



Deployments in the post **helix** / cloud world



Hello!

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Why does Helix matter?



Solution 'Cms' (15 projects)

- .nuget
- .tds
- Installer
- Libs
- packages
- Services
 - Community
 - ContentProvider
- Sitecore
 - SitecoreExtensions
- Tests
 - Services
 - Sitecore
 - Core.UnitTests
 - Web.UnitTests
 - Local.runsettings
- Cms.Core
- Cms.Tds.Core
- **Cms.Tds.Master**
 - Cms.Tds.Master.Content
- Cms.Tds.Master.Legacy
- Cms.Tds.Master.Test
- **Cms.Web**

Solution 'Confused.CMS' (48 projects)

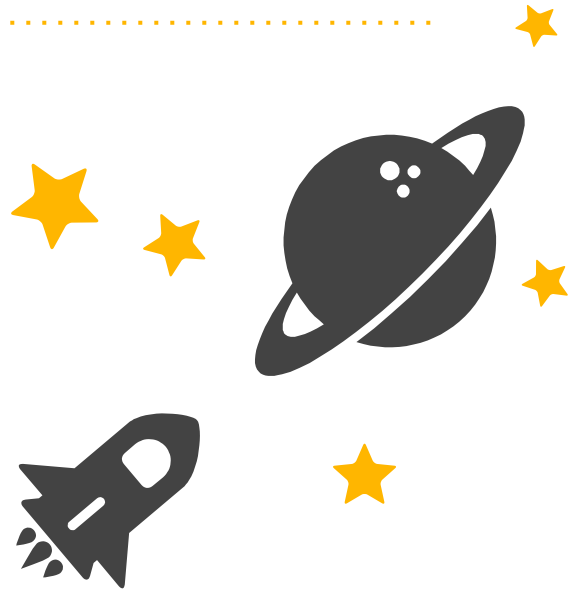
- Configuration
- Feature
- Foundation
 - Authentication
 - Base
 - Editing
 - GlassModels
 - Identity
 - Logging
 - Search
 - Services
 - Tests
- Project
 - Confused
 - Confused.CMS.UI.Automation.Tests
 - Confused.Website
 - Confused.Website.Core
 - Confused.Website.Master
 - **Confused.Website.Tests**



Generally, if tasks that are repeated frequently become taxing, they will be circumvented – and this will lead to inconsistencies in the processes and ultimately inconsistencies in quality.

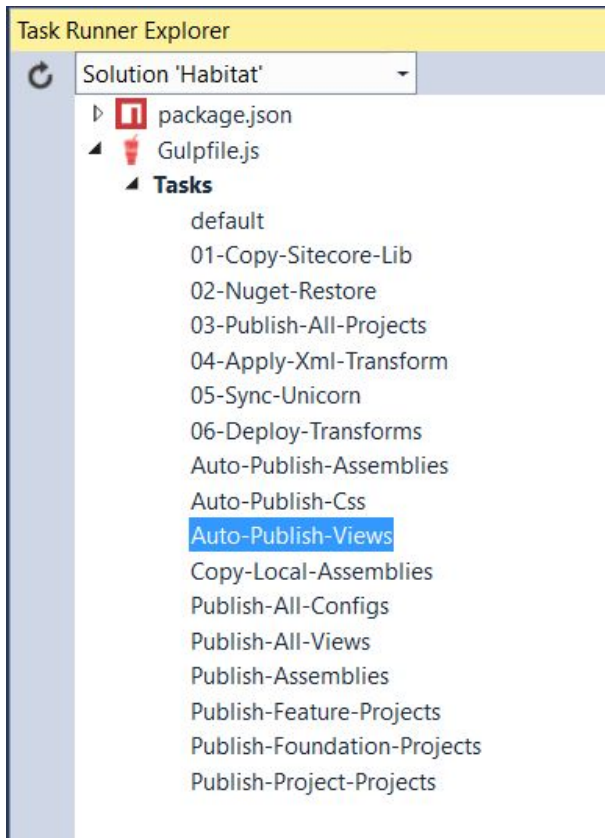
Source - <https://helix.sitecore.net/devops/development/local-deployment.html>

