

Next-level VMware Automation with PowerCLI and ScriptRunner

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ABOUT HEIKO



Head of Marketing
Automation & PowerShell Enthusiast

In the IT industry for 30+ years
IT Admin | Consultant | PM | BD | ...

My First Automations:
REXX | BAT | KiXtart | VBScript | VBA

First PowerShell experience:
Exchange 2007

Co-Founder of the
PowerShell User Group Rhein-Neckar



LET'S CONNECT



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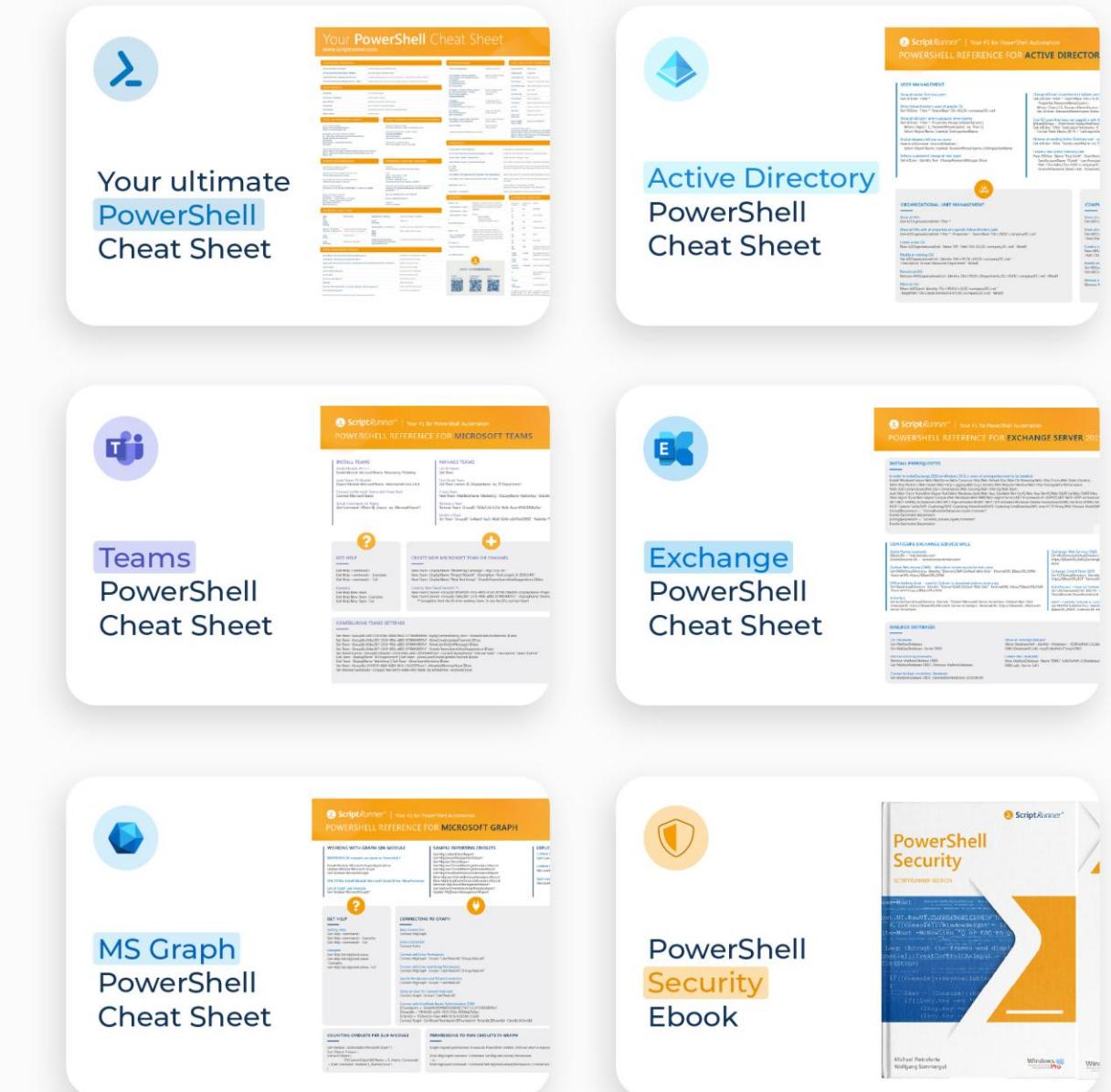


YOUR SCRIPT-POWERED IT AUTOMATION PLATFORM

We enable enterprise IT operations to
run fully automated infrastructures.

