Microsoft

Microsoft Ignite
The Tour

Azure DevOps for
IT Pro and Operations

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Andreas Sobczyk

- Senior Consultant @ CTGlobal
- Microsoft Azure MVP
- Focus Areas
  - Azure – Management, DevOps, IaaS
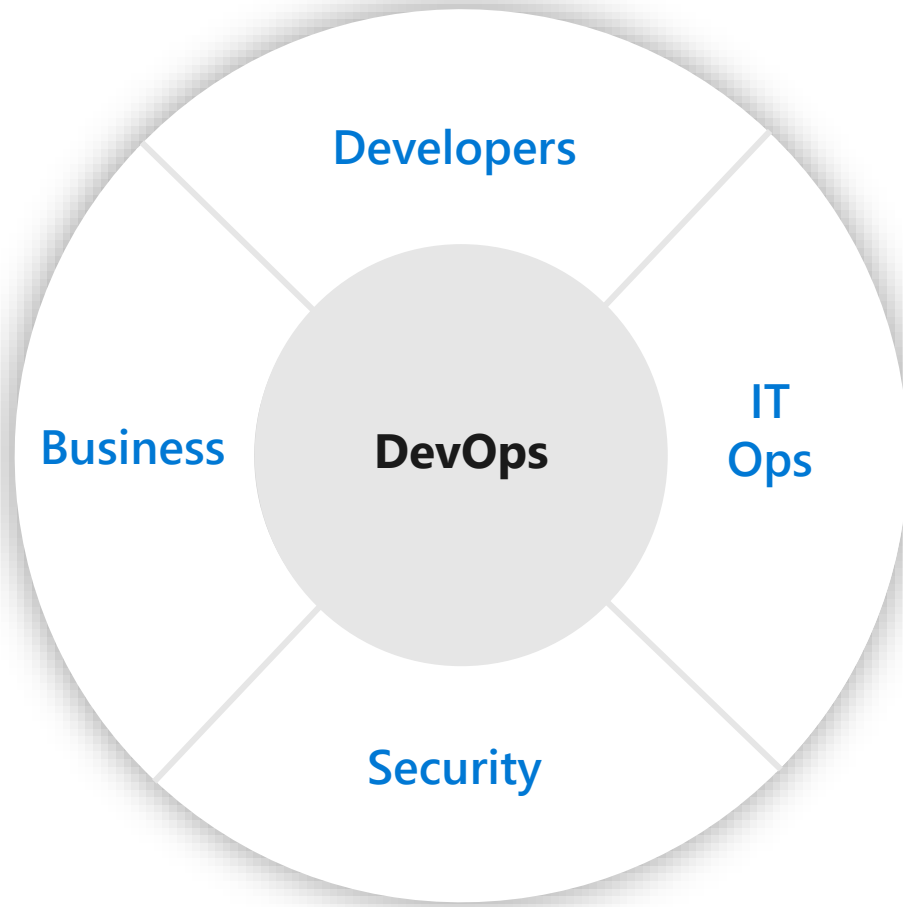 - Azure Stack Family
  - Automation

- Co-Founder Cloud & Datacenter User Group
- @Andreas_Sobczyk
- Blog: CloudMechanic.net
- Sparetime: Racing

Questions

- How many works as an IT Pro or operations?
- How many works with DevOps?
- How many works with ARM Templates/Infrastructure-as-code?

IT is transforming

Developers

Business

DevOps

IT Ops

Security

Adopting new cloud technologies

API

ARM   Templates   Scripting   Functions   Event Grid
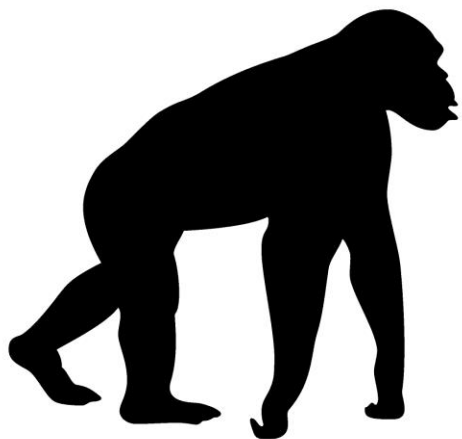
Changing operating model
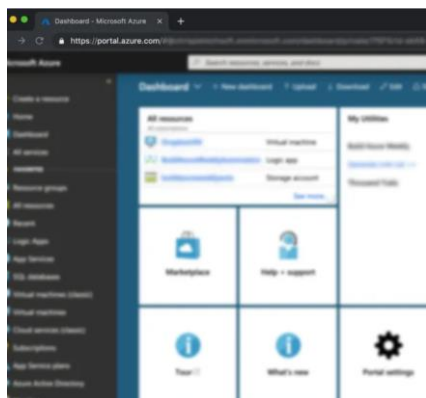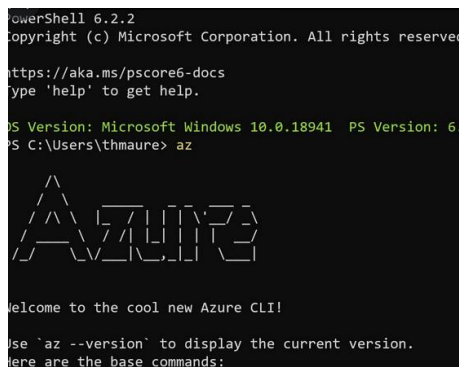
Developer
Collaboration   Business
value   Time to
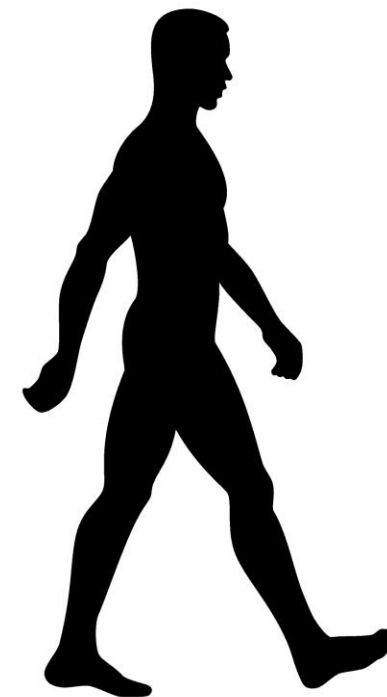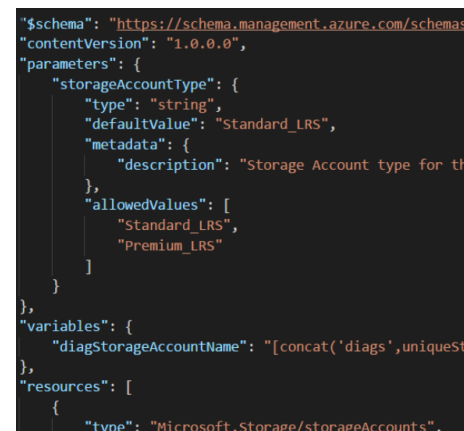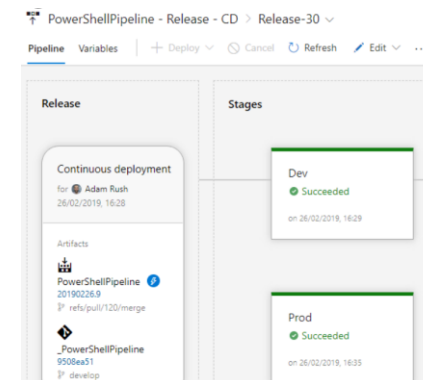market

