PowerShell Conference Europe 2019

Hannover, Germany

June 4-7, 2019

Extend your PowerShell Skills by creating Azure DevOps Extensions

Stefan Stranger

@sstranger

https://github.com/stefanstranger

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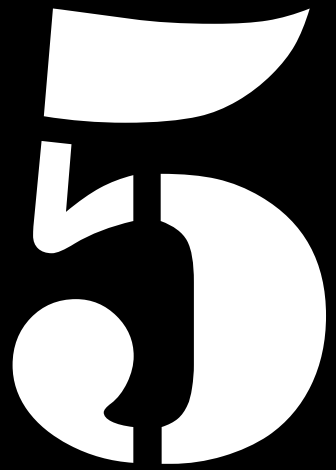

Video operator, did you start the recording?

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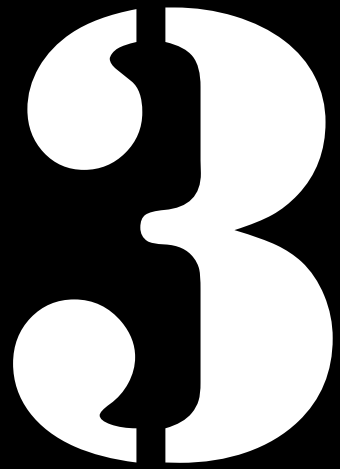

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Extend your PowerShell Skills by creating Azure DevOps Extensions

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Goals

- Learn about Azure DevOps Extensions
- Learn how to leverage your existing PowerShell knowledge to create Azure DevOps Extensions

Agenda

What is Azure DevOps?

What is an Azure DevOps Extension?

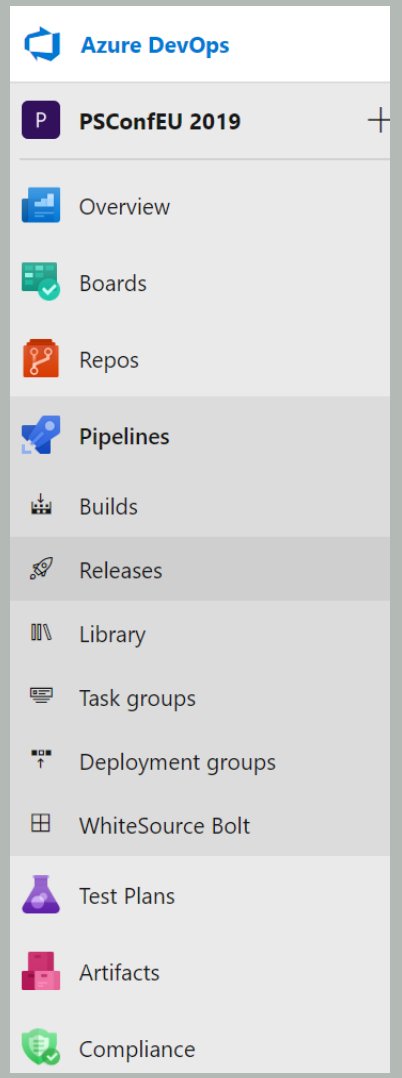
Extension Components?

Demo's

Azure DevOps AKA VSTS

Azure DevOps is a **Software as a Service** that provides development collaboration tools including:

- high-performance pipelines
- free private Git repositories
- configurable Kanban boards
- extensive automated and cloud-based load testing