GET YOUR FREE POWERSHELL RESOURCES

lp.scriptrunner.com/en/powershell-goodies



Your ultimate **PowerShell** Cheat Sheet

Active Directory **PowerShell** Cheat Sheet

PowerShell Reference for **ACTIVE DIRECTORY**

Teams **PowerShell** Cheat Sheet

Exchange **PowerShell** Cheat Sheet

PowerShell Reference for **EXCHANGE SERVER**

MS Graph **PowerShell** Cheat Sheet

PowerShell Security **Ebook**

PowerShell Reference for **MICROSOFT GRAPH**

WHY IT AUTOMATION IS IMPORTANT





Manage
VMware
With
PowerShell



Next-Level
VMware Automation
With
ScriptRunner

THE IT AUTOMATION CHALLENGES



Integration
Complexity



Scalability
Issues



Tool
Overload

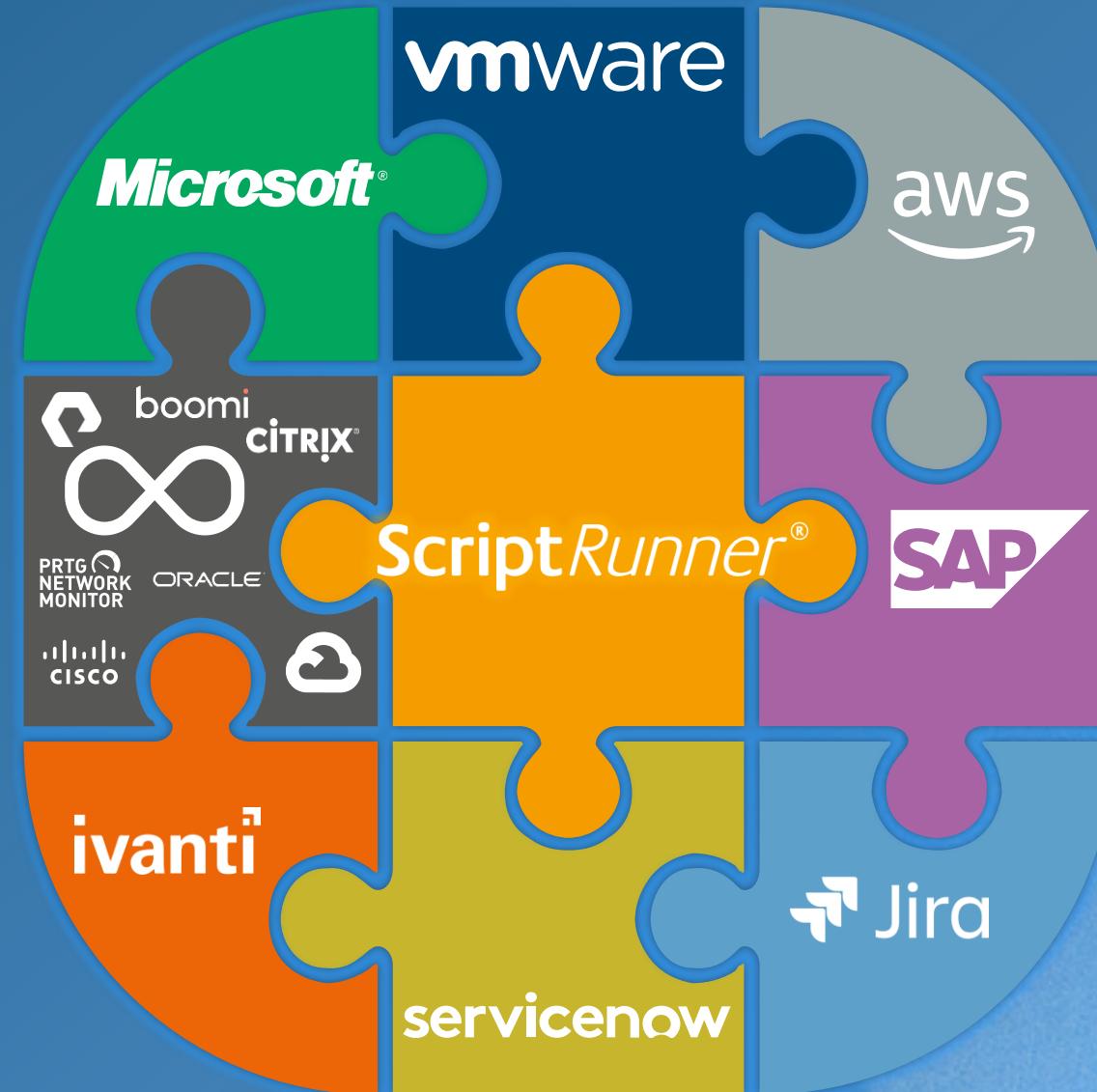


Security Risks



Siloed Teams

SCRIPTRUNNER: SOLVING THE INTEGRATION CHALLENGES



USER ON-/OFF-BOARDING PROCESS WITH SCRIPTRUNNER



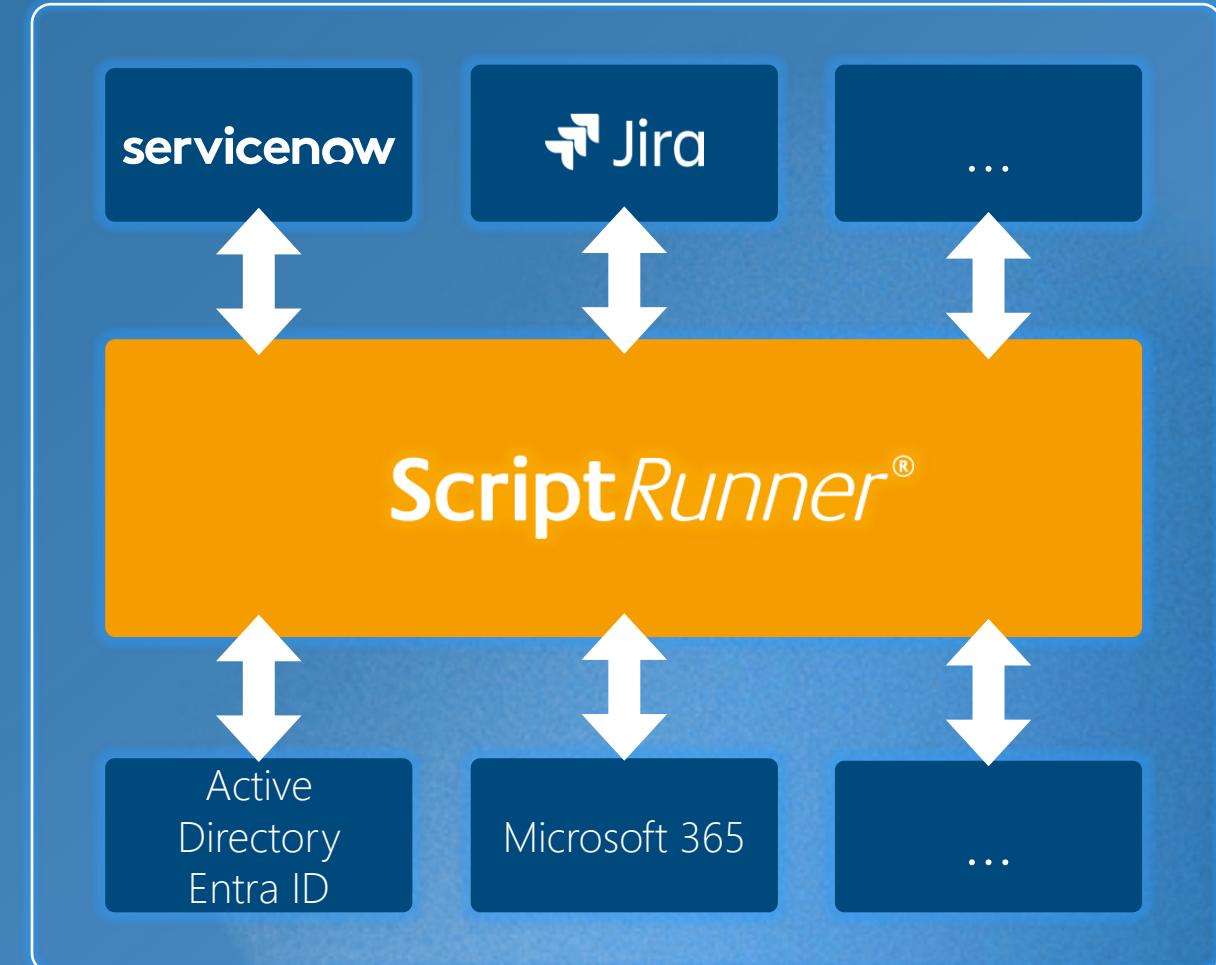
Validation and Approval Workflow

Seamless Bulk User Provisioning

Centralized Security and
User Permission Management

Automated License Allocation

Comprehensive Synchronization
and Audit Logging



SCRIPTRUNNER: SOLVING THE SCALABILITY CHALLENGES



One Solution for IT-Teams,
Help Desk and Self-Services



Consistency + Compliance
