



vivvit

Discover the independent Micro Focus software user community where you can share, collaborate, exchange, and grow



COMMUNITY



**Integrating ITOM into DevOps Tool Chains - Monitoring as Code**  
**September 16, 2020**



# Brought to You By

## Vivit's Application Performance Management Group (APM) Special Interest Group (SIG)



Ron Franklin  
SIG Leader APM & DevOps  
Principal Consultant / Architect  
Randstad Technologies, LLC



Rocky Pisto  
SIG Leader APM  
Vivit Worldwide

YOUR INDEPENDENT MICRO-FOCUS SOFTWARE USER COMMUNITY



# Today's Moderator



Ron Franklin  
Principal Consultant / Architect  
Randstad Technologies, LLC

YOUR INDEPENDENT MICRO FOCUS SOFTWARE USER COMMUNITY





# Today's Speakers



Dr. Lars Rossen  
Fellow, CTO Office  
Micro Focus



Michael Procopio  
Product Marketing Manager,  
Operations Bridge  
Micro Focus

YOUR INDEPENDENT MICRO FOCUS SOFTWARE USER COMMUNITY



# House Keeping

- This “LIVE” session is being recorded  
Recordings are available to all Vivit members
- Session Q&A:  
Please type questions in the Questions Pane

YOUR INDEPENDENT MICRO FOCUS SOFTWARE USER COMMUNITY



# Webinar Control Panel

Toggle View Window  
between Full  
screen/window mode.

Questions



YOUR INDEPENDENT MICRO

COMMUNITY



# Agenda



What is Monitoring as Code

How Monitoring as Code fits into DevOps

How Micro Focus ITOM products implement Monitoring as Code done the DevOps way



# What is Monitoring as Code



# Definition: Monitoring as code

## A shift left activity

### IT in a nutshell

- Someone develops Bits
- Someone else runs the Bits

### Monitoring

- To make the bits run stable you monitor what goes on

### Monitoring as Code

- Who ever makes the Bits, also define how to monitoring
- Preferably as monitoring Bits



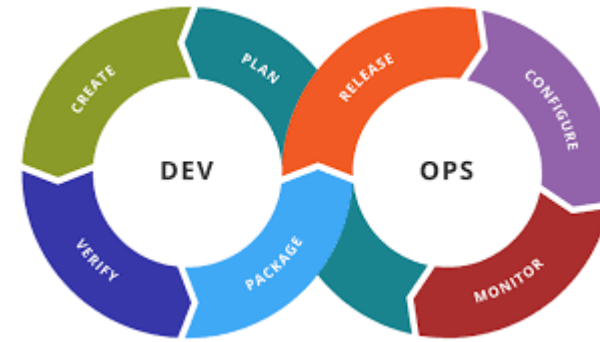


# How Monitoring as Code fits into DevOps

# Definition of DevOps

DevOps is a set of practices that combines software development (Dev) and IT operations (Ops).

- *Wikipedia*



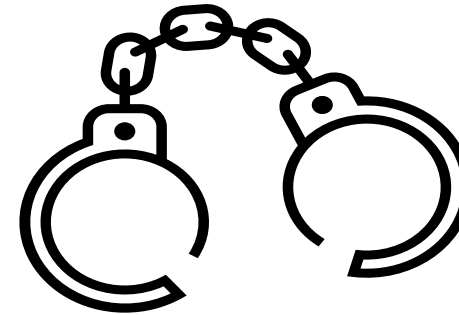
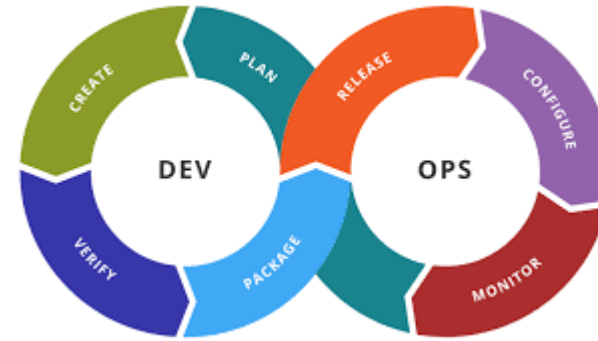
# Definition of DevOps

DevOps is a set of practices that combines software development (Dev) and IT operations (Ops).

