

Dev/Ops

with Microsoft Azure

Carolina Romero + Fernando Machado

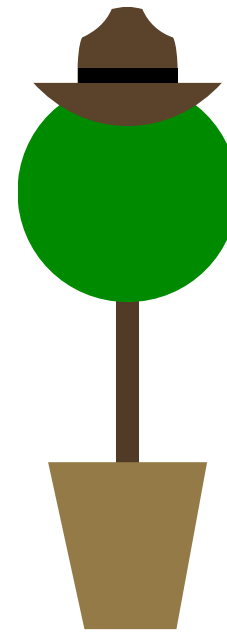
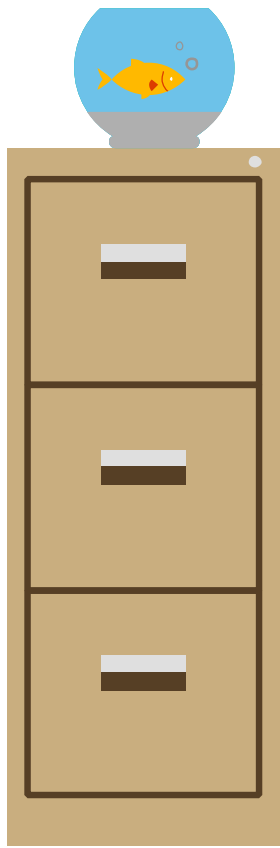
Oct 3, 2015

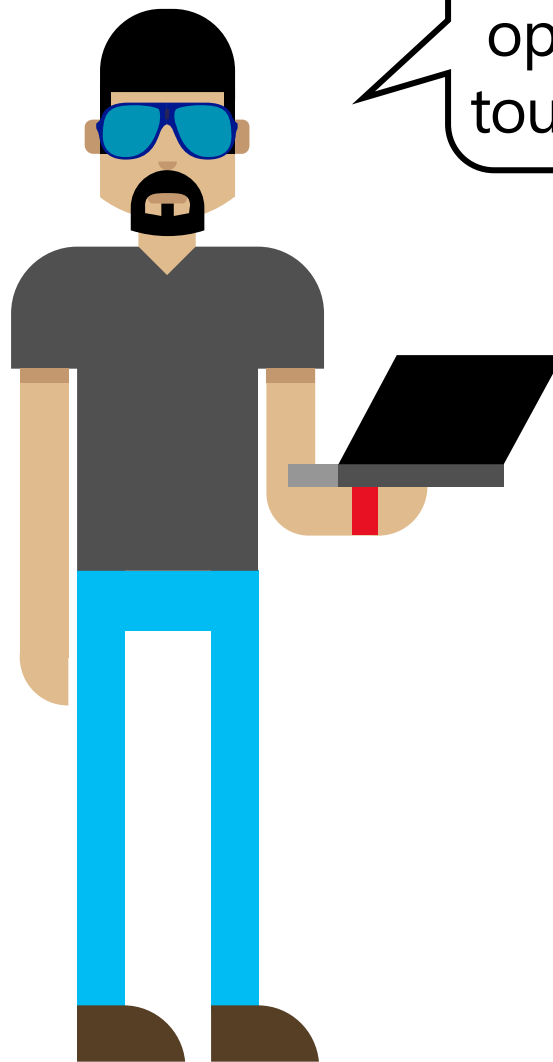
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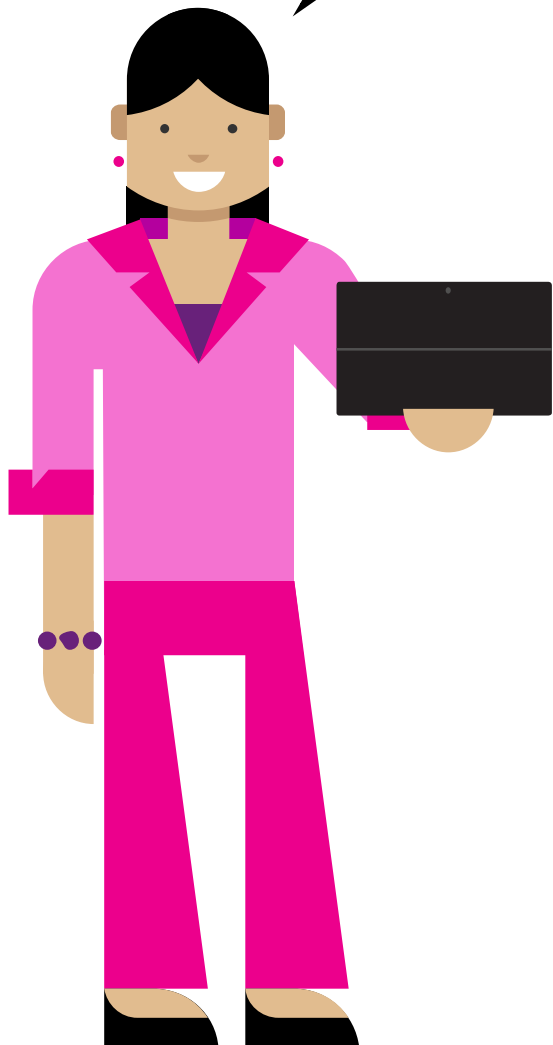
Hi! I'm the developer.
I love to do new stuff!





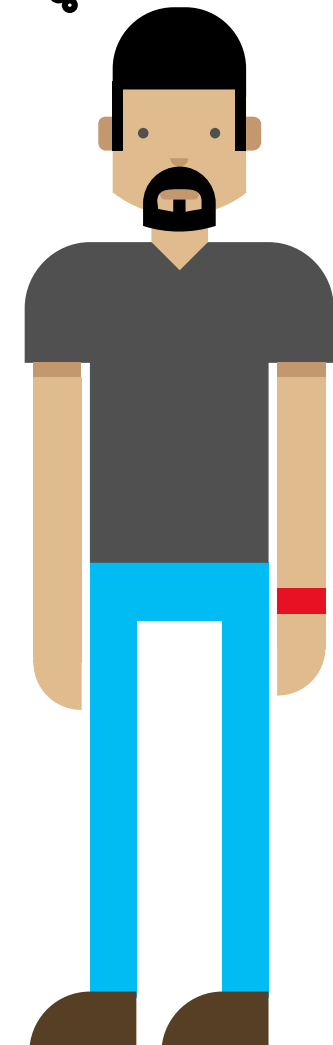
Hello, I'm the guy from operations. If you don't touch... you don't break!

I've something
new for you!

