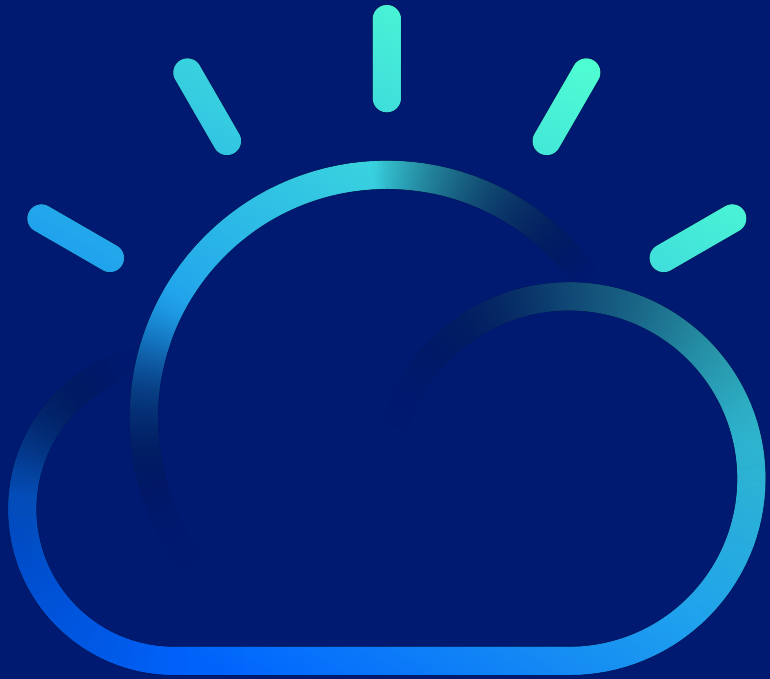
Making Infrastructure and IT Ops Teams Ready for DevOps



Oct 24, 2018

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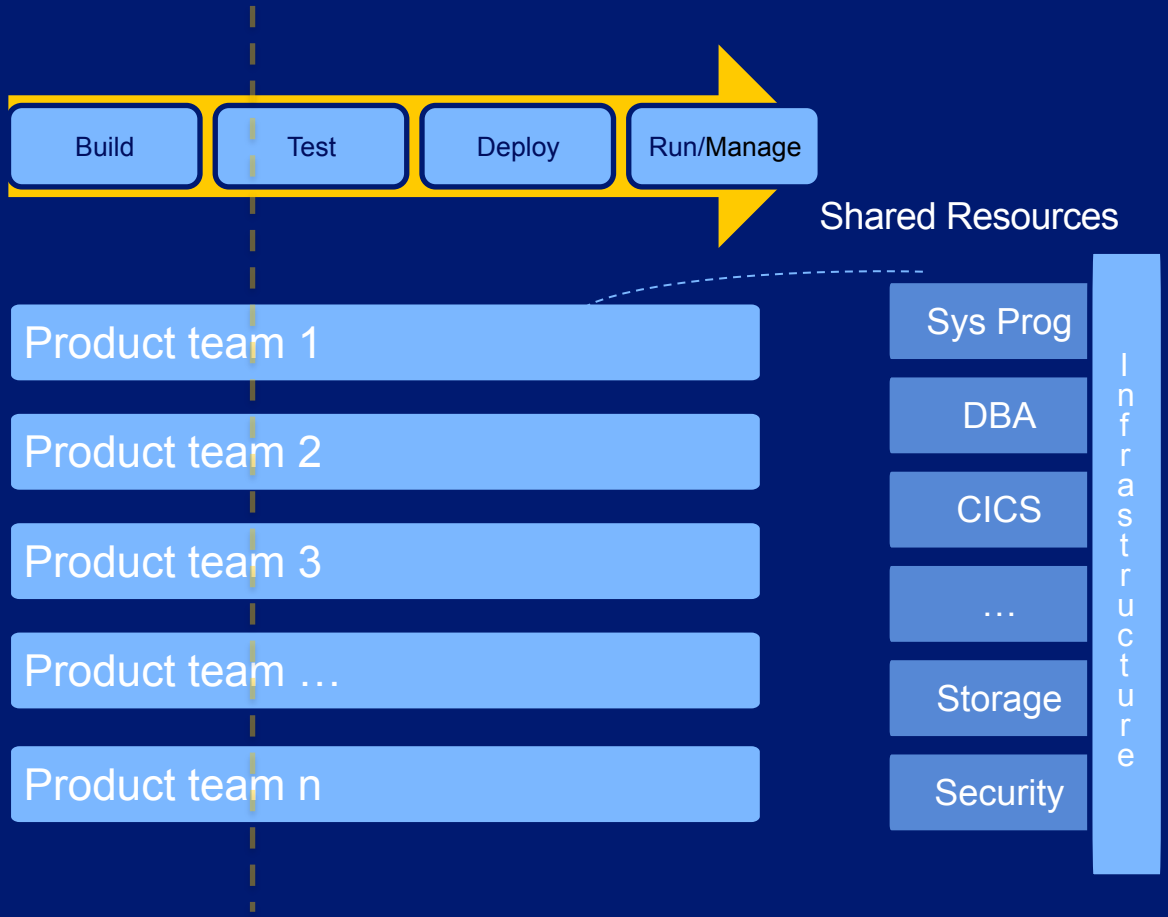
IBM Cloud

