

A woman with dark hair is sitting up in a bed that is covered with a pink blanket and a blue blanket. The room is dimly lit, with light coming from a window with blinds in the background. There is a wooden dresser to the left of the bed, and a nightstand with a lamp to the right. A dreamcatcher hangs on the wall. The overall atmosphere is cozy but cluttered.

# PowerShell

Continuous Delivery

[aka.ms/mark/pscd](https://aka.ms/mark/pscd)

Plaster

Pester

Git & GitHub

VSTS

# CONTENT

Learn And Understand Powershell Modules with Plaster

How To Create Powershell Tests with Pester

How & Why To Use Version Control Systems Like Git

How To Setup Easy Continuous Deployment With VSTS

# OBJECTIVE



A low-angle, blue-tinted photograph of several people's legs and feet in a meeting room. The people are standing around a table, with their legs visible from the knees down. They are wearing various types of shoes, including sneakers and dress shoes. The image is used as a background for the text.

# UNDERSTAND

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# UNDERSTAND

## What Is A Module ?

Package

Distributable

Shareable

Reusable

Partition, Organize & Abstract PowerShell Code Into  
Self-Contained, Reusable Units



# UNDERSTAND

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## Module Content

### **CODE**

Functionality

### **CODE SUPPORT**

Assemblies, Help Files, Or Scripts

### **MANIFEST FILE**

Describes, Metadata, Author & Versioning

### **DIRECTORY**

Contains Content



# TOOLS

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# TOOLS

## What Is Plaster ?

Scaffold

Parametrization

Repeatable

Automate The Process To Create Modules  
\_ Module Framework



# TOOLS

## What Is Pester ?

Verify Work

Design  
Guidance

Documentation

ScriptAnalyser  
& Help

Define What Is Expected & Prove It,  
Create Quality & Ensure Reusability

# TOOLS

## What Is Git ?

Version  
Control

Track  
Changes

Coordinate

Work  
Together

Work On A Module Like A Developer

# TOOLS

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## What Is Azure DevOps?

Platform  
Software  
Development

Measure

Report

Data Storage

Collaborate

Source  
Control

Work Item  
Tracking

Build Server

Central Platform For Your Development,  
Maintenance & Delivery Of Code



# TOOLS

WH



[aka.ms/mark/pscd/code](https://aka.ms/mark/pscd/code)

# DEMO

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# Steps



# Steps

PowerShellGet <https://docs.microsoft.com/en-us/powershell/gallery/readme>

Git <https://git-scm.com/>

VSTS <https://www.visualstudio.com/team-services/>

Github <https://github.com/>

Install-Module Plaster <https://github.com/PowerShell/Plaster>

Install-Module -Name Pester <https://github.com/pester/Pester>

(Install-Module posh-git ) <https://github.com/dahlbyk/posh-git>

The background of the image is a blue-tinted photograph of a row of school lockers. The lockers are arranged in two rows, with the top row slightly offset from the bottom row. Each locker has a small rectangular label at the top with a number. The numbers visible are 147, 149, 151, and 153. The lockers have horizontal ventilation slats and vertical locking mechanisms. The word "Plaster" is written in a large, white, sans-serif font, centered horizontally and partially overlapping the lockers. A thin white horizontal line is positioned directly beneath the word.

# Plaster

# Plaster

## Plaster Manifest

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<plasterManifest schemaVersion="0.4" xmlns="http://www.microsoft.com/schemas/PowerShell/Plaster/v1">
```

```
<metadata></metadata>
```

```
<parameters></parameters>
```

```
<content></content>
```

```
</plasterManifest>
```

XSD Validation

Template Metadata

Module Parameter

Files, Folders Templates, Validation



# Plaster

---

## Metadata

<metadata>

<name>NewPowerShellModule</title>

<id>38bd80d9-3a47-4916-9220-bed383d90876</id>

<version>0.2.0</version>

<title>New PowerShell Module</title>

<description>Plaster template for creating the files for a PowerShell module.</description>

<author>Plaster Project</author>

<tags>Module, ModuleManifest, Build</tags>

</metadata>

# Plaster

---

## Parameters

```
<parameter name='Version'
  type='text'
  default='0.1.0'
  prompt='Enter the version number for the module'/>

<parameter name='License' type='choice' default='2' store='text' prompt='Select a license'>
  <choice label='&Apache'
    help="Adds an Apache license file."
    value="Apache"/>
  <choice label='&MIT'
    help="Adds an MIT license file."
    value="MIT"/>
  type='multichoice' default='0,1,..'
</parameter>
```

# Plaster

---

## Content Elements

```
<file source='Tests\*.tests.ps1'
```

```
  destination='test\'
```

```
  condition='$PLASTER_PARAM_Options -contains "Pester"/>
```

```
<templateFile source='test\Shared.ps1'
```

```
  destination='test\Shared.ps1'
```

```
  condition="$PLASTER_PARAM_Options -contains 'Pester'"/>
```

```
<message newline='true'>`n`nYour new PowerShell module project $PLASTER_PARAM_ModuleName </message>
```



# Plaster

---

## Manifest File