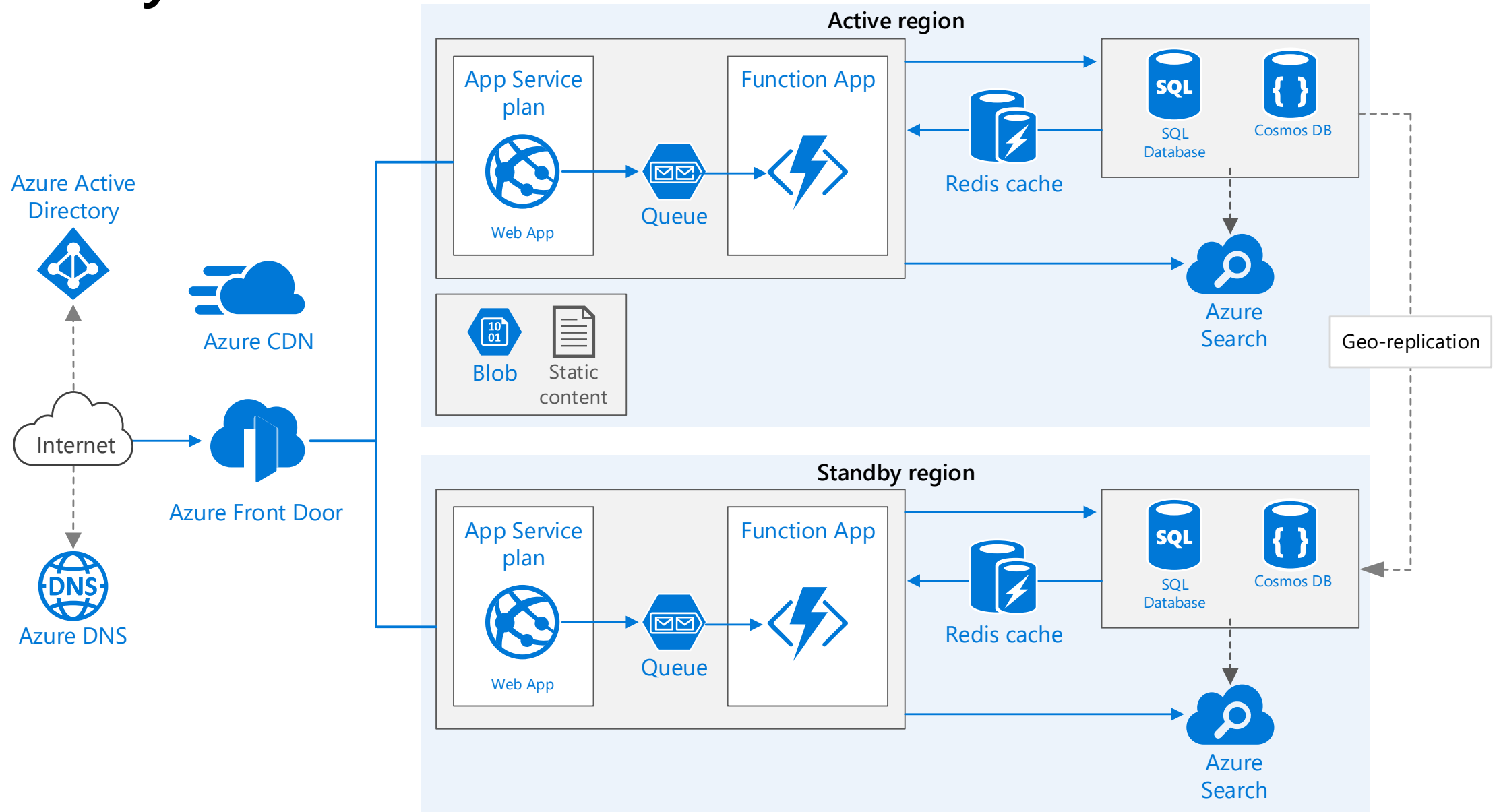Traditional IT   Azure Portal   PowerShell / CLI   ARM Templates   CI/CD Pipelines
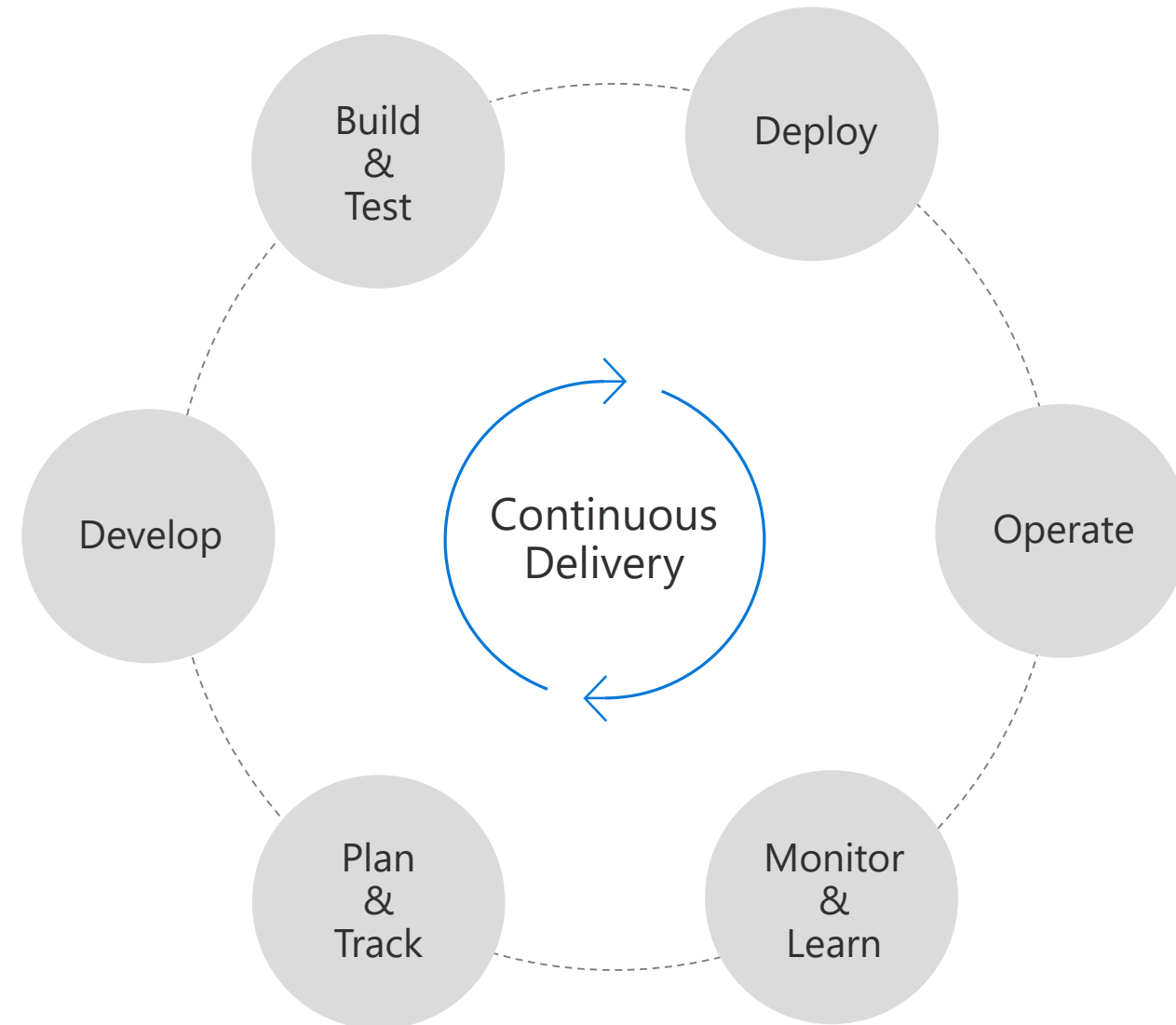
But why do we need this now?