Product Teams



As an

Application Developer

you need

Environments

Instantly, on-demand

- Self-served from a catalog
- IaaS coding taken care of for you

Consumable with CI/CD toolchains

- Bind points conveniently exposed
- Cloud agnostic (IaaS details hidden)
- Monitoring included

Configurable

- ‘Curated’ - unnecessary detail hidden

Extra credit (for people who pay you)

- Cost-managed
- Compliant
- Governed
- .... “out of the box”

So what makes up the environment?

Requirements for the entire pipeline through production system:

Management Platform
- Gateway to infrastructure provisioning
- Calls config management for middleware / OS config
- Wires in management tooling / agents
- Calls release automation tooling

Release Automation (Continuous Delivery)
- Deploy your app and database schema updates
- Call test data management and service virtualization

Data Management
- Database updates
- Generate test data and/or subset/mask

Service Virtualization for test
- Virtualize (mock) external services
- Decouples app under test from 3rd party services or other internal applications

Infrastructure

Compute, network and storage

Management

Performance and availability monitoring/management agents

Server Config and Middleware

Get the middleware installed and patched. Configure users. Etc.

The Application

You need the app you're going to test and run

Data

For test or updates based on application changes

External Dependencies

Address things outside of your app that it depends on all the connections

But where does the infrastructure come from?

And how to do you deploy into it?

Who maintains the core pipeline capabilities?

Run on:

SaaS

Traditional (e.g. VMs) [including under clusters]

Public clouds

Kubernetes clouds (public & private)

IBM Z

Infrastructure changes should flow through the same pipeline as development changes

