

POWERSHELL JEA

(Just Enough Administration)

Presented by

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About Me

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- 23 Years Military Service
- 19 Years Windows Environment
- Instructor
 - SANs Mentor/Community
 - Trilogy TA
 - Howard Community College
- Self taught PowerShell
- Passion for PowerShell



SAY POWERSHELL ONE MORE TIME

**I USE BATCH
AND VB SCRIPTING**

**YOU ARE NOT
MY SON IF YOU
DONT USE POWERSHELL**



- You work in small shop with 3 systems administrators. Your IT shop has a development team of 5 people and there is a contractor who is the system owner of one server. Your development team has full admin rights to the database and web servers. The SysAdmins still update and patch the database and web servers, the developers just need admin rights for development.
- The contractor remotes into his server to operate and manage the thermostats for the organization. He is just a user on the server and cannot perform any admin functions, to include restarting the machine. He likes to leave his office and drive 10-15 miles to visit the sysadmin and have them perform maintenance and reboot the machine.

- “Just Enough Administration (JEA) is a security technology that enables delegated administration for anything that can be managed with PowerShell.” –Microsoft
- “Just like keys on a key chain” – Jeffery Snover
- “Really cool way to empower my users and fellow admins” – James Honeycutt
- Allows common users to perform admin functions (when properly configured)

What is PowerShell JEA

Requirements

<u>Client</u>	<u>Server</u>
Win 10 1511	2019
Win 8, 8.1	2016
Win 7	2012, 2012r2 2008r2

- WMF 5 (Windows Management Framework)
- PowerShell Remoting

How does it work?

- User/Admin uses PowerShell remoting to access remote server using the Session configuration file and using “Runas”
- A virtual Admin account is created and used during THIS SESSION ONLY
- The virtual admin technically has access to all cmdlets, but only shows the user what they are entitled to, based on the Role Capabilities File
- User does what they need to, exits remote session

How It Works

- Controls what Cmdlets, Modules, Functions, and Parameters are allowed
- `New-PSRoleCapabilityFile -Path .\MyFirstJEARole.psrc`
- `VisibleCmdlets =`
 - `@{ Name = 'Restart-Service'; Parameters = @{ Name = 'Name'; ValidateSet = 'Dns', 'Spooler' }},`
 - `@{ Name = 'Start-Website'; Parameters = @{ Name = 'Name'; ValidatePattern = 'HR_*' } }`
- `VisibleExternalCommands = 'C:\Windows\System32\whoami.exe', 'C:\Program Files\Contoso\Scripts\UpdateIT Software.ps1'`

