distribute scripts across many environments

<https://www.selenium.dev>

The image displays a Visual Studio environment with a test run completed. The Test Explorer shows a tree view of tests under 'EUM V5 Test (31)', with a 'Group Summary' indicating 31 tests passed in 10.6 minutes. The code editor shows a C# test script using Selenium WebDriver to interact with the EUM Admin interface.

The browser window shows the 'Add a group' page in the EUM Admin application. The page includes a navigation menu on the left and a registration form on the right. A green notification banner at the top of the page states 'Group has been added'. The registration form fields are as follows:

- Available for Registration:
- Registration URL:
- Site URL:
- SharePoint Group:
- Logo: No file chosen
- Publicly Available:
- Summary:

Additional Webinars



Integrating Multiple Planner Boards into a Power BI Dashboard
May 20, 2021
12 pm – 1 pm EST



Managing Complex Projects with Microsoft 365
June 8, 2021
12 pm – 1 pm EST

Register for all upcoming events at <http://eum.co/resources/events>

Thank you!

Questions?

