



Release Pipeline - the PPoSh Modules Story



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Agenda

- Live in Chaos
- The Idea – How and Benefits
- Internals – Code, Build and Deploy
- Git/Hub + Plaster + CI
- Current State
- Our Win-Win

Live in Chaos

Multiple „working copies”

- on different servers
- in different folders
- for every admin

Multiple scripts

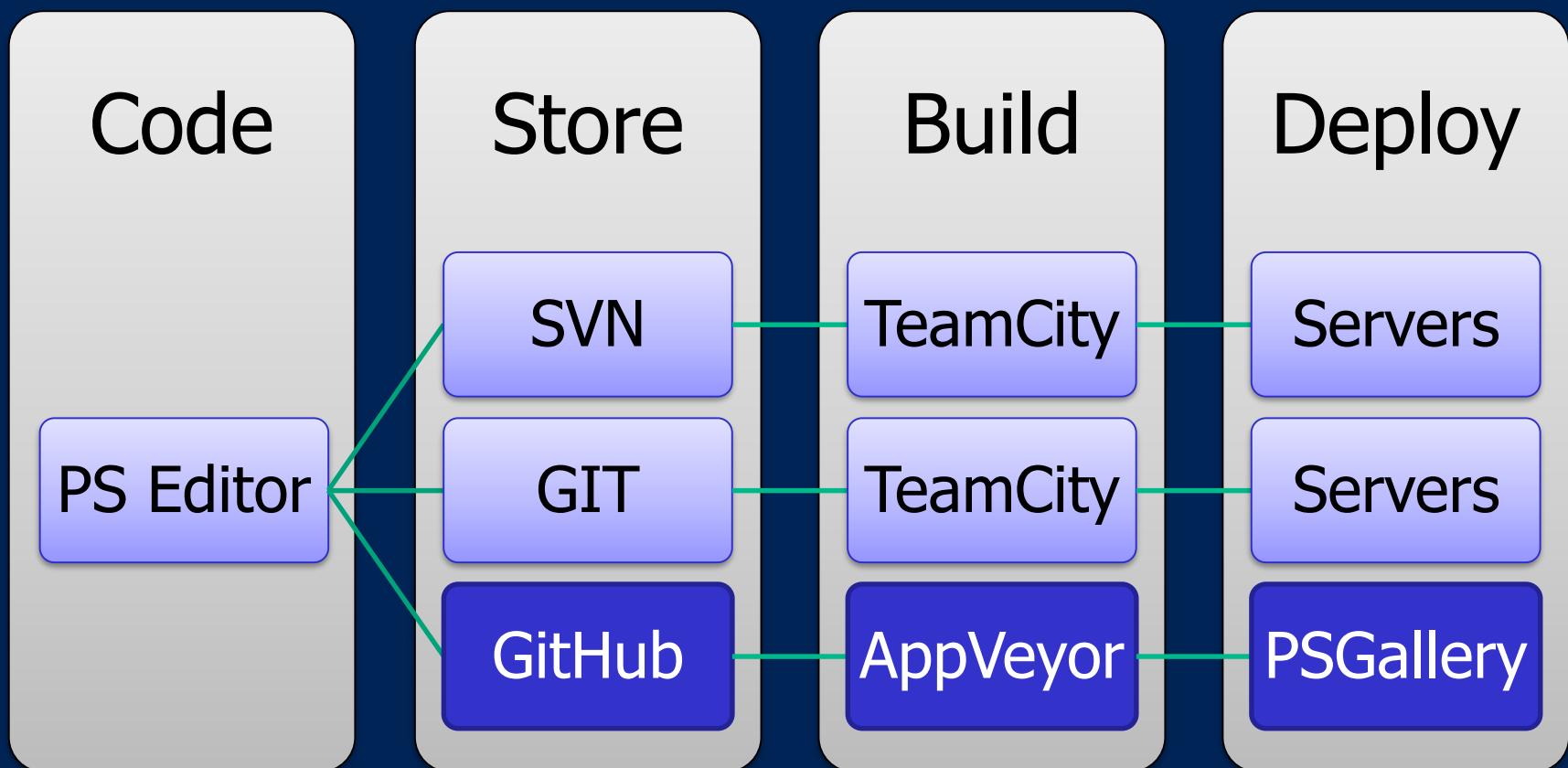
- doing the same
- customized, not generalized

No „working standards”