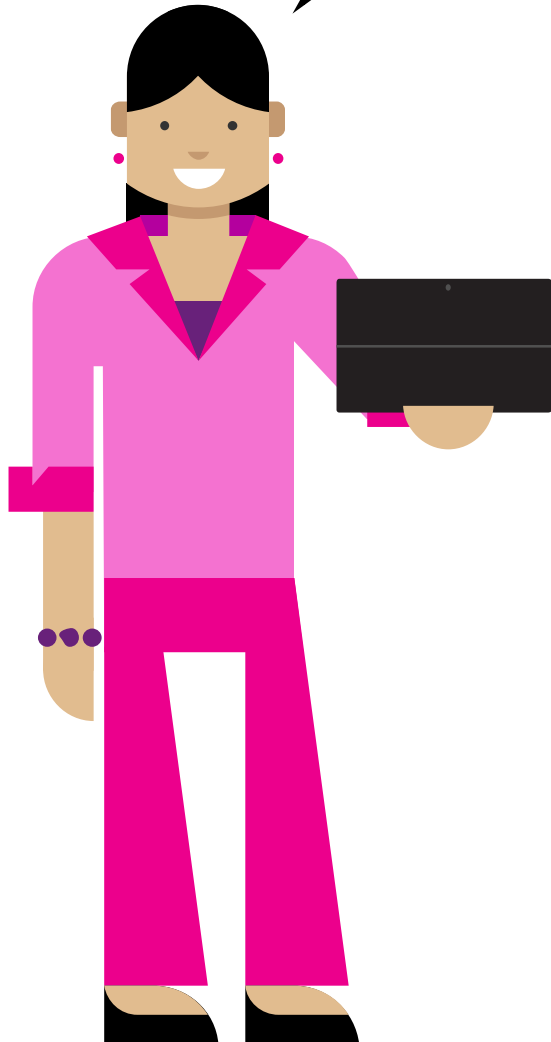


Sure... another shi@!#
piece of cra@!#

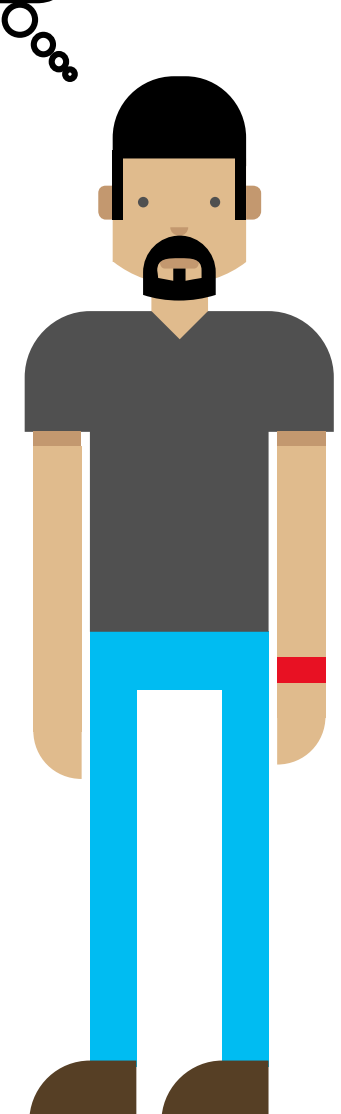
ooo

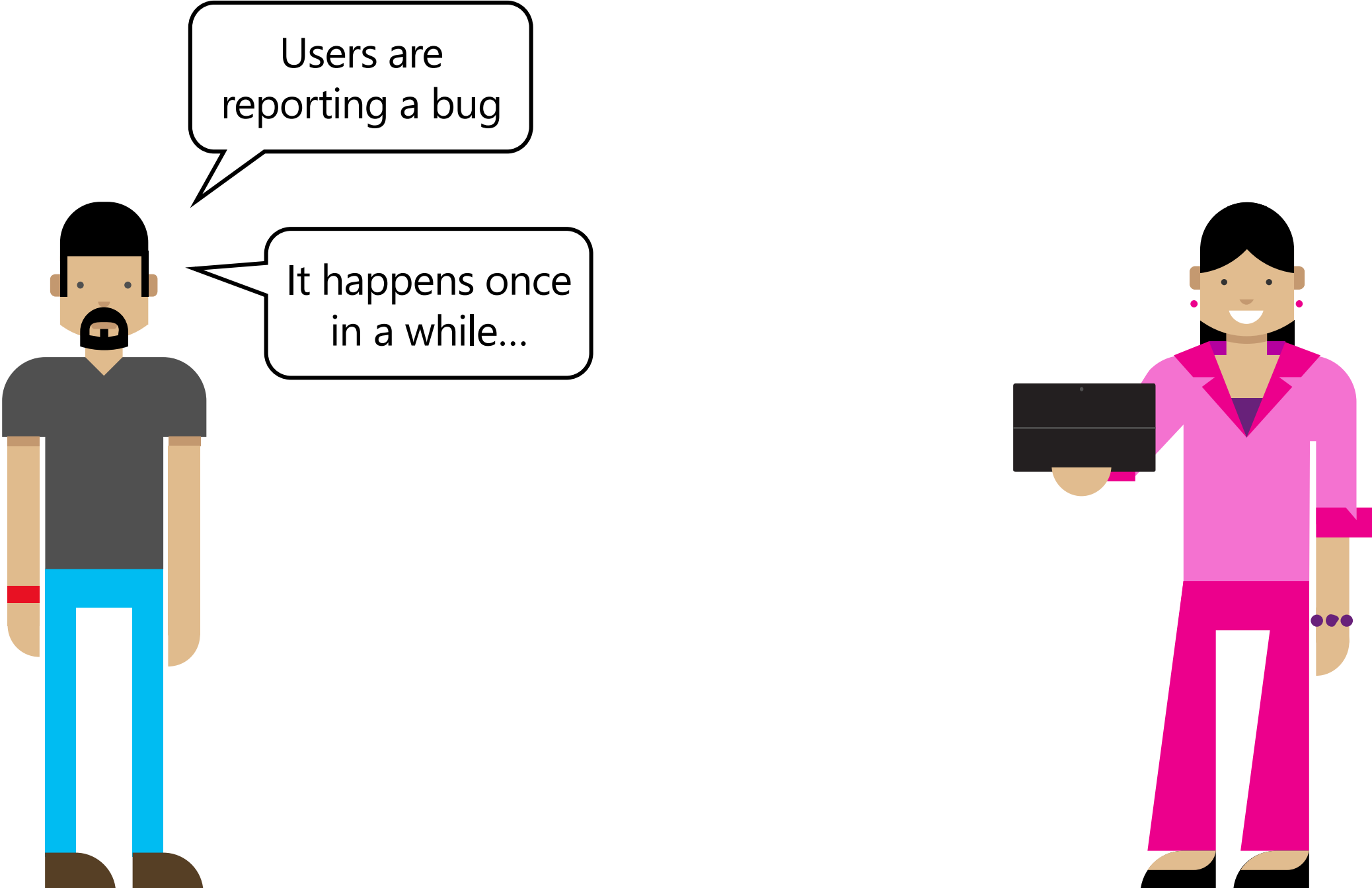


Deploy it ASAP...
It's urgent!