What is DevOps?

People. Process. Products.

"

DevOps is the union of **people**, **process**, and **products** to enable continuous delivery of value to your end users. **"**

What is a DevOps "Team"?

- A team of people that contains everyone needed to produce the product.

- <u>What is a product?</u>

  - A product is anything with an outcome that matters to the business or its customers.

  - "Product" is most easily imagined as a software product/project,
    But "product" can also be something like "deploying web servers",
    "assign Azure Policies" or "managing the network infrastructure"

  - The team contains everyone needed to produce the product.

Product Team

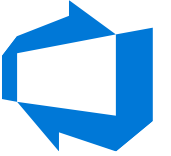| PM |
| Developer |
| Security |
| Sys. Engineer |
| Net. Engineer |

The challenges when working in DevOps teams

· Collaborate and orchestrate work across the team

· Share and control scripts, configurations, code, etc.

· Control the process of deploy, change and delete resources

· Store documentation and track changes in it

Azure DevOps

Provides collaboration tools for Development and Operations to organize tasks, share and deploy code, and documentation

Azure Boards

Deliver value to your users faster using proven agile tools to plan, track, and discuss work across your teams.

Azure Pipelines

Build, test, and deploy with CI/CD that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.

Azure Repos

Get unlimited, cloud-hosted private Git repos and collaborate to build better code with pull requests and advanced file management.

Azure Test Plans

Test and ship with confidence using manual and exploratory testing tools.

Azure Artifacts

Create, host, and share packages with your team, and add artifacts to your CI/CD pipelines with a single click.

Azure Wiki

Use Wiki to explain project objectives, epics, specs, release notes, best practices, or other content to ensure all your team members learn

Collaborate and orchestrate work across the team

Azure DevOps - Boards

- Track work with Kanban boards, backlogs, team dashboards, and custom reporting

Connected from idea to release

Track all your ideas at every development stage and keep your team aligned with all code changes linked directly to work items.
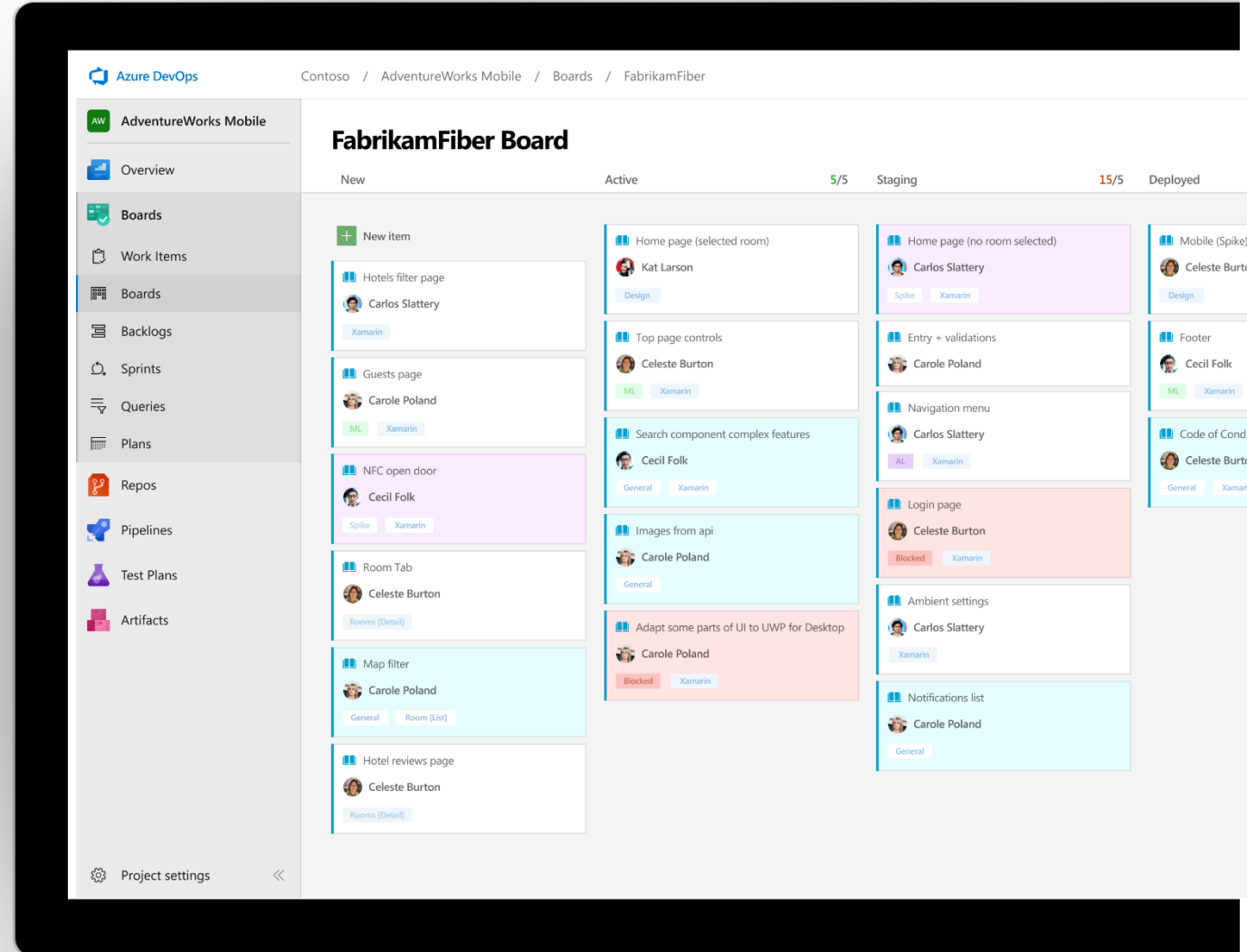
Scrum & Agile ready