One click deployments



Habitat

- Gulp Tasks
- Gulp-msbuild





Local Deployment

- Web One Click Publish
- Msbuild
- Local Publish Profile



Publish Profiles

```
<Project ToolsVersion="4.0" xmlns="http://schemas.microsoft.com/developer/msbuild/2003">
  <Import Project="..\..\..\..\..\publishsettings.targets" />
  <PropertyGroup>
    <WebPublishMethod>FileSystem</WebPublishMethod>
  </PropertyGroup>
  <PropertyGroup>
    <ExcludeFilesFromDeployment>
      $(ProjectDir)\App_Config\Include\Project\Confused.Website.Integration Test.config;
      $(ProjectDir)\App_Config\Include\Project\Confused.Website.Load Test.config;
      $(ProjectDir)\App_Config\Include\Project\Confused.Website.LIVE Dublin Deploy.config;
      $(ProjectDir)\App_Config\Include\Project\Confused.Website.LIVE Amsterdam Deploy.config;
    </ExcludeFilesFromDeployment>
  </PropertyGroup>
</Project>
```



Item serialization

TDS Helix Validators

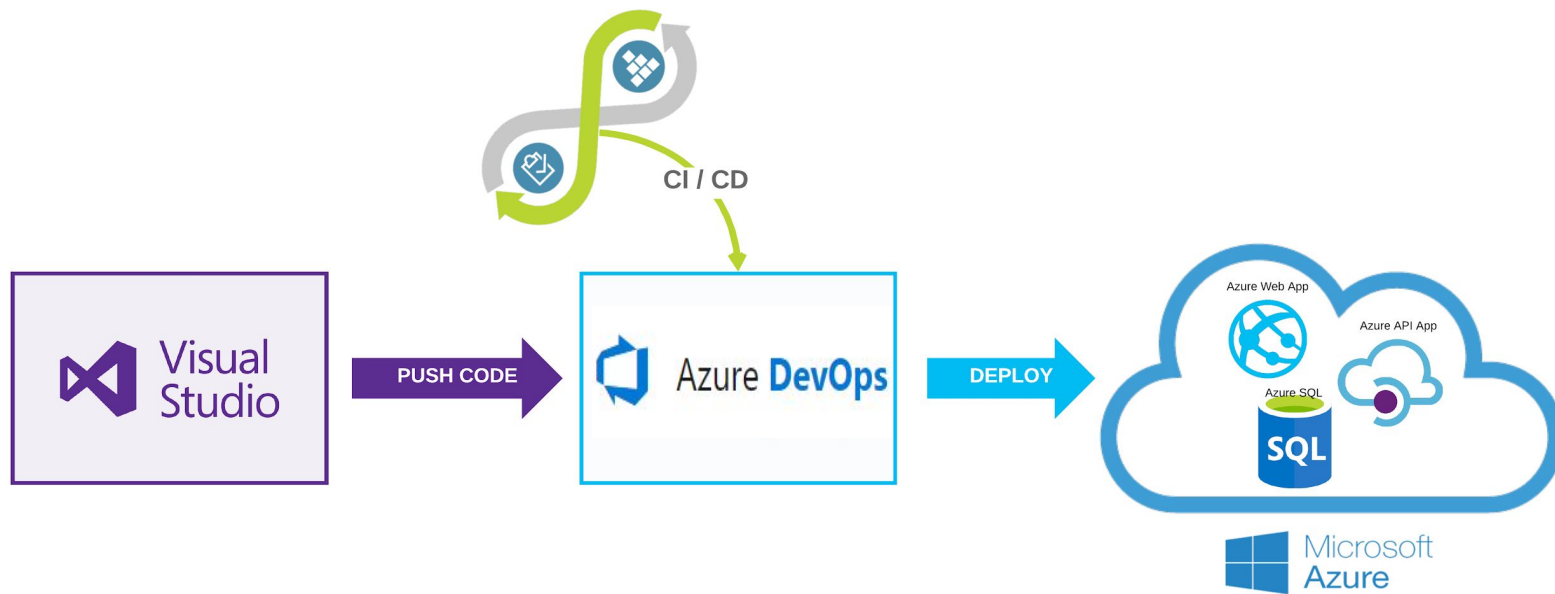
TDS creates update package

- | | | |
|-------------------------------------|---------|---|
| <input checked="" type="checkbox"/> | TDSA015 | Helix Features don't reference other Features |
| <input type="checkbox"/> | TDSA016 | Helix Projects don't reference other Projects |
| <input type="checkbox"/> | TDSA017 | Helix Foundations don't reference Features |
| <input checked="" type="checkbox"/> | TDSA018 | Helix Features don't reference Projects |
| <input type="checkbox"/> | TDSA019 | Helix Foundations don't reference Projects |



It is discouraged to do partial deploys of modules or features from development to production. Deployments should happen on an application-level scale, which fits with the availability requirements of the business.