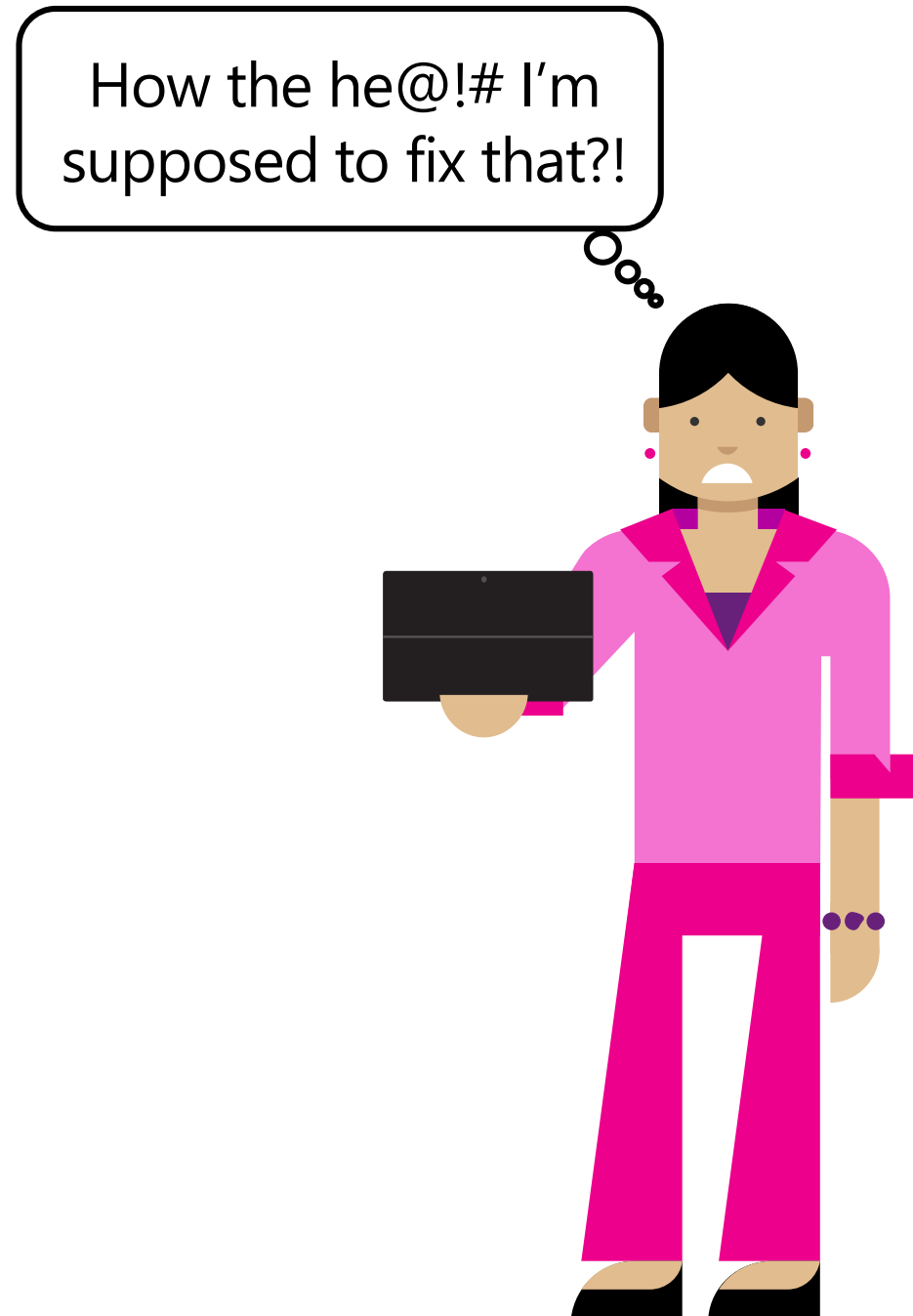
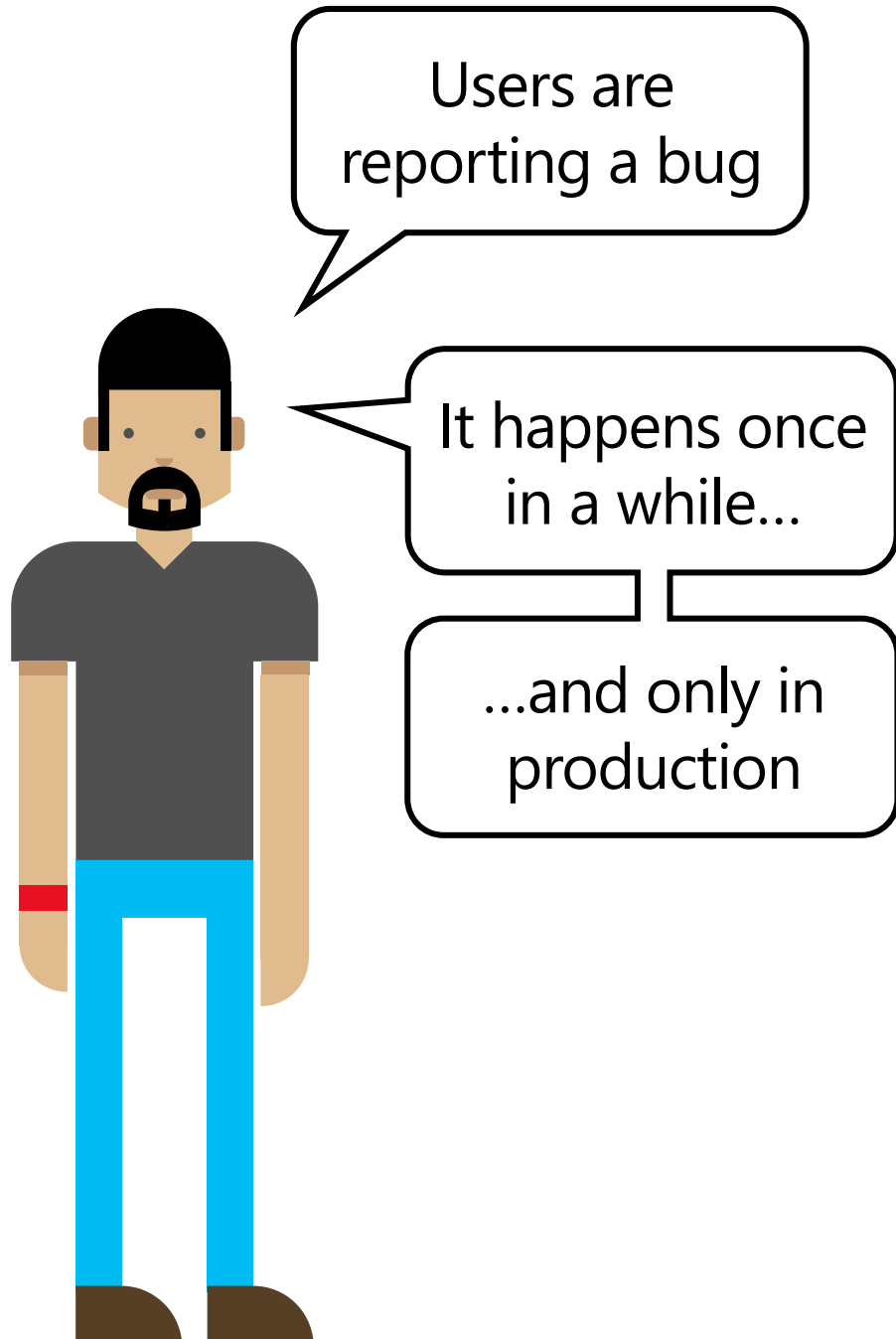
What the he@!# I'm
supposed to do that



An illustration featuring two stylized human figures. On the left is a man with a black beard and hair, wearing a dark grey t-shirt and bright blue pants. On the right is a woman with black hair, wearing a pink blazer and matching pants, holding a black laptop. Two speech bubbles are positioned between them, containing text. The background is plain white.

Users are reporting a bug

It happens once in a while...

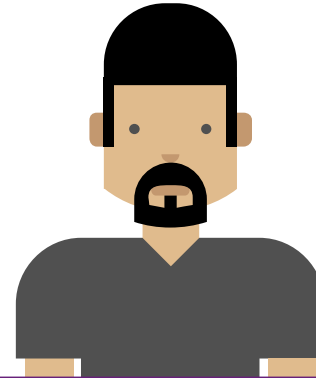




Asks for solutions



Develops & tests solutions



Operates & supports solutions



Gets solutions

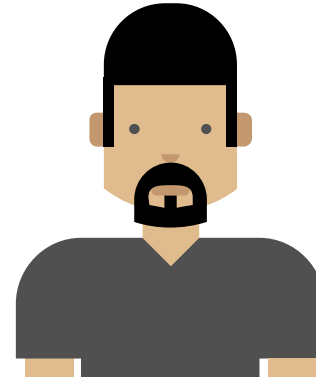




Asks for solutions



Develops & tests solutions



Operates & supports solutions



Gets solutions



Dev

Hard to reproduce errors out of production environments

Usually long business need-to-business value delivery cycles

Ops

It's not possible to know what or how applications are doing, beyond the basics

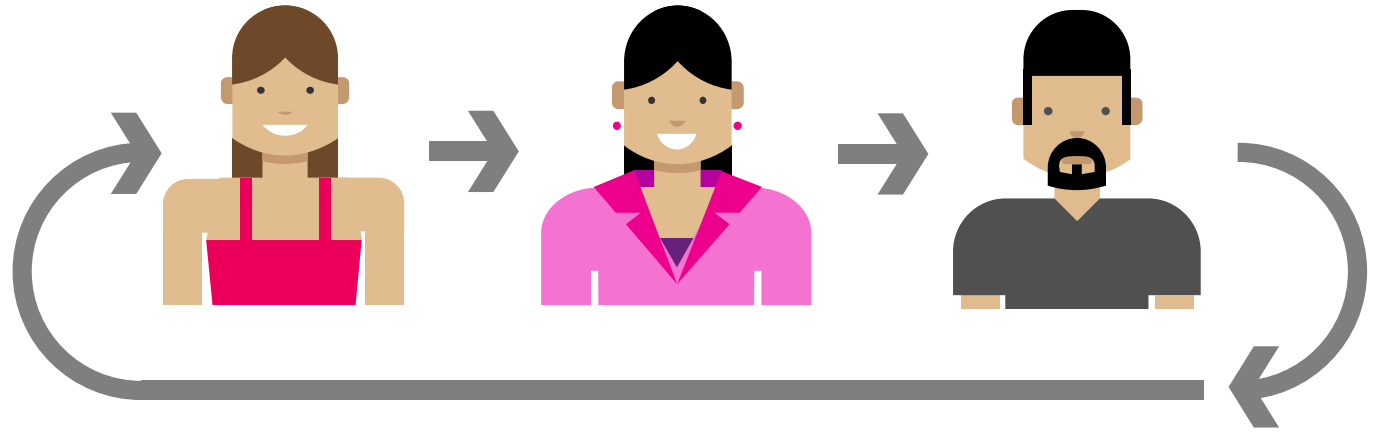
Different applications deploy in different ways; deployment is hard, slow, and error prone



