



PowerShell Conference Europe

Azure Policy Guest Configuration Cloud Edition of DSC

Jan Egil Ring

Many thanks to our sponsors:





› Get-Speaker

Name : Jan Egil Ring
Work : Lead Architect, Infrastructure @ Crayon
E-mail : jan.egil.ring@crayon.com
Twitter : @JanEgilRing
Website : {www.crayon.com, www.powershell.no}
Country : Norway

Agenda

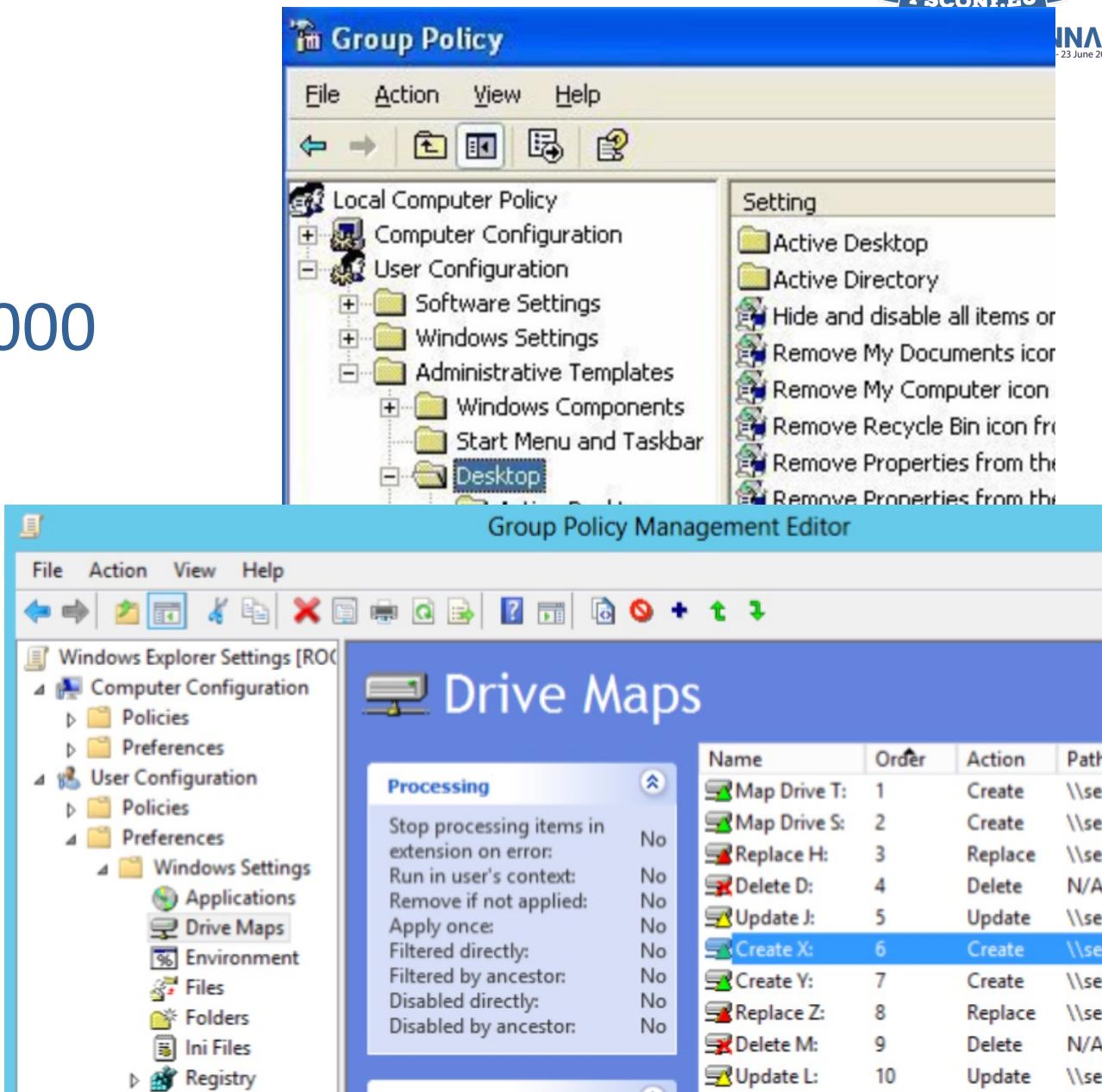
- Introduction
 - History
 - DSC versions
 - Azure Guest Configuration
 - Azure Arc for Servers/Azure VMs
- Demos