- *Wikipedia*

DevOps is a cover for Development to take over the world

- *Lars Rossen*



# Definition of DevOps

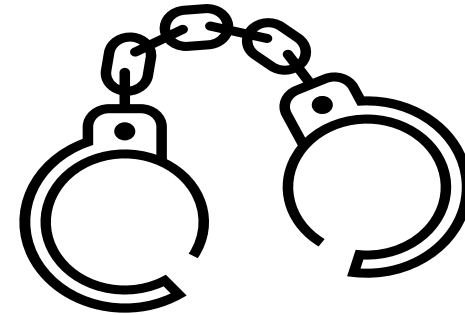
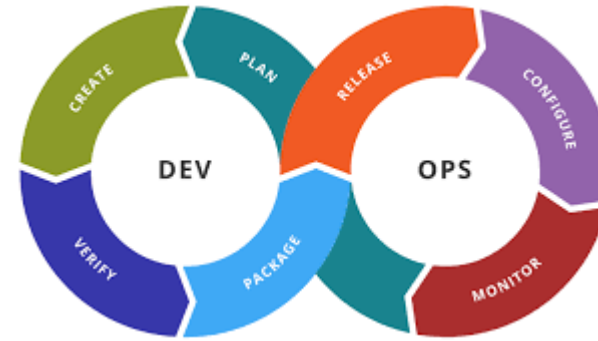
DevOps is a set of practices that combines software development (Dev) and IT operations (Ops).

- *Wikipedia*

DevOps is a cover for Development to take over the world






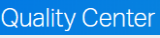















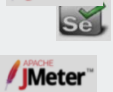

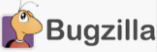





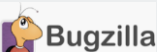
- *Lars Rossen*

***Unfortunately, Dev do not understand Operations at enterprise scale***





# Tool and methods: Developers cannot even agree across teams

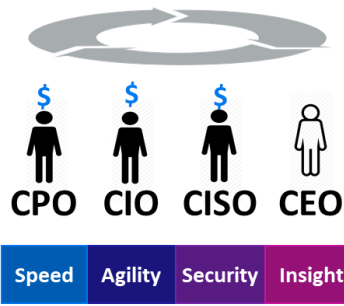
	IDE	SCCM	Continuous Integration (CI)	Continuous Testing	Agile Management	Quality Management
Product Team 1						
Product Team 2						
Product Team 3						
Product Team 4						
Product Team 5						