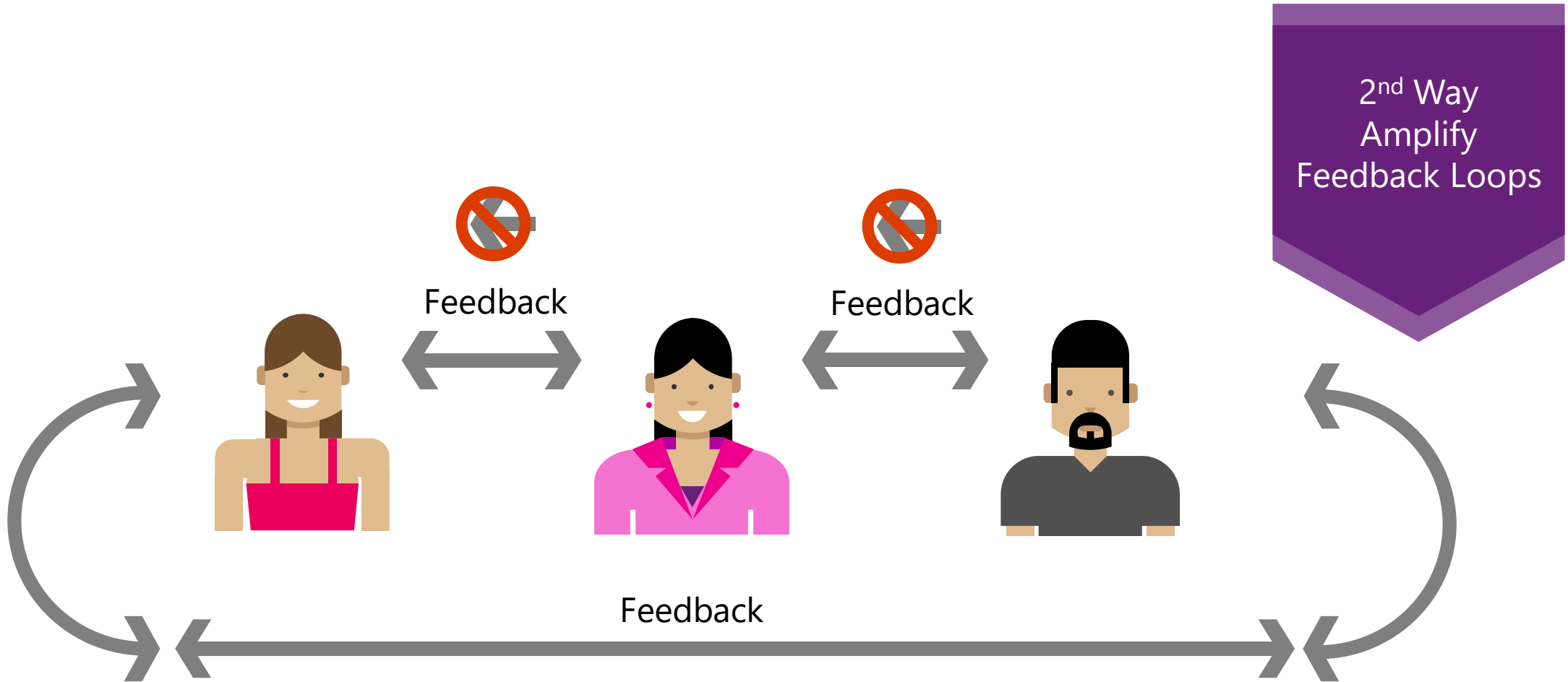
Local Optimization



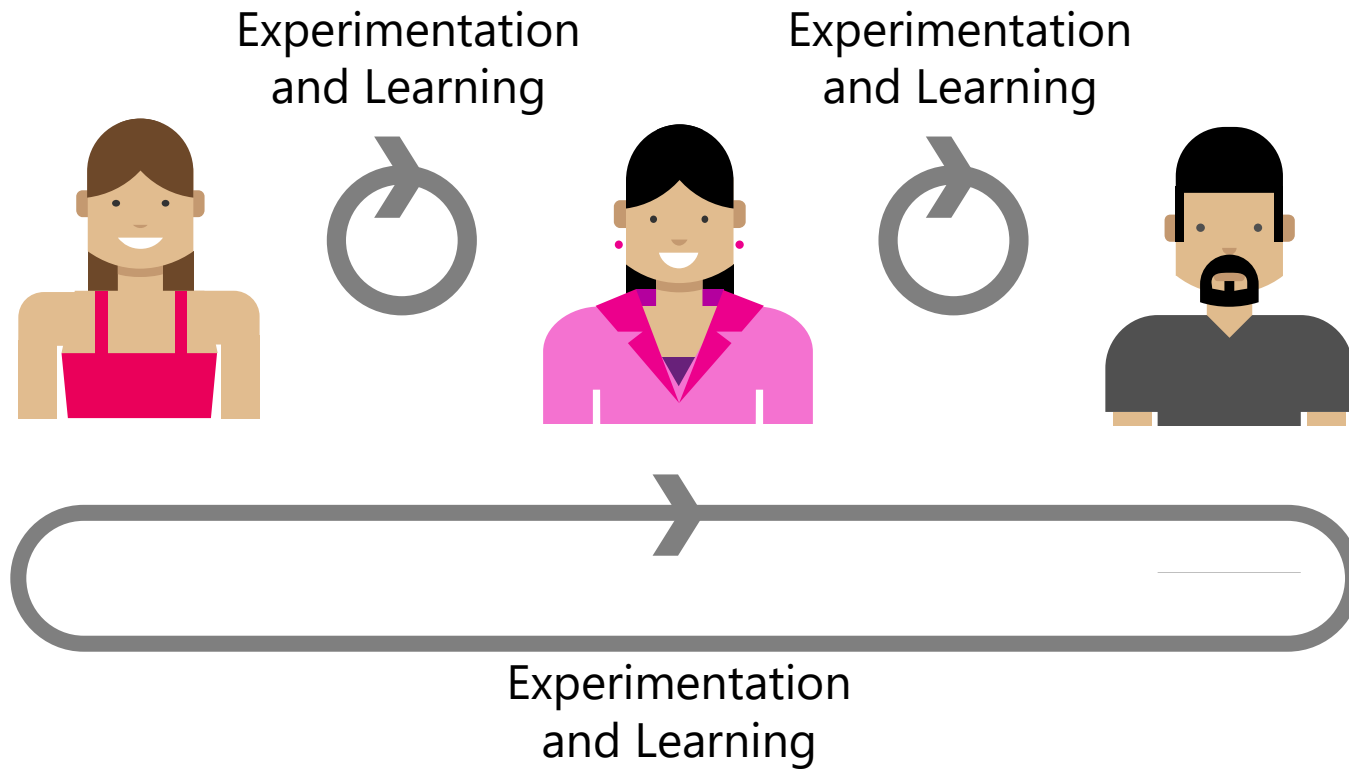
Local Optimization

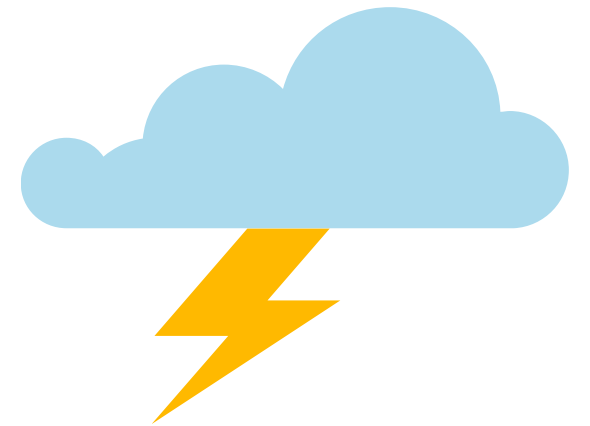
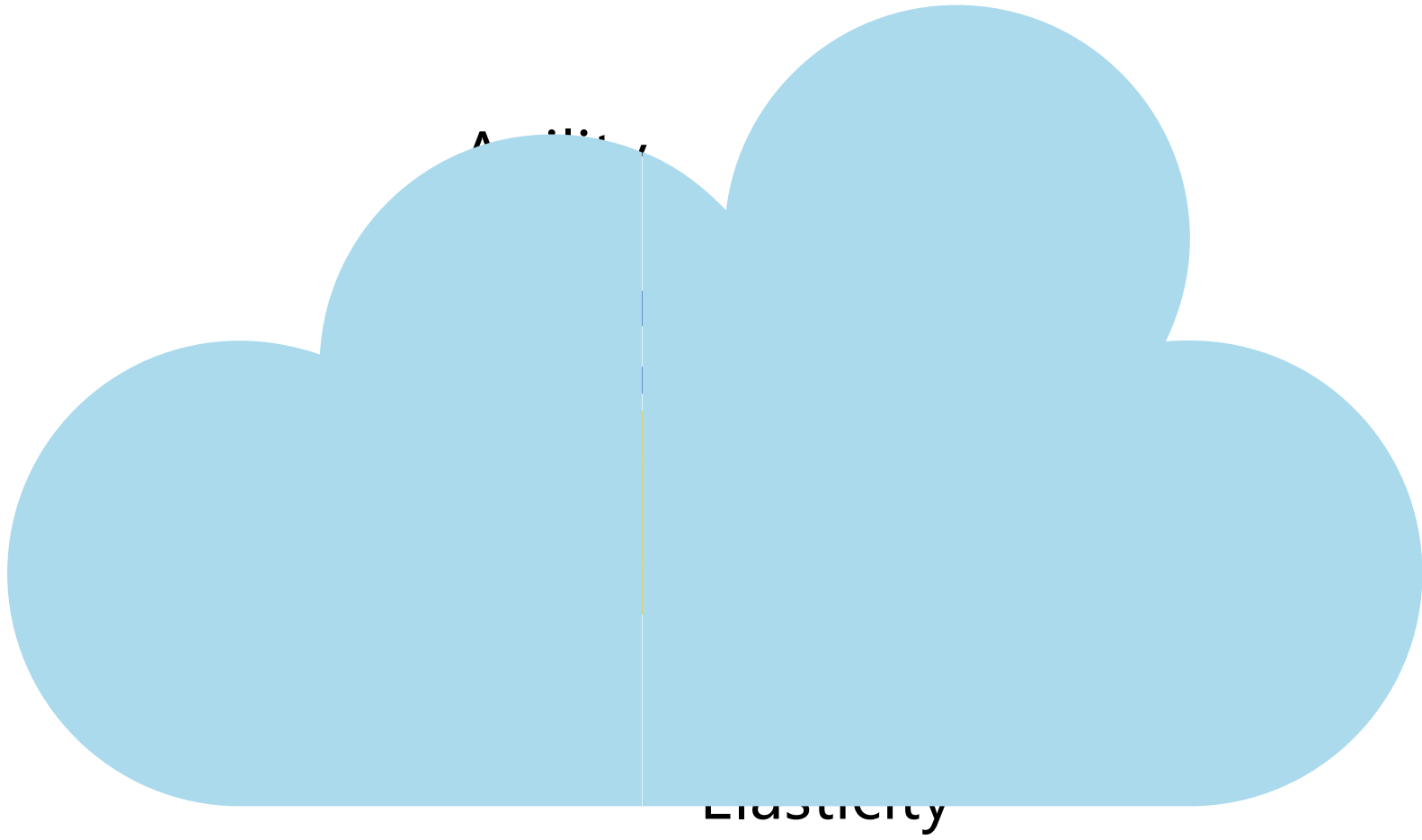


Global Optimization



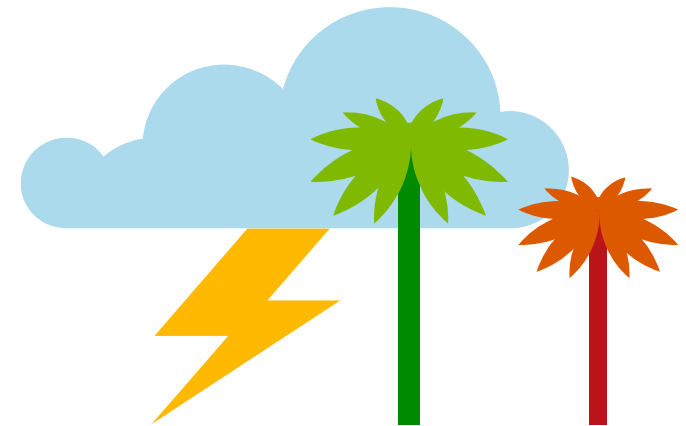
3rd Way
Culture of
Continual
Experimentation
and Learning







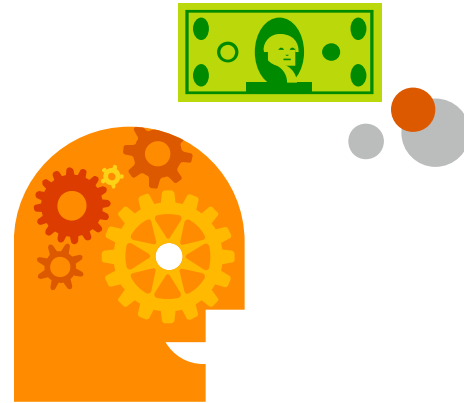
Define infrastructure
Provision resources
Manage environments
Manage configuration
Monitoring
Diagnostics



Define Infrastructure



Deploy or update a group of resources, repeatedly



Visualize a group of resources in a logical view, including monitoring/billing



Manage permissions on a group of resources

Define Infrastructure

Azure Resource Manager

Azure Templates

- Ensure Idempotency

- Simplify Orchestration

- Simplify Roll-back

- Provide Cross-Resource Configuration and Update Support

Azure Templates are:

- Source file, can be checked-in

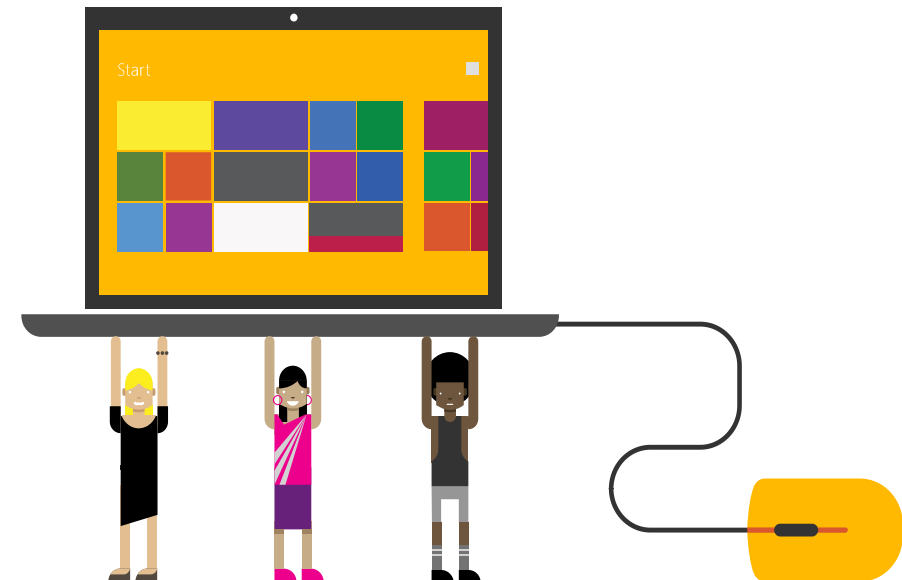
- Specifies resources, dependencies, connections

- Support parametrized input/output



Demo

Provisioning Resources with Azure Automation



Release Management



Complex



Error-prone



Chaotic

Release Management

Team Foundation Server and
Visual Studio Online

Automated builds

Automated testing

Automated deploy

Deploy approval workflow

Traceability

Custom tasks

The screenshot displays the Release Management console interface. At the top, there is a navigation bar with 'Dev', 'QA', and 'Prod' environments connected by arrows. Below this, a 'Deployment Sequence' is shown, expanded to reveal a 'VSALM' component. The 'VSALM' component contains two tasks: 'Remove Web Site' and 'Copy File or Folder'. The 'Remove Web Site' task has a configuration variable 'SiteName' set to 'FabrikamDev'. The 'Copy File or Folder' task has configuration variables 'SourceFileFolder' set to 'c:\FabrikamRM\WebSite\DEV' and 'DestinationFileFolder' set to 'c:\FabrikamRM\Backup\DEV'. On the left side, a 'Toolbox' is visible, listing various tasks and components such as 'Control Flow', 'Servers', and 'Components'.