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History

- Group Policy
 - Introduced in Windows 2000
 - Evolved over the years
 - Very successful



History

- Desired State Configuration
 - Released with PowerShell 4.0 in 2013
 - Benefits over Group Policy
 - Infrastructure As Code
 - Source control
 - Pipeline support (CI/CD)
 - Easier to test
 - No dependency on Active Directory
 - Linux support



Automation



IT Pro



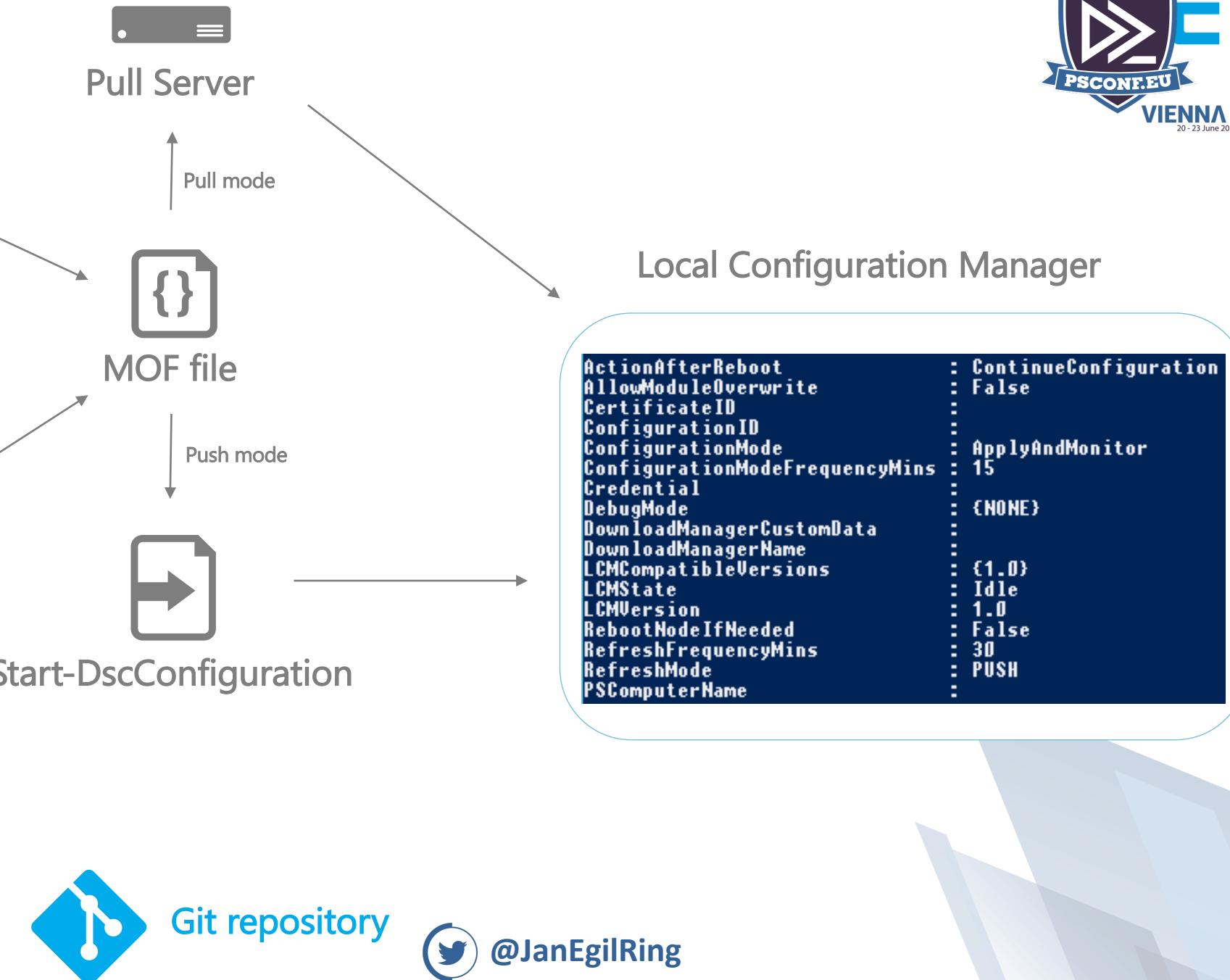
computer



Windows
PowerShell file

```

1 configuration MyConfig {
2     node srv01 {
3         WindowsFeature IIS {
4             Name = 'Web-Server'
5             Ensure = 'Present'
6         }
7     }
8 }
9
10 }
11
12 }
13 }
```



Git repository



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DSC (module) versions

- DSC 1.0
 - Windows PowerShell (WMF) 4.0, 5.0, 5.1
 - WMI
 - Linux-edition based on Open Management Infrastructure (OMI) CIM server
- DSC 2.0
 - The version of DSC that shipped in PowerShell 7.0.
 - No dependency on WMI/WMF
- DSC 3.0 (preview)
 - PSDesiredStateConfiguration module no longer included in the PowerShell package
 - Cross-platform features
 - Install-Module -Name PSDesiredStateConfiguration -AllowPrerelease

PSDesiredStateConfiguration module Open Sourced



- Announced in 2022 May DSC Community Call
 - <https://www.youtube.com/watch?v=VBTY2JG6mmM>
- <https://github.com/PowerShell/PSDesiredStateConfiguration>

Azure Policy Guest Configuration

- “audit or configure operating system settings as code, both for machines running in Azure and hybrid Arc-enabled machines”
 - 2 deployment options
 - Azure VMs
 - Non-Azure VMs
 - Azure Arc for Servers
 - aka.ms/gcpol
 - Gotcha: To limit the extension from impacting applications running inside the machine, the guest configuration agent isn't allowed to exceed more than 5% of CPU

Azure Policy Guest Configuration

- New features in guest configuration address top asks from customers:
 - Increased size limit for configurations (100MB)
 - Advanced reporting through Azure Resource Graph including resource ID and state
 - Manage multiple configurations for the same machine
 - When machines drift from the desired state, you control when remediation occurs
 - Linux and Windows both consume PowerShell-based DSC resources