DEV

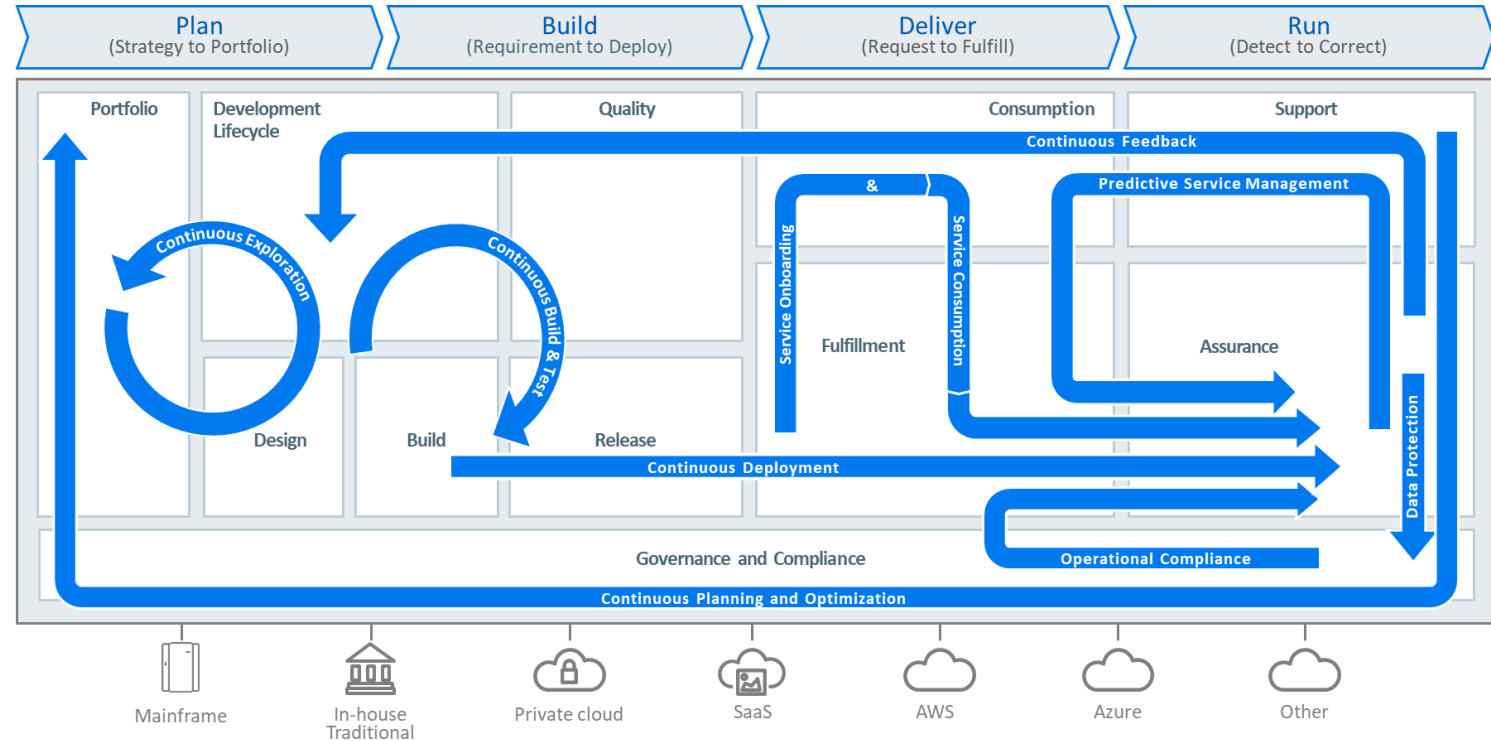
# Tool and methods: So what happens if each team is defining monitoring

	IDE	SCCM	Continuous Integration (CI)	Continuous Testing	Agile Management	Quality Management	Config	Monitoring	Incident
Product Team 1									
Product Team 2									
Product Team 3									
Product Team 4									
Product Team 5									
	DEV						OPS		

