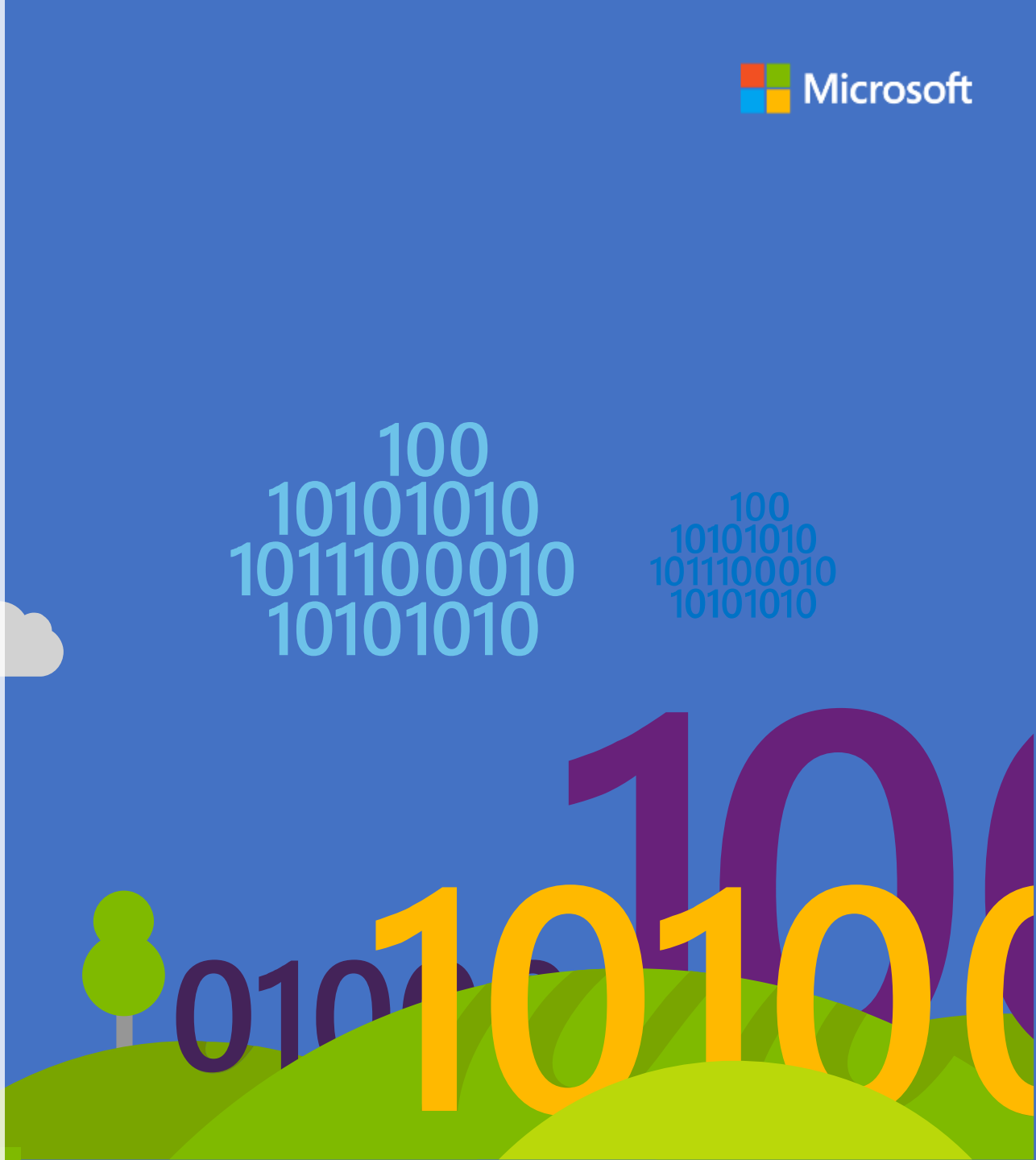
Dev/Ops

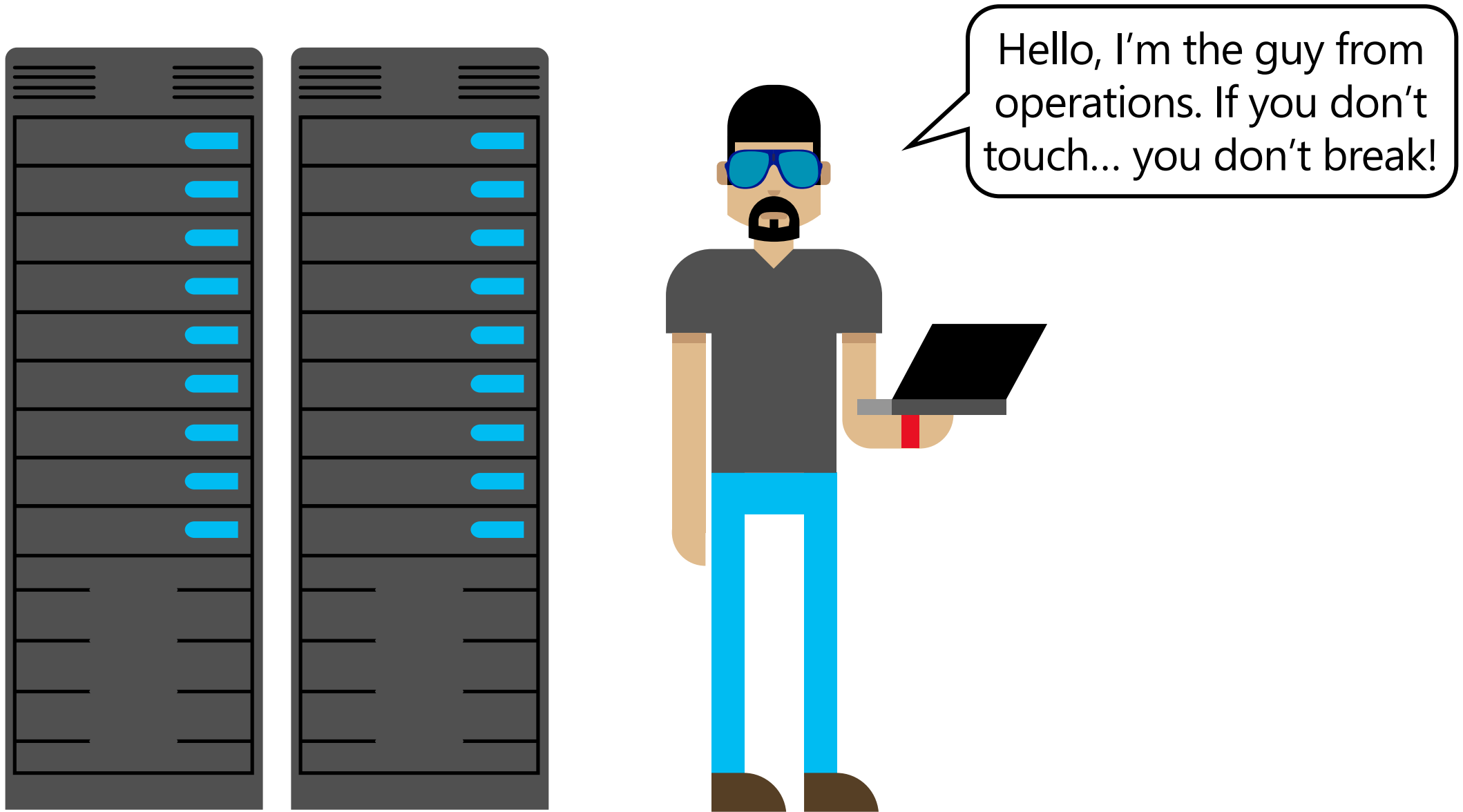
with Microsoft Azure

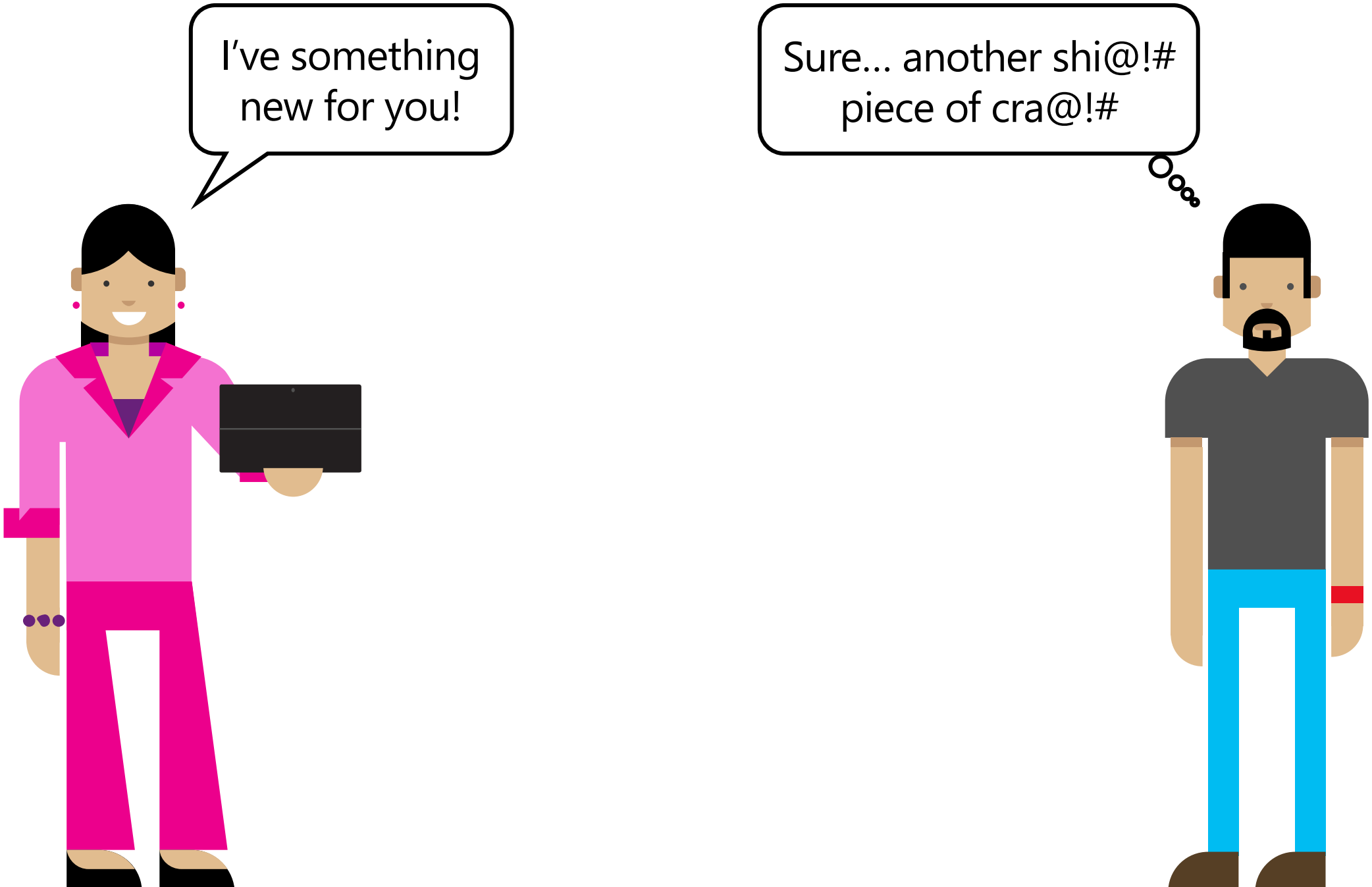
Carolina Romero + Fernando Machado

Oct 3, 2015

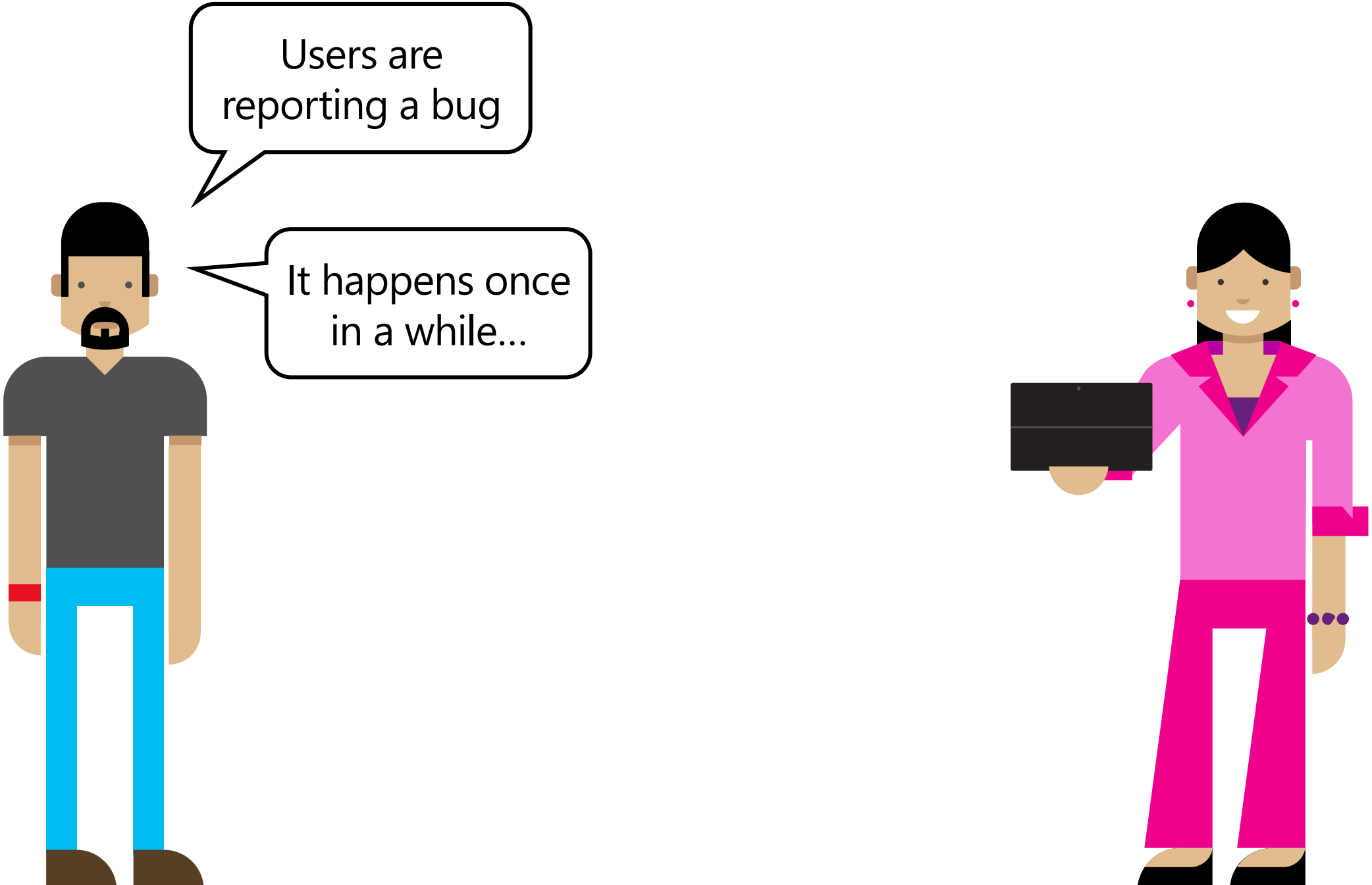


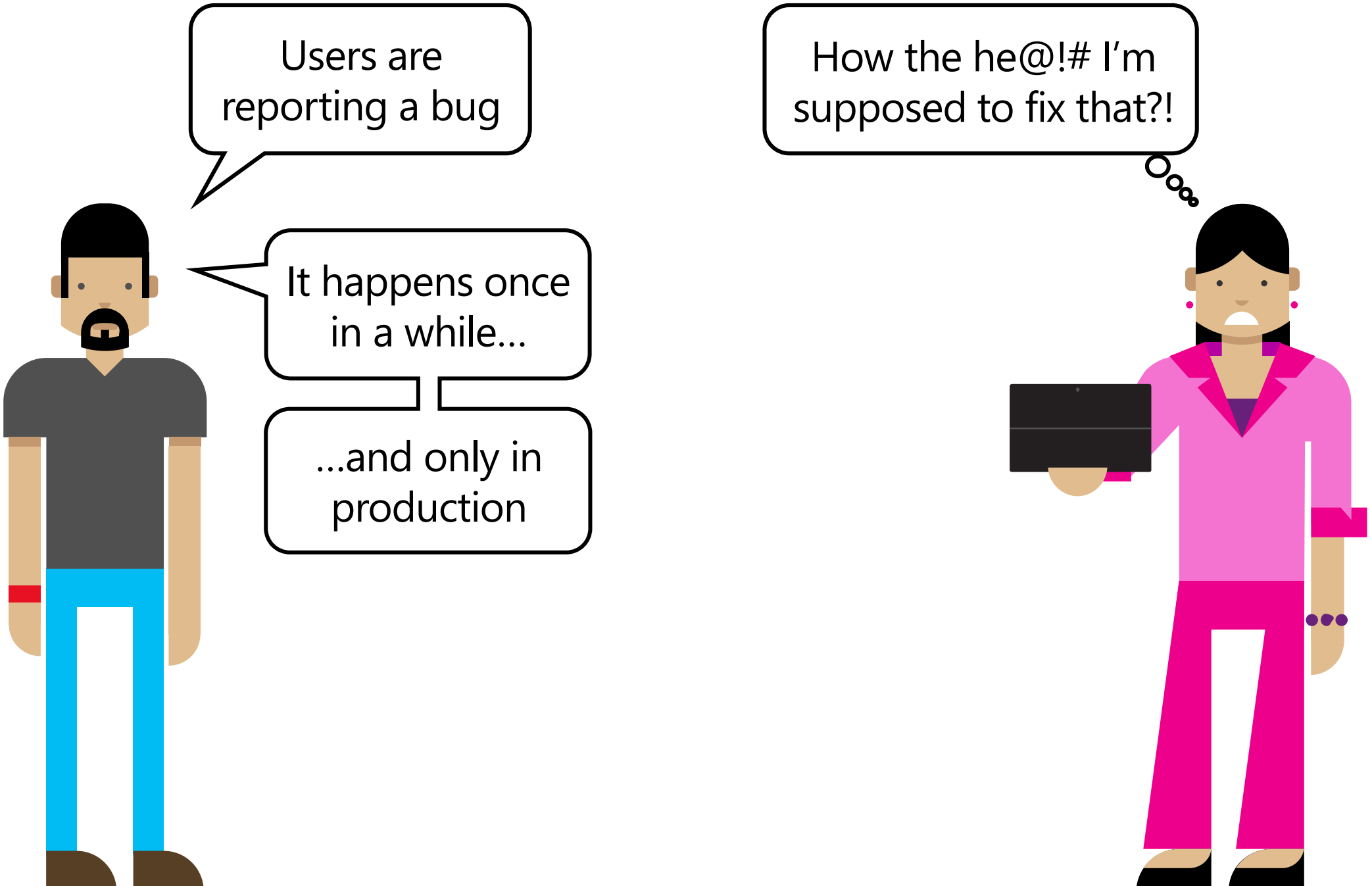
Hi! I’m the developer.