- Everyone doing the same thing in a different way



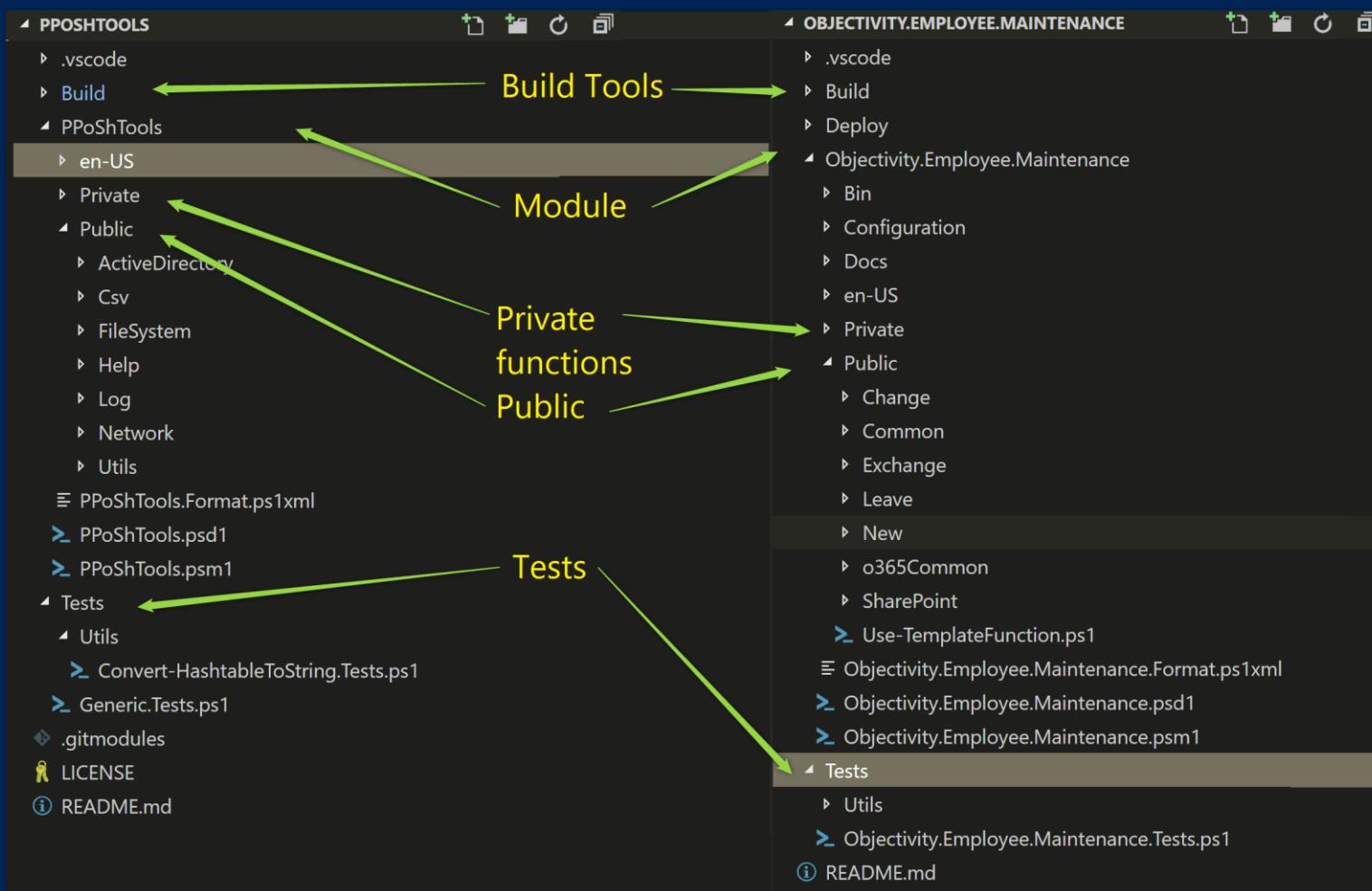
The Idea -- How



The Idea -- Benefits

- PS Script Analyzer rules applied and enforced
- „Working copy“ deployed to IT management servers
- Common build tools, common standards for every module
- Pester test ready
- Common Utilities

Internals -- Code -- Structure



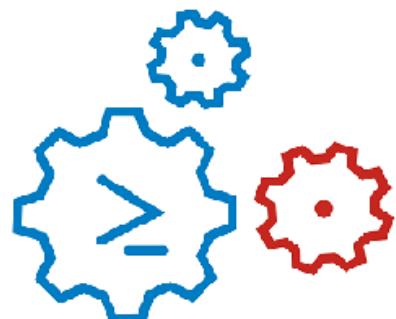
Internals -- Code -- Rules

```
# differences from PPoshTools:  
# PSPlaceOpenBrace Enable = $false  
# PSPlaceCloseBrace Enable = $false  
@{  
    Severity = @('Error', 'Warning', 'Information')  
    IncludeRules = @(  
        'PSAvoidDefaultValueForMandatoryParameter',  
        'PSAvoidDefaultValueSwitchParameter',  
        'PSAvoidGlobalAliases',  
        'PSAvoidGlobalFunctions',  
        'PSAvoidGlobalVars',  
        'PSAvoidUsingPlainTextForPassword',  
        'PSAvoidTrapStatement',  
        'PSAvoidUsingWriteObject',  
        'PSUseOutputTypeCorrectly',  
        'PSUsePSCredentialType',  
        'PSUseShouldProcessForStateChangingFunctions',  
        'PSUseSingularNouns',  
        'PSUseSupportsShouldProcess',  
        'PSUseVerboseMessageInDSCResource'  
    )  
  
    Rules = @{  
        PSPlaceCloseBrace = @{  
            Enable = $false  
            NoEmptyLineBefore = $true  
            IgnoreOneLineBlock = $true  
            NewLineAfter = $true  
        }  
    }  
}
```

Git/Hub + Plaster = PowerShell Module



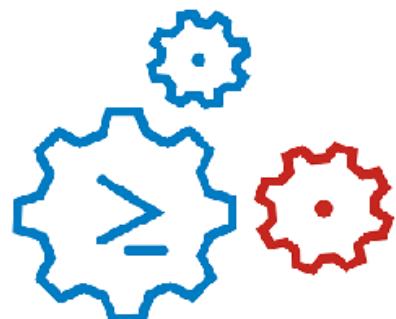
Create GitHub repo



PPOS

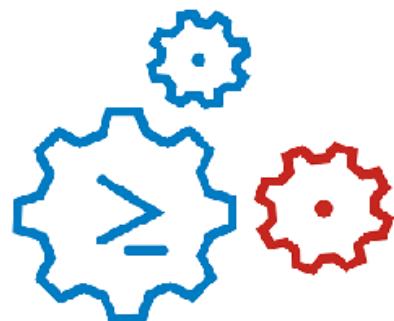
http://bit.ly/PSConfEU2018_MCVideos

Plaster - Create Module PPoSh



PPoSh

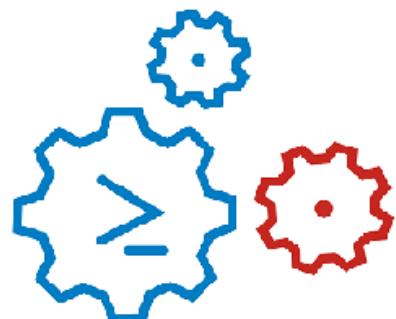
Create Git repo



PPOSH

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Plaster - Create Module Objectivity