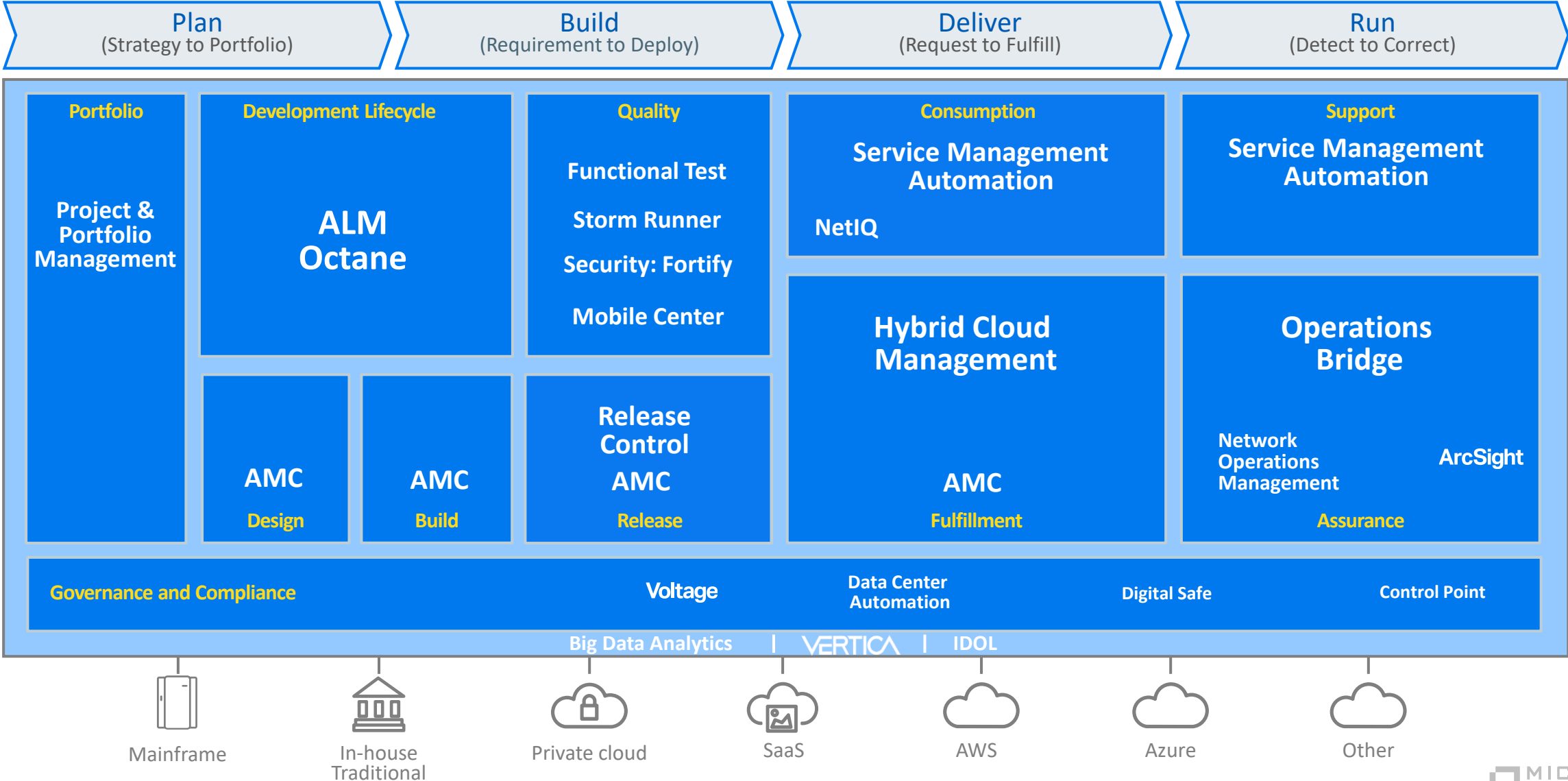
# Driving Digital Transformation with one unifying architecture