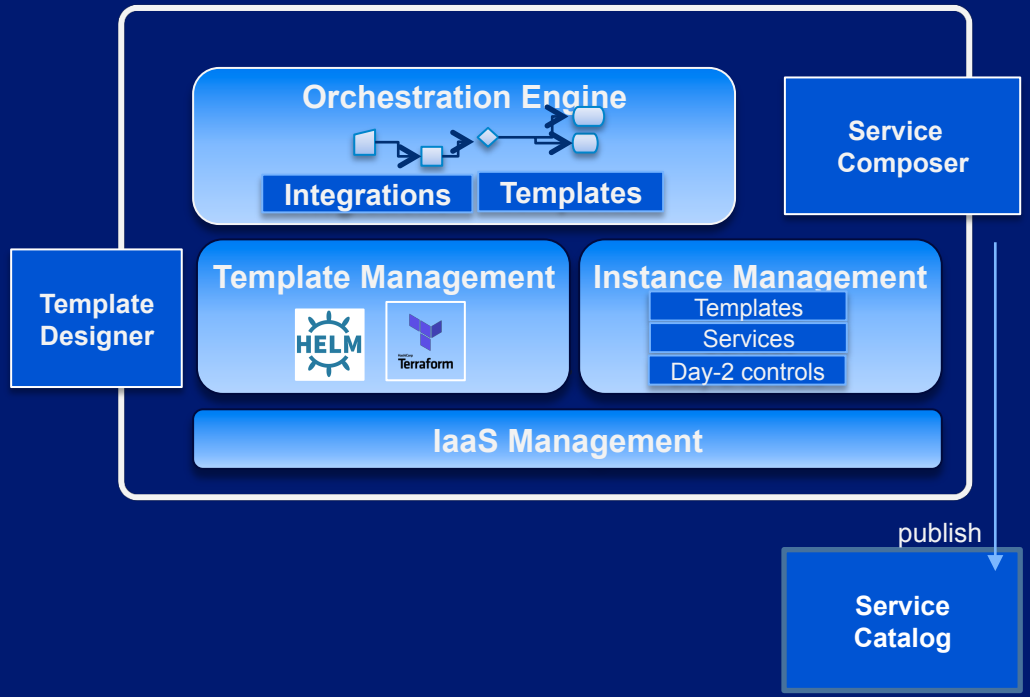
Additional tools are needed to deal with the infrastructure layer

- Manage infrastructure definitions and updates via source code manager.
- Use the pipeline to test the infrastructure definitions - then deploy them into the pipeline for the application teams.

Infrastructure: Templates Plus…

Expressing automation to create an environment-in-code as a template is good… but most infrastructure teams need to :

- Wrap templates with orchestration (approvals, manual interactions, other systems…)
- Track and manage provisioned environments
- Publish orchestrations into a Service Catalog
- Cost tracking and workload placement guidance



And what about z/OS?

Jenkins 2.0

- **Creating a RES volume and IPLing a new z**
- **Using Infrastructure as Code practices**

Stage View

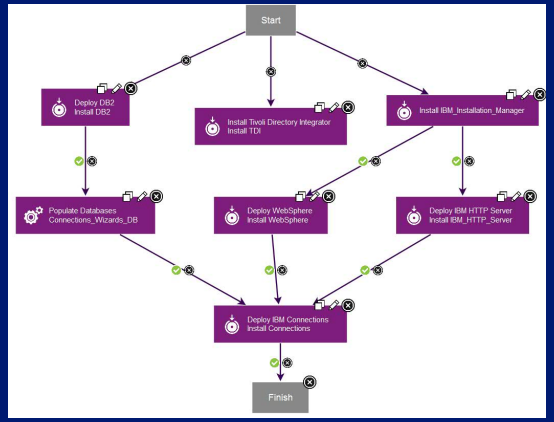
	start	zOS checkout	zOS Initialize	zOS zFS Unmount	zOS dataset selection	zOS RES volume Build	zOS zFS Mount	zOS Rename	Finished
Average stage times: (Average full run time: ~4min 25s)	42ms	7s	10s	8s	13s	13s	12s	12s	22ms
#24 Dec 06 12:40	22ms	3s	10s						
#23 Dec 06 12:31	20ms	12s	9s	9s	12s	13s	9s	11s	22ms
#22 Dec 06 12:16	85ms	5s	11s	12s	14s	14s	15s	13s	