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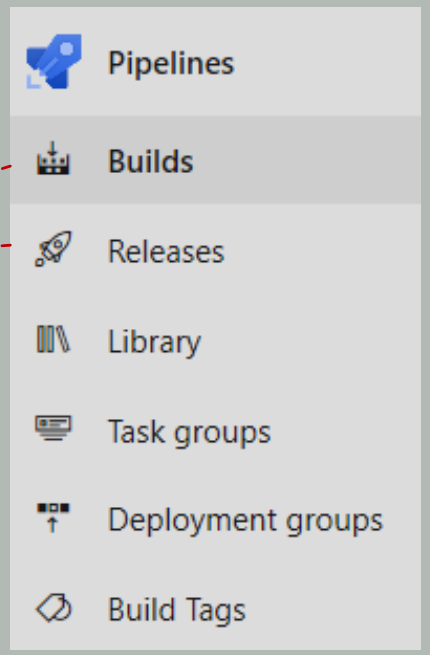
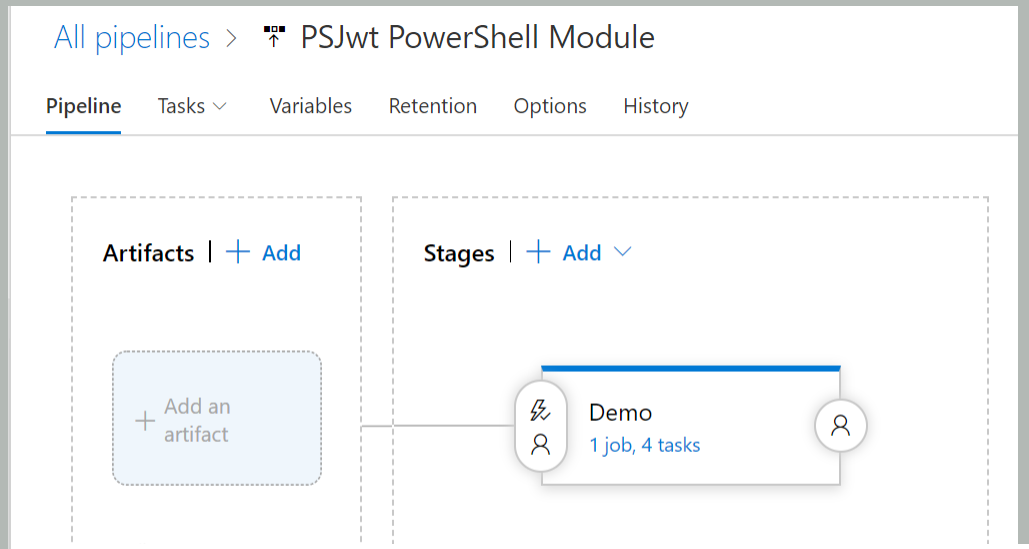
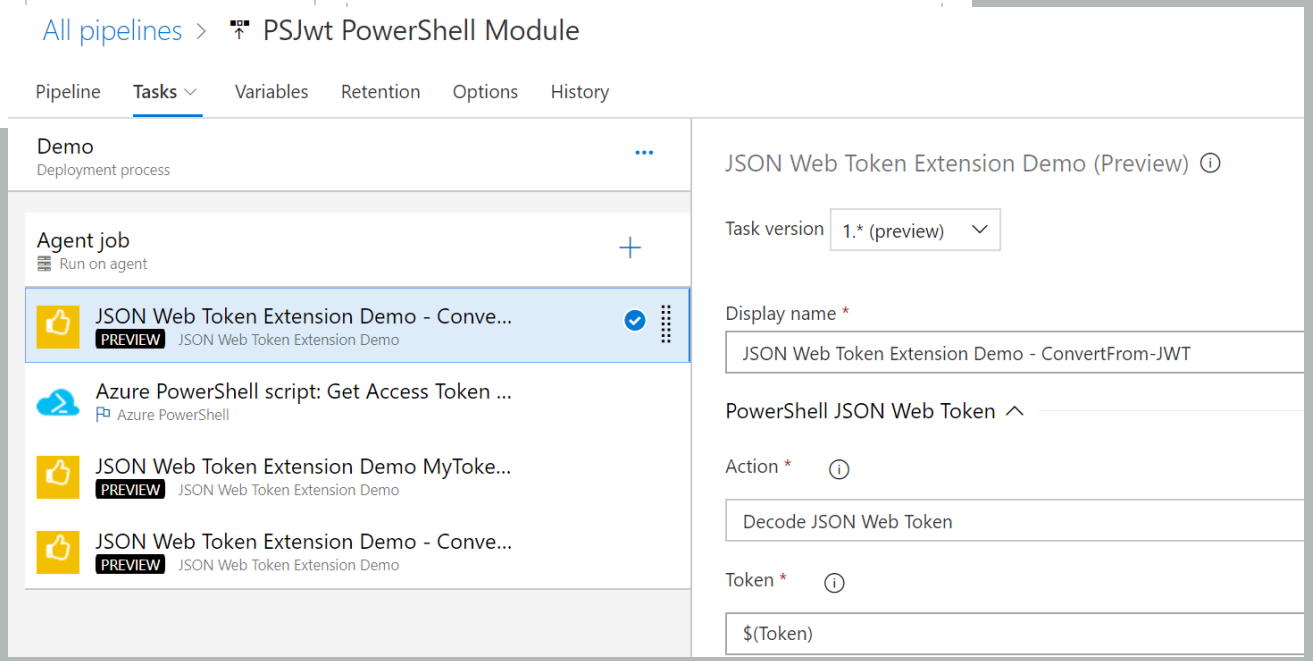
Pipelines