Use built-in scrum boards and planning tools to help your teams run sprints, stand-ups, and planning meetings.
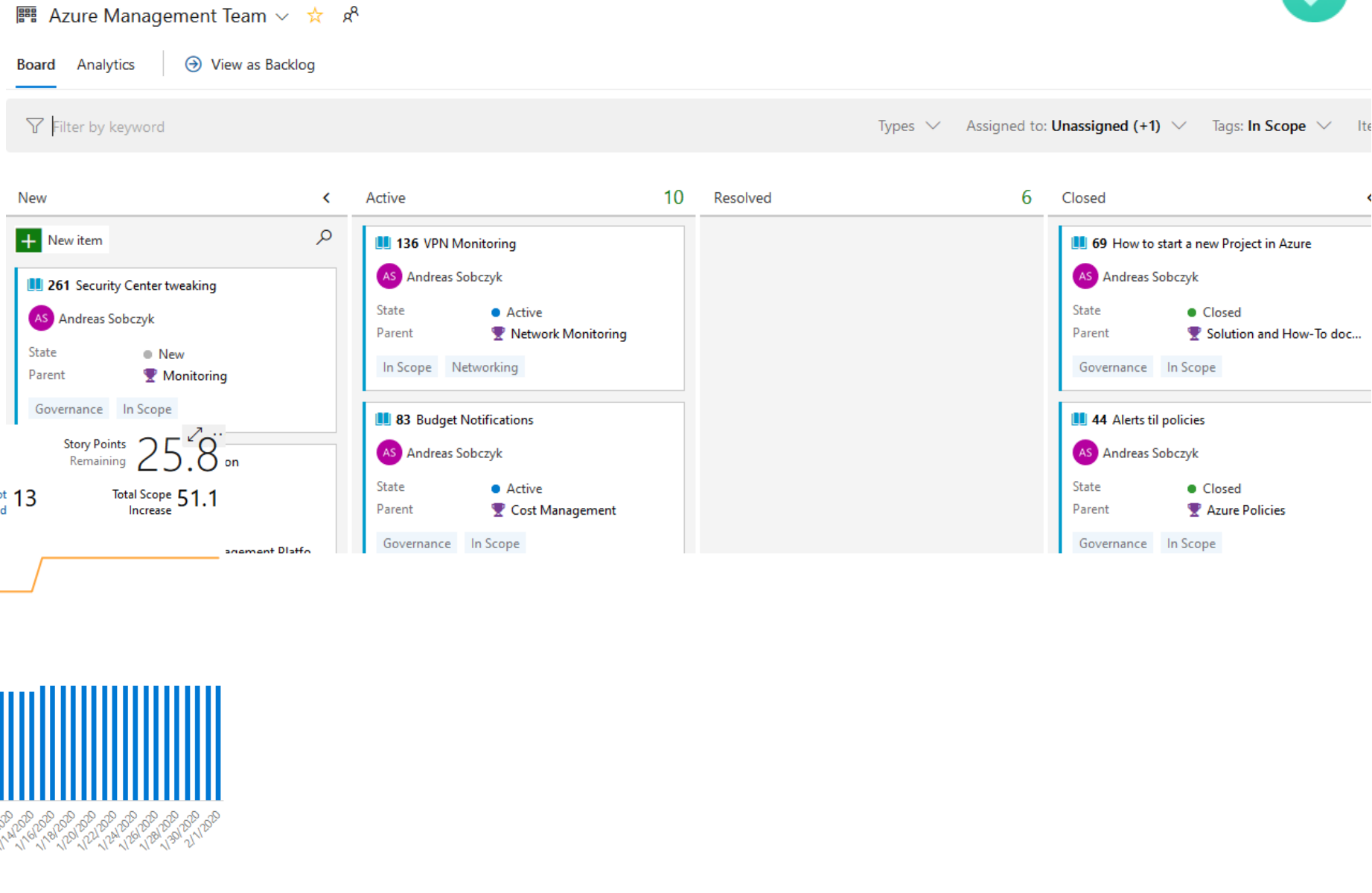
Project insights

Gain new insights into the health and status of your project with powerful analytics tools and dashboard widgets.

Azure DevOps - Boards, How can ITOps use this?

- Task boards
- Backlogs
- Sprints
- Burndown

Azure D[...]ro

- Epic = [...]
- Feature[...]
- User St[...]
- Task = [...]tasks

CAUTION

The following translation of tasks might cause high blood pressure and discomfort
for Agile experts

Share and control scripts, configurations, code, etc.

Version-control with Git

- A distributed version-control system
- No need for internet, everything is local

- What is version-control?
  - A system that keeps records of your changes
  - Allows collaboration development
  - Allows you to know who made what changes when
  - Allows you to revert changes

Azure DevOps - Repos

- Unlimited private Git repo hosting and support for TFVC that scales from a hobby project to the world's largest Git repositories

Works with any Git client

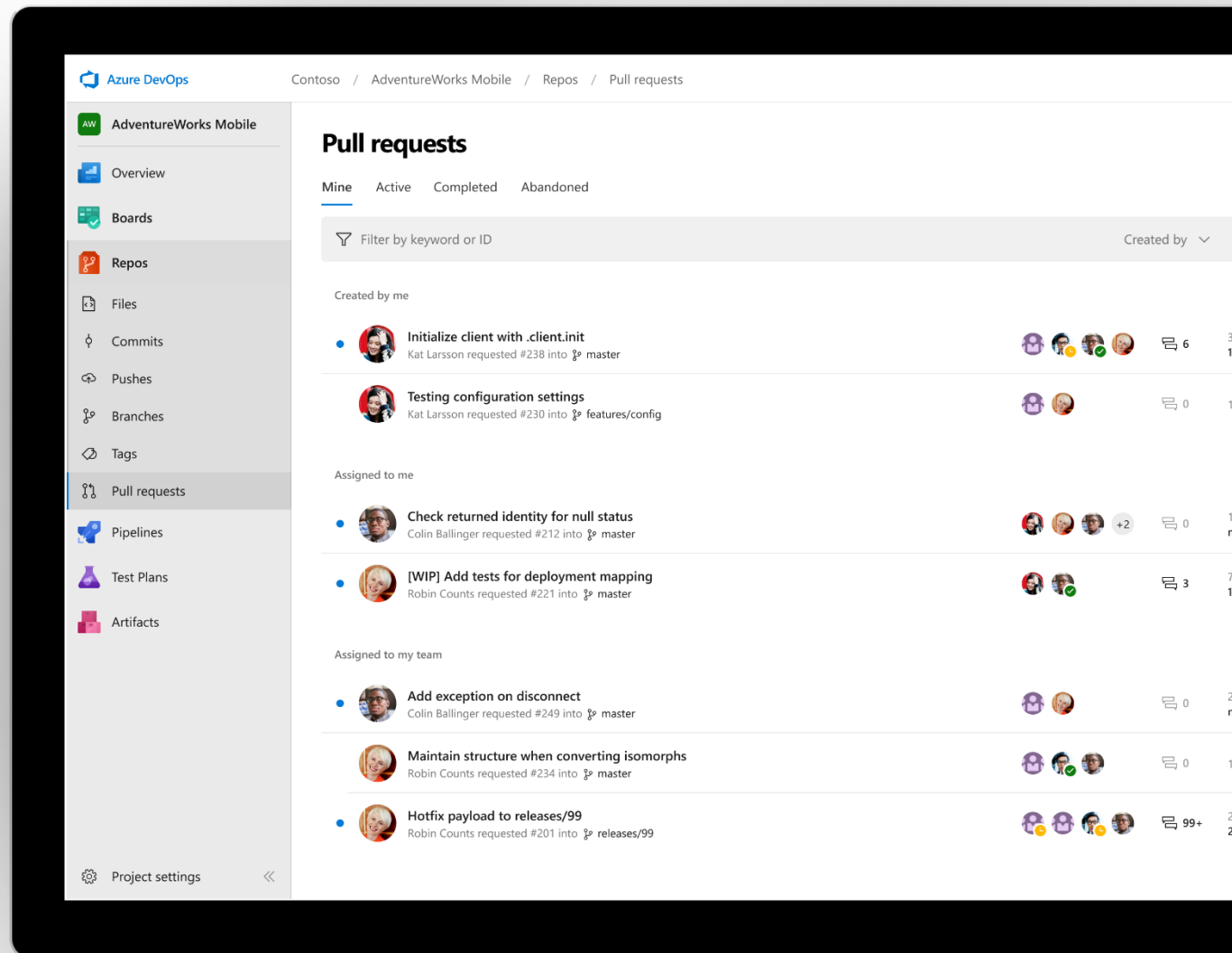Securely connect with and push code into your Git repos from any IDE, editor, or Git client.