Provide the integration to application pipeline for Product teams to use

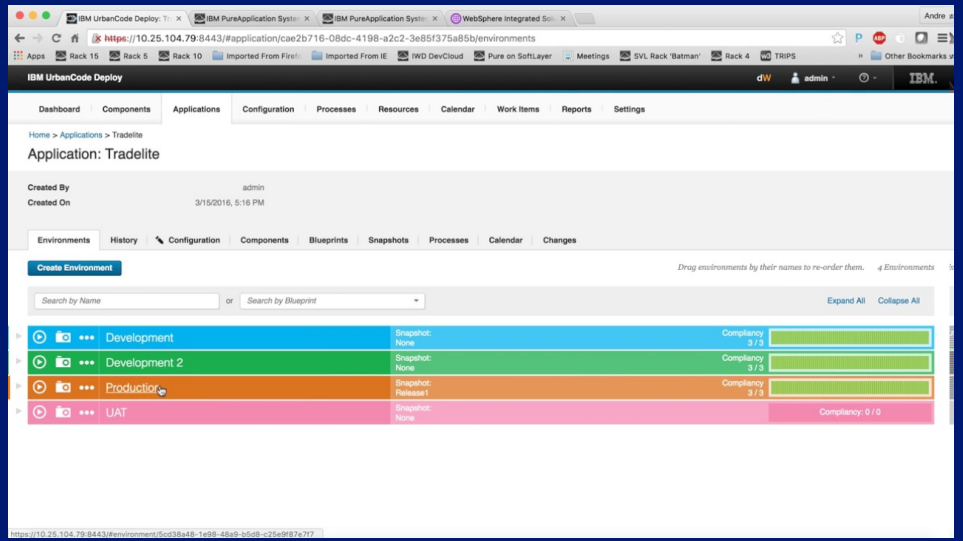
- Capabilities for teams to manage test data and create fabricated data.
- Capabilities for virtual service creation and management.
- Capabilities for the deployment of an application to easily use on demand infrastructure.

Automated cross-platform deployment with IBM UrbanCode

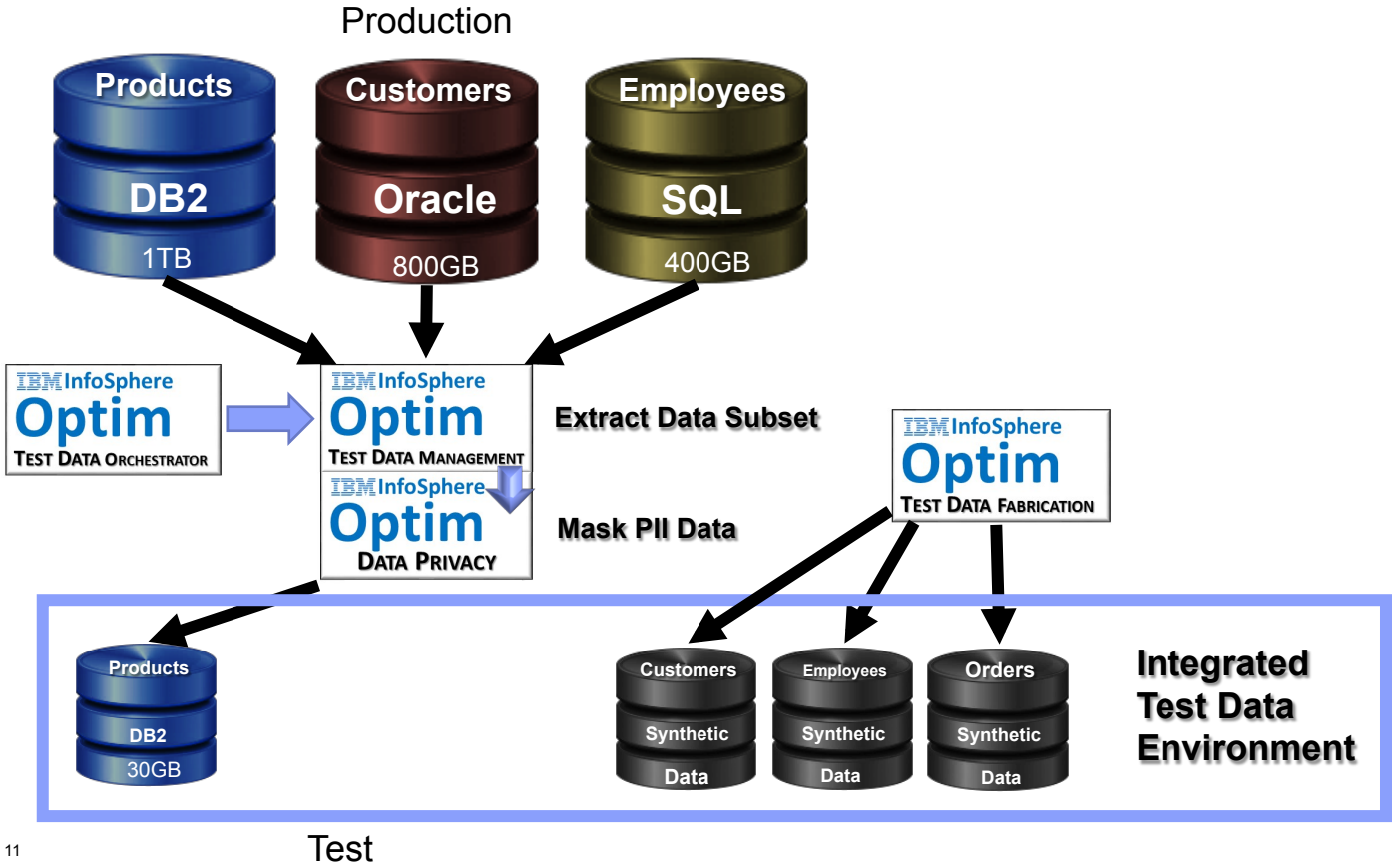
- **Continuous Delivery** for multi-tier or multi-service applications
- **Pipeline** views of which changes are where
- **Push-button deployment** of applications into environments from Dev to Test to Prod
- **200+ Integrations** (plugins) with middleware and other tools
- **Quality Gates and Approvals:** Policies governing what moves to production either data driven or human driven.