Prepare artifacts for release

Deploy products







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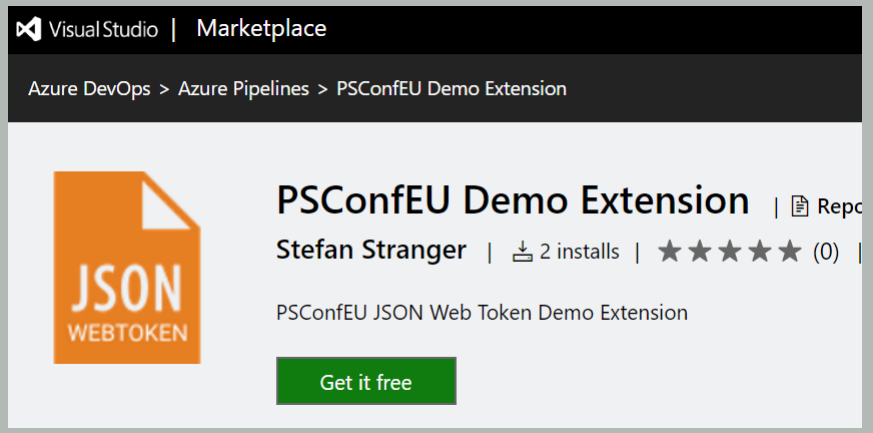
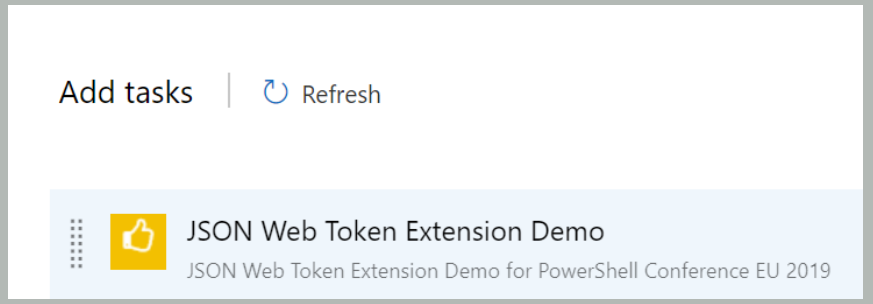
Azure DevOps Extensions?

- Extensions are add-ons for Azure DevOps
- Can be used in Azure DevOps Pipelines
- Published in Visual Studio Marketplace