Source - <https://helix.sitecore.net/devops/deployment/strategy.html>



Build Pipeline



NuGet restore `***.sln`
NuGet



Build solution `***.sln`
Visual Studio Build



Run Test Assemblies
Visual Studio Test



Check Code Coverage
Build Quality Checks



Check Build Warnings
Build Quality Checks



Copy Files to: `$(Build.ArtifactStagingDirectory)\webapp...`
Copy Files



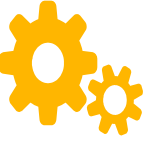
Copy Files to: `$(Build.ArtifactStagingDirectory)\scripts`
Copy Files



Publish Artifact: webapp
Publish Build Artifacts



Publish Artifact: scripts
Publish Build Artifacts



Build Step

Solution * ⓘ

***.sln

Visual Studio Version ⓘ

Latest

MSBuild Arguments ⓘ



```
/p:PublishProfile=Release /p:DeployOnBuild=True /p:DeployDefaultTarget=WebPublish /p:WebPublishMethod=FileSystem  
/p:publishUrl=$(Build.ArtifactStagingDirectory)\webapp
```



Local vs Release

```
<Project ToolsVersion="4.0" xmlns="http://schemas.microsoft.com/developer/msbuild/2003">  
  <Import Project="..\..\..\..\..\publishsettings.targets" />  
  <PropertyGroup>  
    <WebPublishMethod>FileSystem</WebPublishMethod>  
    <LastUsedBuildConfiguration>Release</LastUsedBuildConfiguration>  
    <LastUsedPlatform>Any CPU</LastUsedPlatform>  
    <SiteUrlToLaunchAfterPublish />  
    <LaunchSiteAfterPublish>True</LaunchSiteAfterPublish>  
    <ExcludeApp_Data>False</ExcludeApp_Data>  
    <DeleteExistingFiles>False</DeleteExistingFiles>  
  </PropertyGroup>  
</Project>
```



Copy Files

Source Folder ⓘ

`$(TdsProjectDirectory)\bin\Package_$(BuildConfiguration)`

Contents * ⓘ

`**`

Target Folder * ⓘ

`$(Build.ArtifactStagingDirectory)\webapp\App_Data\SitecorePackageDeployer`



Code Quality

- 80% code coverage
- 0.5% drop in code coverage fails a build
- 600 Unit Tests
- 60 Automated UI Tests
- Warnings as errors

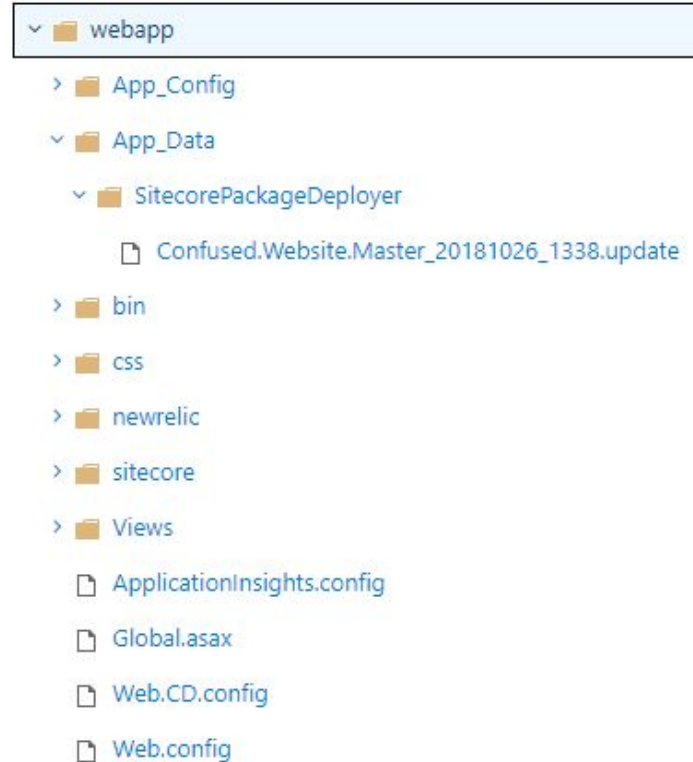


Build Artifacts

Web App

Update Package






Clean up batch file





Build Pipeline

All Environments are scaled
CMS Only mode

-  Azure App Service Deploy: cms-ft-cm
Azure App Service Deploy
-  Apply CD Role transforms
XDT Transform
-  Azure App Service Deploy: cms-ft-cd
Azure App Service Deploy
-  Warm up Site
PowerShell
-  Run UI Test Assemblies
Visual Studio Test



Config Files

- Different Sitecore config files for on prem and cloud
- Web.config different for CD and CM servers

Release Stages

The screenshot displays a release management interface with two main sections: 'Release' and 'Stages'.