Properties | Server Visibility

Dev → QA → Prod

Deployment Sequence Expand All Collapse All

Deployment Sequence

VSALM

Remove Web Site

Configuration Variables:

SiteName	FabrikamDev
----------	-------------

Copy File or Folder

Configuration Variables:

SourceFileFolder	c:\FabrikamRM\WebSite\DEV
DestinationFileFolder	c:\FabrikamRM\Backup\DEV

Toolbox

- Control Flow
 - Parallel
 - Sequence
 - Rollback
 - Rollback Always
 - Manual Intervention
- Tags
- Servers
 - VSALM
- Components
 - Fabrikam Call Center
- Azure
- IIS
- INI File
- MS-SQL
- Windows OS

Release Management

Team Foundation Server and
Visual Studio Online (vNext)

Automated builds

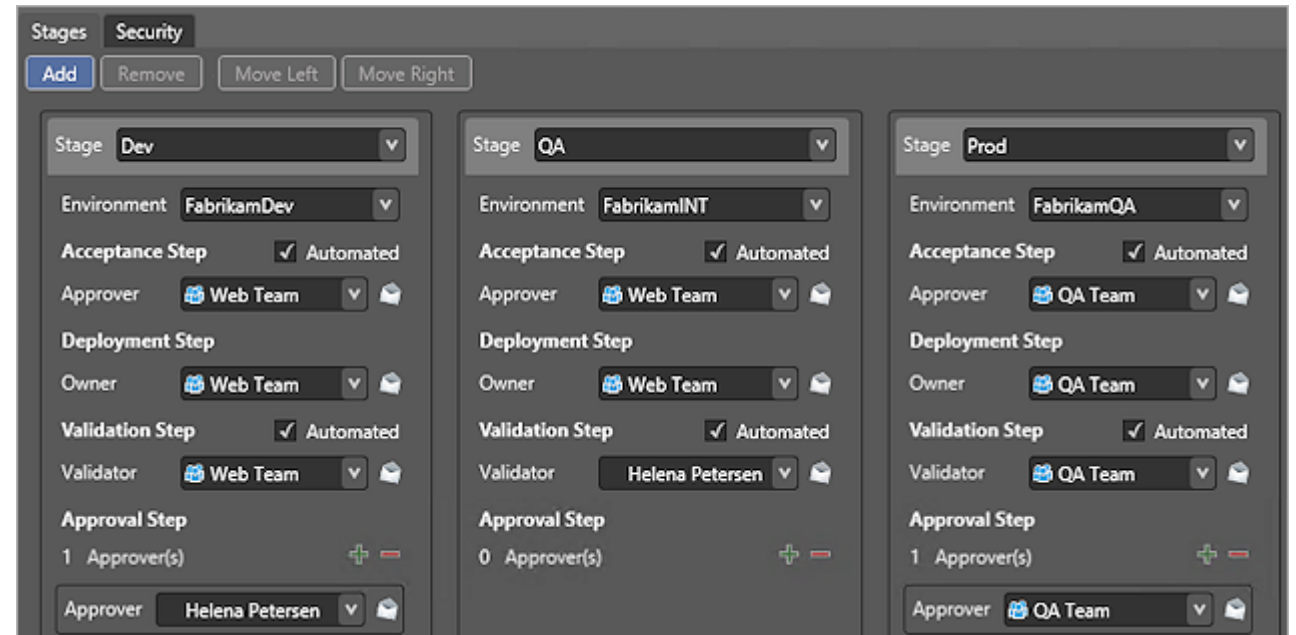
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Custom tasks



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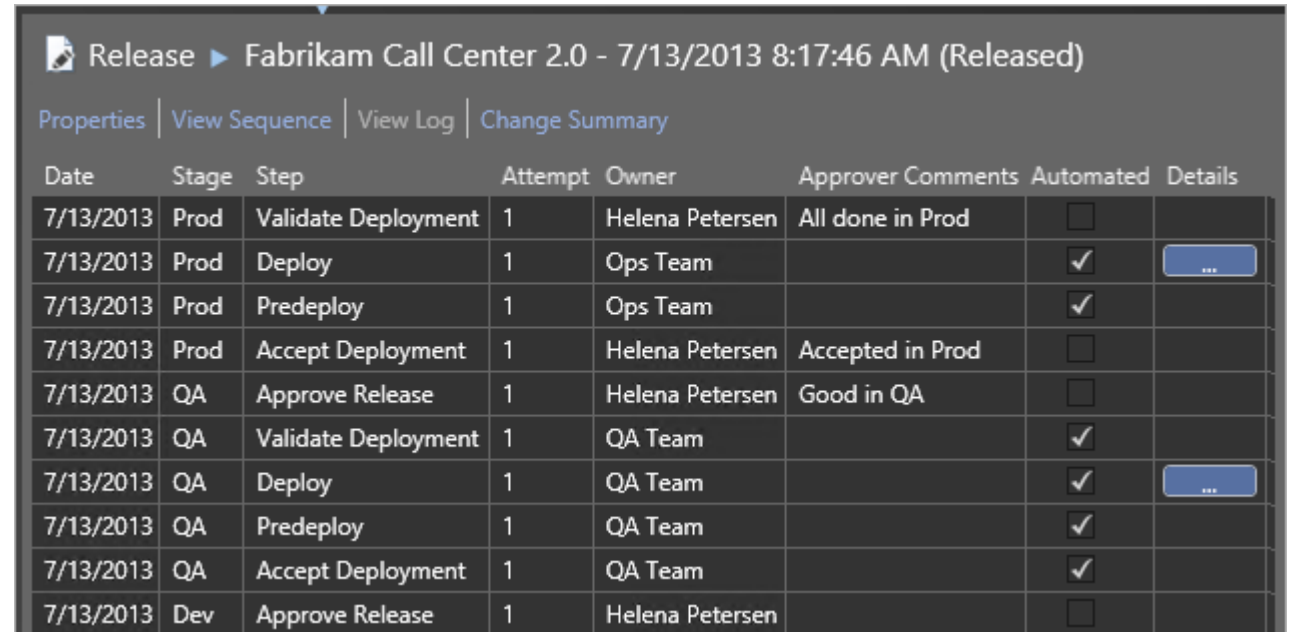
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Automated deploy

Deploy approval workflow

Traceability

Custom tasks



Release ▶ Fabrikam Call Center 2.0 - 7/13/2013 8:17:46 AM (Released)

[Properties](#) | [View Sequence](#) | [View Log](#) | [Change Summary](#)

Date	Stage	Step	Attempt	Owner	Approver Comments	Automated	Details
7/13/2013	Prod	Validate Deployment	1	Helena Petersen	All done in Prod	<input type="checkbox"/>	
7/13/2013	Prod	Deploy	1	Ops Team		<input checked="" type="checkbox"/>	...
7/13/2013	Prod	Predeploy	1	Ops Team		<input checked="" type="checkbox"/>	
7/13/2013	Prod	Accept Deployment	1	Helena Petersen	Accepted in Prod	<input type="checkbox"/>	
7/13/2013	QA	Approve Release	1	Helena Petersen	Good in QA	<input type="checkbox"/>	
7/13/2013	QA	Validate Deployment	1	QA Team		<input checked="" type="checkbox"/>	
7/13/2013	QA	Deploy	1	QA Team		<input checked="" type="checkbox"/>	...
7/13/2013	QA	Predeploy	1	QA Team		<input checked="" type="checkbox"/>	
7/13/2013	QA	Accept Deployment	1	QA Team		<input checked="" type="checkbox"/>	
7/13/2013	Dev	Approve Release	1	Helena Petersen		<input type="checkbox"/>	

Release Management

Team Foundation Server and
Visual Studio Online (vNext)