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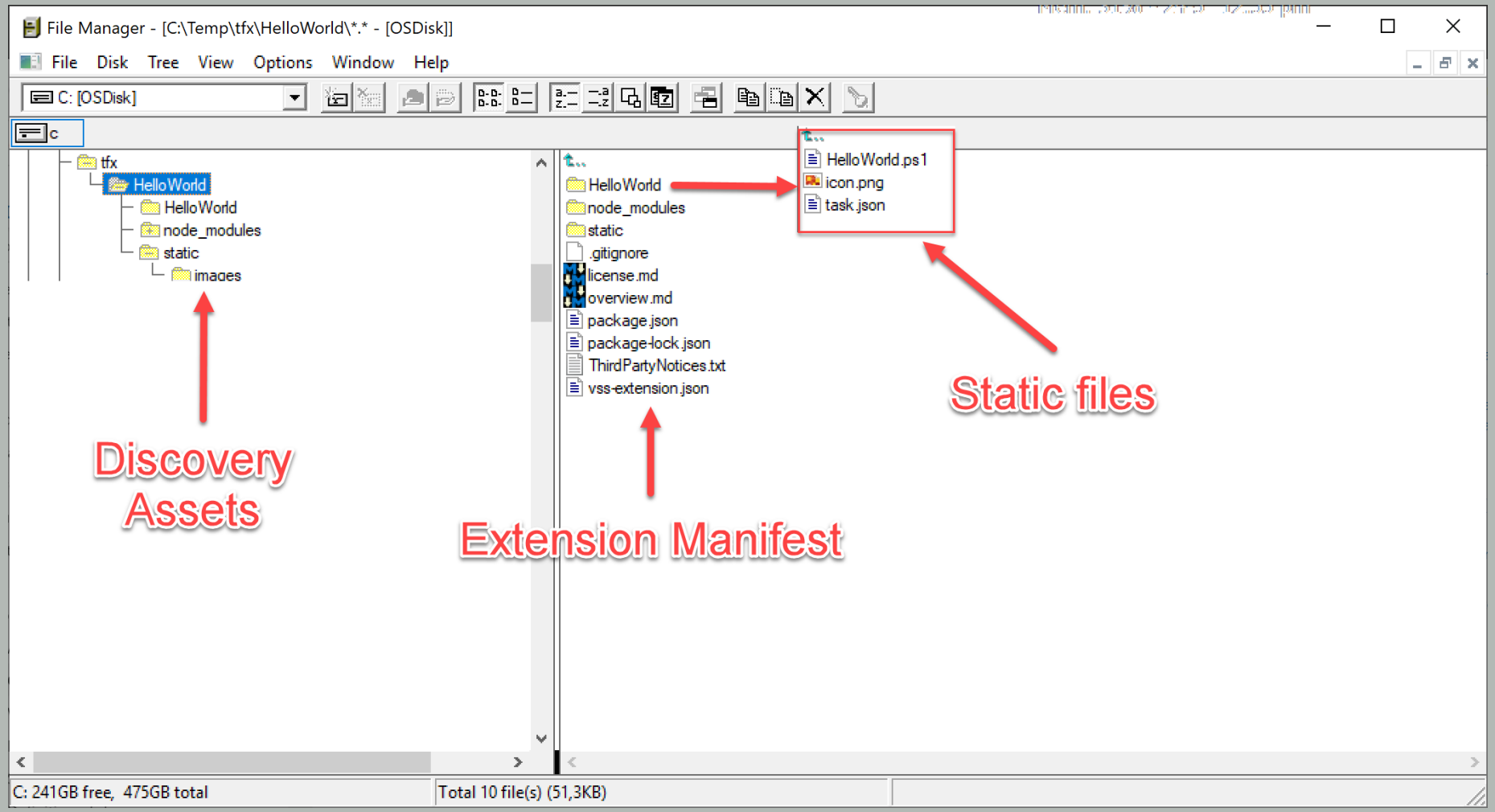
Azure DevOps Extension - Components