PPOSH

Internals -- Build -- Build.ps1

Configure
NuGet

Configure Host
PSGallery Repository

Install-
PSDepend

Install Build
Dependencies

Install Project
Dependencies

Dependencies
PSDepend

Set Build
Environment

Build
Helpers

Invoke-PSake

Internals -- Build -- PSake.ps1

Init

- Initialize Environment Variables with BuildHelpers

Test

- Run Pester Tests
- Upload results to Appveyor / Output Folder

Build

- Update Module Version
- Update Functions to Export

Static Code Analysis

- Run PSScript Analyzer
- Update AppveyorTest / Output Folder

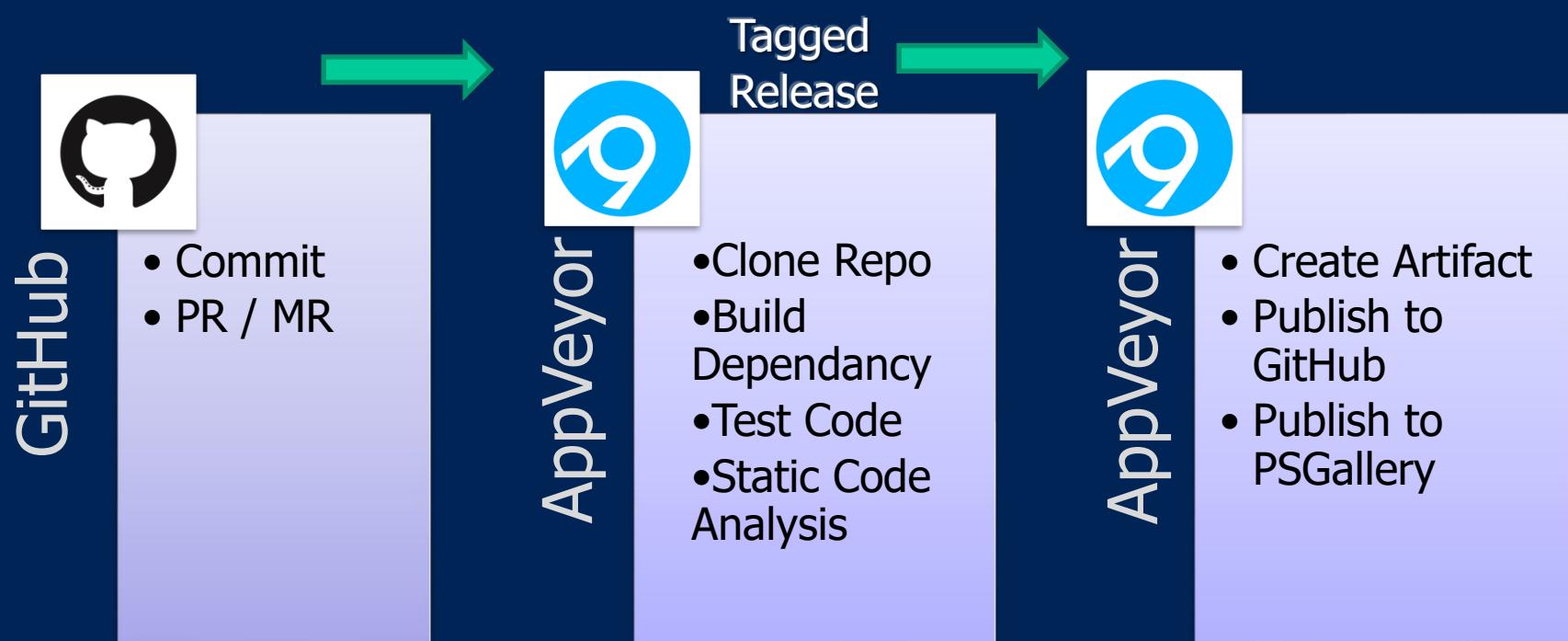
Regenerate Wiki

- New-MarkdownDoc

Create ZIP for TC

- Create ZIP deployment package if running on TC

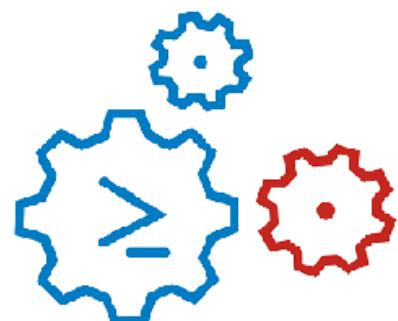
Internals -- Build & Deploy -- AppVeyor



Internals -- Build & Deploy -- Appveyor



Create Appveyor Project

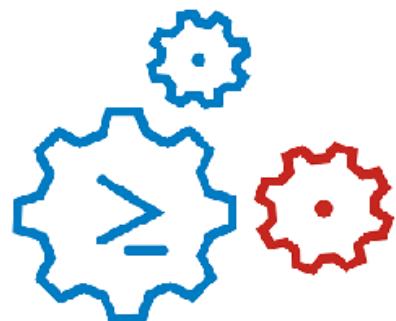


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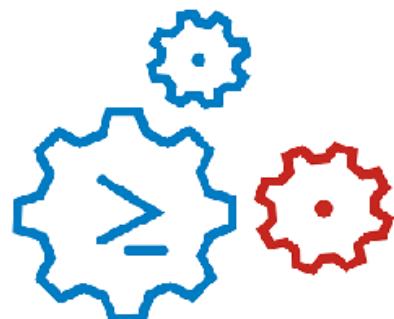
Publish to PSGallery