I love to do new stuff!

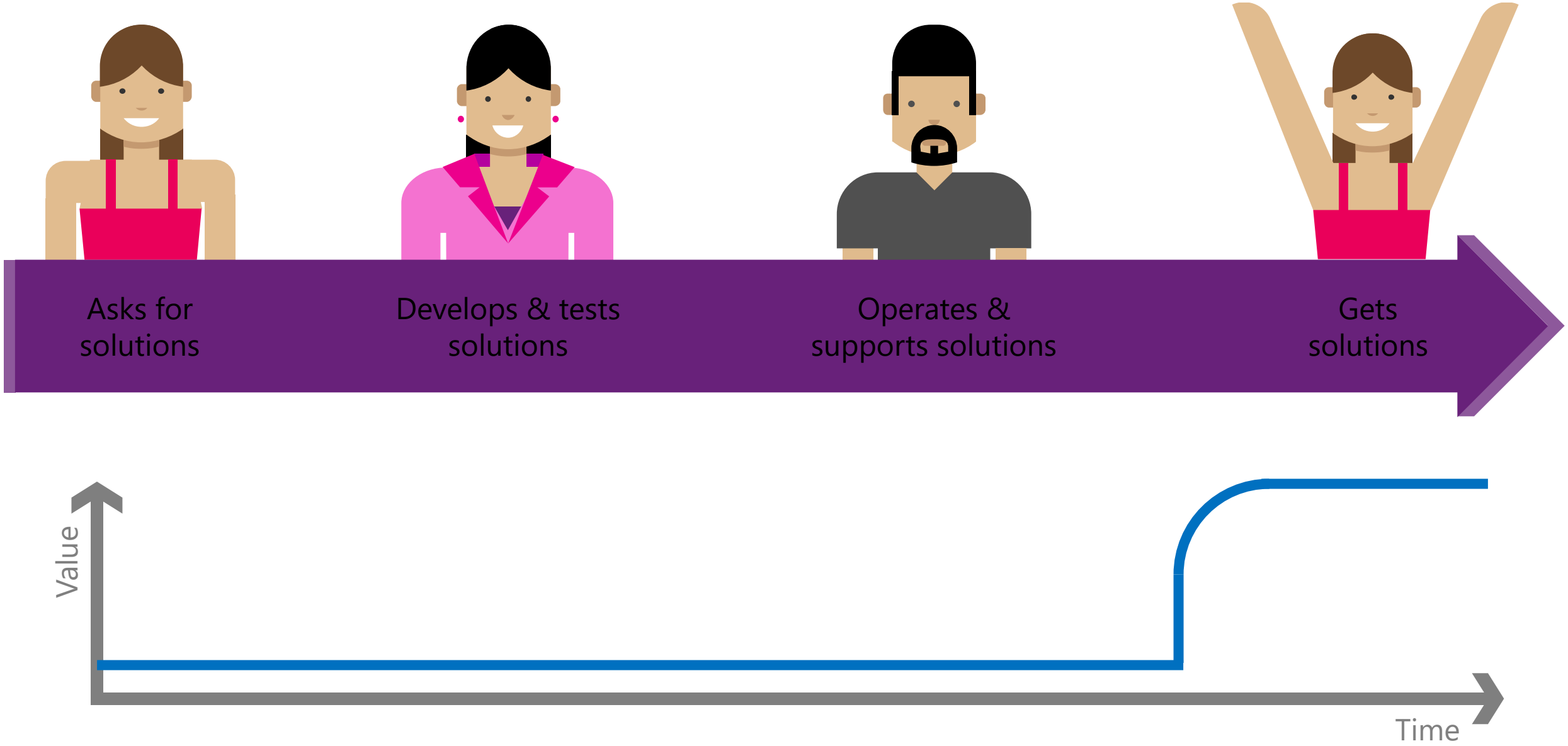

Hello, I'm the guy from operations. If you don't touch... you don't break!


I’ve something new for you!
Sure… another shi@!# piece of cra@!#

Deploy it ASAP…
It's urgent!
What the he@!# I'm supposed to do that

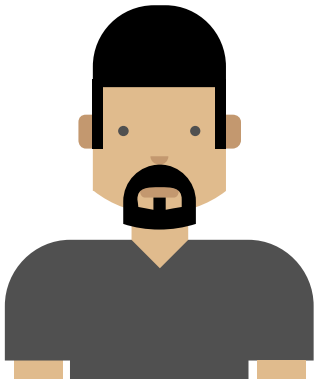

Users are reporting a bug
It happens once in a while…


Users are reporting a bug
It happens once in a while…
…and only in production
How the he@!# I'm supposed to fix that?!
Ooo


Asks for solutions
Develops & tests solutions
Operates & supports solutions
Gets solutions
Value
Time