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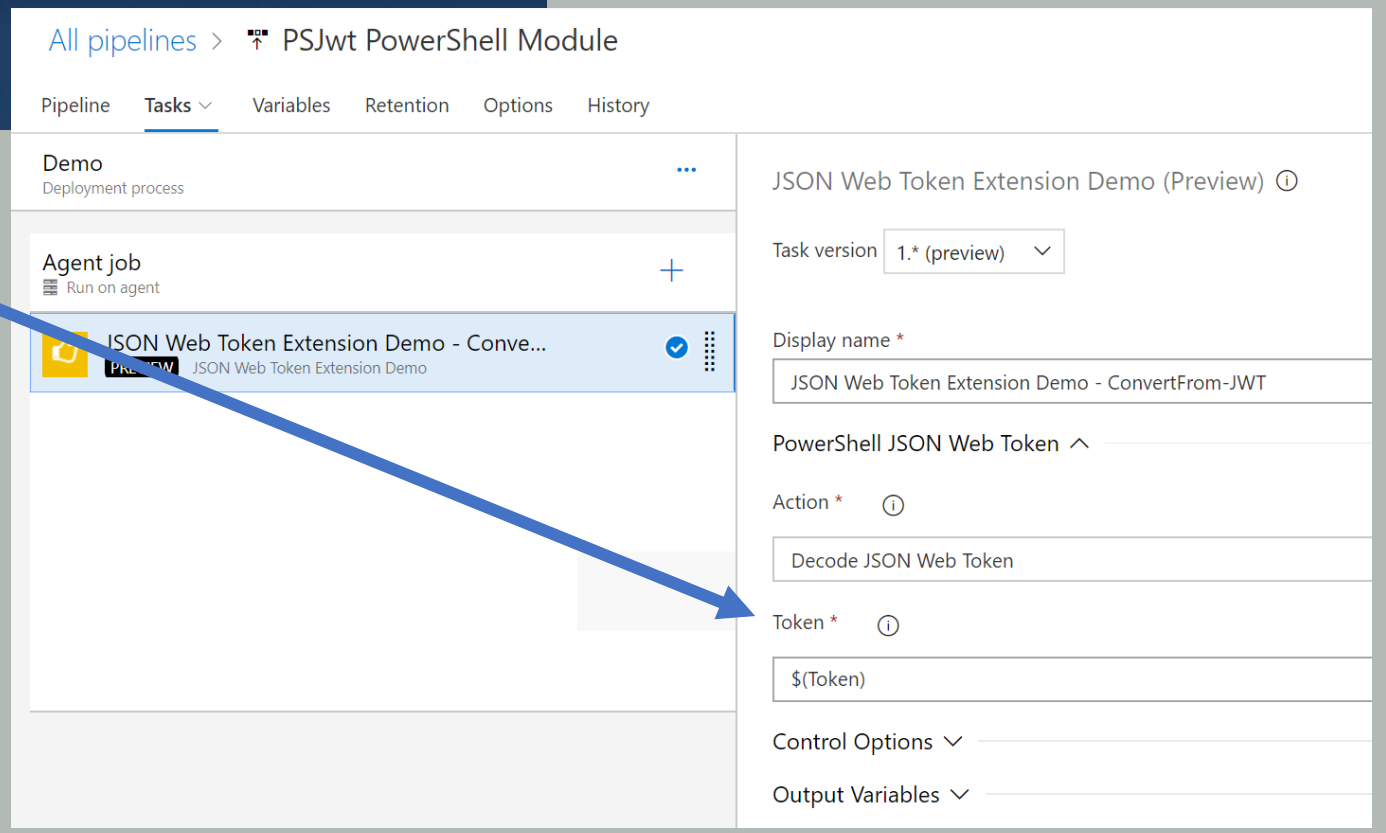
PowerShell function vs Extension Task

```
I ♥ PS get-command convertfrom-jwt

CommandType     Name                                               Version    Source
-----------     ----                                               -------    ------
Function        ConvertFrom-JWT                                    1.0.0      PSJwt

I ♥ PS get-command convertfrom-jwt -Syntax

ConvertFrom-JWT [-Token] <string> [<CommonParameters>]
```