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Create Wiki

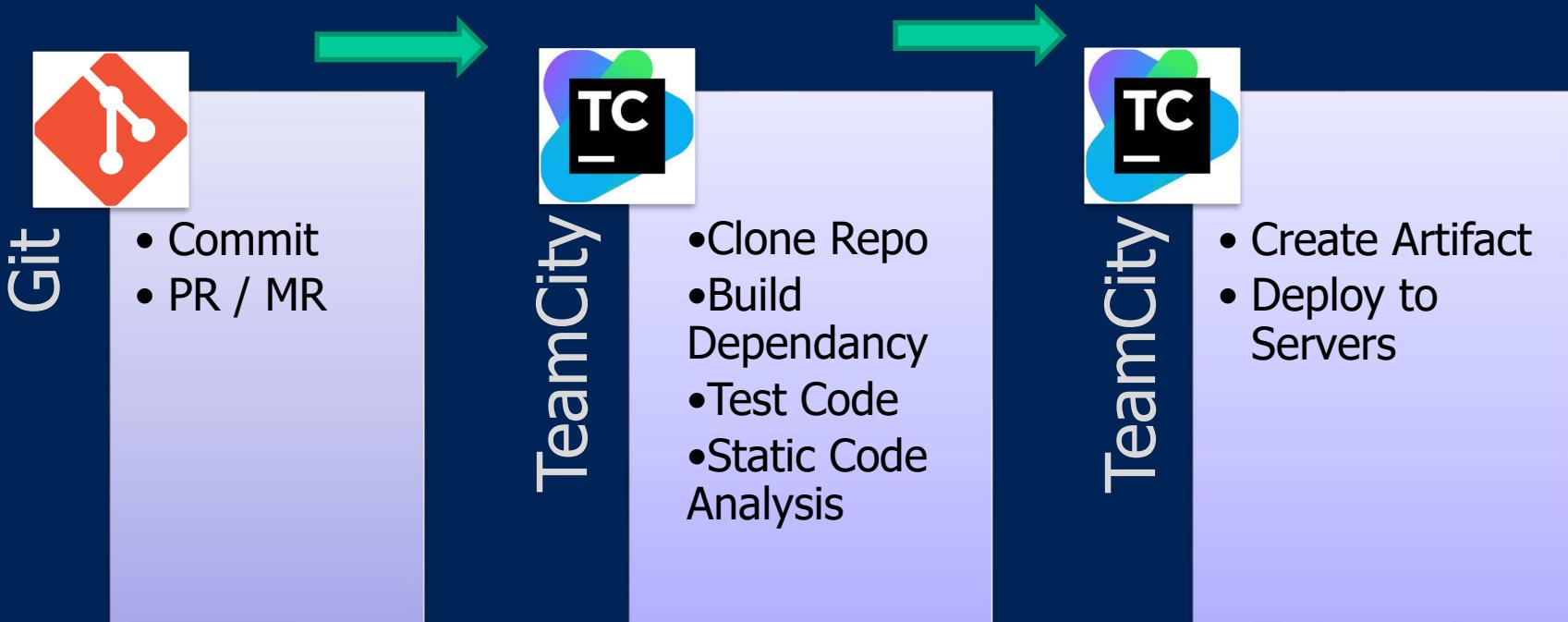


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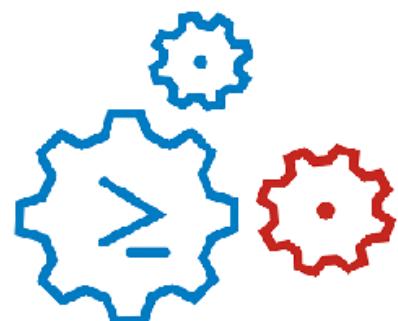
Internals -- Build & Deploy -- TeamCity