Web hooks and API integration

Add validations and extensions from the marketplace or build your own using web hooks and REST APIs.
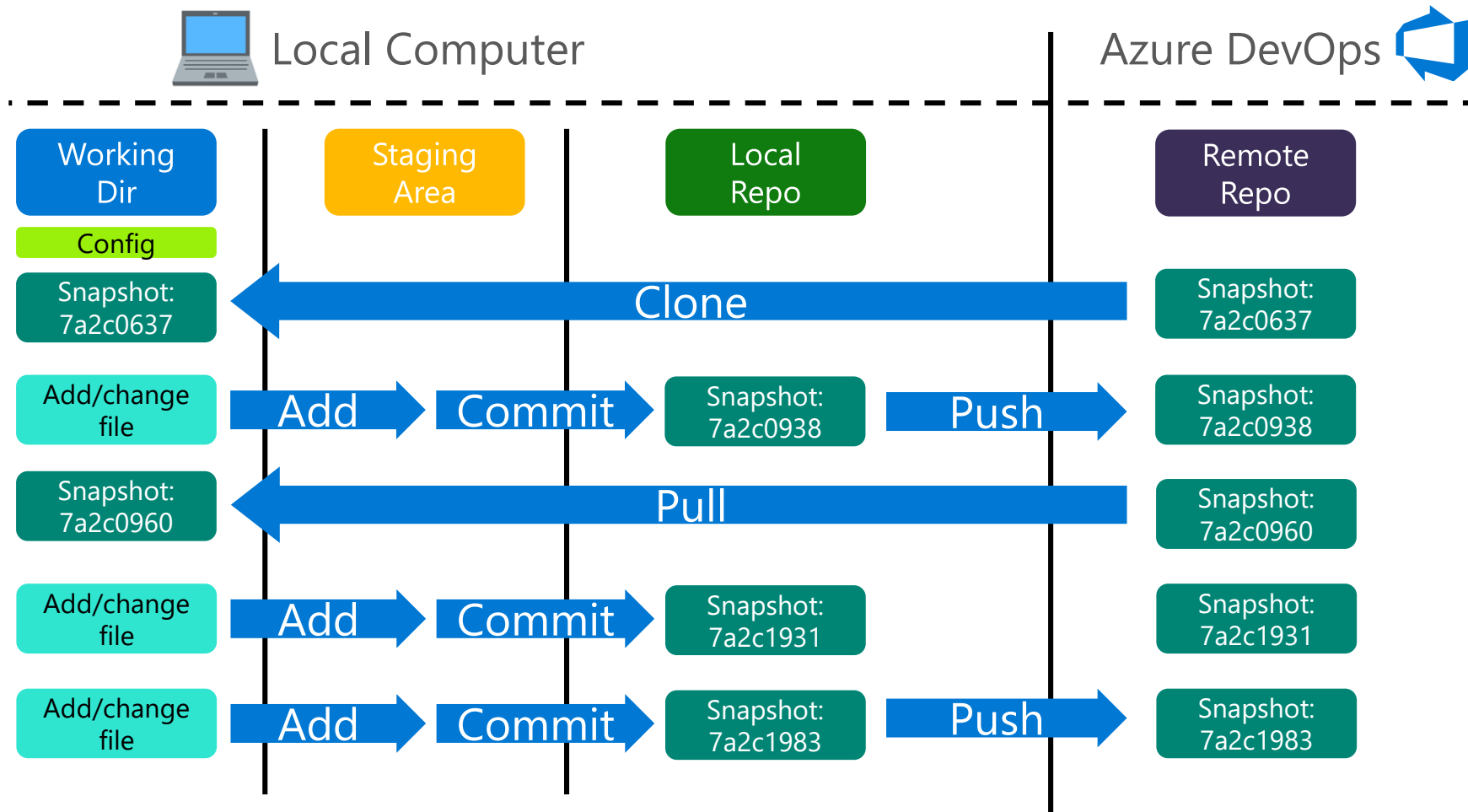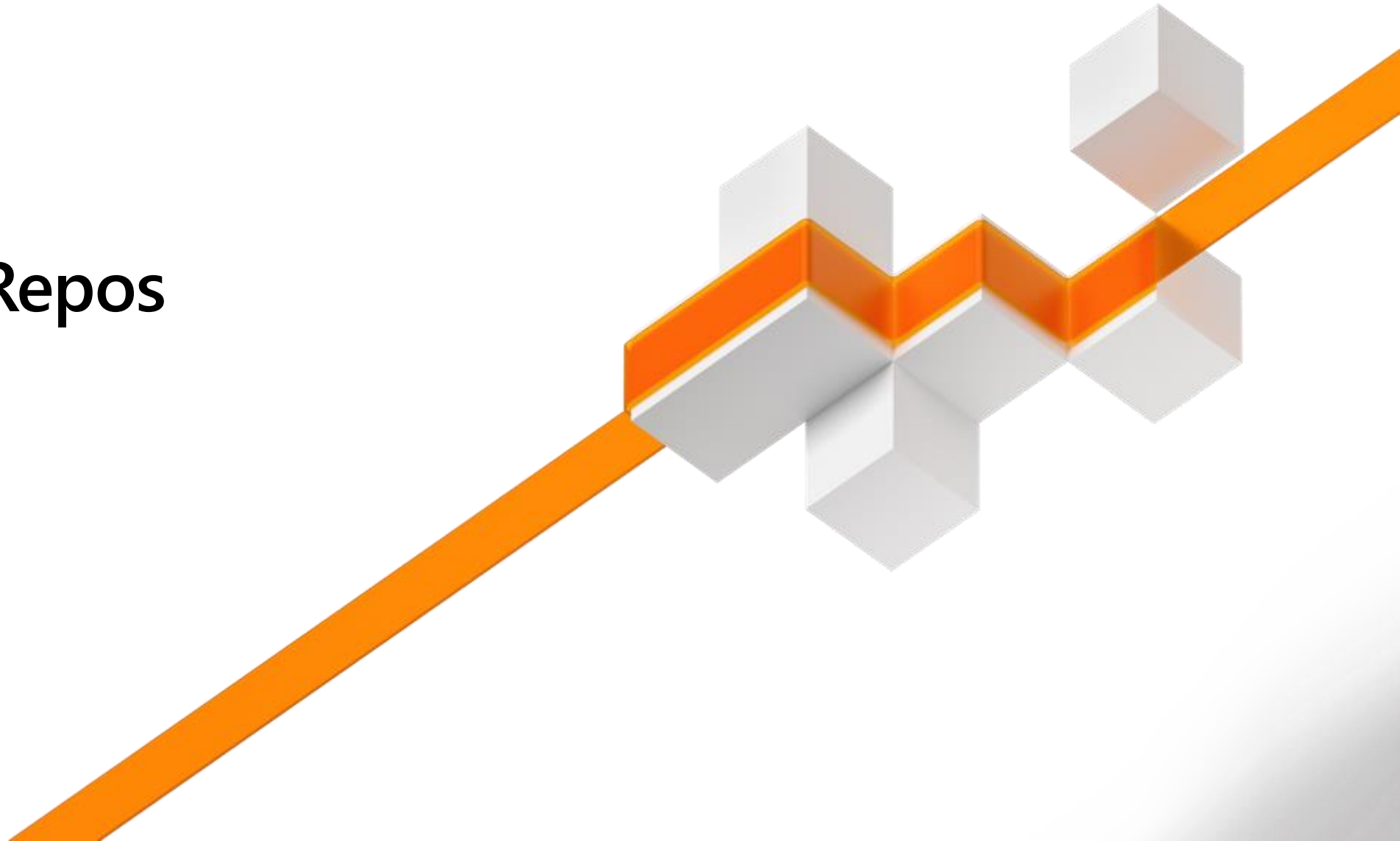
Semantic code search