Asks for solutions

Develops & tests solutions



Operates & supports solutions

Gets solutions

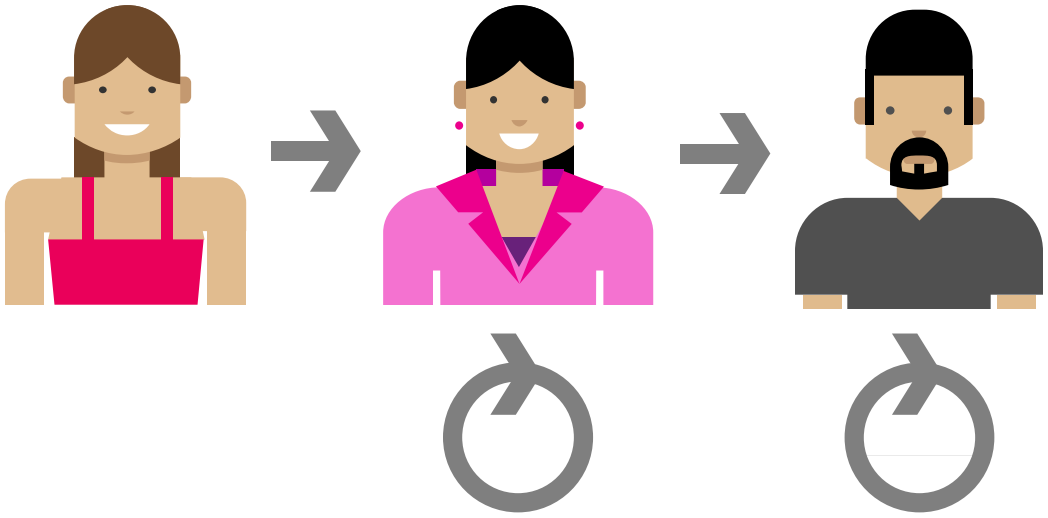
Functional Requirements

Working Code

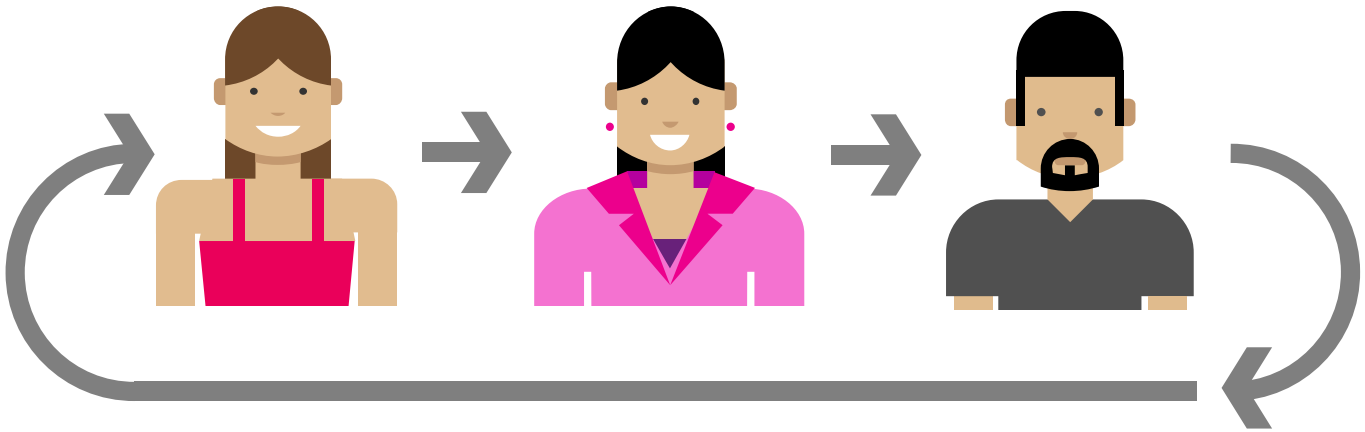
Bugs

Incidents

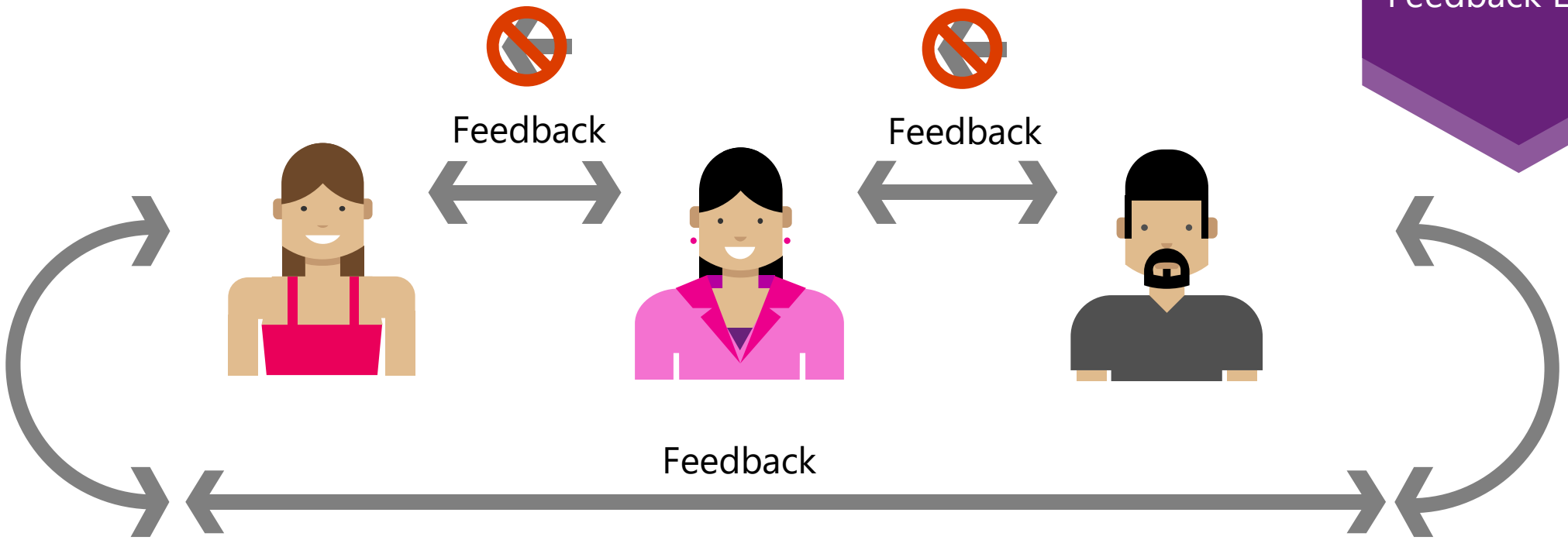
Dev	Hard to reproduce errors out of production environments
	Usually long business need-to-business value delivery cycles
Ops	It's not possible to know what or how applications are doing, beyond the basics
	Different applications deploy in different ways; deployment is hard, slow, and error prone