- Easy provisioning
- Automation and permission to go fast
- Automation to be correct



Continuous Data for Continuous Testing



Virtualize Services and generate API test cases

An application developer or test engineer can:

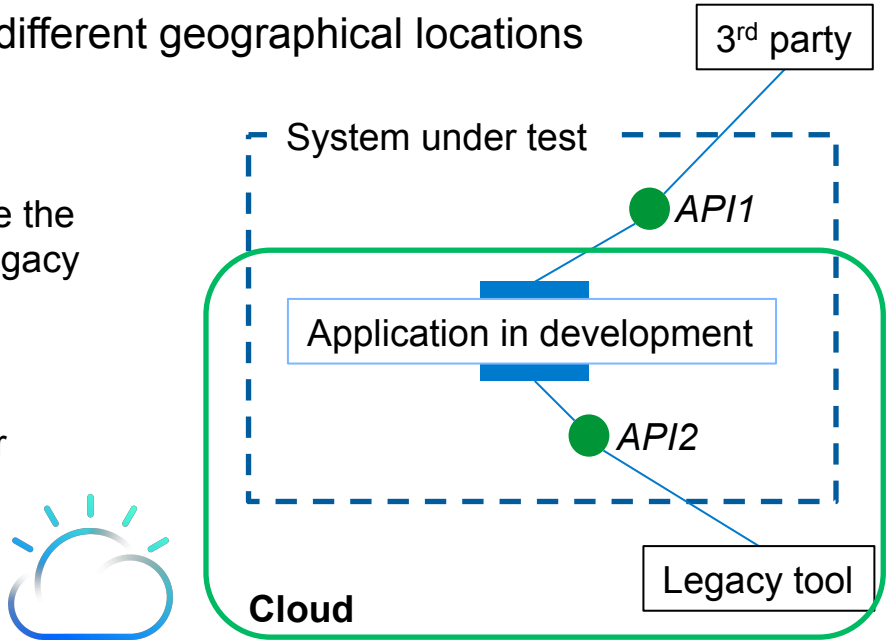
- Test the flow of data to and from APIs
- Virtualize APIs that are unavailable at that time
- Simulate errors from an API service to see how the solution reacts
- Simulate the behavior of APIs being hosted in different geographical locations

How?