Quickly find what you're looking for with code-aware search that understands classes and variables.

Working in Git with Visual Studio Code

Boards and Repos

Azure DevOps - Pipelines

Cloud-hosted pipelines for Linux, Windows and macOS.

Automated Build, Validation & Deploy

Any language, any platform, any cloud

Build, test, and deploy Node.js, Python, Java, PHP, Ruby, C/C++, .NET, Android, and iOS apps. Run in parallel on Linux, macOS, and Windows. Deploy to Azure, AWS, GCP or on-premises

Extensible

Explore and implement a wide range of community-built build, test, and deployment tasks, along with hundreds of extensions from Slack to SonarCloud. Support for YAML, reporting and more
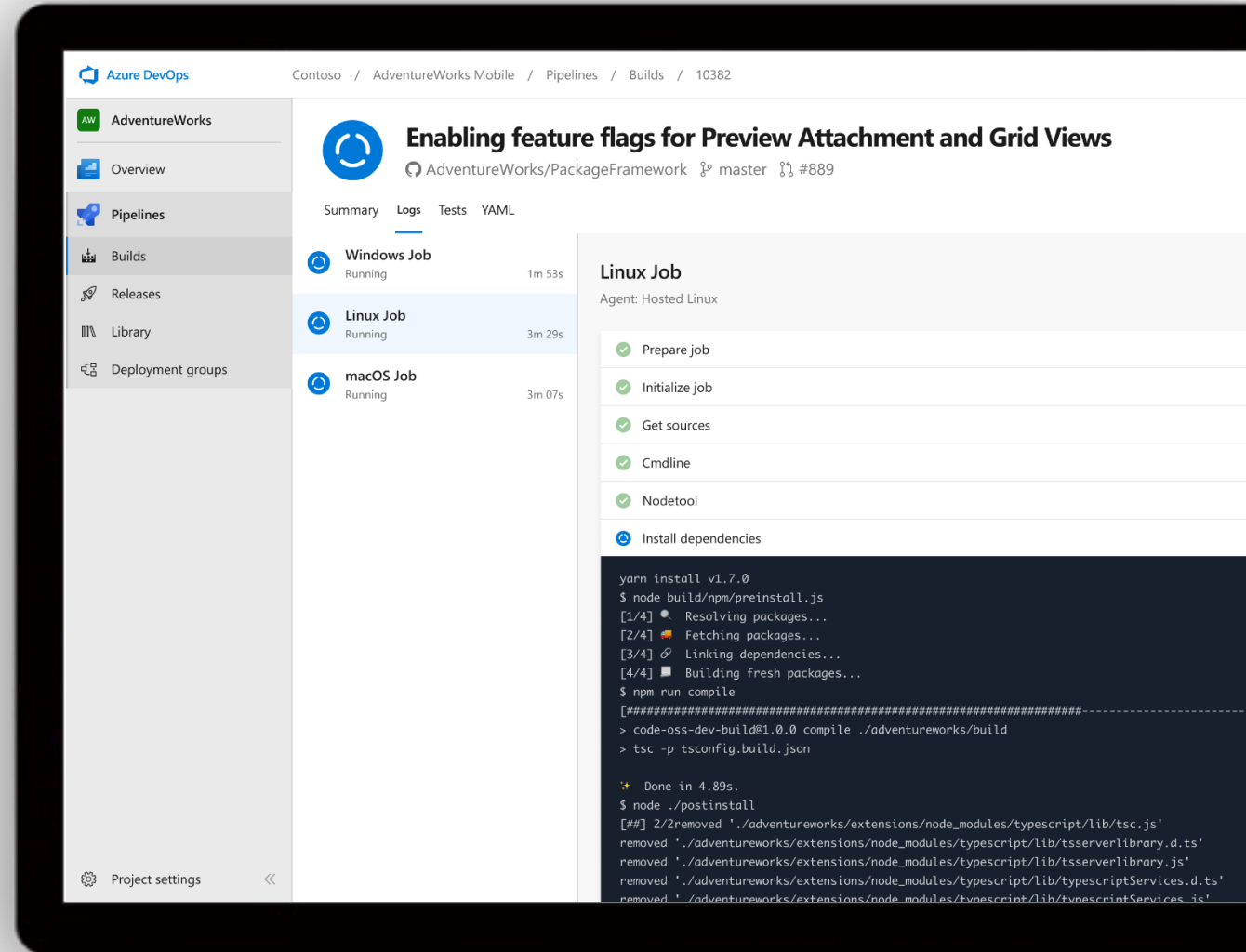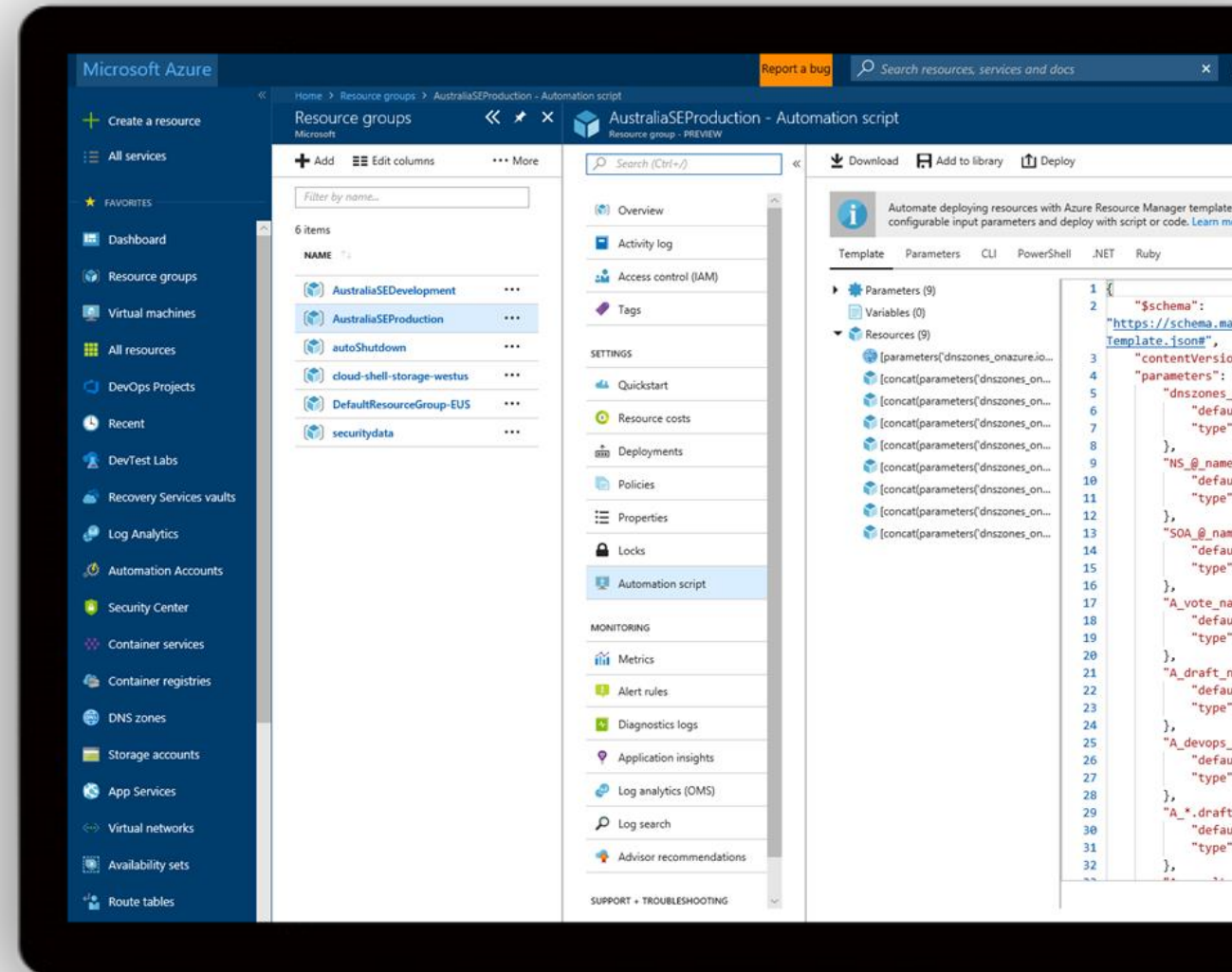
Azure DevOps - Pipelines
Azure Resource Manager & DevOps Tool Integrations