Across All Platforms



Manage and Monitor
IT Processes Effectively



Streamline and Automate
Top IT Processes Instantly

High Availability
Load Balancing



Seamless Integration
Scale As You Grow



Unified Automation Platform
For Every Process Type



Easy Deployment
Fast ROI



HIGH AVAILABILITY WITH SCRIPTRUNNER



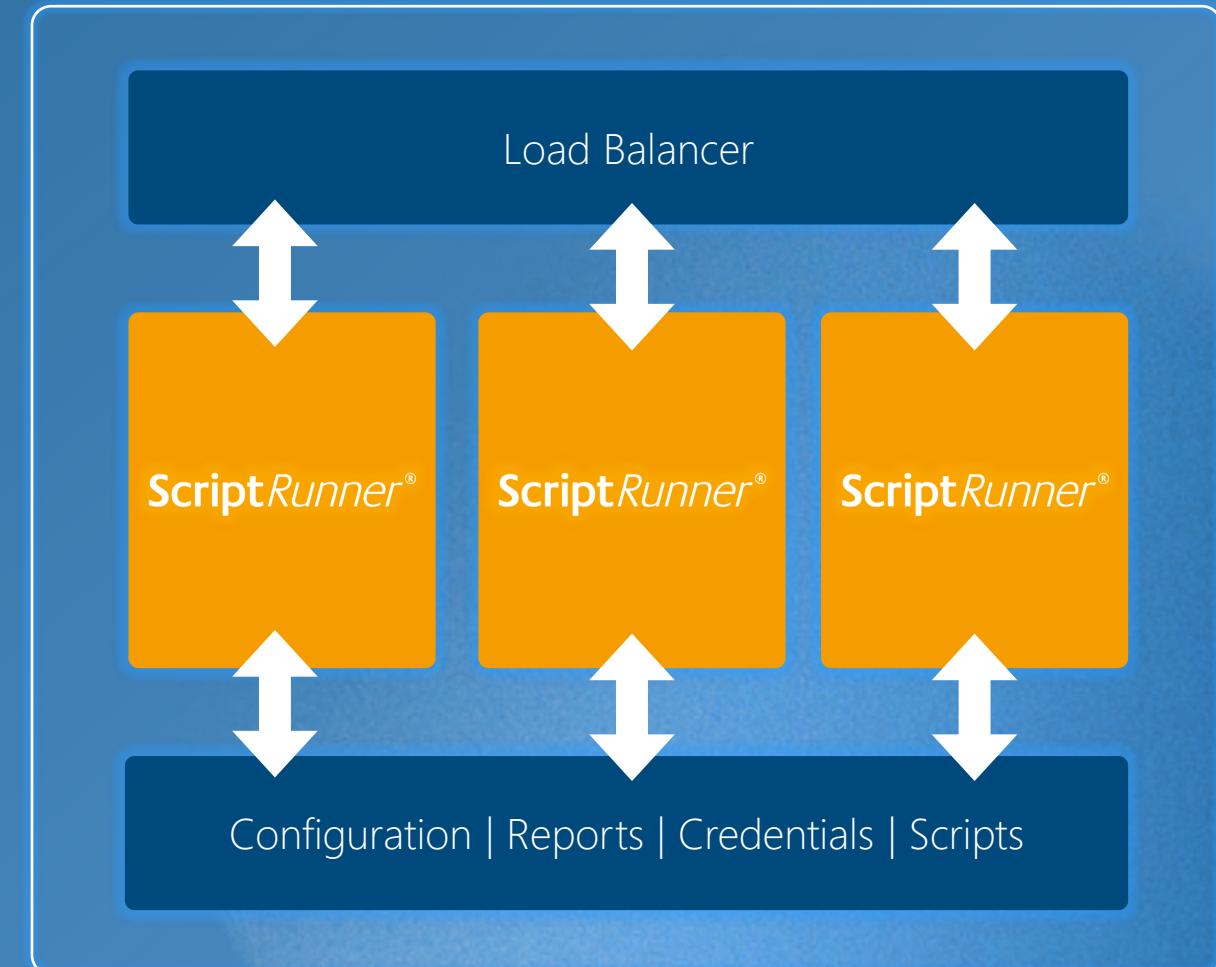
Reliable and Scalable
IT Automation Platform

Failover and Maintenance Support

Centralized Configuration
Management

Unified Reporting System

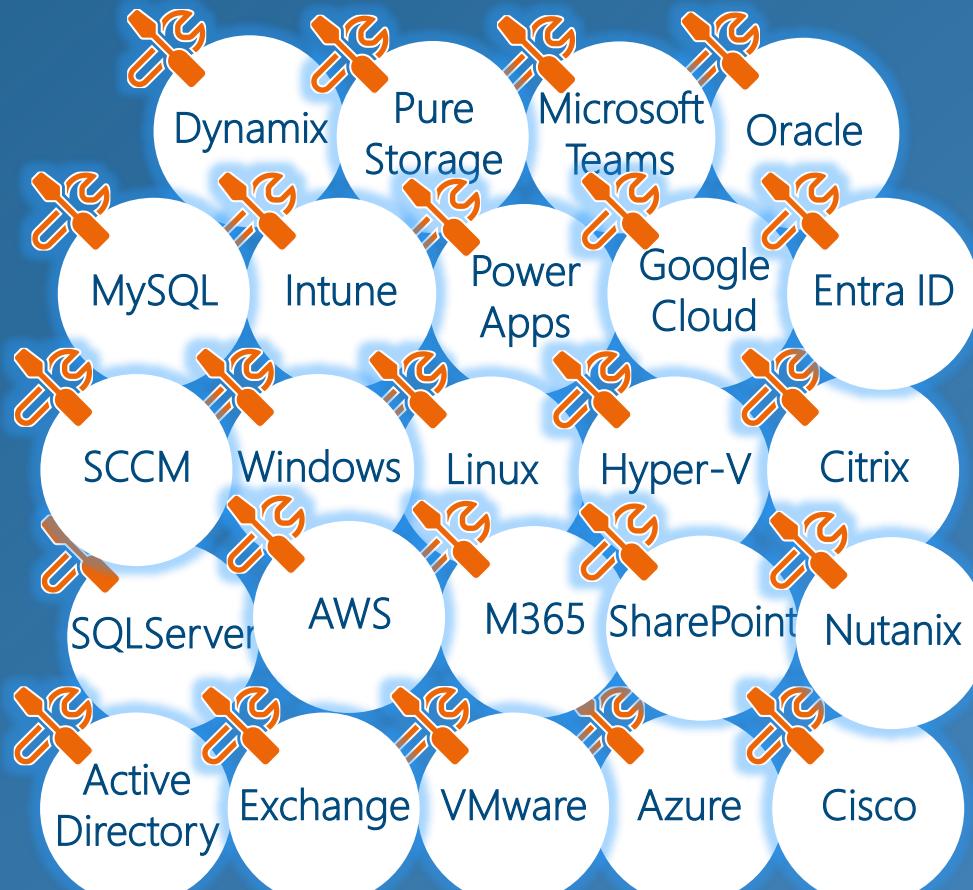
Secure and Centralized
Credential Storage