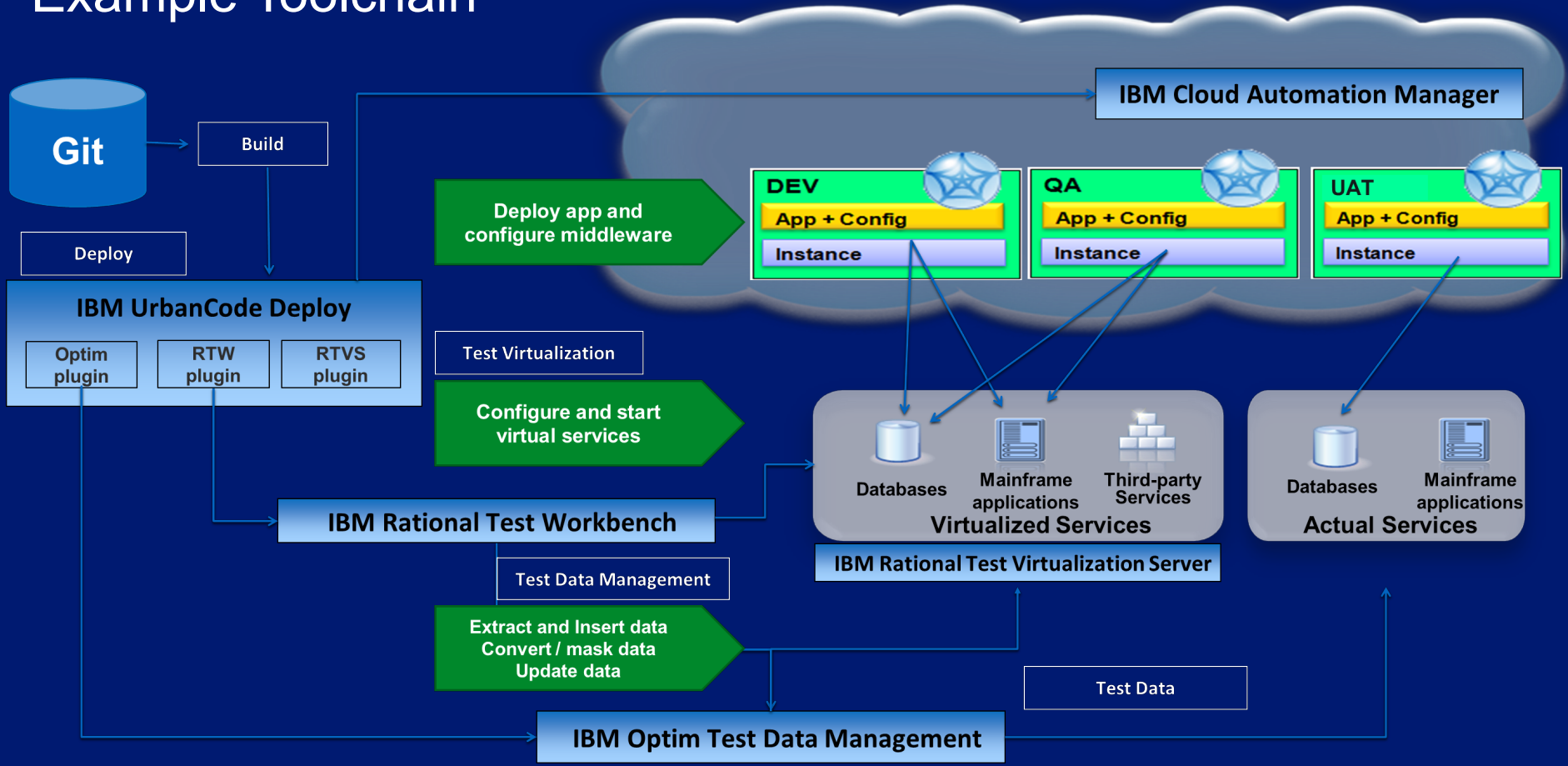
Rational Test Workbench can create stubs that simulate the behavior of APIs from 3rd party providers or existing / legacy technologies

Did you know…

Virtual API stubs can be run in Kubernite or Docker containers



Example Toolchain



Thank you

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