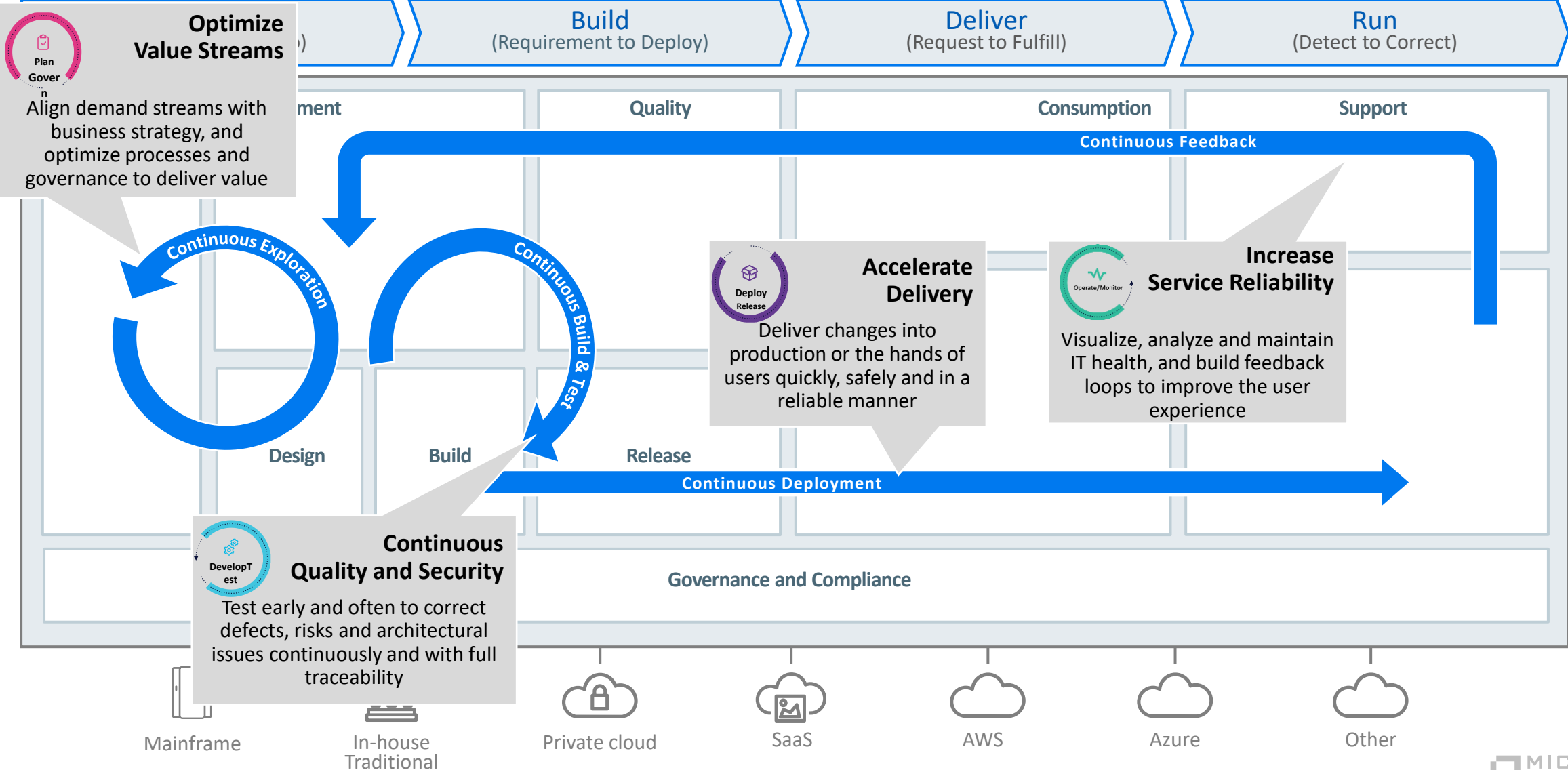
The Factory of the Digital Enterprise



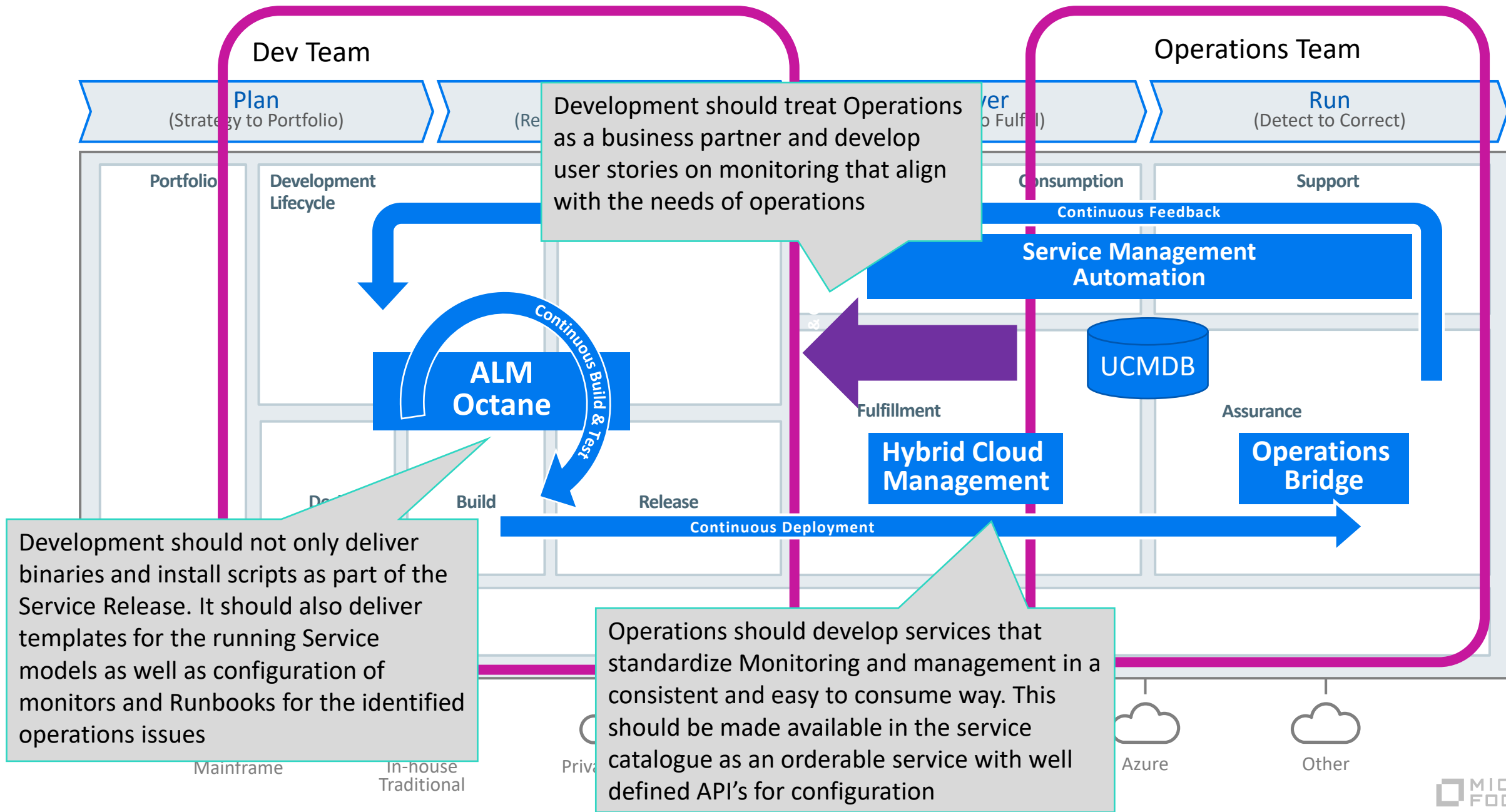
# Define the functional components of the standardized Factory



# Define the Value flow and integrations for Enterprise DevOps







Dev Team

Operations Team

Plan

(Strategy to Portfolio)

Development should treat Operations as a business partner and develop user stories on monitoring that align with the needs of operations

Run

(Detect to Correct)

Portfolio

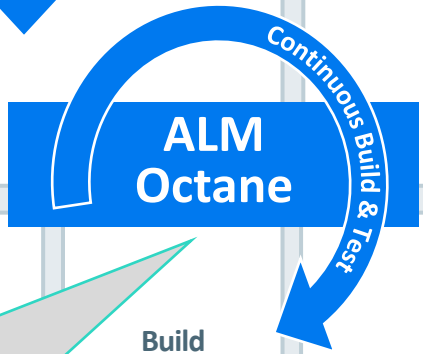
Development Lifecycle

Consumption

Support

Continuous Feedback

Service Management Automation



UCMDB

Fulfillment

Assurance

Hybrid Cloud Management

Operations Bridge

Build

Release

Continuous Deployment

Development should not only deliver binaries and install scripts as part of the Service Release. It should also deliver templates for the running Service models as well as configuration of monitors and Runbooks for the identified operations issues