SCRIPTRUNNER: STOP TOOL OVERLOAD



Unmanageable Automation Tool Zoo



VS

ScriptRunner®

Future-Proof Automation

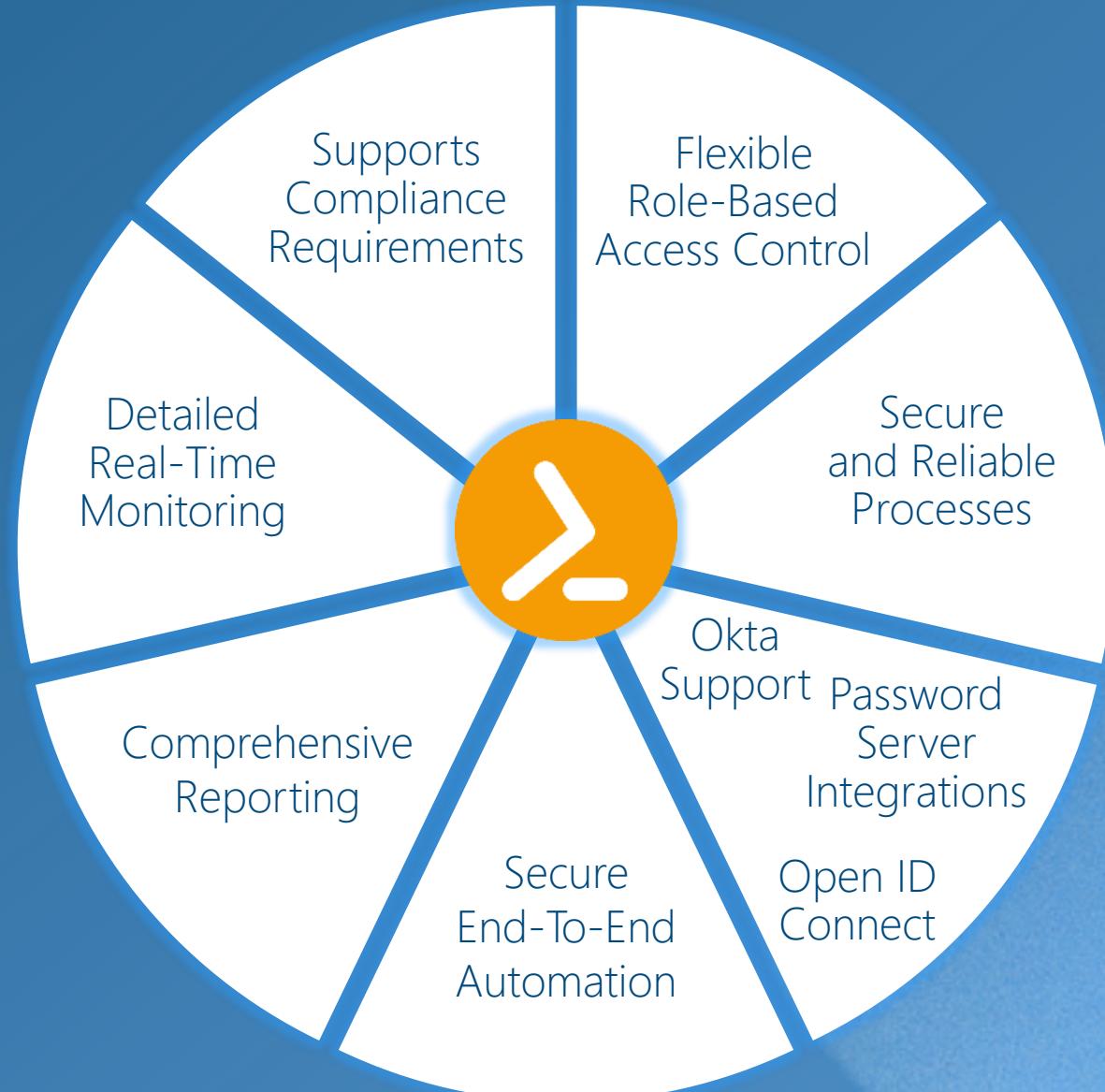
Quick Adoption To
IT Strategy Shifts

Centralized Hub For
Everything IT Automation

Consistent Enterprise-Wide
IT Automation Processes

Single IT Automation
Platform For Every System

SECURE IT AUTOMATION WITH SCRIPTRUNNER



SCRIPTRUNNER: BREAK DOWN IT AUTOMATION SILOS



One Single Platform to
Foster Enterprise-Wide
IT Automation Initiatives

Enables
Unified IT Automation
For All IT Operations Teams

ScriptRunner®

Seamless and Scalable
End-To-End Automation
Across All IT Systems

Holistic
Automation Management
Streamlines IT Processes and
Boosts Efficiency

AUTOMATE ALL YOUR IT SYSTEMS WITH ONE PLATFORM



POWERSHELL: THE BACKBONE OF IT AUTOMATION



Embedded Across
Countless Ecosystems

Endless Automation Possibilities

IT Automation Standard

Build for Enterprises
Robust | Secure | Versatile

Highly Flexible



SCRIPTRUNNER: YOUR COMPREHENSIVE IT AUTOMATION PLATFORM



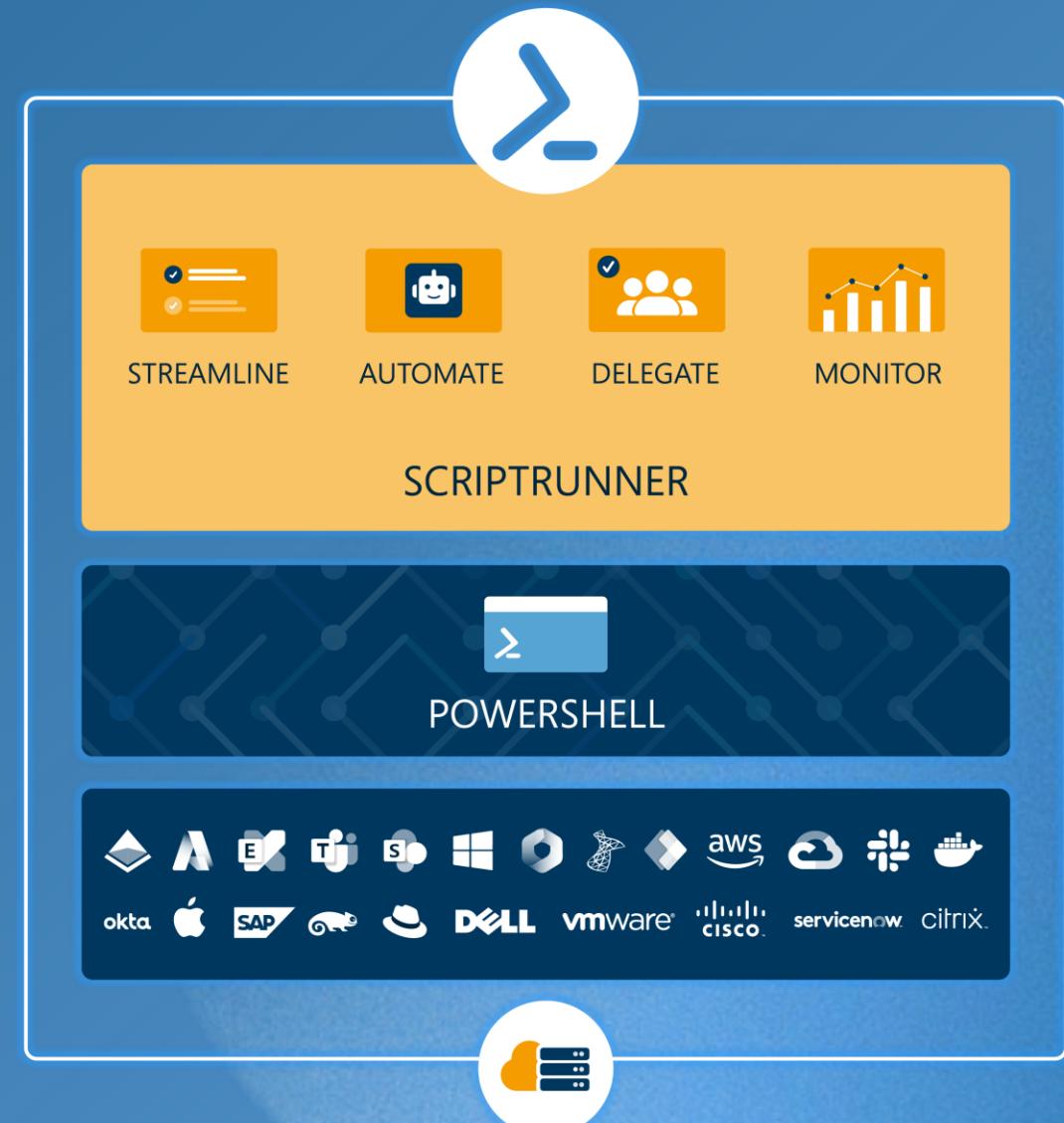
Combine PowerShell's versatility with Enterprise Management Capabilities

Multi-Platform | Multi-Purpose IT Automation with One Solution

Secure End-To-End Automation Routine Tasks To Complex Processes

Comprehensive Monitoring
Detailed Reporting

AI-Infused Scripting
Central PowerShell Governance



THE POWERCLI MODULE



Available for 10+ years

Automate all aspects of
vSphere management

Hundreds of Cmdlets

Current version: 13.3
13.2 million downloads (PSGallery)