Infrastructure as Code, built-in with Azure Resource Manager

Use Azure Automation & Functions to automate repetitive operational tasks

Support for DevOps tool integrations and OSS tooling such as Terraform, Ansible & Chef

Pipelines - Types

- YAML vs Release

Azure Automation CI/CD example

coreAutomation-tst

coreAutomation-prd

Deploy - TST

Deploy - PRD

coreAutomation

YAML pipeline: Validate
- Runbooks
- Asset Templates
- Modules

Release: Deploy

Runbook

Stage: TST

Runbooks

Asset Templates

Modules

Stage: PRD

Runbooks

Asset Templates

Modules

Azure DevOps-
Azure Management

Runbook

Visual Studio Code

Automation
Contributor
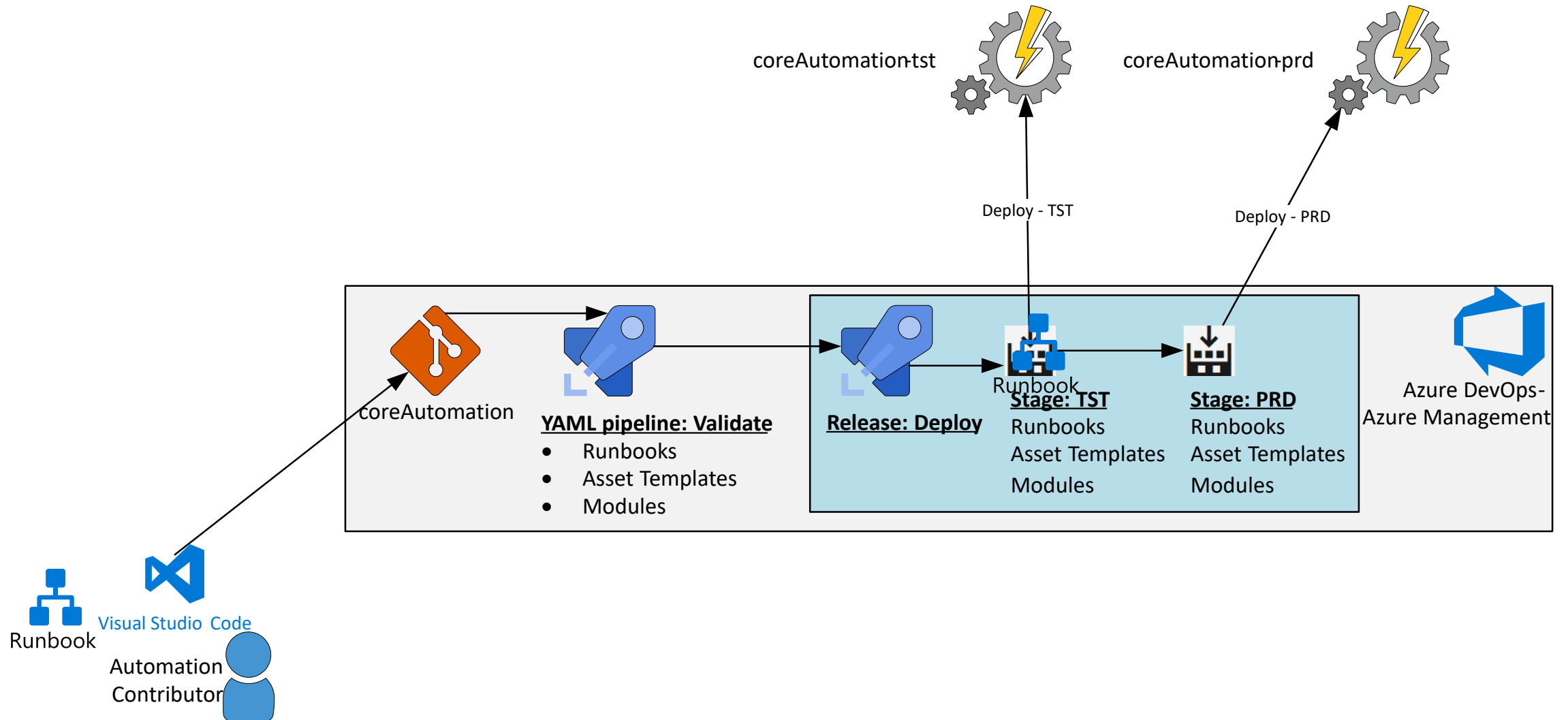
AM Azure Management