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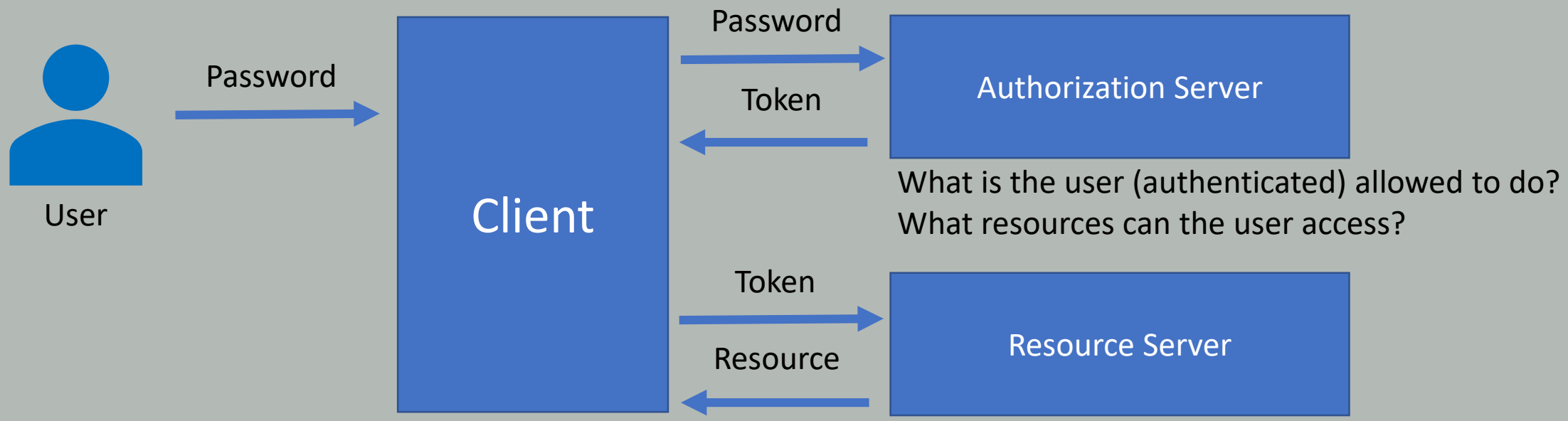
PSJwt PowerShell Module

- PowerShell Module for JWT (JSON Web Tokens)
- JWT is a JSON-based open standard for creating access tokens



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PowerShell 6.2.0 - C:\Users\stefstr (FileSystem) - PID: 16060

```
MzgiLCJyaCI6IkkiLCJzY3AiOiJ1c2VyX2ltcGVyc29uYXRpb24iLCJzdWIiOiJsM19yb0lTUVUyMjJiVUxTOXlpMmswWHBxcE9pTXo1SDNaQUNvMUdlWEEiLCJ0aWQiOi
JmYTE1ZDY5Mi1lOWM3LTQ0NjAtYTc0My0yOWYyOTU2ZmQ0MjkiLCJ1bmlxdWVfbmFtZSI6ImFiZWxpQG1pY3Jvc29mdC5jb20iLCJ1dGkiOiJGVnNHeFlYSTMwLVR1aWt1
dVVvRkFBIiwidmVyIjoiMS4wIn0=.D3H6pMUtQnoJAGq6AHd'

aud          : ef1da9d4-ff77-4c3e-a005-840c3f830745
iss          : https://sts.windows.net/fa15d692-e9c7-4460-a743-29f29522229/
iat          : 1537233106
nbf          : 1537233106
exp          : 1537237006
acr          : 1
aio          : AXQAi/8IAAAAFm+E/QTG+gFnVxLjWdw8K+61AGrSOuMMF6ebaMj7XO3IbmD3fGmrOyD+NvZyGn2VaT/kDKXw4MIhrgGVq6Bn8wLXoT1LkIZ+FzQVkJP
               PLQOV4KcXqSlCVPDS/DiCDgE222TImMvWNaEMaUOTsIGvTQ==
amr          : {wia}
appid        : 75dbe77f-10a3-4e59-85fd-8c127544f17c
appidacr     : 0
email        : AbeLi@microsoft.com
family_name  : Lincoln
given_name   : Abe (MSFT)
idp          : https://sts.windows.net/72f988bf-86f1-41af-91ab-2d7cd0122247/
ipaddr       : 222.222.222.22
name         : abeli
oid          : 02223b6b-aa1d-42d4-9ec0-1b2bb9194438
rh           : I
scp          : user_impersonation
sub          : l3_roISQU222bULS9yi2k0XpqpOiMz5H3ZACo1GeXA
tid          : fa15d692-e9c7-4460-a743-29f2956fd429
unique_name  : abeli@microsoft.com
uti          : FVsGxYXI30-TuikuuUoFAA
ver          : 1.0

I ♥ PS
```