Role Capabilities File

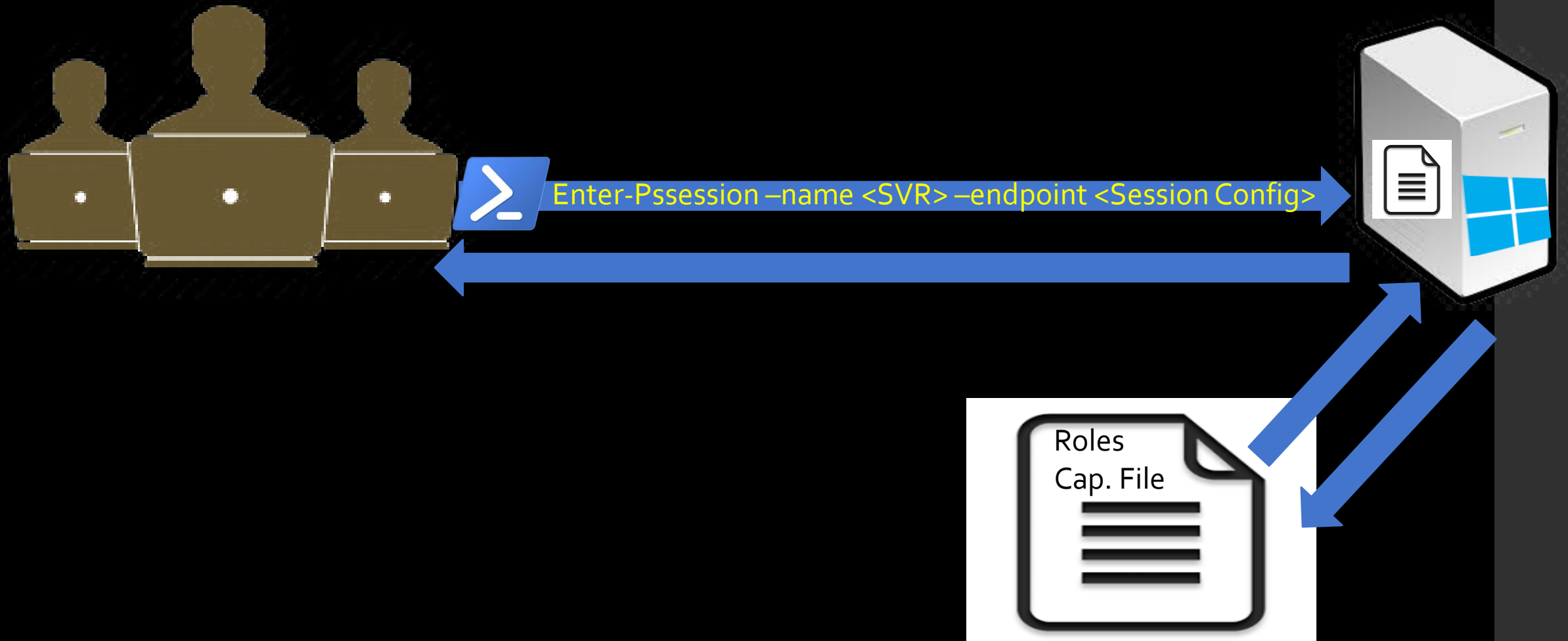
- Controls who can log in and determines what role capability file to use.
- Virtual accounts are created on the fly and are used for the one session only. Will have local rights on endpoint and member servers or domain admin rights on DC
- Specified Virtual accounts can be specified, but must be in the appropriate local group. Group Managed Service Accounts can be used if the user needs network resources. (Harder to trace back to a specific user)

Session Configurations

Session Configuration File

- `New-PSSessionConfigurationFile -SessionType RestrictedRemoteServer -Path .\MyJEAEndpoint.pssc`
- `RunAsVirtualAccount = $true`
- `TranscriptDirectory = 'C:\ProgramData\JEAConfiguration\Transcripts'`
- `RoleDefinitions = @{`
 - `'CONTOSO\JEA_DNS_ADMINS' = @{`
 - `RoleCapabilities = 'DnsAdmin', 'DnsOperator', 'DnsAuditor' }`
 - `'CONTOSO\JEA_DNS_OPERATORS' = @{`
 - `RoleCapabilities = 'DnsOperator', 'DnsAuditor' }`
 - `'CONTOSO\JEA_DNS_AUDITORS' = @{`
 - `RoleCapabilities = 'DnsAuditor' }`
- `}`

How It All Works Together



Demo Time

What Next

- Implementing is not a project, it is an ongoing task
- It empowers your users and fellow admins
- Make them feel like



References & Further Reading

- <https://docs.microsoft.com/en-us/powershell/jea/overview>
- <https://docs.microsoft.com/en-us/powershell/jea/role-capabilities>
- <https://docs.microsoft.com/en-us/powershell/jea/session-configurations>
- SANs SEC505: Windows Security and PowerShell Automation
- <https://www.youtube.com/watch?v=zftC6eDzRJY&t=1025s>
- https://www.youtube.com/watch?v=f_Dd5fRXixY

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Upcoming Talks and Classes

Jameshoneycutt.net/my-events

April – BsidessCharm (PowerShell Crash
Course Workshop)



**THIS IS THE END OF THE
PRESENTATION**

**ANY QUESTIONS?
IF NOT, JUST CLAP!**