Internals -- Build & Deploy -- TeamCity



Create TeamCity Project

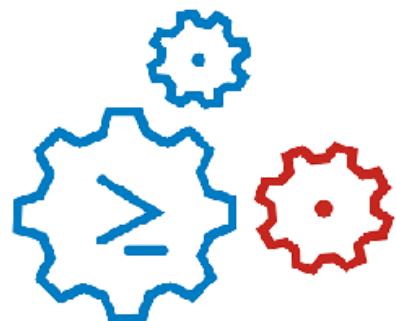


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Deploy to servers

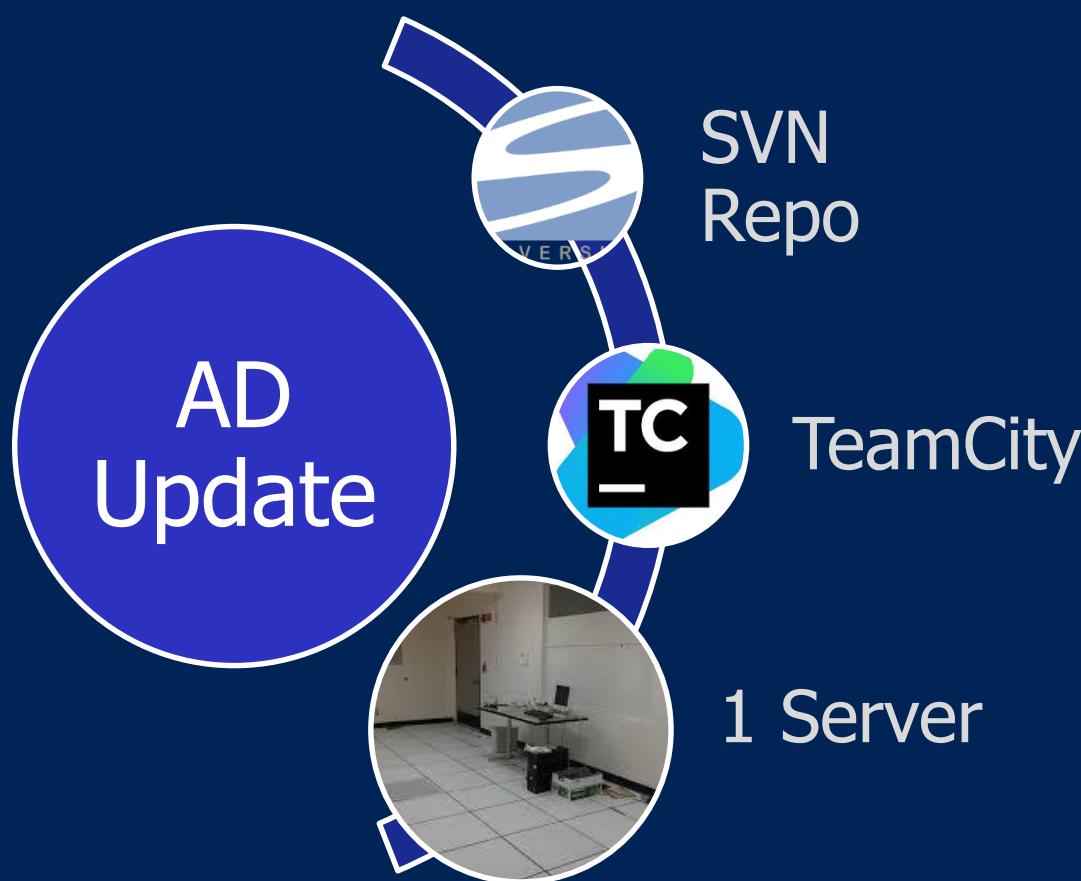


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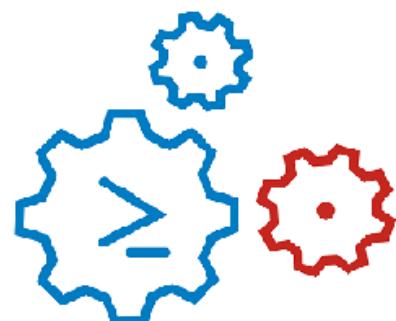
Simple beginnings



Simple beginnings -- Demo



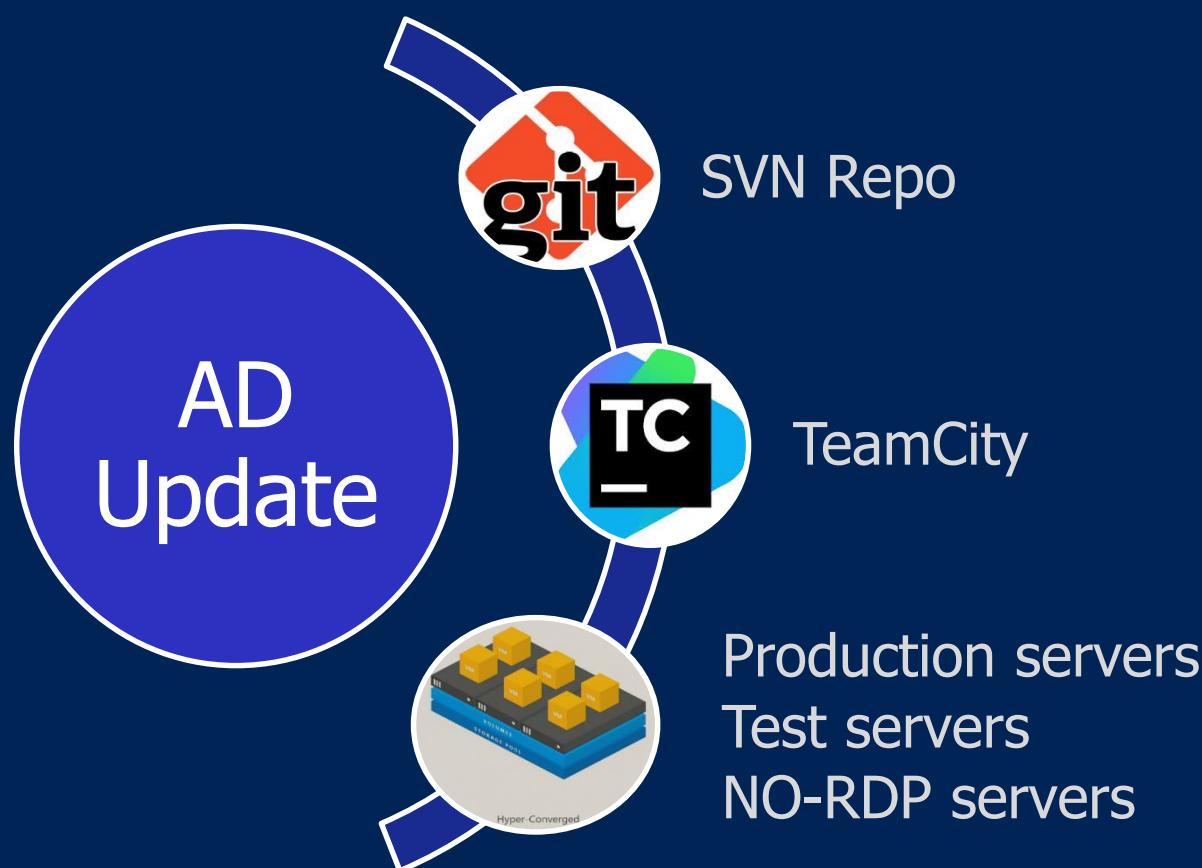
Simple File Watcher



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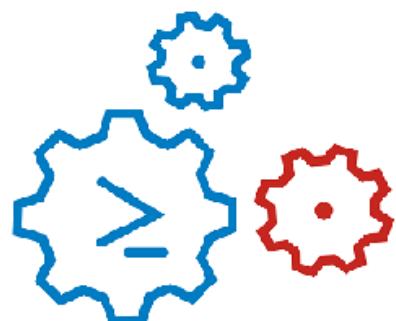
Current state



