



# PSScriptAnalyzer

BY

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# > whoami

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- ▶ Full stack .Net with a DevOps focus (PowerShell/Azure/Docker/VSTS)
- ▶ Author of [posh-dotnet](#) and [posh-vsts-cli](#)
- ▶ Maintainer of [PSScriptAnalyzer](#) and contributor to the [PowerShell Core](#) repo
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# Ice Breaker & Presentation Theme

<https://github.com/bergmeister/cmatrix>

# What is PSScriptAnalyzer?

- ▶ Open Source (MIT) and owned by MSFT
- ▶ Static Code Analysis
- ▶ Style Linter & Formatter
- ▶ Offers corrections
- ▶ Integrated into PowerShellEditorServices
  - VSCode, Sublime, Vim, etc
- ▶ Offer advice on PSCore compatibility (under development)
- ▶ Built using netstandard1.6 and net451
  - Cross Platform but dependency on PowerShell's Language.Parser
    - More like netcore2.0 in practice

# What does PSScriptAnalyzer not do?

- ▶ Help you to write correct syntax. This is PowerShellEditorServices.
- ▶ Warn you on any mistake. PSSA is not your mum
- ▶ Help you learn PowerShell
- ▶ Learning source for writing good code  
→ <https://github.com/PoshCode/PowerShellPracticeAndStyle>
- ▶ Warnings sometimes do not trigger when they should and sometimes they do when they should not
- ▶ PSSA is clever but not intelligent

# Why PSScriptAnalyzer?

- ▶ Learning rules means learning about best practices or gotchas
- ▶ Find bugs → prevent expensive debugging time.
- ▶ It's free!
- ▶ Code style rules
- ▶ Help review code changes

# Demo

- ▶ VSCode integration and rule selection and .vscode
- ▶ Cmdlets usage (note to self: use Ubuntu VM)  
<https://github.com/PowerShell/PSScriptAnalyzer#usage>
  - ▶ Get-ScriptAnalyzerRule
  - ▶ Invoke-ScriptAnalyzer
  - ▶ Invoke-Formatter
- ▶ Suppressing warnings: functions/scripts (param gotcha)
- ▶ CI example: <https://github.com/bergmeister/posh-profile/blob/master/test/psscriptanalyzer.tests.ps1>

# Overview

## Rules:

- ▶ <https://github.com/PowerShell/PSScriptAnalyzer/tree/development/RuleDocumentation>
- ▶ Known issues:
  - ▶ PSUseDeclaredVarsMoreThanAssignment
  - ▶ Parsing imported types:  
<https://github.com/PowerShell/PSScriptAnalyzer/issues/850>
  - ▶ Docs → PRs welcome!
  - ▶ SSA (Single Statement Analysis → e.g. for += on array → PR
- ▶ Help: GitHub or Slack: <https://powershell.slack.com>



# My current work so far (available in vNext)

- ▶ Invoke-ScriptAnalyzer **-Fix**
- ▶ Invoke-ScriptAnalyzer **-EnableExit**
- ▶ Invoke-ScriptAnalyzer **-ReportSummary**
- ▶ Upgrade build to .Net Core 2.0 SDK
- ▶ Building and debugging with Visual Studio
- ▶ New rules:
  - ▶ **AvoidAssignmentToAutomaticVariable**
  - ▶ **PossibleIncorrectUsageOfAssignmentOperator**
- ▶ Warn on Get-\* (added to **AvoidUsingCmdletAlias**)
- ▶ Various bug and documentation fixes. Especially PSUseDeclaredVarsMoreThanAssignment, PSOpenBrace and setting path parsing
- ▶ CI: PowerShell Core on Windows/Linux

# How does it work?

- ▶ AST → Demo: Show-Ast from <https://www.powershellgallery.com/packages/ShowPSAst/1.0>

```
Show-Ast { if($a -eq "$($b.Wtf())"){ } foreach($i in $x){} }
```

- ▶ Custom rules:

Example:

```
Invoke-ScriptAnalyzer -ScriptDefinition 'write-Host' -CustomRulePath  
"C:\Users\cberg\git\London\January2018\ChrisDent_AdventuresInAST\AllR  
ules.psm1"
```

More examples:

[https://github.com/powershellorguk/London/tree/master/January2018/ChrisDent\\_AdventuresInAST](https://github.com/powershellorguk/London/tree/master/January2018/ChrisDent_AdventuresInAST)

More AST stuff: Find-Ast in VSCode and EditorAstProvider:  
<https://github.com/SeeminglyScience/EditorAstProvider>

# How to build, debug PSSA and consume it in VSCode

- ▶ Demo using GitHub (from scratch)

<https://github.com/PowerShell/PSScriptAnalyzer#from-source>

- ▶ Show VsCode integration in  
C:\Users\cberg\.vscode\extensions\ms-vscode.powershell-1.6.0\modules

# Future directions

- ▶ X-Platform support/testing getting more serious → Jim
- ▶ Rule/Doc fixes
- ▶ PSCore compatibility (like PowerShellStandard for scripts)
- ▶ New rules
- ▶ SSA (single statement analysis)

Thank you for your attention  
and patience!

Any Questions?