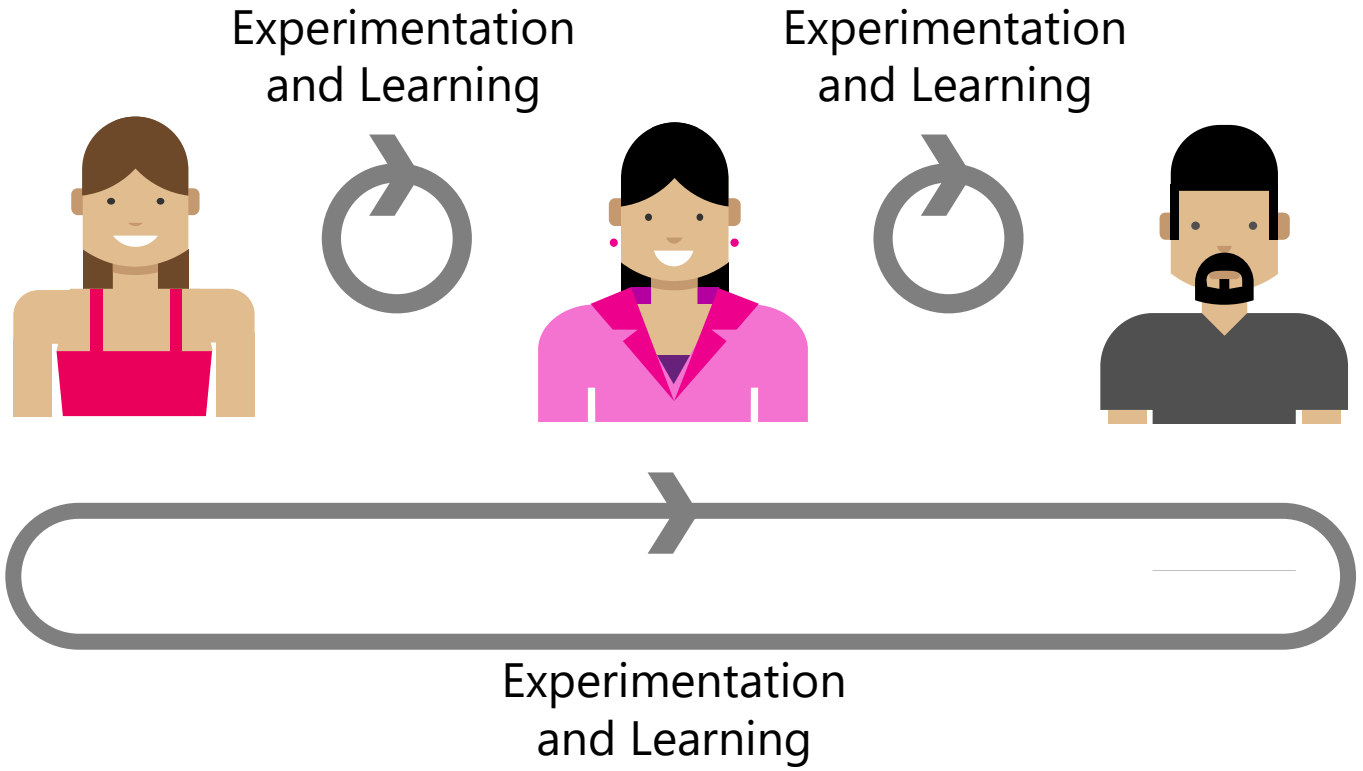
1st Way
Systems
Thinking

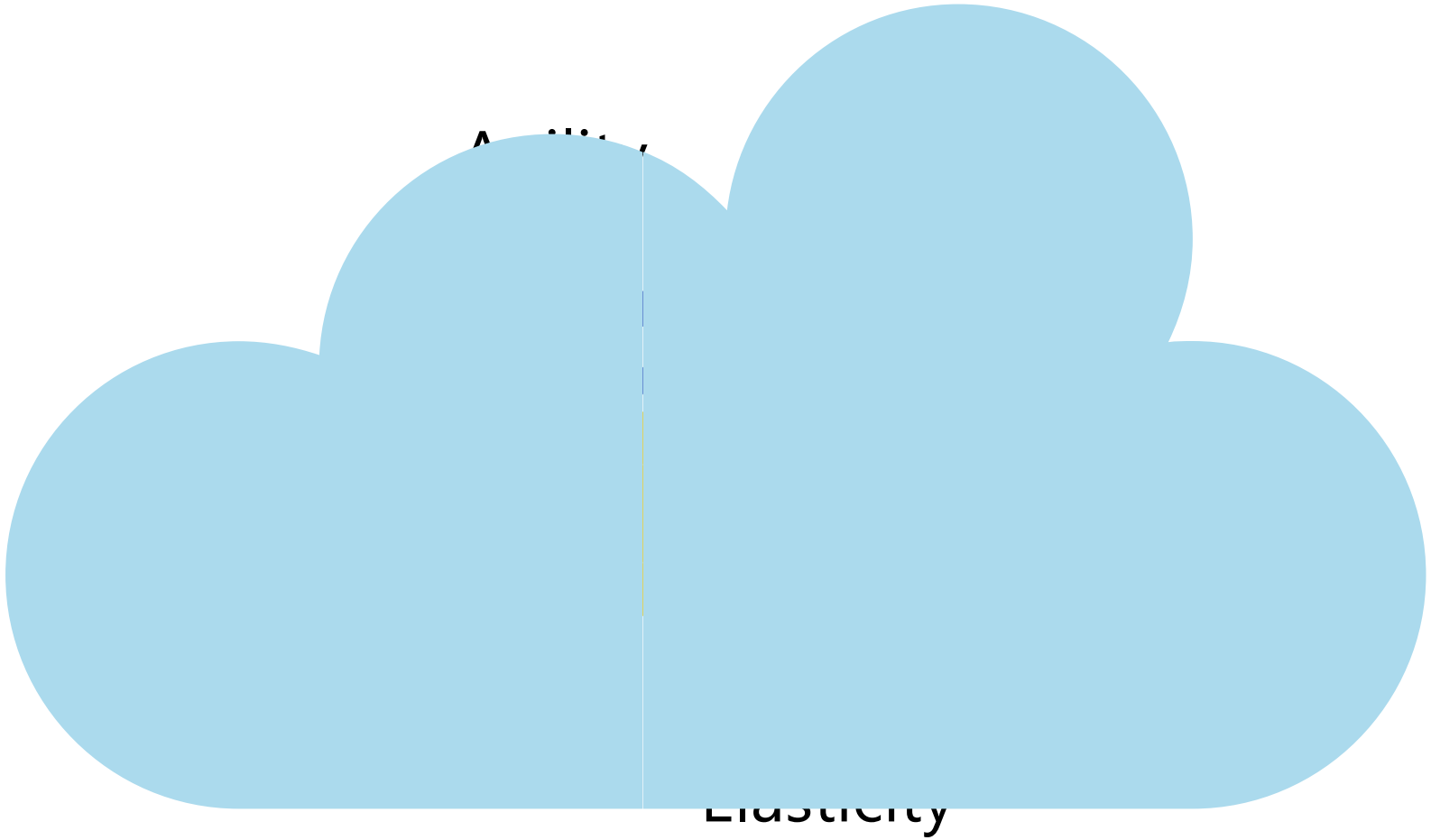


2nd Way
Amplify
Feedback Loops

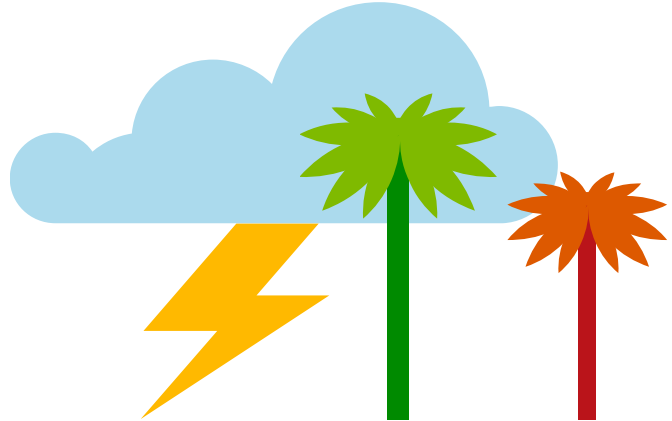


3rd Way
Culture of
Continual
Experimentation
and Learning



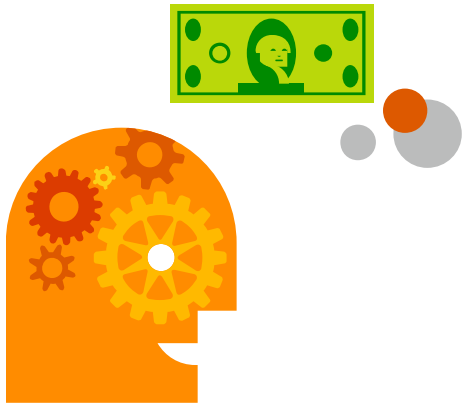

Elasticity

Define infrastructure
Provision resources
Manage environments
Manage configuration
Monitoring
Diagnostics