Current State -- Demo



Current State



PPOS

Daily Struggle

- 20+ Team Members
 - Use shared Code Repo



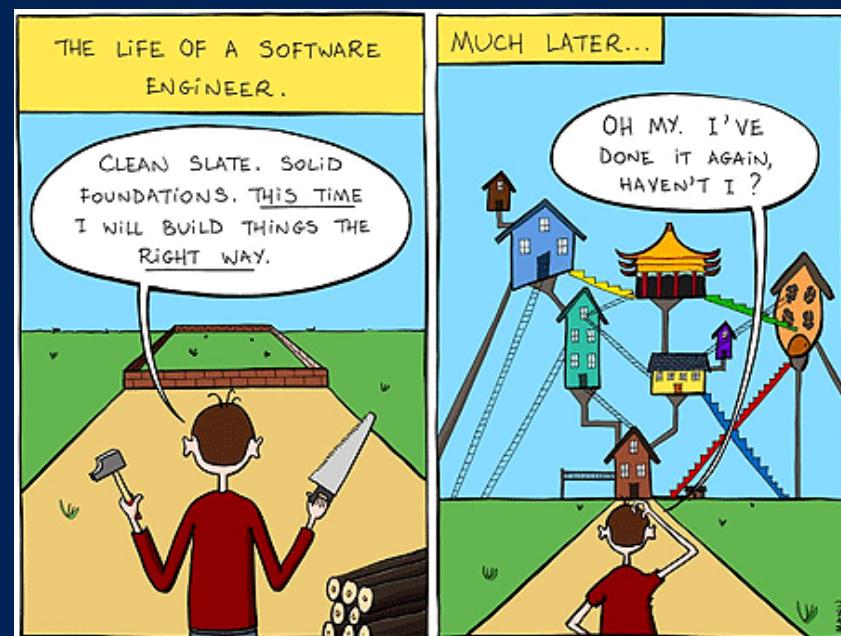
Daily Struggle

- 20+ Team Members
 - Use shared Code Repo
- Don't commit to Master



Daily Struggle

- 20+ Team Members
 - Use shared Code Repo
- Don't commit to Master
- Stop writing scripts,
write re-usable functions!



Current State

PPoShBuildTools

BuildHelpers

PSDepend

Psake

PSScriptAnalyzer

PPoShBuildTools

PPoShTools

PPoShSQLTools

PPoShBuildTools

PPoShTools

PPoShSQLTools



Objectivity.HyperV
Objectivity.EmployeeMaintenance
PPoShOVF
...

PPoShTools

PPoShSQLTools

Current State – Modules in Numbers

ModuleName	PublicFunctions	PrivateFunctions	PublicLines	PrivateLines
PPoShTools	23	11	2268	688
PPoshSqlTools	9	3	800	289
PPoShOVF	3	0	297	0
PPoShOVFDiagnostics	21	1	2159	66
Summary	56	15	5524	1043

ModuleName	PublicFunctions	PrivateFunctions	PublicLines	PrivateLines
Objectivity.AdminTools	0	0	0	0
Objectivity.Configuration	0	0	0	0
Objectivity.Employee.Maintenance	93	21	13493	1894
Objectivity.HyperV	29	2	2922	143
Objectivity.Network	0	0	0	0
Objectivity.OVF	4	0	318	0
Objectivity.Private	0	0	0	0
Objectivity.ProjectManagement	10	2	949	105
Objectivity.SystemUpdate	35	5	3492	679
Objectivity.UpdateManagement	0	0	0	0
ObjectivityAdminTools	116	18	29573	1091
Summary	287	48	50747	3912

King's Crown



King's Crown

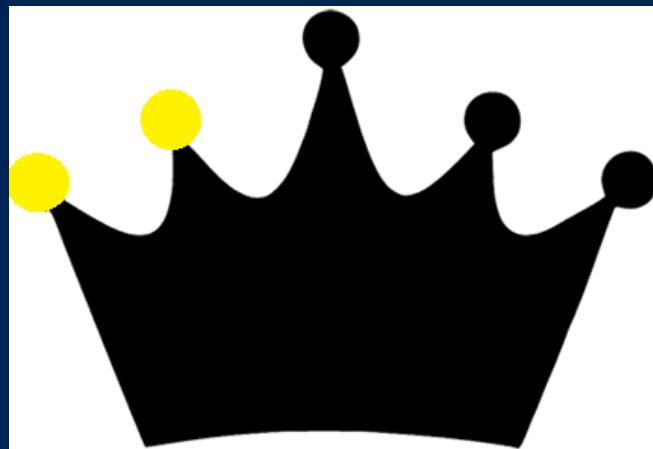
SQL Logging



ID	Action	EntityType1	EntityValue1	EntityType2	EntityValue2	OldValue	AdditionalData	Ticket
1	Modify	AD User		AD Attribute physicalDeliveryOfficeName	Wroclaw	wroclaw, omega 2.7	NULL	IIT-768
2	Modify	AD User		AD Attribute company	Objectivity Ltd.	Objectivity Bespoke Software Speci...	NULL	IIT-768
3	Modify	AD User		AD Attribute Division			NULL	IIT-768
4	Add	AD User		AD Group	WiFi Users		NULL	IIT-768
5	Modify	AD User		AD Attribute physicalDeliveryOfficeName	Wroclaw	5.38, WestForum 1B	NULL	IIT-768
6	Modify	AD User		AD Attribute Division			NULL	IIT-768
7	Add	AD User		AD Group	WiFi Users		NULL	IIT-768
8	Modify	AD User		AD Attribute physicalDeliveryOfficeName	Wroclaw	Omega	NULL	IIT-768
9	Modify	AD User		AD Attribute streetAddress	ul. Strzegomska 142A	ul. Dunaska	NULL	IIT-768
10	Modify	AD User		AD Attribute physicalDeliveryOfficeName	Wroclaw	4.36, WestForum 1B	NULL	IIT-768
11	Add	AD User		AD Group	WiFi Users		NULL	IIT-768
12	Modify	AD User		AD Attribute extensionAttribute15		2015-02-20	NULL	IIT-768
13	Modify	AD User		AD Attribute extensionAttribute14		2015-02-28	NULL	IIT-768
14	Add	AD User		NULL	NULL		NULL	IIT-768
15	Modify	AD User		AD Attribute SamAccountName			NULL	IIT-768
16	Modify	AD User		AD Attribute AccountPassword	System.Security.SecureString		NULL	IIT-768
17	Modify	AD User		AD Attribute Name			NULL	IIT-768
18	Modify	AD User		AD Attribute UserPrincipalName			NULL	IIT-768
19	Modify	AD User		AD Attribute Path	OU=Users OU=Wroclaw Users O		NULL	IIT-768

