FUTURE DECODED

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IN PARTNERSHIP WITH: CommunityDays.it

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Automazione del cloud con Azure Automation

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About Me

- My journey
  - Distributed systems monitor and management since 1997
- What I'm working on
  - Design public cloud based architectures (Azure, AWS)
  - Design solutions to deploy, monitor and manage cloud based architectures
- Managing Principal Consultant in Progel spa
  - Lead a team of 15
  - Cloud and managed services solutions
- Microsoft MVP System center Cloud and Datacenter Management since 2009
- Founder of UGISC
  - User Group Italy System Center and Operations Management Suite (www.ugisystemcenter.org)

Microsoft MVP Most Valuable Professional

Agenda

- Where we left off
- Getting hybrid to get in control
- Coding for Azure Automation

Intro and more

Aka where we left off

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OMS positioned

Insights and Analytics
- Gain visibility across workloads, giving customers all the information needed on what's happening in the environment
- Includes log collection and search, application and server dependency mapping, as well as network health monitoring

Automation & Control
- Enable consistent control and compliance across environments for both Azure, 3rd-party clouds and on-premises datacenters
- Includes services to assist with process automation, desired state configuration, change tracking and update management

Security & Compliance
- Drive security across every area of the organization, delivering sophisticated threat intelligence capabilities, malware detection, and information on how systems may have been compromised
- Includes advanced security and audit functionality and malware threat analysis
- Azure Security Center availability for deep security management of Azure services

Protection & Recovery
- Ensure availability of important applications and data. Protection and Recovery helps you keep critical data protected through integrated cloud backup, and applications available, while minimizing the impact of disruptions to the business
- Includes both backup and site recovery services for an integrated experience

Typical (Azure) Automation Scenarios

Patch / Update / Backup Orchestration	Change Control, Configuration & Provisioning	Monitoring & Remediation
Patch Azure IaaS VMs without downtime, leveraging Traffic manager.	Deploy a VM on an Azure / On-Premise cloud and enable monitoring for the VM.	Automate remediation of issues raised in OpsMgr and OMS alerts
Orchestrate patching of applications in your data center with System Center 2012 / 2016.	Deploy applications to requesting users as part of a self-service automation strategy.	Start up and shut down development and test environments on a schedule.
SQL Backup on a schedule.	Deploy application from Git, run validation tests, and swap to production if tests pass.	Monitor for when a new service gets created, and configure it for the right tracing / backup policy.
Backup and restore Azure or Hyper-V VMs.	Automate onboarding of new users in Office 365.	Notify users who have underutilized Azure or Hyper-V VMs and perform remediation.

Microsoft Automation platforms

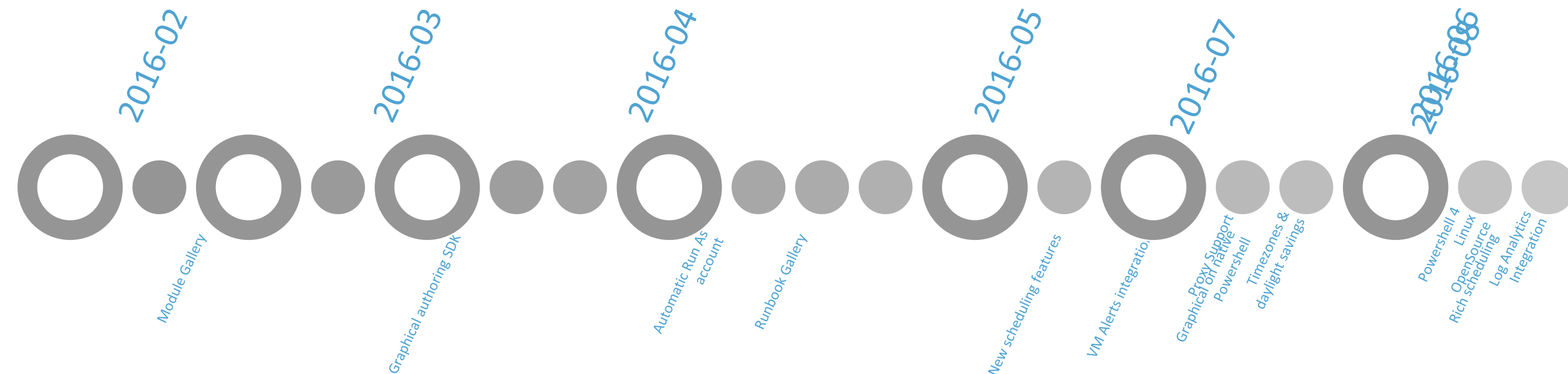| ORCHESTRATOR	SMA	AZURE AUTOMATION
• Simple drag-and-drop authoring experience • Integration with dozens of platforms • Challenges with parallelism, restart behavior	• PowerShell Workflow based engine • Control parallelism, restart behavior • No UI, component integration by you	• PowerShell Workflow • Powershell • GUI • Native PowerShell • Basic Authoring UI • Source Control Integration • DSC Support