Operations should develop services that standardize Monitoring and management in a consistent and easy to consume way. This should be made available in the service catalogue as an orderable service with well defined API's for configuration

Mainframe

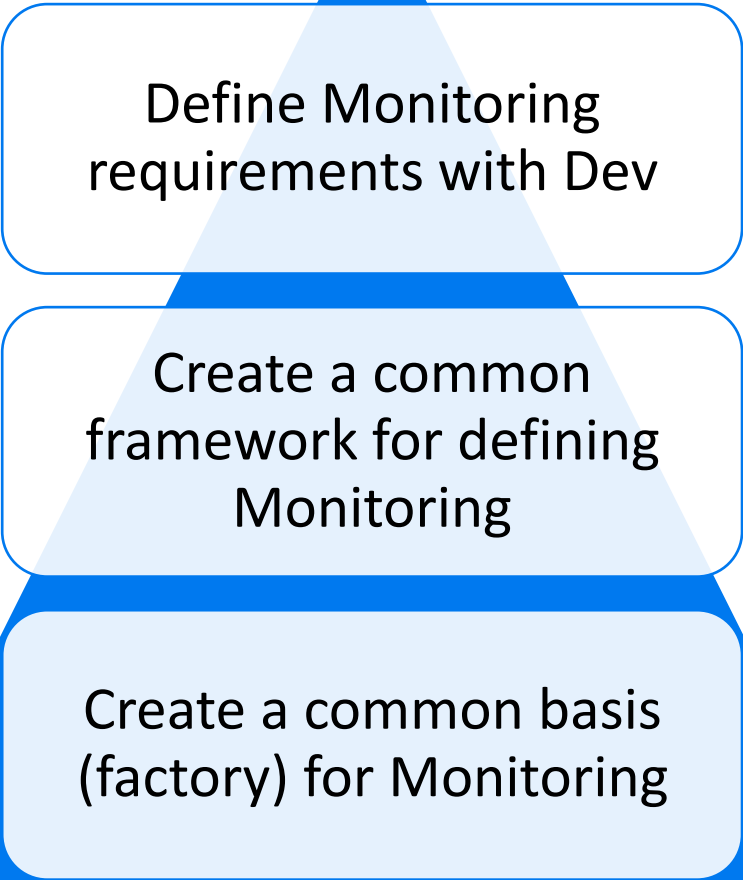
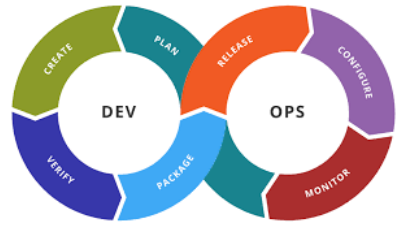
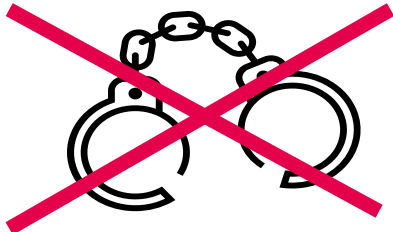
In-house Traditional