Define Infrastructure

Deploy or update a group of resources, repeatedly

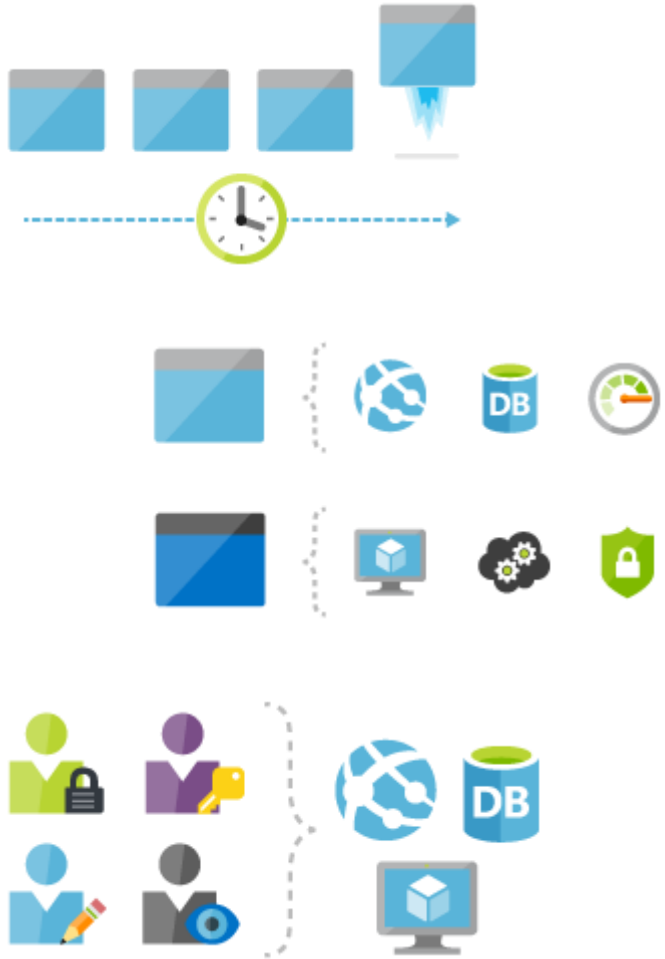


Visualize a group of resources in a logical view, including monitoring/billing

Manage permissions on a group of resources

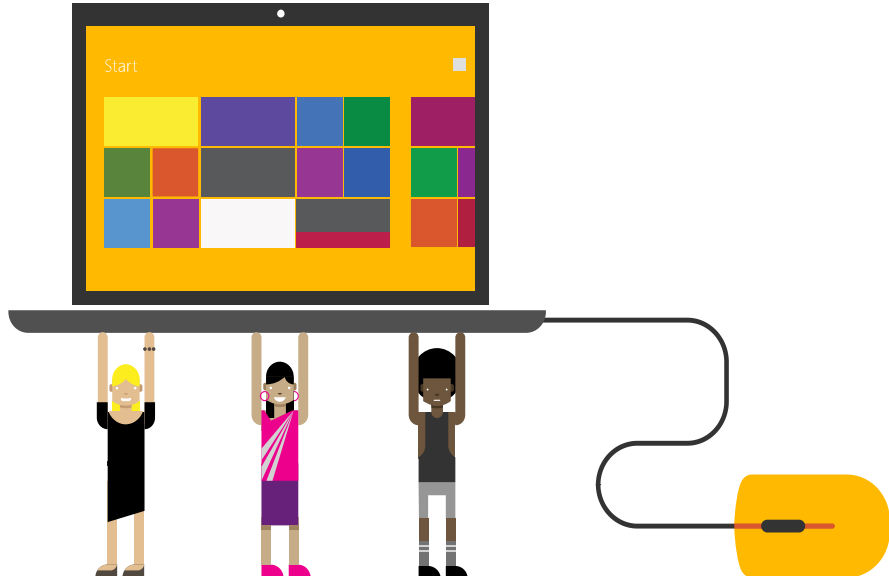
Define Infrastructure

- 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

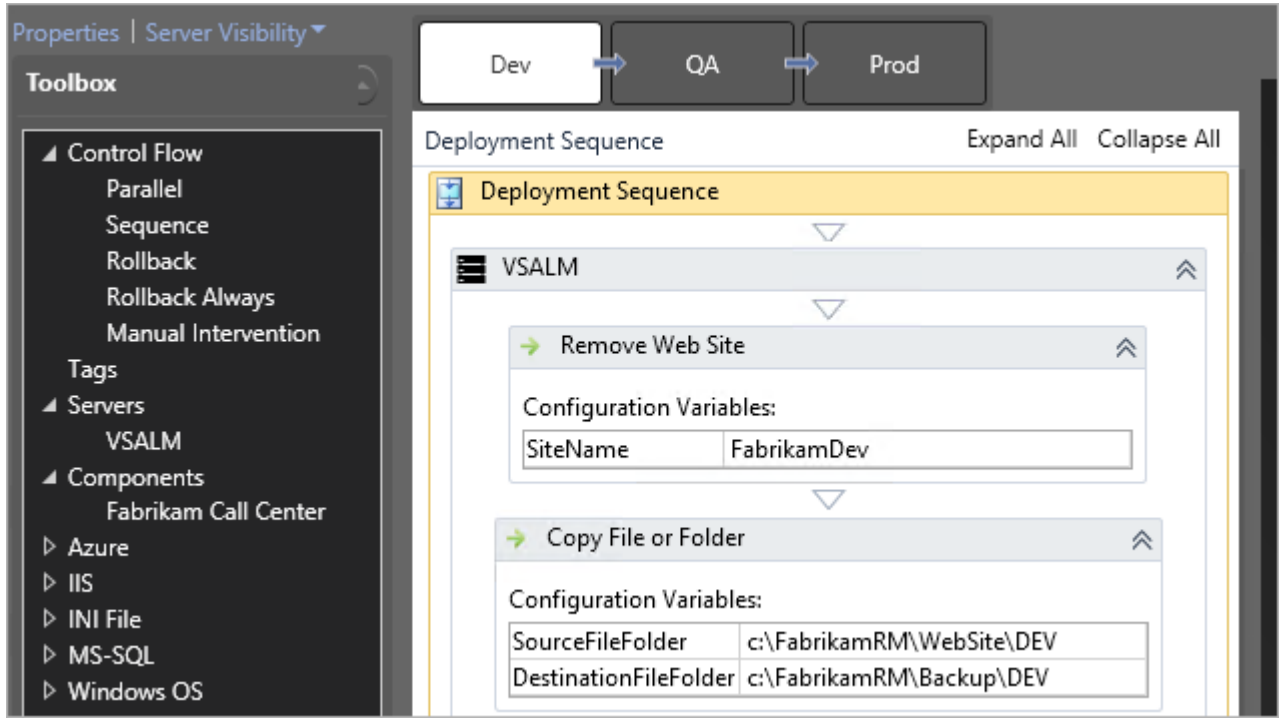
Error-prone

Chaotic

Release Management

Team Foundation Server and Visual Studio Online

- **Automated builds**
- **Automated testing**
- **Automated deploy**
- Deploy approval workflow
- Traceability
- Custom tasks



Release Management

Team Foundation Server and Visual Studio Online (vNext)

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- **Deploy approval workflow**
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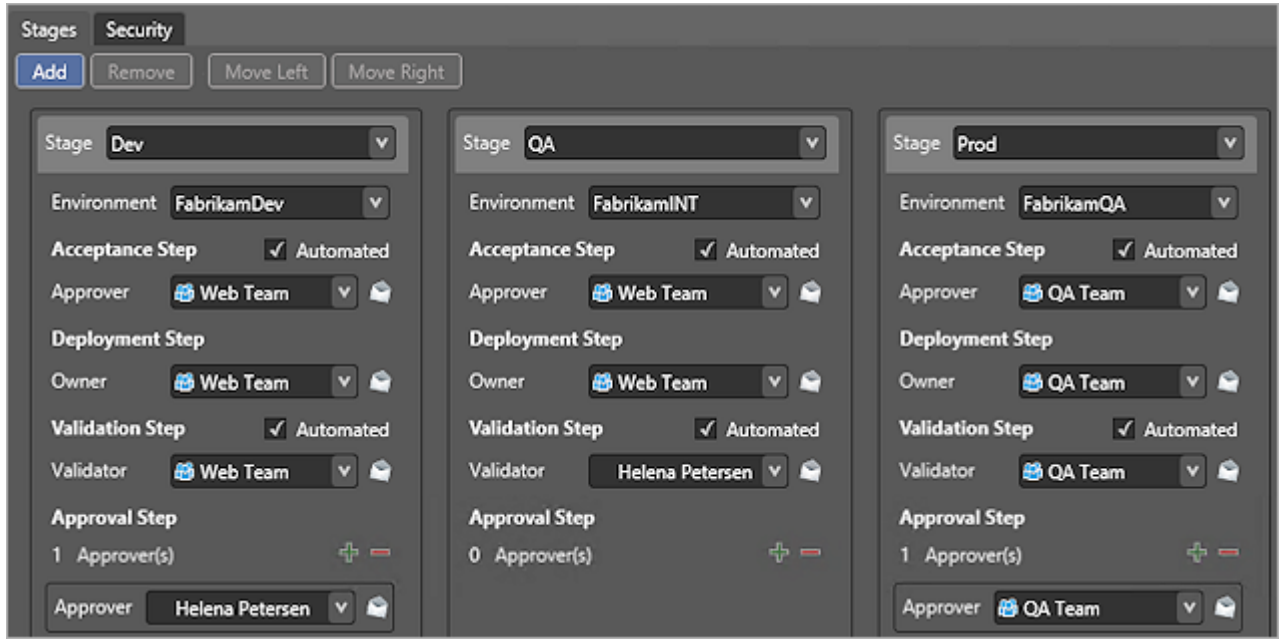