Option 1: Azure VMs

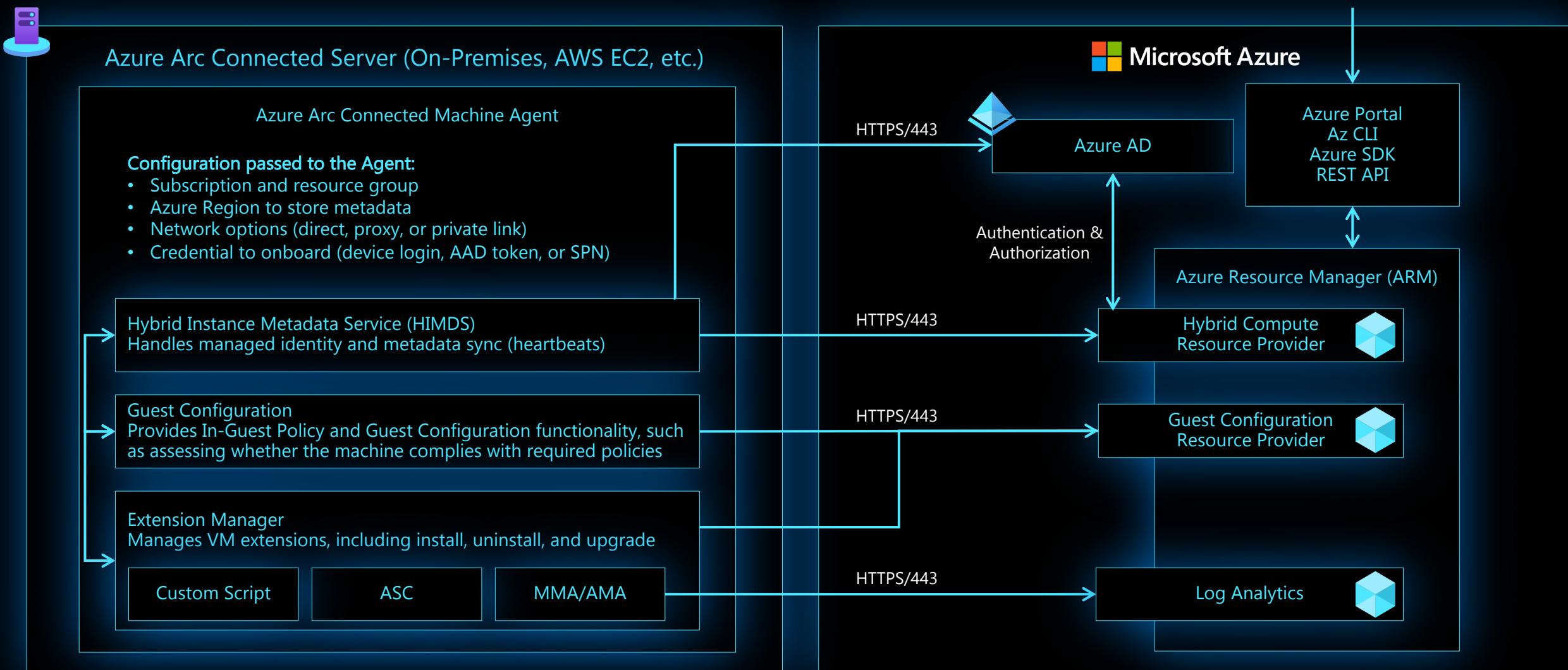
- System Managed Identity
- VM extension

Option 2: Azure Arc for Servers

- Manage Windows and Linux physical servers and virtual machines hosted outside of Azure, on your corporate network, or other cloud providers