King's Crown

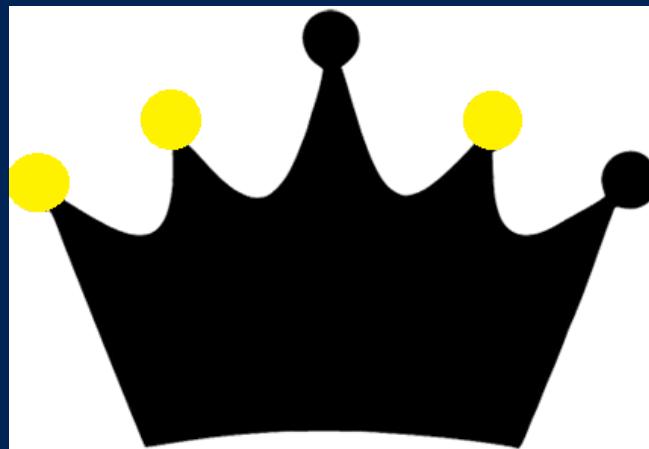
Shared Repo



repository	description
AdminPSModules (10)	
Objectivity.AdminTools	
Objectivity.Configuration	Configuration of infrastructure, services etc. for deploys, tests, etc.
Objectivity.Employee.Maintenance	
Objectivity.HyperV	
Objectivity.Network	Network configuration and stuff
Objectivity.OVF	Objectivity Operation Validation Framework
Objectivity.Private	Private repos
Objectivity.ProjectManagement	SharePoint Online, Jira
Objectivity.SystemUpdate	System Updates (Windows for start)
Objectivity.UpdateManagement	Objectivity.UpdateManagement

King's Crown

Common Knowledge



King's Crown

Continuous Deployment



ITSupport

Overview Change Log Statistics Current Problems Investigations Muted Problems Build Chains Flaky Tests 0

Hide successful configurations

- Objectivity.AdminTools | PowerShell Module build and deploy
- Objectivity.Configuration | PowerShell Module build and deploy
- Objectivity.Employee.Maintenance | PowerShell Module build and deploy
 - Build
 - #1.0.134 Tests passed: 2
 - Deploy to OBJPLWMGMT0 | Success #1.0.134
 - Deploy to OBJPLWCON0 | Success #1.0.134
 - Objectivity.Employee.Maintenance.AD.Update | AD User file handling
 - Objectivity.Employee.Maintenance.Dev | PowerShell Module build and deploy
 - Objectivity.Employee.Photo | AD User file handling
 - Objectivity.HyperV | PowerShell Module build and deploy
 - Objectivity.OVF | PowerShell Module build and deploy
 - Objectivity.ProjectManagement | PowerShell Module build and deploy
 - Objectivity.SystemUpdate | PowerShell Module build and deploy
 - ObjectivityAdminTools | PowerShell Module build and deploy
 - Provisioning OBJPLWCON0 | Provisioning server OBJPLWCON0
 - Provisioning OBJPLWCON0-TEST | Provisioning test server OBJPLWCON0-TEST
 - Provisioning OBJPLWMGMT0 | Provisioning server OBJPLWMGMT0

Is it Worth IT?

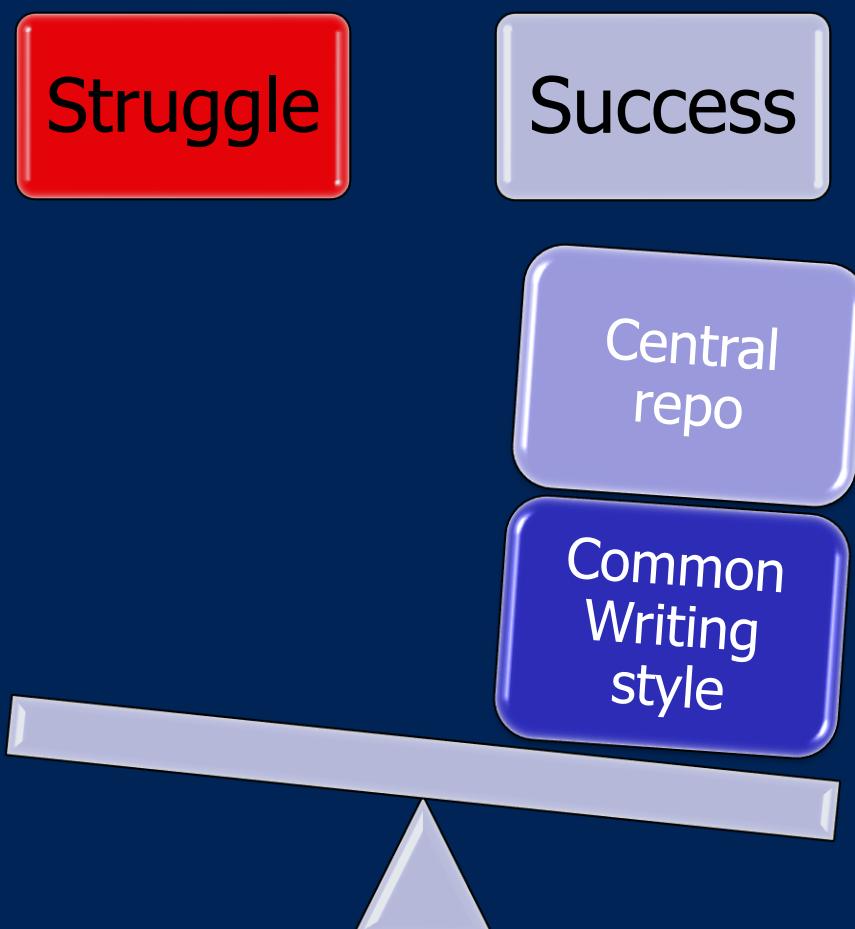
Struggle

Success

Common
Writing style



Is it Worth IT?