```
<newModuleManifest destination='src\${PLASTER_PARAM_ModuleName}.psd1'
```

```
  moduleVersion='${PLASTER_PARAM_Version'
```

```
  rootModule='${PLASTER_PARAM_ModuleName}.psm1'
```

```
  author='${PLASTER_PARAM_FullName'
```

```
  description='${PLASTER_PARAM_ModuleDesc'
```

```
  encoding='UTF8-NoBOM'
```

```
  powershellVersion='5.1'/>
```

# Plaster

Use Parameter

```
<%
```

```
if ($PLASTER_PARAM_Ensure -eq 'Yes') {
```

```
"    # Ensure the presence/absene of the resource."
```

```
"    [ValidateSet('Present','Absent')]"
```

```
"    [string]"
```

```
"    ` $Ensure = 'Present'"
```

```
}
```

```
%>
```

```
<%= $PLASTER_PARAM_ParameterName %>
```

Use Parameters Inside `<% %>` To Template

Single Output in Template `<%=`

# Azure DevOps



Visual Studio Team Services &gt; Build and release &gt; Pester Test Runner Build Task



# Pester Test Runner Build Task

**Richard Fennell (Black Marble)** | 612 installs | (5)

Run Pester tests without the need to install Pester in with the PMModule folder or in the source repo (Using Pester 3.4.3 or 4.0.8).

**Install****Download**

Click **Install** for Visual Studio Team Services and **Download** for Team Foundation Server.

# Marketplace

[Overview](#) [Q & A](#) [Rating & Review](#)

## Releases

- 1.0.x - initial public release (targets Pester 3.3.5)
- 4.0.x - changed versioning to fit with new release pipeline (still targets Pester 3.4.0)
- 4.1.x - now targets 3.4.3, but allows the path to the module to be overridden
- 4.2.x - removed non-required demand
- 4.3.x - Added support for Tag and ExcludeTag parameters
- 4.4.x - Added support for multiple comma separated tags
- 5.0.x - Added optional support for Pester 4.0.3
- 5.1.x - Fixes issue with running tests using the 32Bit process switch (#150)
- 6.0.x - Add support for JaCoCo code coverage as provided by Pester 4.0.8 ([issue #152](#))

Definitions / PowerShell | **Builds**[Build](#) [Options](#) [Repository](#) [Variables](#) [Triggers](#) [General](#) [Retention](#) [History](#)

Save Queue build... Undo

Add build step...

**Pester Test Runner**  
Pester Runner **Publish Test Results**  
Publish Test Results \*\*/TEST-\*.xml **Copy Files**  
Copy Files to: \$(build.artifactstagingdirectory)



# Azure DevOps Build Tasks

...

PowerShellPlaster-CI

Save & queue

Discard

Summary

Queue

...

Tasks

Variables

Triggers

Options

Retention

History

Process

Build process

...

Get sources

mark-mit-k/PowerShellPlaster

master

Phase 1

Run on agent

+

Pester Test Runner

Pester Test Runner from Black Marble

Copy files from MarkMitKAdvancedPlasterManifestTempl...

Windows Machine File Copy

Agent phase

Remove

Display name \*

Phase 1

Agent selection

Agent queue

Manage

<inherit from definition>

Demands

Name	Condition	Value
------	-----------	-------

+ Add

Execution plan

Parallelism

☒ None

☐ Multi-configuration

☐ Multi-agent

Timeout \*

0

# SUMMARY

---

# SUMMARY

Continuous  
Delivery  
VSTS

Testing  
Framework  
Pester

**Have Fun!**  
Create some  
Modules  
Today

Module  
Framework  
Plaster

\$

Free







# Mark Warneke

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[aka.ms/mark/pscd](https://aka.ms/mark/pscd)

[@mark\\_mit\\_k\\_](https://twitter.com/mark_mit_k_)

Let me know what you think!



[aka.ms/mark/pscd/voice](https://aka.ms/mark/pscd/voice)

# Resources

- <https://github.com/PowerShell/Plaster/>
- <https://github.com/pester/Pester>
- <https://github.com/>
- <https://github.com/dahlbyk/posh-git>
- <https://www.visualstudio.com/team-services/>
- <https://code.visualstudio.com/>
- <https://git-scm.com/>
- <https://docs.microsoft.com/en-us/powershell/gallery/readme>
- <http://overpoweredshell.com/Working-with-Plaster/>
- <https://www.youtube.com/watch?v=16CYGTKH73U&feature=youtu.be>

NEXT: scripts

# Scripts

- Code can be found:  
[aka.ms/mark/pscd/code](https://aka.ms/mark/pscd/code)