What's up

2016-02
Module Gallery

2016-03
Graphical authoring SDK

2016-04
Automatic Run As account
Runbook Gallery

2016-05
New scheduling features

2016-07
VM Alerts integration
Proxy Support
Graphical on native Powershell
Timezones & daylight savings

2016-08
2016-09
Powershell 4
Linux
OpenSource
Rich scheduling
Log Analytics Integration

Comiing Soon

- Linux Hybrid worker
- Python 2 and bash support only on Linux
- Watchers Runbook
- Graphical rubooks improvements – error management
- Take Action from Log Analytics

Automation Dashboard

Automation Accounts & Dashboard

Create Automation Accounts
- Organize your automation by group or individual contributor
- Accounts can live in different regions
- Create up to 30 accounts

Use Automation Dashboard
- Operational dashboard for analysis and troubleshooting
- Quickly access "problem" jobs to get up and running quickly
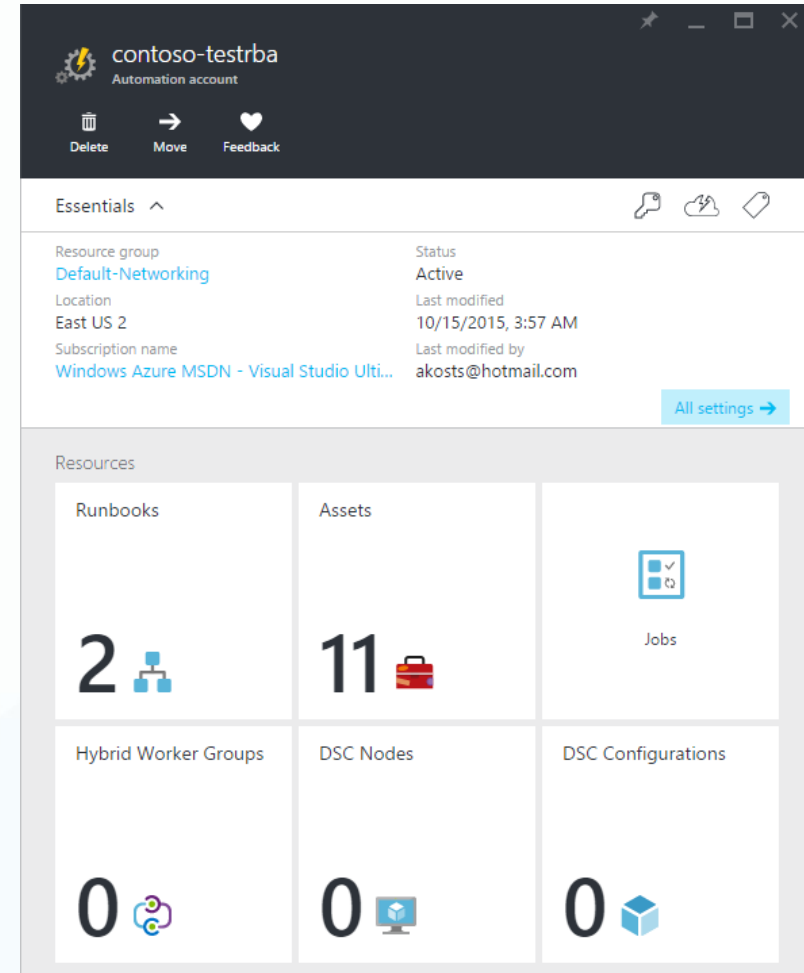
Manage Runbooks & Jobs

- Dashboard View
    - View runbook jobs over time
    - Find jobs that may need attention

- Runbooks View
    - Filtering of jobs based on status and date
    - Identify authoring state (New, In edit, Published)
    - Filter by tags to group related runbooks