Is it Worth IT?



Is it Worth IT?

Struggle

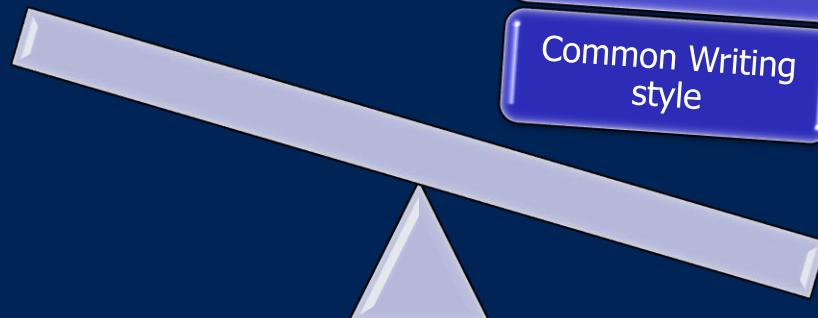
Success

PoSh Based CI/CD

Support-User
Friendly

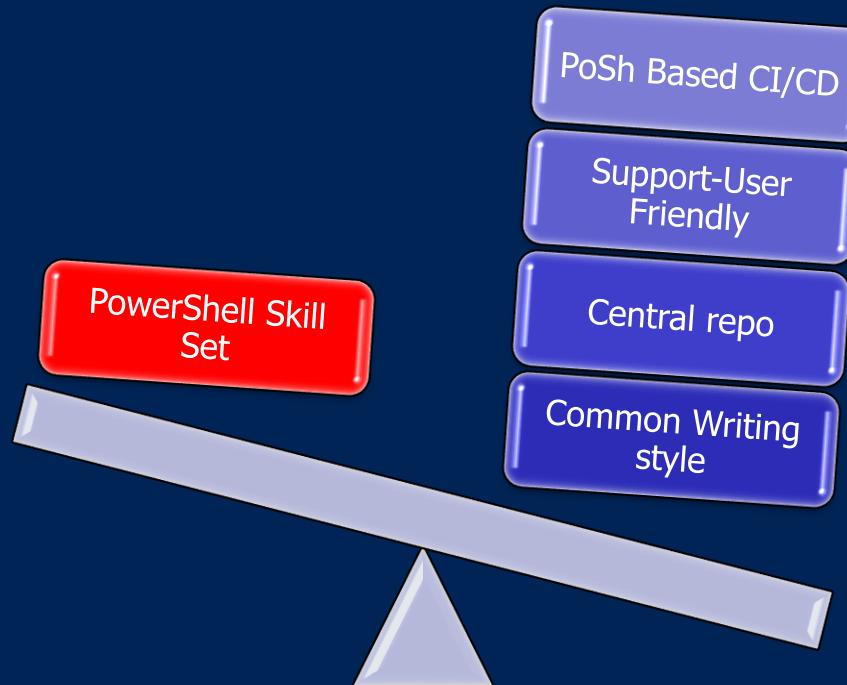
Central repo

Common Writing
style



Is it Worth IT?

Struggle Success



Is it Worth IT?

Struggle

Success

Git usage

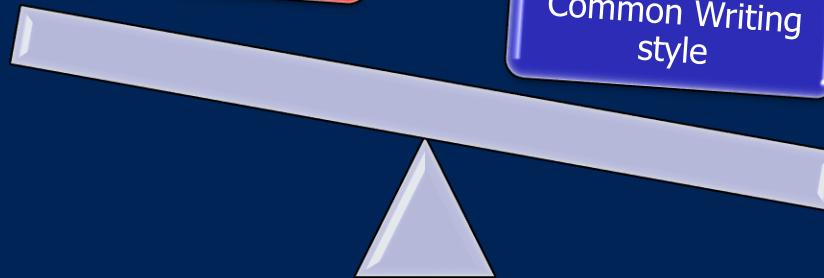
PowerShell Skill Set

PoSh Based CI/CD

Support-User Friendly

Central repo

Common Writing style



Is it Worth IT?

Struggle

Success

CI/CD Tooling

Git usage

PowerShell Skill Set

PoSh Based CI/CD

Support-User Friendly

Central repo

Common Writing style

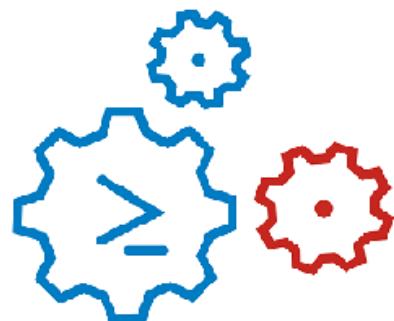
Summary

- Start small
- Agree on simple rules for writing code
- Create tools for the whole team
- Encourage others to participate
- Expand and grow

Bonus Demo



Naming Scheme



PPOSH

Questions?



Next Steps

- Now: 15 min break
- Grab a coffee
- Stay here to enjoy next presentation
- Change track and switch to another room
- Ask me questions or meet me in a breakout session room afterwards