Automated builds

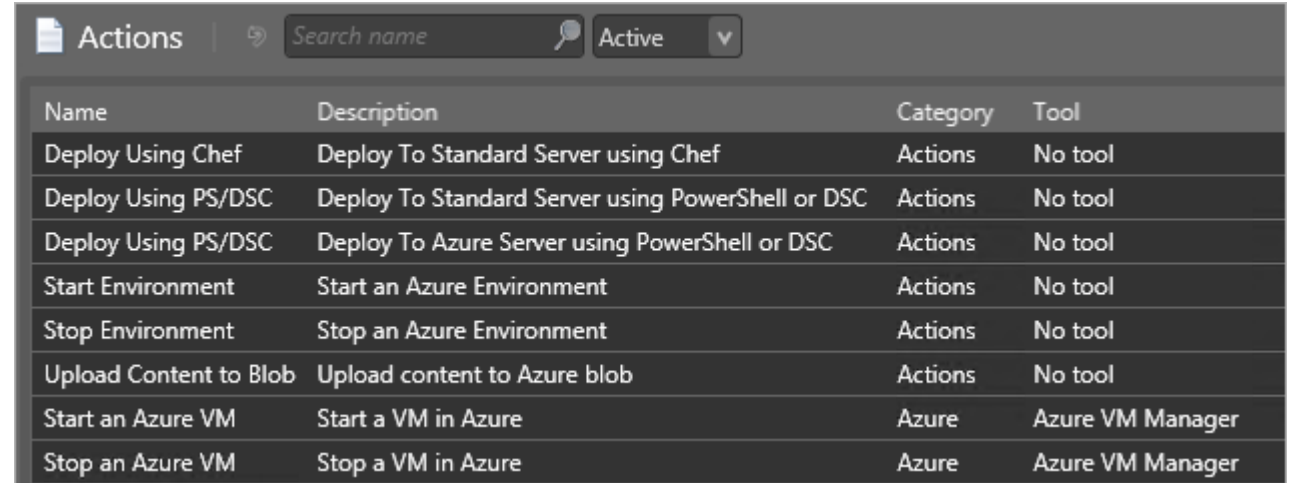
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Custom tasks

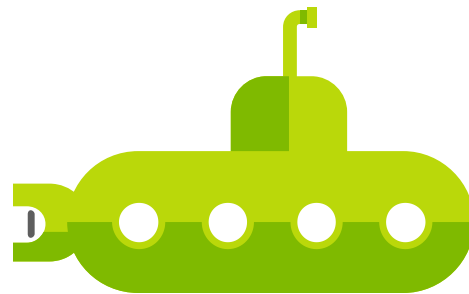


Name	Description	Category	Tool
Deploy Using Chef	Deploy To Standard Server using Chef	Actions	No tool
Deploy Using PS/DSC	Deploy To Standard Server using PowerShell or DSC	Actions	No tool
Deploy Using PS/DSC	Deploy To Azure Server using PowerShell or DSC	Actions	No tool
Start Environment	Start an Azure Environment	Actions	No tool
Stop Environment	Stop an Azure Environment	Actions	No tool
Upload Content to Blob	Upload content to Azure blob	Actions	No tool
Start an Azure VM	Start a VM in Azure	Azure	Azure VM Manager
Stop an Azure VM	Stop a VM in Azure	Azure	Azure VM Manager

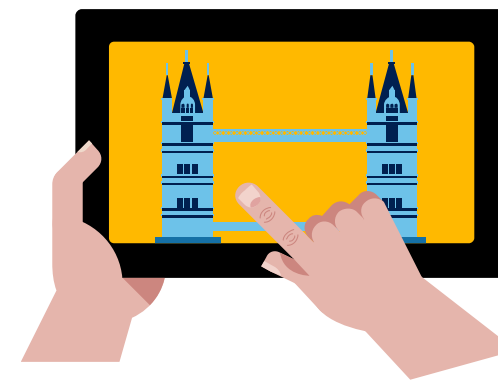
Monitoring & Diagnostics



Know what solution
components are
doing



Know what
happened after
some event



Know what
customers are
doing

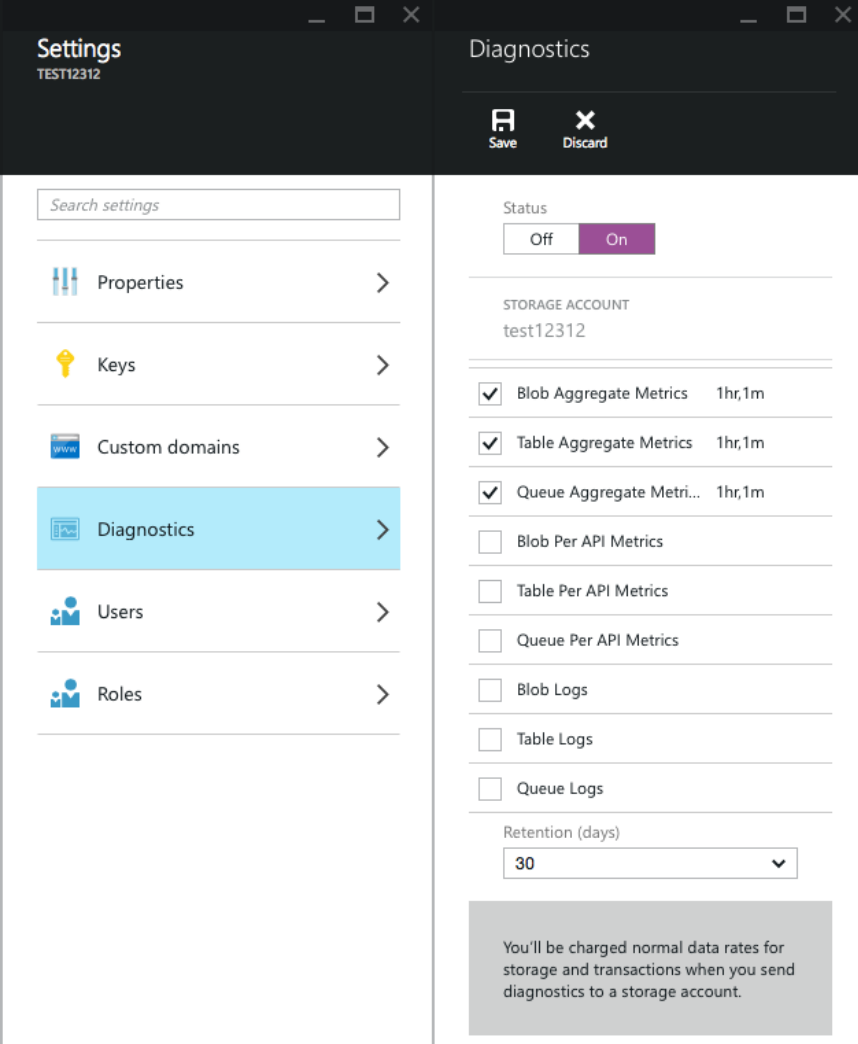
Monitoring & Diagnostics

Azure diagnostics

Can be configured in almost every service

Stored in Azure

Accessible through Azure Portal or API



The screenshot shows the 'Diagnostics' settings page in the Azure portal. The left sidebar contains a navigation menu with options: Properties, Keys, Custom domains, Diagnostics (selected), Users, and Roles. The main content area is titled 'Diagnostics' and includes a 'Status' toggle set to 'On'. Below this, the 'STORAGE ACCOUNT' is identified as 'test12312'. A list of diagnostic settings is shown, each with a checkbox and a retention period of '1hr,1m':

- Blob Aggregate Metrics 1hr,1m
- Table Aggregate Metrics 1hr,1m
- Queue Aggregate Metri... 1hr,1m
- Blob Per API Metrics
- Table Per API Metrics
- Queue Per API Metrics
- Blob Logs
- Table Logs
- Queue Logs

At the bottom, there is a 'Retention (days)' dropdown menu set to '30'. A grey box at the bottom right contains the following text: 'You'll be charged normal data rates for storage and transactions when you send diagnostics to a storage account.'