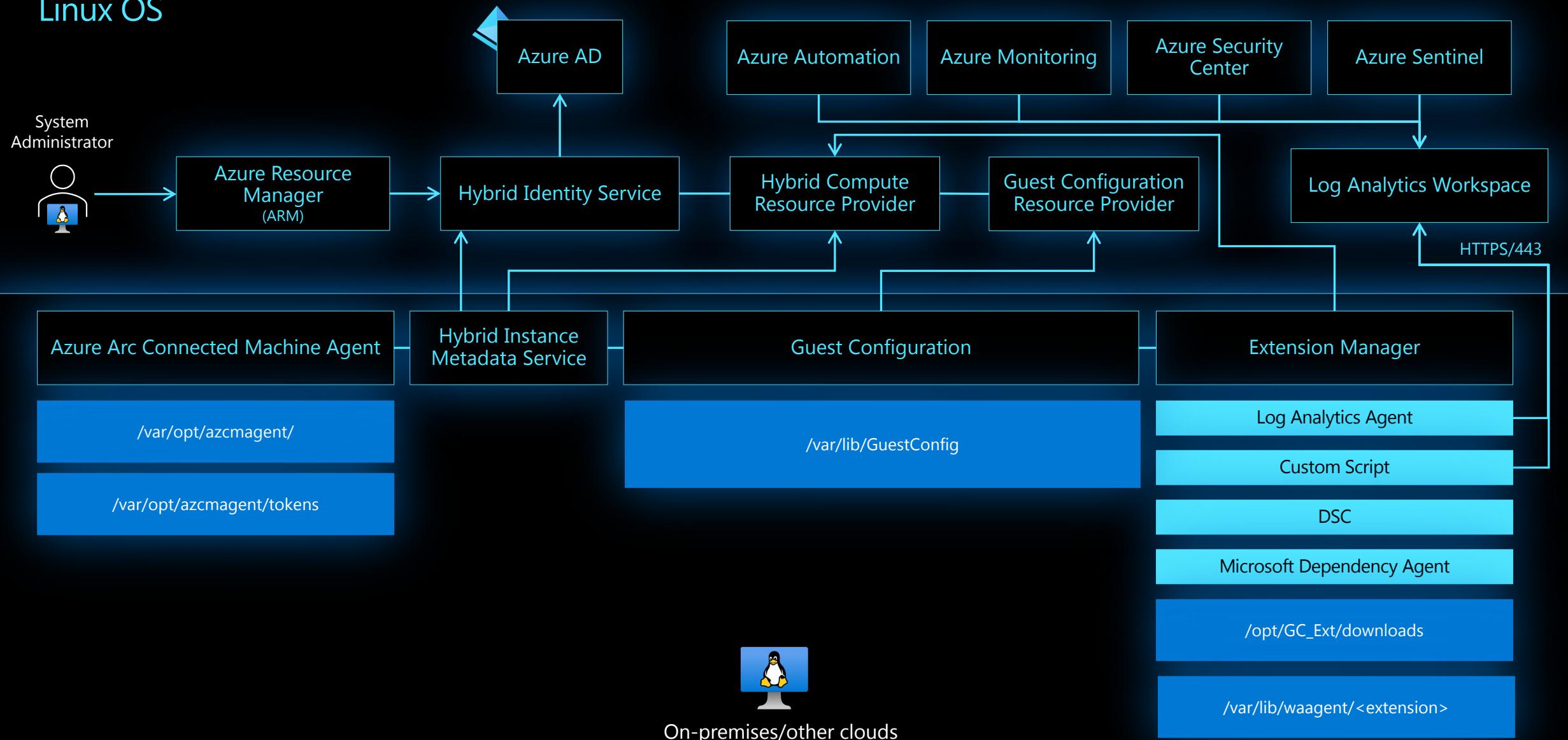
Azure Arc-enabled servers

Connected Machine Agent



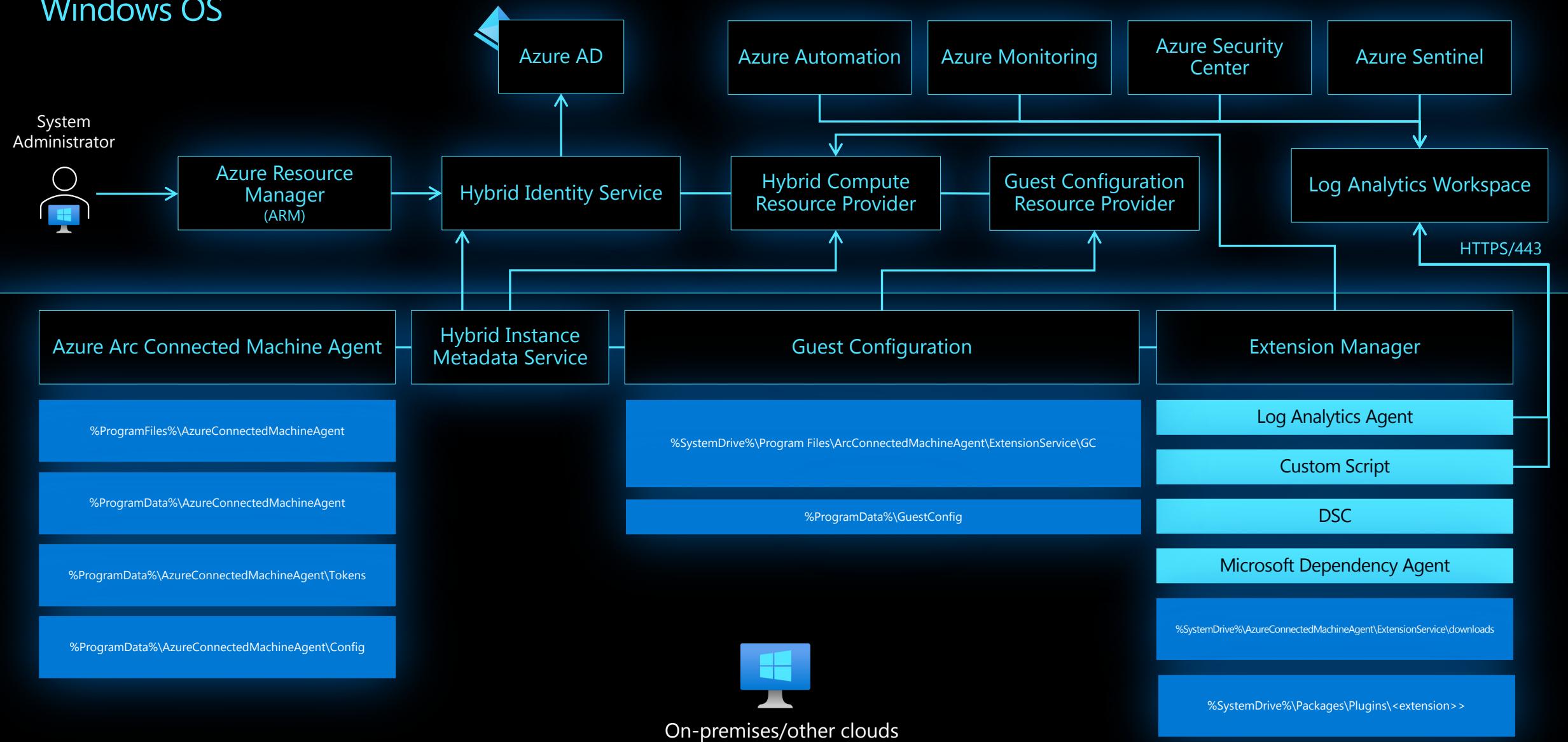
Azure Arc-enabled servers architecture

Linux OS

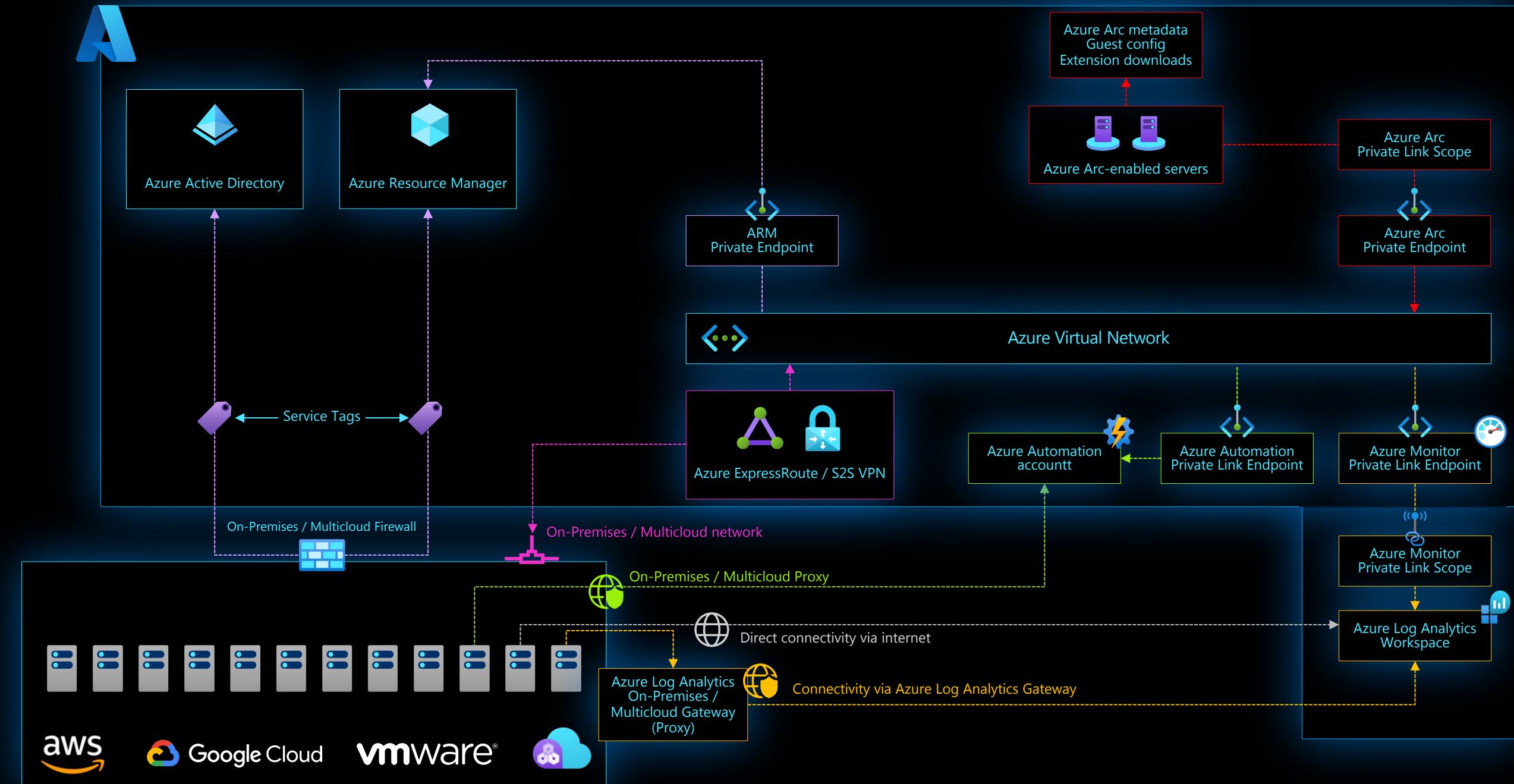


Azure Arc-enabled servers architecture

Windows OS



Azure Arc-enabled servers - Private Link integration



Demos

We love Demos!



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IT Pros edition

Azure Resource Manager (ARM)



Azure Bicep



Hashicorp Terraform



ArcBox (IT Pros) Azure Resource Group