- Jobs View
    - History of jobs per runbook
    - Who last updated and when
    - Input parameters and output
    - Drill into each job to view streams generated to help trou
    - Stop, Suspend and Resume job

Manage Automation Assets

- Manage Global Assets
  - Add additional integration modules
  - Update to new module versions
  - Create / manage credentials
  - Create / manage connections
  - Create / manage variables
  - Manage Schedules
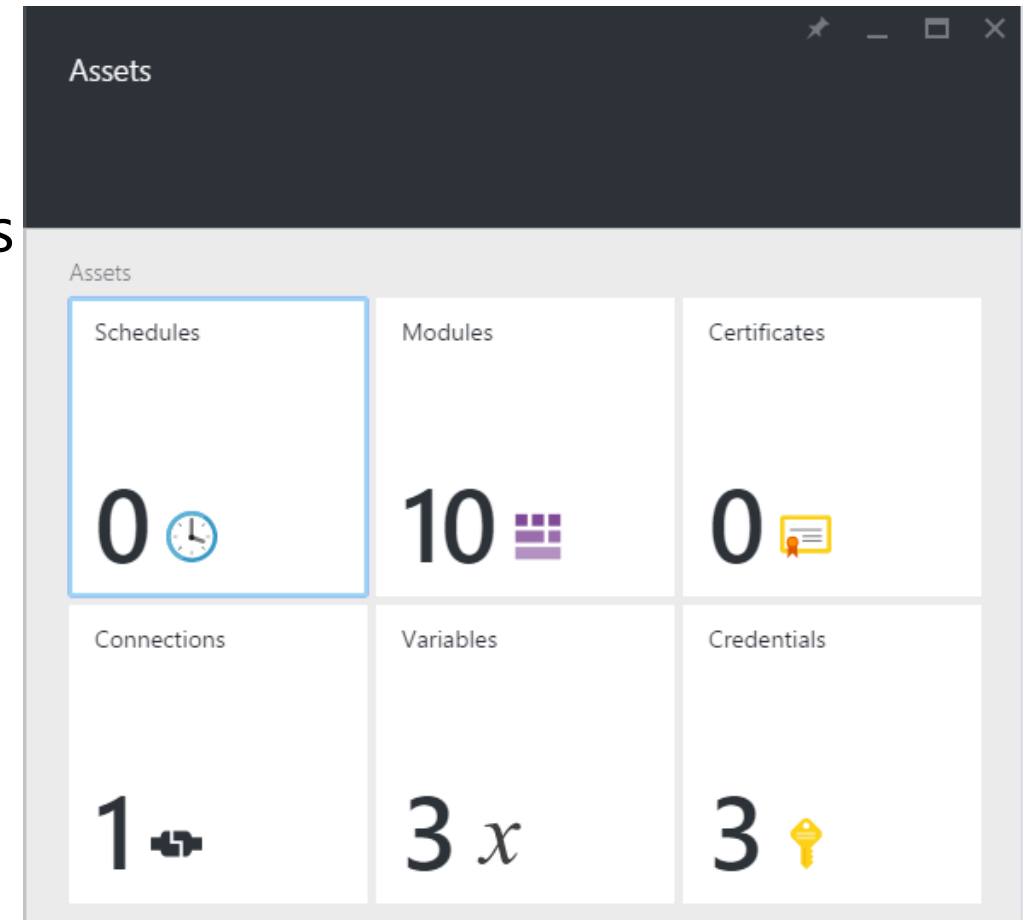
DEMO