Supports Windows PowerShell
and PowerShell 7



EXAMPLE POWERSHELL USE CASES



Create | Manage | Remove VMs

Start | Stop | Restart | Set VMs

Manage Snapshots

Infrastructure Maintenance

Creating Reports



SCRIPTRUNNER: BREAK DOWN IT AUTOMATION SILOS



User On- and Offboarding

95%
FASTER

Permission and Access Management

90%
QUALITY BOOST

User Change Management

90%
IMPROVED

94%
ACCELERATED

Virtual Machine Deployment



100%
AUTOMATED

Infrastructure Reporting & Statistics



89%
FASTER

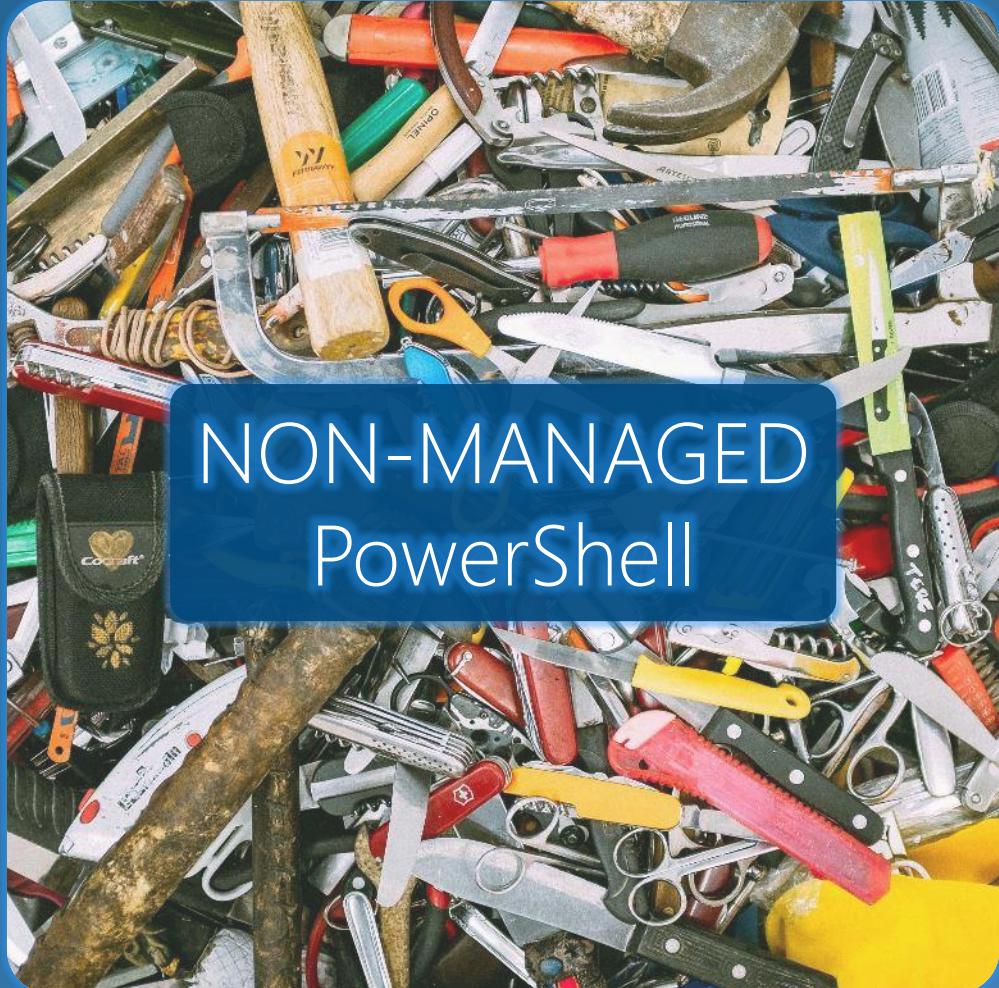
Configuration Management



SUCCESSFULL IT AUTOMATION WITH SCRIPTRUNNER



TWO WAYS OF AUTOMATING WITH POWERSHELL



NON-MANAGED
PowerShell



MANAGED
PowerShell
With
ScriptRunner



STANDARDIZATION, AUTOMATION AND DELEGATION OF RECURRING TASKS

AUTO-CREATED
USER FRIENDLY
WEB FORMS

SECURE
MANAGEMENT
AND
DELEGATION

CENTRALIZED SCRIPTS AND
MODULES MANAGEMENT

DELEGATION
SCHEDULED
EVENT-DRIVEN

COMPREHENSIVE
MONITORING AND
REPORTING



CENTRALIZED SCRIPT MANAGEMENT



The screenshot shows the ScriptRunner web application interface. The left sidebar is titled "ScriptRunner" and contains navigation links: Dashboard, Run, Authorize & Delegate, Monitoring, Configuration, Actions, Queries, Targets, Scripts (which is selected and highlighted in blue), and Credentials. Below these are Settings and a "Scripts" section with a list of 1282 scripts.

The main content area shows a list of scripts under the heading "Scripts" (Showing 9 of 1282 Scripts). The list includes:

- Get-EOOutOfOffice.ps1
- Set-EOOutOfOffice - Copy (2).ps1
- Set-EOOutOfOffice - Copy.ps1
- Set-EOOutOfOffice.ps1** (selected, indicated by a checkmark icon)
- Set-EOOutOfOffice.ps1
- Set-EOOutOfOffice_orig.ps1
- TeamsWithOutOwner-Scheduled.ps1
- TeamsWithOutOwner.ps1
- Webinar_Set-ExOutOfOffice.ps1

A modal window for "Set-EOOutOfOffice.ps1" is open. The title bar says "Public" and the script name is "Set-EOOutOfOffice.ps1". It shows the status "Checked out by me". The modal has tabs: Save, Check in script, and Revoke script editing. The "Code editor" tab is active, showing the PowerShell script code:

```
51 [Parameter(ParameterSetName="Schedule Auto Reply")]
52 [Parameter(Mandatory = $true,ParameterSetName="Schedule Auto Reply")]
53 [Parameter(ParameterSetName="Disable Auto Reply")]
54 [Parameter(ParameterSetName="Enable Auto Reply")]
55 [Parameter(ParameterSetName="Schedule Auto Reply")]
56 [switch]$GenerateReport
57 )
58
59 try{
60     [string[]]$Properties = @('Identity','AutoReplyState','StartTime','EndTime','ExternalAudience',''
61     [string[]]$resultMessage = @()
62     [string]$msg = "Mailbox {0} "
63     [string]$replyType = 'All'
64
65     [hashtable]$cmdArgs = @{
66         'ErrorAction' = 'Stop'
67         'Confirm' = $false
68     }
69
70     if($PSCmdlet.ParameterSetName -eq "Disable Auto Reply"){
71         $cmdArgs.add('AutoReplyState' , 'Disabled')
72         $msg += "disabled"
73     }
74     else{
75         if($AutoReplyType -eq 'Only contact list members'){
76             $replyType = 'Known'
77         }
78         if($AutoReplyType -eq 'Internal only'){
79             $replyType = 'None'
80         }
81     }
82
83     $script:AutoReply = New-Object PSObject -Property $Properties
84     $script:AutoReply | Add-Member -MemberType NoteProperty -Name "ResultMessage" -Value $resultMessage
85     $script:AutoReply | Add-Member -MemberType NoteProperty -Name "Message" -Value $msg
86     $script:AutoReply | Add-Member -MemberType NoteProperty -Name "ReplyType" -Value $replyType
87
88     $script:AutoReply | ConvertTo-Json | Out-String
89
90     if($GenerateReport){
91         $report = $script:AutoReply | ConvertTo-Json | Out-String
92         $report | Set-Content -Path $reportPath
93     }
94
95     $script:AutoReply
96 }
```

The right side of the interface features a large search bar with placeholder text "Search for a script or configuration item" and a "Search" button. A user profile icon for "COMPANY\Administrator(Kerberos)" is visible at the top right. The bottom right corner shows a small preview of another part of the application.

SECURE CREDENTIAL MANAGEMENT



Credentials Showing 13 of 13 credentials

[+ Create](#)

Create credential

Azure Key Vault

Use username and password or client secret from Azure Key Vault

Windows credential store

Use username and password or client secret from the local Windows credential store

WinRM client certificate

Use a WinRM client certificate from the local certificate store

Password server

Retrieve the secret from a central password server

PowerShell Secret Management

Retrieve the secret from the Secret Management vault (experimental)