Monitoring & Diagnostics

Application Insights

Get 360° insights for your application

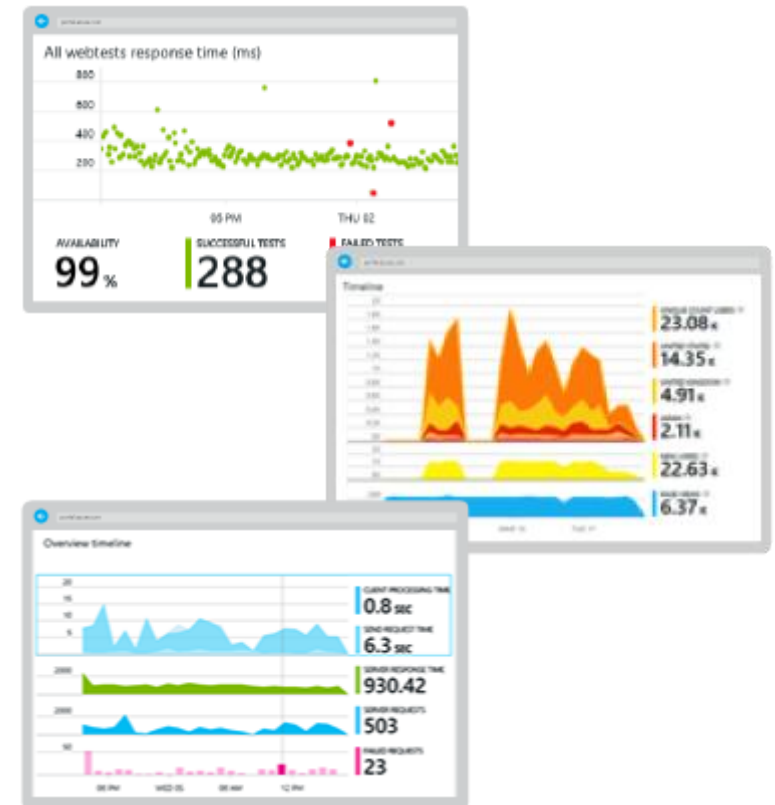
Ensure your application's availability

Diagnose exceptions and performance issues

Analyze your application's usage

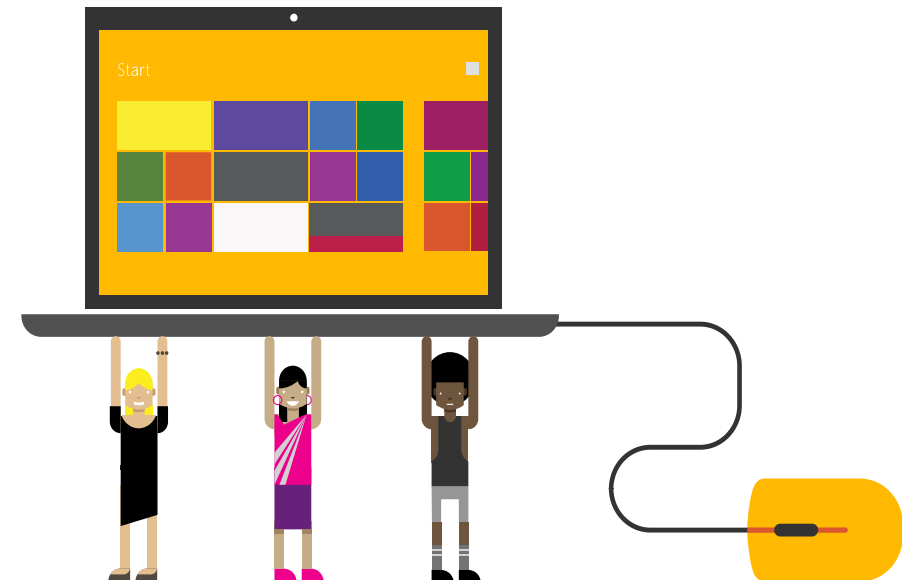
Cloud, device and on-premises

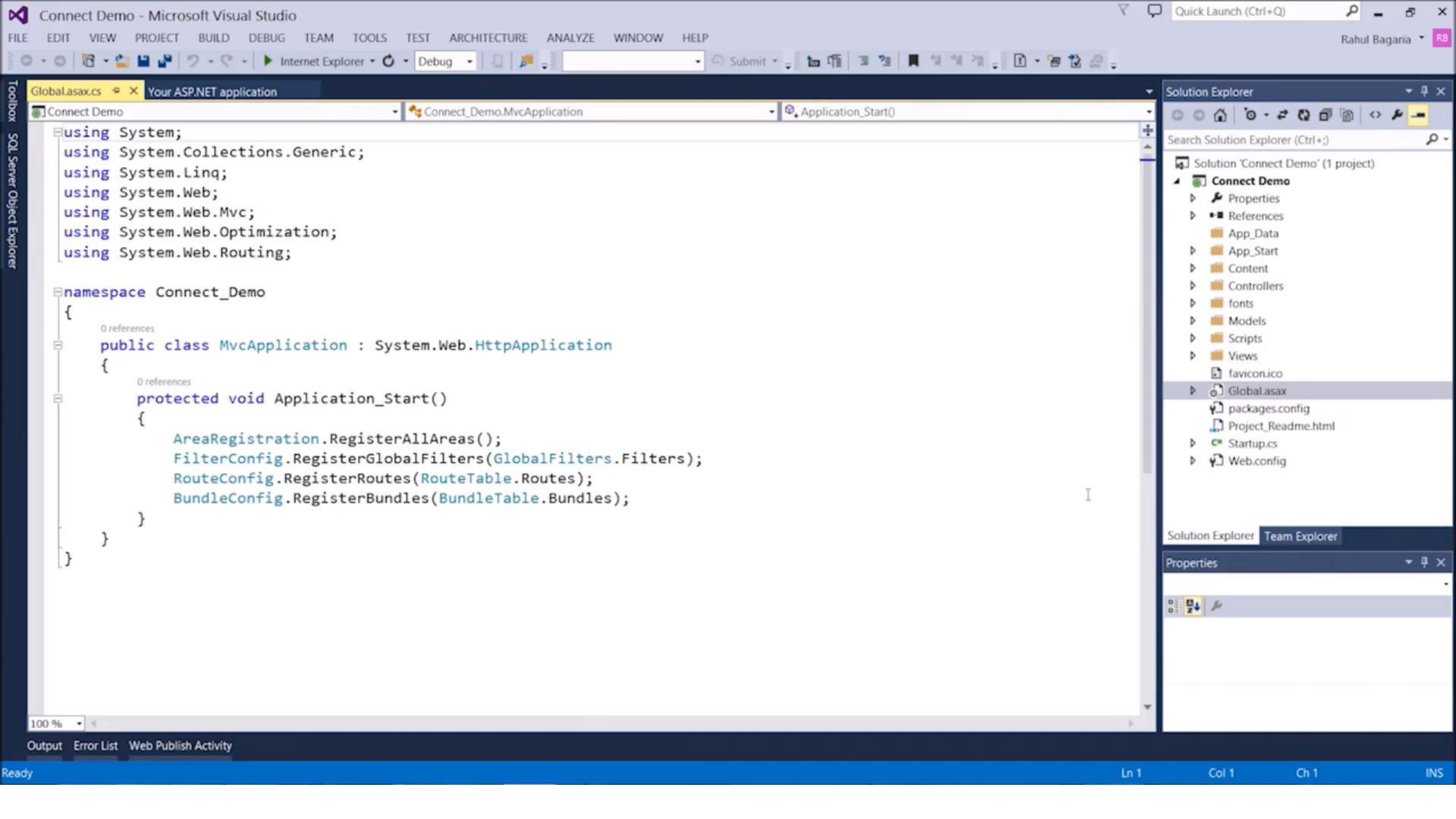
iOS, Android, Windows apps, J2EE and ASP.NET web apps, and WCF services




Video

Azure Application Insights





An illustration of three stylized human figures standing in a row and holding hands. On the left is a woman with black hair, wearing a pink blazer and pink pants. In the middle is a woman with brown hair, wearing a red dress, with her arms raised in a celebratory gesture. On the right is a man with a beard and black hair, wearing a grey t-shirt and blue pants. A speech bubble originates from the woman in the middle, containing the text 'Dev+Ops work better together!'.

Dev+Ops work
better together!

Questions? Thanks!

Carolina Romero
@romero_caro

Fernando Machado Píriz
@fmachadopiriz

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