Release Management

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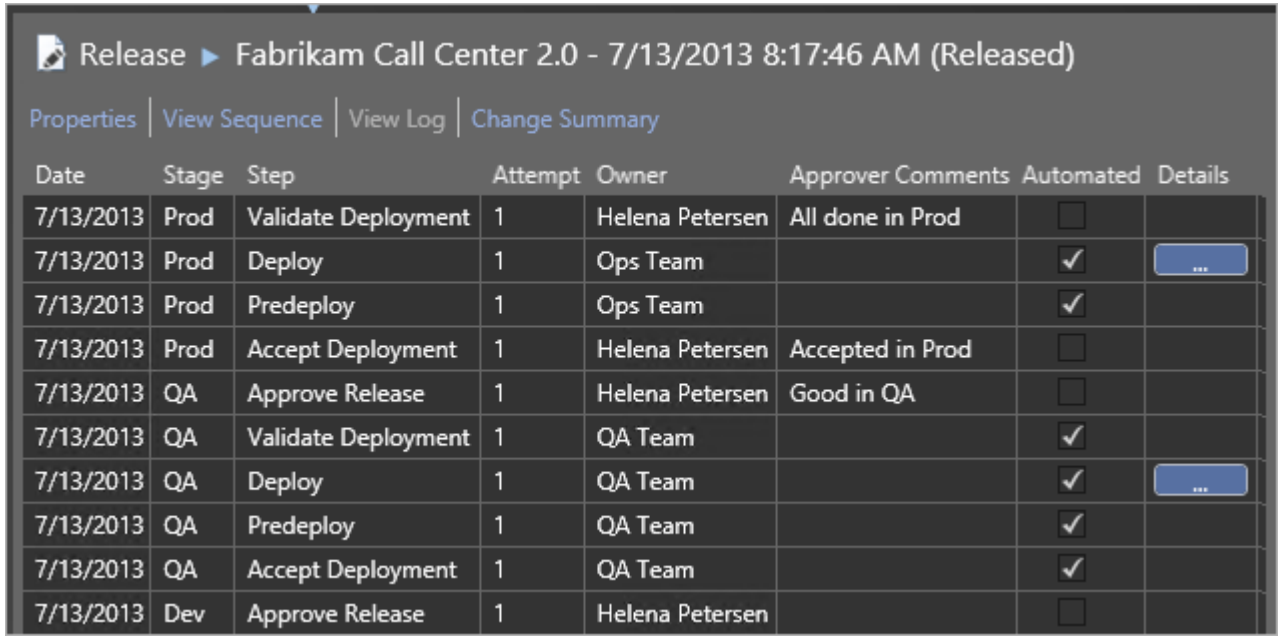

Date	Stage	Step	Attempt	Owner	Approver Comments	Automated	Details
7/13/2013	Prod	Validate Deployment	1	Helena Petersen	All done in Prod	☐	
7/13/2013	Prod	Deploy	1	Ops Team		☑	...
7/13/2013	Prod	Predeploy	1	Ops Team		☑	
7/13/2013	Prod	Accept Deployment	1	Helena Petersen	Accepted in Prod	☐	
7/13/2013	QA	Approve Release	1	Helena Petersen	Good in QA	☐	
7/13/2013	QA	Validate Deployment	1	QA Team		☑	
7/13/2013	QA	Deploy	1	QA Team		☑	...
7/13/2013	QA	Predeploy	1	QA Team		☑	
7/13/2013	QA	Accept Deployment	1	QA Team		☑	
7/13/2013	Dev	Approve Release	1	Helena Petersen		☐	

Release Management

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- Automated builds
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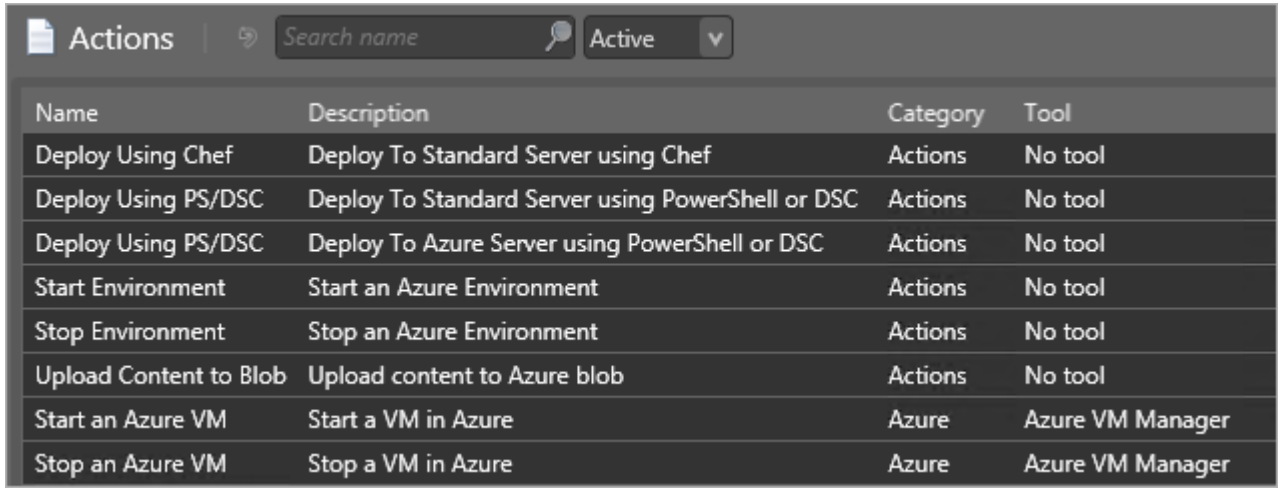
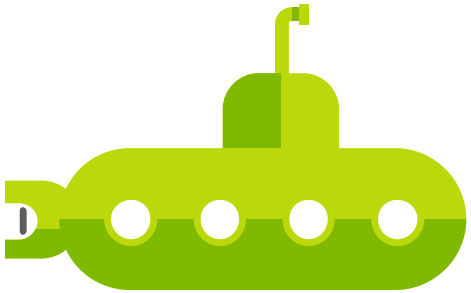
- Automated deploy
- Deploy approval workflow
- Traceability
- **Custom tasks**



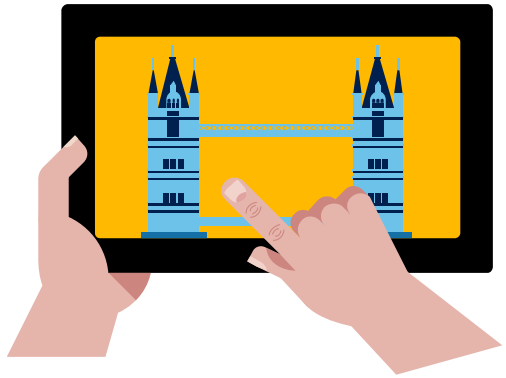
Name	Description	Category	Tool
Deploy Using Chef	Deploy To Standard Server using Chef	Actions	No tool
Deploy Using PS/DSC	Deploy To Standard Server using PowerShell or DSC	Actions	No tool
Deploy Using PS/DSC	Deploy To Azure Server using PowerShell or DSC	Actions	No tool
Start Environment	Start an Azure 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