ArcBox Workbook



Azure Monitor



Azure Policy



Azure Log Analytics



Microsoft Defender
for Cloud



Azure Sentinel



ArcBox-SQL
Azure Arc-enabled
SQL server



ArcBox-SQL
Azure Arc-enabled
server



ArcBox-Win2K19
Azure Arc-enabled
server



ArcBox-Win2K22
Azure Arc-enabled
server



ArcBox-Ubuntu
Azure Arc-enabled
server



ArcBox-CentOS
Azure Arc-enabled
server



ArcBox-SQL
Nested Hyper-V VM (with SQL installed)



ArcBox-Win2K19
Nested Hyper-V VM



ArcBox-Win2K22
Nested Hyper-V VM



ArcBox-Ubuntu
Nested Hyper-V VM



ArcBox-CentOS
Nested Hyper-V VM



Azure VM Hyper-V Host
Windows Server 2022 Datacenter with Hyper-V enabled (Nested Virtualization)



ArcBox Azure Virtual Network

Resources

- Official documentation
 - [Understand the guest configuration feature of Azure Policy](#)
- Azure Arc Jumpstart
 - aka.ms/azurearcjumpstart
- Writing DSC Resources for Azure Policy Guest Configuration for Linux by Gael Colas
 - <https://www.youtube.com/watch?v=RxnxpZqvEmg>
- Demos and slides
 - github.com/PSConfEU

Q&A

15 minutes



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