Azure Automation Portal – from nothing to running in 50 seconds

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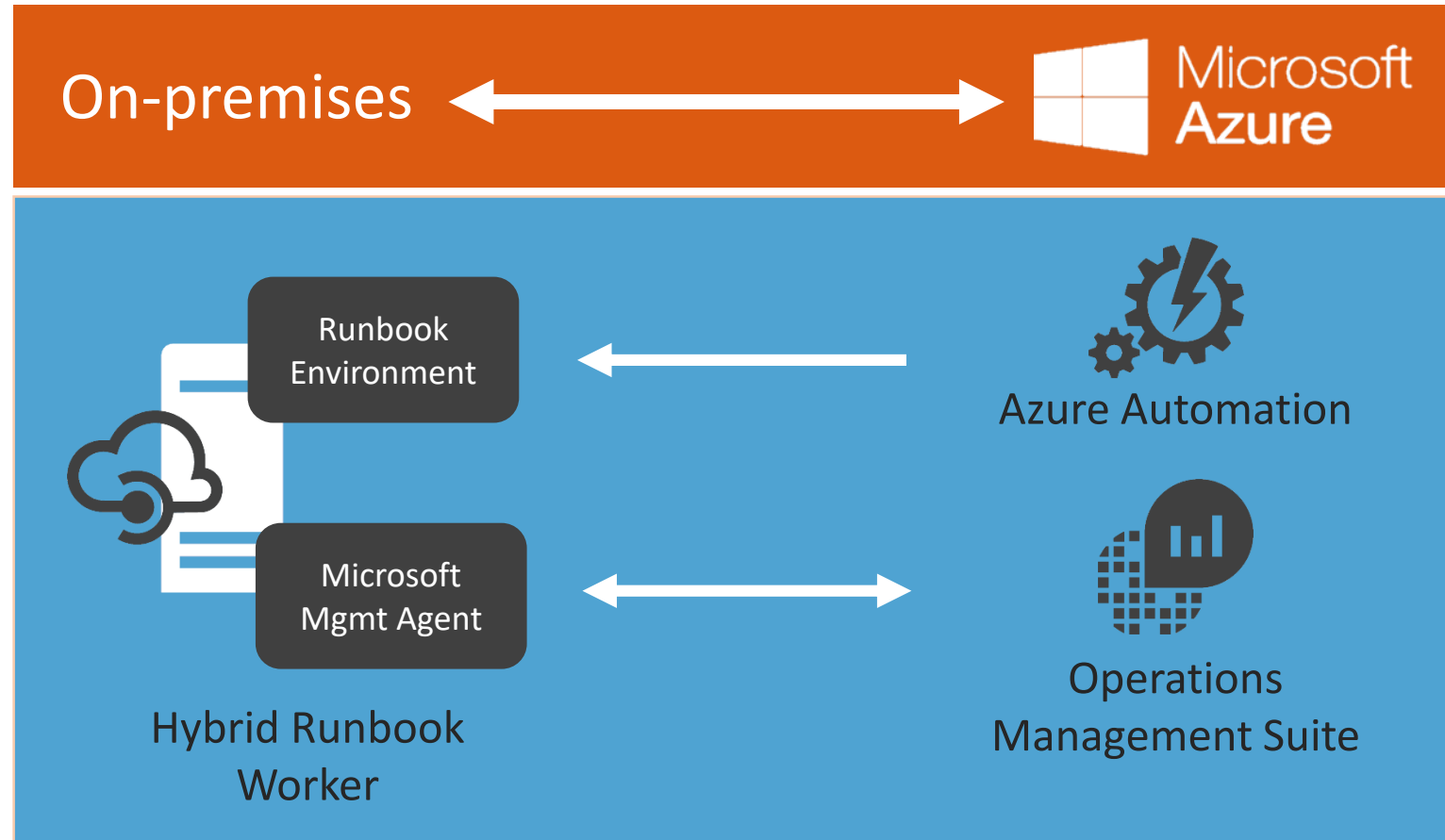
Getting Hybrid