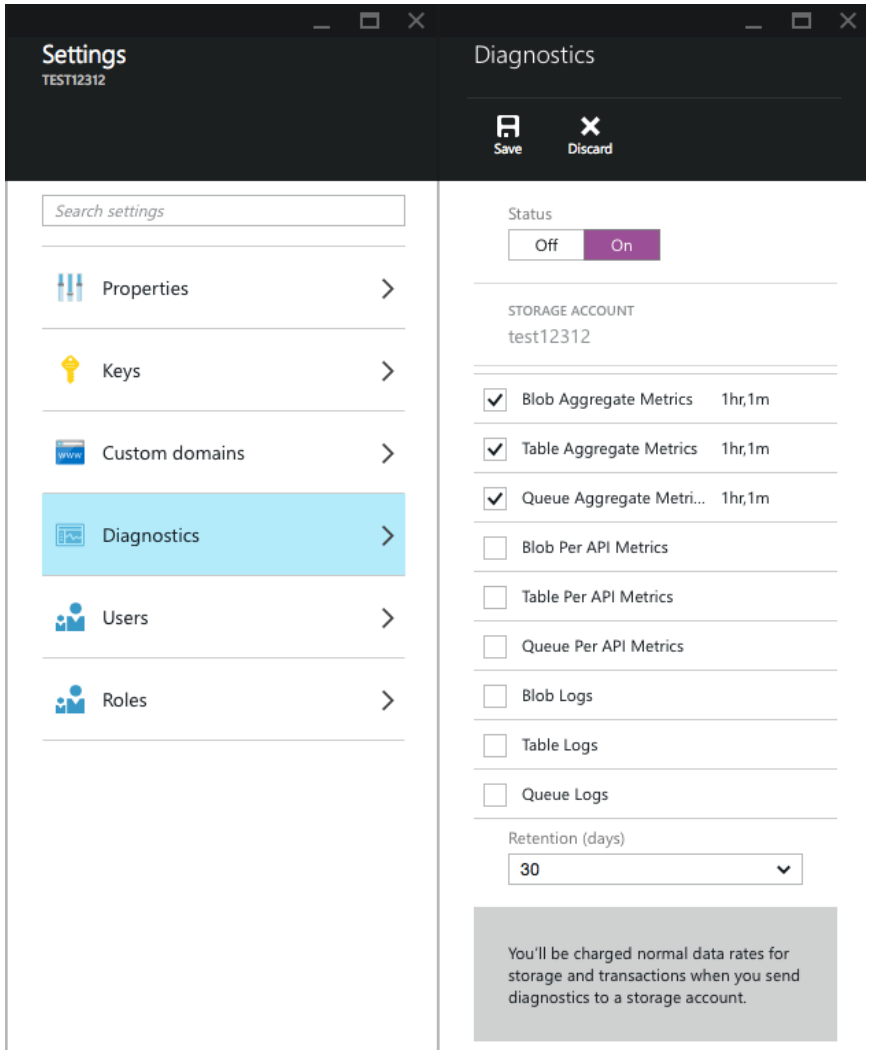


Know what customers are doing

Monitoring & Diagnostics

Azure diagnostics

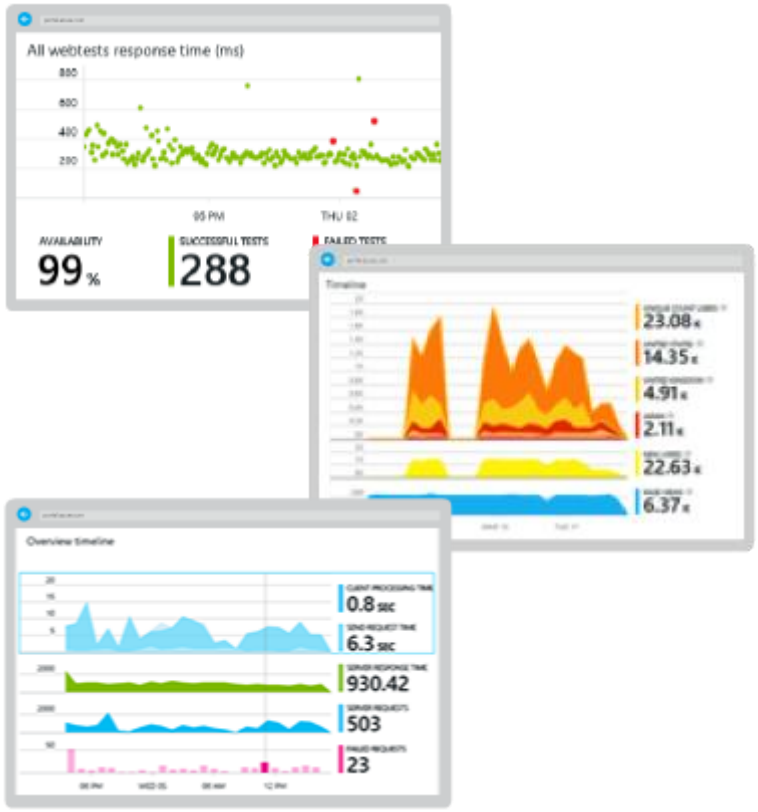
- Can be configured in almost every service
- Stored in Azure
- Accessible through Azure Portal or API



Monitoring & Diagnostics

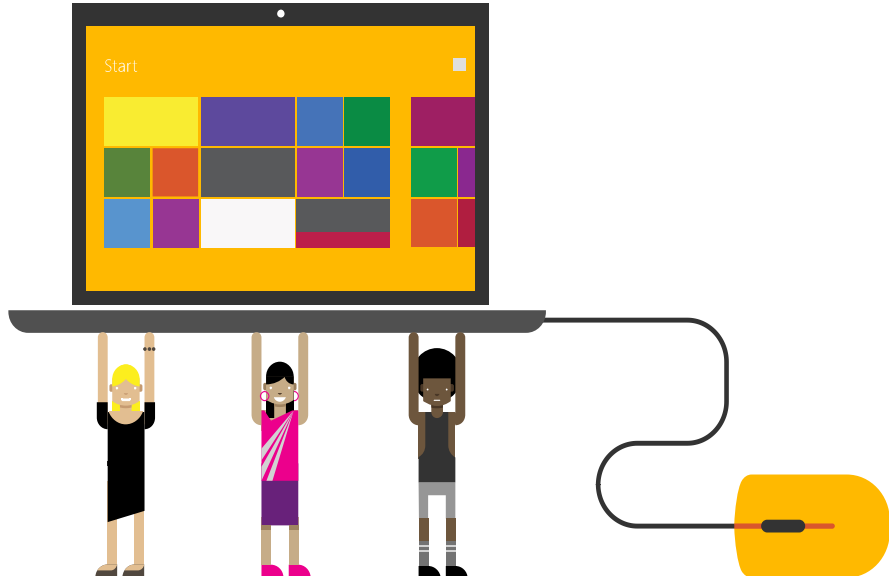
Application Insights

- 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



Connect Demo - Microsoft Visual Studio

FILE EDIT VIEW PROJECT BUILD DEBUG TEAM TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP

Rahul Bagaria

Internet Explorer | Debug | Submit

Global.asax.cs | Your ASP.NET application

Connect Demo | Connect_Demo.MvcApplication | Application_Start()

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Mvc;
using System.Web.Optimization;
using System.Web.Routing;

namespace Connect_Demo
{
    0 references
    public class MvcApplication : System.Web.HttpApplication
    {
        0 references
        protected void Application_Start()
        {
            AreaRegistration.RegisterAllAreas();
            FilterConfig.RegisterGlobalFilters(GlobalFilters.Filters);
            RouteConfig.RegisterRoutes(RouteTable.Routes);
            BundleConfig.RegisterBundles(BundleTable.Bundles);
        }
    }
}
```

100 %

Output | Error List | Web Publish Activity

Ready | Ln 1 | Col 1 | Ch 1 | INS

Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'Connect Demo' (1 project)
- Connect Demo
  - Properties
  - References
  - App_Data
  - App_Start
  - Content
  - Controllers
  - fonts
  - Models
  - Scripts
  - Views
  - favicon.ico
  - Global.asax
  - packages.config
  - Project_Readme.html
  - Startup.cs
  - Web.config

Solution Explorer | Team Explorer

Properties

Dev+Ops work
better together!

Questions?
Thanks!

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