Scopes

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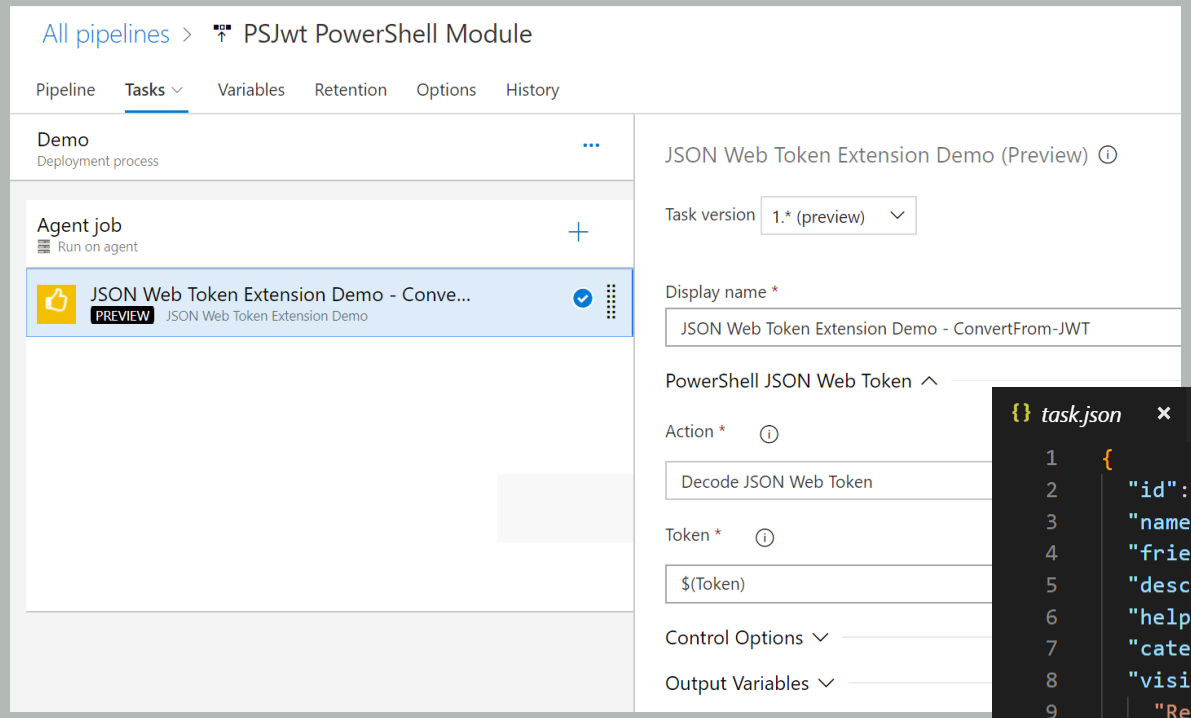
Task.json defines Task UI



task.json

```
{
  "id": "ecf39f25-2f79-4907-886d-d096c446a320",
  "name": "JWT-Demo",
  "friendlyName": "JSON Web Token Extension Demo",
  "description": "JSON Web Token Extension Demo for PowerShell Conference EU 2019",
  "helpMarkDown": "Use this task to decode or create a JSON Web Token",
  "category": "Deploy",
  "visibility": [
    "Release"
  ],
  "author": "Stefan Stranger",
  "version": {
    "Major": 1,
    "Minor": 0,
    "Patch": 6
  },
```

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DEMO

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Caveats

- PowerShell Task is not cross-platform (only works on Hosted VS2017)
- Extension < 50 mb

Summary

- What is Azure DevOps?
- What are Azure DevOps Extensions?
- How to turn your PowerShell module into an Extension
- PSExtensionHelper (~~very~~ alpha version) PowerShell module

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References

- PSJwt PowerShell Module
- Online JWT conversion
- Blog post - Using the Windows Graph API to set Service Principal as owner of Service Principal
- Develop Extensions
- Package, publish, unpublish, and install Azure DevOps extensions
- Extension manifest reference
- Task Schema

Questions?

Use the conference app to vote for this session:
https://my.eventraft.com/psconfeu

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about_Speaker

I'm Stefan Stranger

I work at Microsoft as a Consultant

You can find some my open source projects on Github.

I like to share my knowledge about Azure, PowerShell and DevOps

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