Overview

Boards

Repos

Pipelines

Pipelines

Environments

Releases

Library

Task groups

Deployment groups

Test Plans

Artifacts

Project settings

Recent   **All**   Runs

All pipelines

Name

⌄ 📁 Azure Management

  ✓ Azure Management - ARMTemplate #20190617.1 • azure Firewall view added

  ✓ Azure Management - Monitoring - Action Groups #Azure Management_Azure Management - Monitoring - Action Groups_master_20200212.1 • update pipeline scope

  ✓ Azure Management - Monitoring - Service Health Alerts #Azure Management_Azure Management - Monitoring - Service Health Alerts_master_20191217.1 • .

  ✓ Azure Policies - Alerting #Azure Management_Azure Policies - Alerting_master_20200212.1 • action group added to alert rules

  ✓ Custom Roles #20200214.2 • backup added to cloud ops

  ✓ Policies - Validate Definitions #20200220.1 • change deploy MMA agent policy to custom

⌄ 📁 coreAutomation

  ✓ coreAutomation #20200214.1 • update runbooks to match new MG structure

⌄ 📁 Network

  ✓ JumpBoxes #20191021.7 • fix param

  ✓ Network - coreHub-WE #20200218.2 • fix prio

  ✓ Network - Monitoring #Azure Management_Network - Monitoring_master_20200217.2 • ping test disabled

  ✓ Network - spoke-liftAndShift-tst #20191126.1 • fix local address prefix for UDR

⌄ 📁 VM Management

  ✓ Backup - Monitoring #20190816.1 • Created new prd dashboard parameter file

  ✓ Backup - Recovery Vaults #20191220.2 • custom RG added to all policies

  ✓ Software Update Deployments #20190816.1 • Update prd param

  ✓ VM Management - vmSecrets Key Vault #20200115.1 • added AzureDevOps.Certificate Authority - Core - 1 to list keys

Azure DevOps - Wiki

- Markdown based documentation
- Stored in a git repository

Markdown

- Code-based documentation using text-to-html.
- Use often in Git
- Makes your documentation a part of the code

Markdown Language

It's very easy to make some words **bold** and other words
italic with Markdown. You can even
[link to Google!](http://google.com)

It's very easy to make some words **bold** and other words *italic* with
Markdown. You can even link to Google!

Rendered markdown

- Word –> Markdown
  - Pandoc: pandoc --extract-media=. -s word.docx -t markdown -o README.md

Pipelines and Wiki
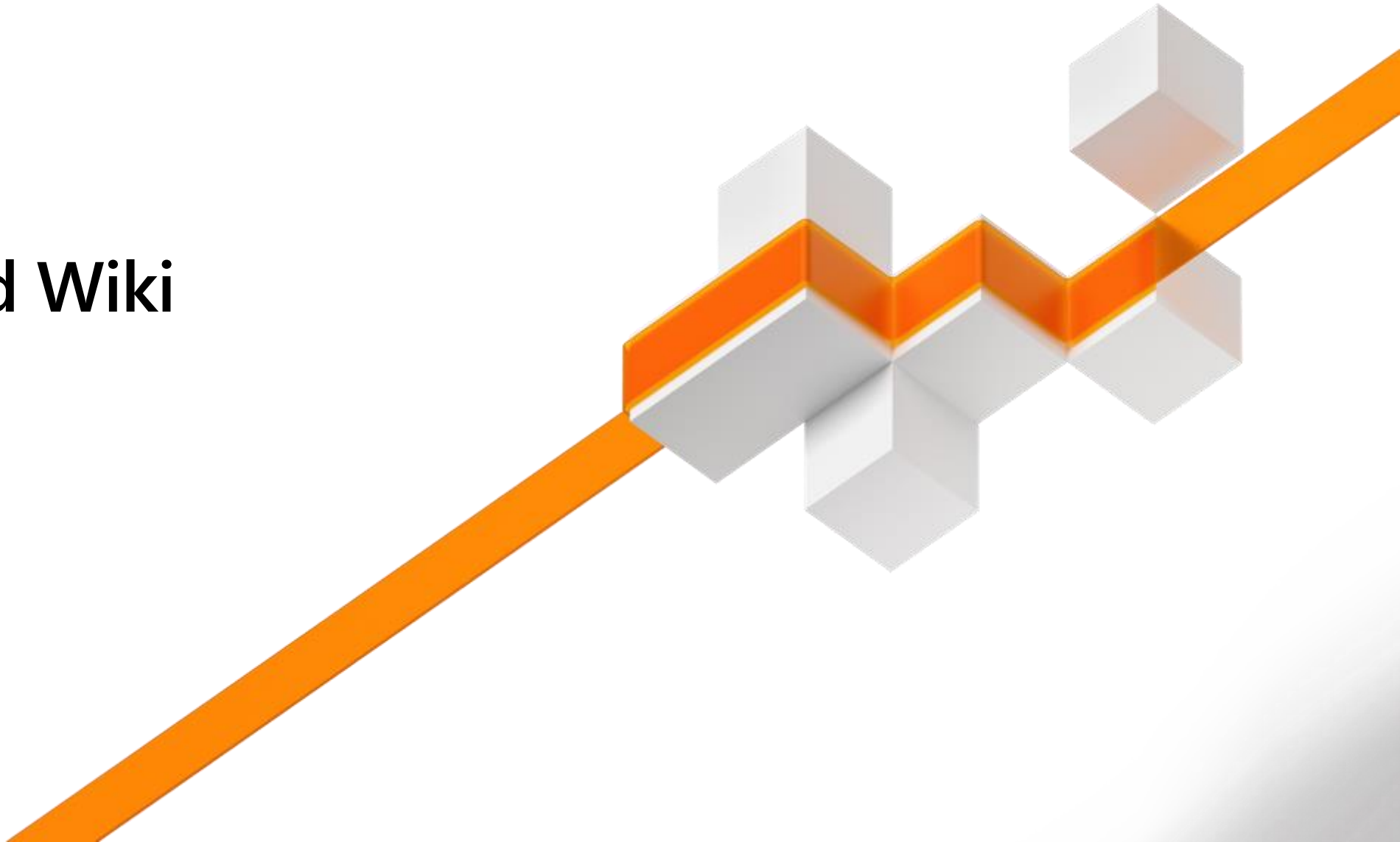
AzureManagement.slack.com

Join the new Azure Management Community

https://tinyurl.com/joinAzm

Questions?