SSH key

Use an existing SSH key file or create a new one

 PAT_Customers test123

Type

Username

Owner

Tags

Windows credential store

VMadmin

Public

Azure Key Vault

michael.gall@scriptrunner.com

Public

Password server

Public

Azure Key Vault

Git_pat

Public

Azure Key Vault

github_pat

Public

SSH key file

test

Public

Azure Key Vault

test01

Public

Azure Key Vault

test

Public

PASSWORD SERVER SUPPORT



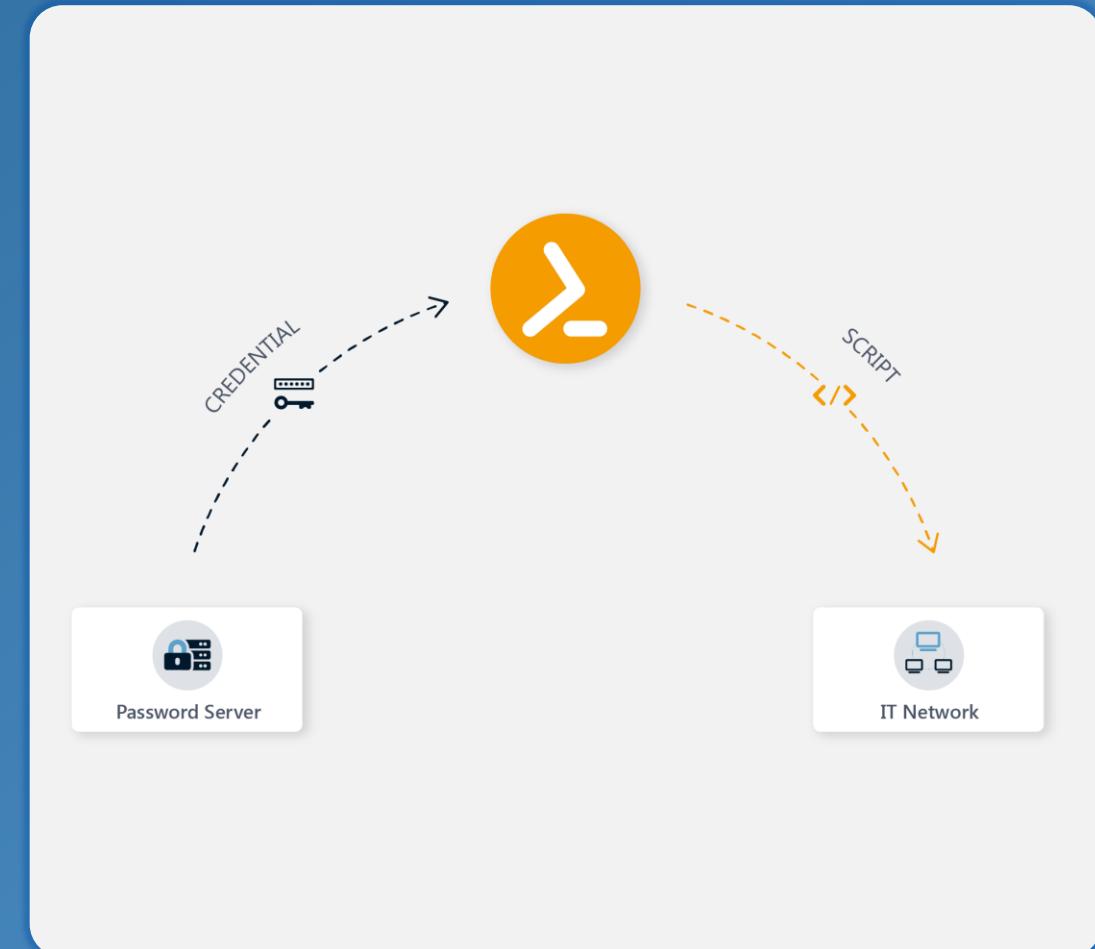
Connectors for CyberArk, Pleasant
and Delinea (Thycotic)

Support for Azure KeyVault

Automatic password rotation

Single secure password repository in
multi-server scenarios

No local credentials



SECURE DELEGATION



ScriptRunner executes scripts and connects to backend systems

No user access to backend systems, scripts, modules and credentials

Role-based secure tasks delegation to help desk teams and end-users

Easy access via ScriptRunner Portal and Self-Service Portals

Complete separation of PowerShell environment and user context



DEMOCRATIZING POWERSHELL | NO EXTRA CODING



The Script

```
86 #Import-Module VMware.Automation.Core
87 #Import-Module VMware.PowerCLI
88 $user = $SRXEnv.SRXStartedBy
89 $client = $SRXEnv.SRXStartedIP
90 $action = $SRXEnv.SRXDisplayName
91
92 try{
93     $Script:vmServer = Connect-VIServer -Server $VIserver -Credential $VI
94
95     if($PSCmdlet.ParameterSetName -eq "byID"){
96         $Script:machine = Get-VM -Server $Script:vmServer -Id $VMId -ErrorAction SilentlyContinue
97     }
98     elseif($PSCmdlet.ParameterSetName -eq "byName"){
99         $Script:machine = Get-VM -Server $Script:vmServer -Name $VMName -ErrorAction SilentlyContinue
100    }
101
102    switch($Command){
103        "Start"{
104            $null = Start-VM -VM $Script:machine -Server $Script:vmServer
105        }
106        "Stop"{
107            $null = Stop-VM -VM $Script:machine -Server $Script:vmServer
108        }
109        "Suspend"{
110            $null = Suspend-VM -VM $Script:machine -Server $Script:vmServer
111        }
112        "Restart"{
113            $null = Restart-VM -VM $Script:machine -Server $Script:vmServer
114        }
115    }
116
117    if($SRXEnv) {
118
119        $action01 = '<a href="http://winsrv-poc1.company.net/scriptrunner">' + $action
120        $SRXEnv.ResultMessage = "Command #$action01 successfully executed"
121    }
122}
```



Manage VMs

Manage VMs

Select virtual machine

Search... q

DC0_C0_RP0_VM0 - PoweredOff

Select a command you want to execute

4 values available

Start	Press enter to remove
Stop	
Suspend	
Restart	

▶

The User Experience

ScriptRunner Portal X + https://winsrv-poc1.company.net/ScriptRunner/Portal/#/actions/ COMPANY\tina(NTLM)

ScriptRunner®

Run

All Pinned ActiveDirectory Azure Cloud8 ExchangeOnline O365 SharePointOnline SQLServer + Add tab Search... Grid View List

Bulk User Onboarding 🕵️	Change User Properties 🚧	Create a new SharePoint Online Site 🌎	Manage existing VMs 🕹️	Out-Of-Office Management 🌴
Reset User Password (AD)	Add users to distribution groups 🕵️	Advanced Active Directory Report	Create a new team based on company guidelines 🚀	Create a Teams report 🔎
Create new Azure VM based on company standards 📈	Create new VMware VM	Detect Teams with only ONE owner	Reset User Password (Azure AD) 🚧	Show Azure Consumption Report 📊

FLEXIBLE ROLE-BASED DELEGATION



The screenshot shows the ScriptRunner Active Directory Self-Services interface. The left sidebar has a 'Authorize & Delegate' section selected. The main content area shows the 'Delegations' tab under 'CONFIGURATION'. On the right, a 'Delegations' panel lists assigned actions:

- AD: Show Active Directory User Properties (Get-ADUser)
- Advanced Active Directory Report
- Reset password for Active Directory user
- Change Active Directory User Properties

Below this, a list of available actions includes:

- Local: Add two values
- AD: Show Active Directory User Properties (Get-ADUser) (highlighted in orange)
- Simulate Set-ADUserPropertiesDemo
- Test-Cascaded ADQueries
- Get-ExMailboxProperties
- Remove-PrintJob
- Validation possibilities

A message at the bottom right of the delegations panel says 'Press enter to remove'.