Release Section:

- Manually triggered**
- by Wesley Lomax
- 10/12/2018, 9:06 AM
- Artifacts**
- WEBAPP
- WEBAPP.Cms.Trunk_181011.1
- \$/Confused

Stages Section:

- Integration Test**
✓ Succeeded
on 10/12/2018, 9:11 AM
- Load Test**
⌚ Not deployed
- LIVE Dublin Deploy**
✓ Succeeded
on 10/16/2018, 3:24 PM
- LIVE Dublin Swap Slot**
✓ Succeeded
on 10/17/2018, 8:30 AM





Release Pipeline



Slack Notification: #deploy-it

Slack Notification



Azure App Service Deploy: cms-it-cm

Azure App Service Deploy



Apply transforms web.cd.config => web.config

XDT Transform



Azure App Service Deploy: cms-it-cd

Azure App Service Deploy



Swap Slots: cms-it-cd

Azure App Service Manage



App Service Deploy

Package or folder * ⓘ

`$(System.DefaultWorkingDirectory)/WEBAPP/webapp`

File Transforms & Variable Substitution Options ^ -

Generate Web.config ⓘ

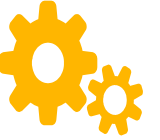
XML transformation ⓘ

XML variable substitution ⓘ



Environment Transforms

- ▲ App_Config
 - ▶ Confused
 - ▶ Include
 - ▶ AppSettings.config
 - ▶ AppSettings.Integration Test.config
 - ▶ AppSettings.LIVE Amsterdam Deploy.config
 - ▶ AppSettings.LIVE Dublin Deploy.config
 - ▶ AppSettings.Load Test.config



Rule based config

- Introduced with Sitecore 9
- Simplifies config
- Change or remove config based on roles



Sitecore package deployer

- Open source project from Hedgehog
- Sitecore agent checks directory for new update package
- Update package goes out with our release



Post Deploy Actions

General
Code Generation
Multi-project Properties
Environment Validation
Build
Update Package
Deploy
NuGet Package

Configuration: Platform:

Please select the operations you wish TDS to perform after the deployment process completes. These operations will be performed at the end of update package deployments and web service deployments.

Name	Order	Description
<input checked="" type="checkbox"/> Trigger Save Event	0	Triggers a save event for Sitecore items
<input type="checkbox"/> Publish After Deploy		Publishes deployed items after deployment. Publishing targets are specified in the Paramet...
<input checked="" type="checkbox"/> Update Link Database	1	Updates the link database for deployed items.
<input checked="" type="checkbox"/> PublishDeployedItemsWithPublishingQueue	2	Confused.Foundation.Base.TDS.PublishDeployedItemsWithPublishingQueue, Confused.F...

Performance Issues



5000+ Publish jobs created
Over 2 hours installing the
package

Batch Items and add to the
publish queue

Credit - MVP John Rappel

<https://www.geekhive.com/buzz/post/2017/10/tds-post-deploy-action-publish-items-via-publishing-queue/>

Infrastructure or code?





Where are we?

- Deployment takes 5 minutes
- 15 minutes for update package
- Separate task for slot swap in production

Pool: Confused Test Deploy · Agent: TestDeploy.02.1		... 5m 30s
✓ Initialize Job · succeeded		<1s
✓ Download artifact - WEBAPP - webapp · succeeded		9s
✓ Download artifact - WEBAPP - scripts · succeeded		1s
✓ Slack Notification: #deploy-It · succeeded		1s
✓ Azure App Service Deploy: cms-lt-cm · succeeded		45s
✓ Apply transforms web.cd.config => web.config · succeeded		1s
✓ Azure App Service Deploy: cms-lt-cd · succeeded		2m 0s
✓ Swap Slots: cms-lt-cd · succeeded		2m 29s



Next Steps..

- Blue / Green deployment
- Slot Swap and secondary recycles
- Pre warm up the slot
- Edge Cache



Thanks!

Any questions?

You can find me at @WesleyLomax & wesleylomax.co.uk