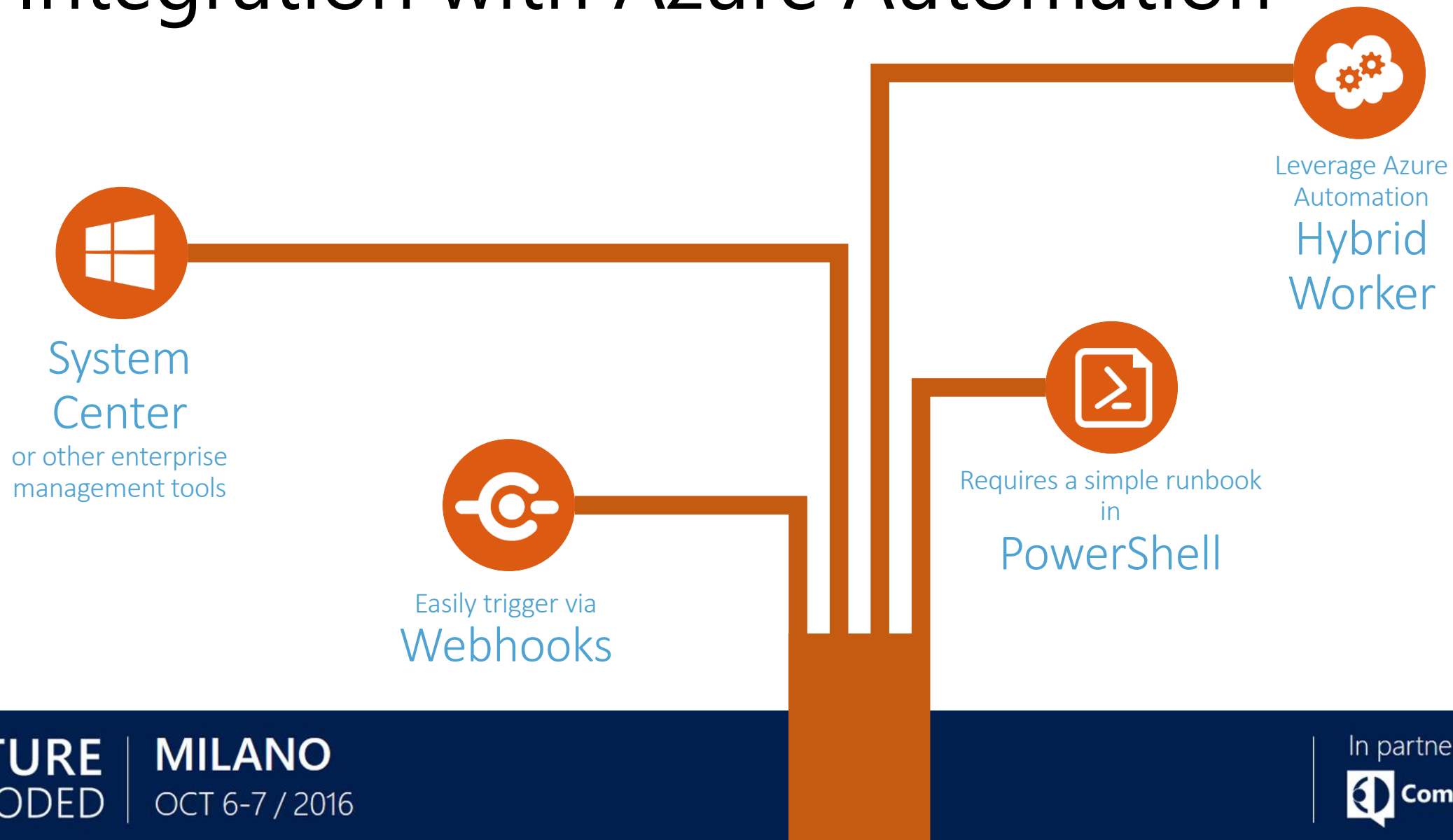To get in control

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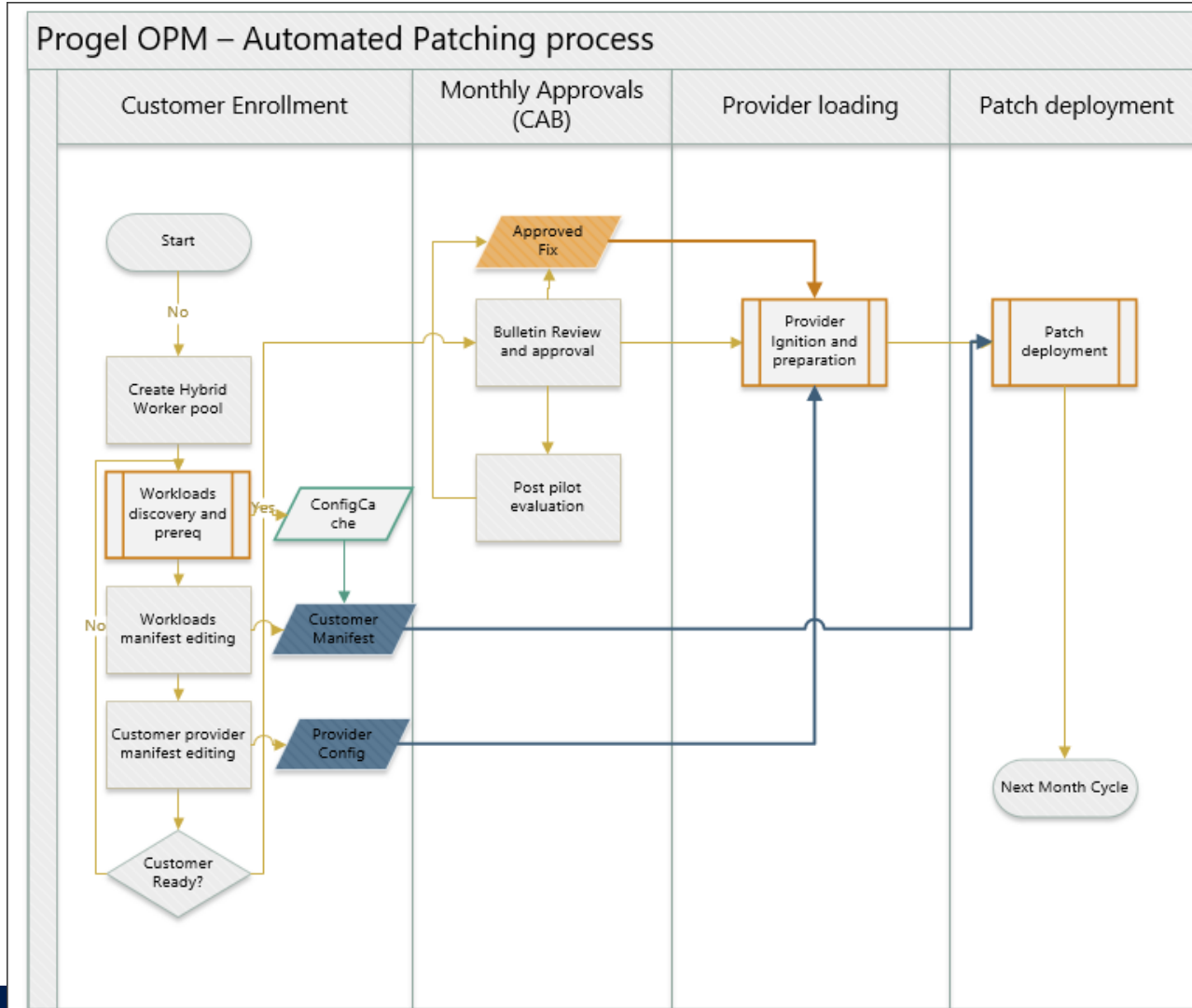#FutureDecoded

Getting hybrid to get in control

- An on-prem server running MS Mgmt Agent

- Executes runbooks downloaded from AA

- Reports results back to AA and OMS

- Can be deployed in groups for high availability

- Requires no ports (outside-in)

On-premises

Microsoft Azure

Runbook Environment

Microsoft Mgmt Agent

Hybrid Runbook Worker

Azure Automation

Operations Management Suite

Integration with Azure Automation

Leverage Azure Automation
Hybrid Worker

System Center
or other enterprise management tools

Easily trigger via
Webhooks

Requires a simple runbook in
PowerShell

Azure Automation - real use case

We are using Azure Automation for...

- Patching across different customers
- Remediate our SCOM infrastructure
- Execute SQL Server Reports
- Execute Trend Analysis on Log Analytics Data
- Enrich the OMS Log Analytics capabilities
- Provision Azure VMs
- Automate DR with ASR

Azure Automation monitoring

- 'cause you want to know if your automations are running

- OMS Log Analytics

- System Center Operations Manager
  - Community based management pack
    (https://github.com/QuaeNocentDocent/OMS-ManagementPack)

Coding for automation

Coding Techniques

- Remoting
  - Azure -> Powershell modules and direct REST API
  - AWS -> Powershell module
  - Linux –> SSH powershell module
  - Windows -> Powershell remoting / WinRM
- Extending
  - Powershell modules
- Best practices
  - Add synopsys and helpuri
  - Use [OutputType()] (especially if you want to go graphical)
  - Add connection account definitions (Automation.json)

Community additions

- Powershell Gallery is the main source
- Notable integrations
  - HybridWorkerToolkit by @MrTaoYang
  - Posh-SSH by darkoperator (github.com/darkoperator)
  - Pester 'cause you want to automate testing for your automations ☺

Runbook Authoring Options

Azure Portal

Both script and visual authoring

Author from anywhere

Not an optimal scripting interface

PowerShell ISE

Author, test and publish from local PowerShell ISE instance

Create and test assets locally

DEMO

Coding for Automation

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Key takeaways

- Azure Automation is ready for production time
- Start to finish in 15' even in hybrid scenarios (maybe less)
- xPlat
- Powershell based
- Improving at cloud speed
- http://aka.ms/myoms

Domande?

Materiale su
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