COMPREHENSIVE MONITORING AND REPORTING



ScriptRunner®

Live Monitor

Running scripts: 3

Actions: 2

Scheduled: 1

Queued: 0

Queries: 1

Advanced Active Directory Report

Cancel execution

```
99: WARNING: Cannot resolve the manager, on the group 'Bass-AU'.
100: Done!
101: Working on Organizational Units Report...
102: Done!
103: Working on Users Report...
104: Done!
105: Working on Group Policy Report...
106: Done!
107: Working on Computers Report...
108: Done!
109: Compiling Report...
110:
```

Action or scripted query Started Target Runtime Started by Server

Simple Active Directory Report a few seconds ago AD local Running... COMPANY\tina ScriptRunner

Filter by servers...

SCRIPTRUNNER: YOUR COMPREHENSIVE IT AUTOMATION PLATFORM



Management

Consistent
processes

Better quality
Fullfill SLAs

Secure and effective
script management



DevOps

Expand scripting to
automate more



Developer

Streamline tasks
Maximize time



IT Operations



HelpDesk

Enhance Services
Expedite Delivery



EndUser

Self-Services for rapid
task resolution

WHAT ORGANIZATIONS ACHIEVED WITH SCRIPTRUNNER



We document how much time we save on some of the Actions. In the last year and a half, around 4,000 hours just on the Actions we track.

Bin Xu,
Senior System Administrator



Our users worldwide are now more empowered: they can perform assigned administrative tasks at any time without needing system rights. And all this with full, centralized traceability.

Michael Köppel,
Head of IT Automation & Integration



I showed my success, the numbers are solid. One user can be provisioned in a minute with ScriptRunner, and that is just one example of many use cases.

Martin Nikolov,
Senior Infrastructure Solution Architect



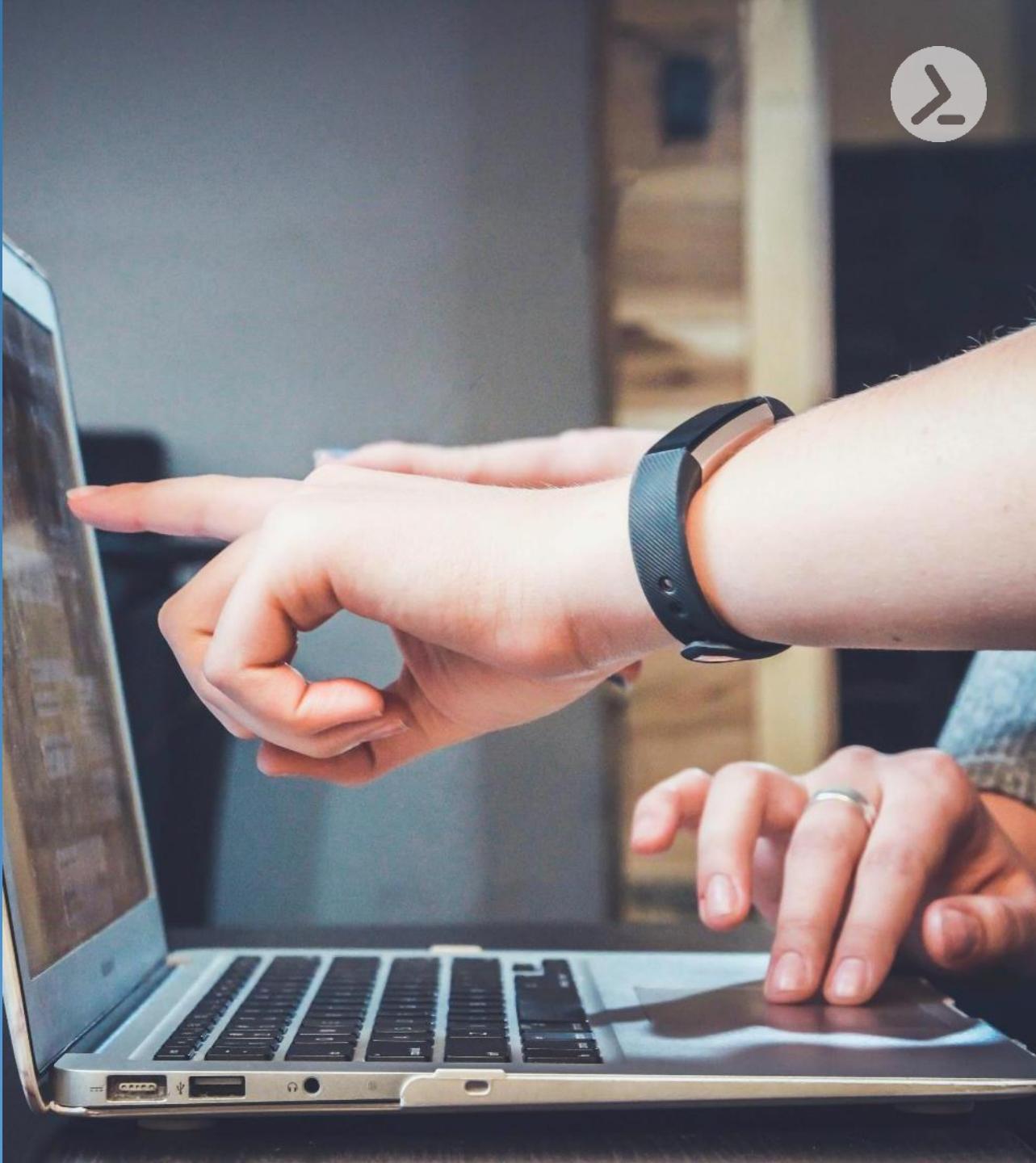
We're in control and we are able to act. If a script doesn't perform, we immediately see the result in the ScriptRunner Portal. This empowers us to target the problem in no time.

Martin Nikolov,
Senior Infrastructure Solution Architect



Let's talk about your
automation use cases.
Book an online session
with me.

lp.scriptrunner.com/meetings/heiko-brenn/demo-en





THANK YOU

#KeepOnAutomating