Private

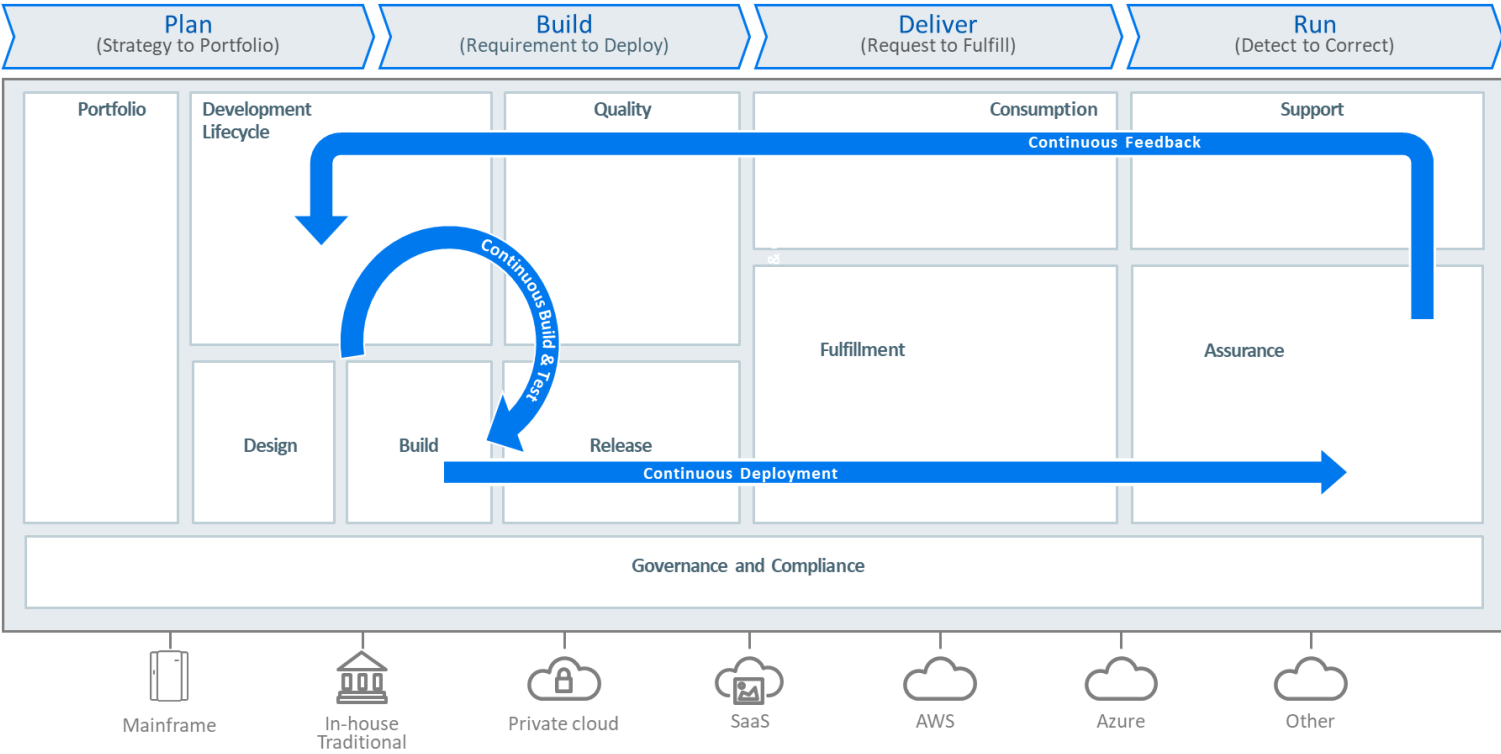
Azure

Other

# Monitoring as code



## The **Factory** of the Digital Enterprise





# Micro Focus Tools: Overview and Setup

# Basic Process Flow

Setup



Data instance



# Micro Focus Tools: Administrative Tasks



# Dev Lead and HCMX Service Designer

Single design automates the fulfillment of a wide variety of requests

The screenshot displays the 'Multi Tier Hybrid Cloud Service (1.1)' interface in the 'DESIGNER' tab. The main workspace shows a hierarchical service tree with components like 'Azure Infrastructure Service', 'Azure LB', 'Azure Database Group', 'Azure Server Group', 'Storage Group', 'Server Group', and 'vmware server'. A configuration panel on the right is open for the 'Azure Server' component, showing fields for 'sub\_credentials\_user', 'subnetName', 'virtualNetworkName', and 'VM Name'. A blue line connects the 'Azure Server' component in the tree to the configuration panel. A large blue 'X' is overlaid on the configuration panel, and a blue line extends from it to the right, pointing towards the text 'Monitoring setup'. The interface includes a top navigation bar with 'Sequenced Designs', 'HYBRID CLOUD MANAGEMENT', and 'Content Store'. A left sidebar lists various service components like 'Apache Tomcat', 'IIS Web Server', and 'MySQL database'. The bottom right corner shows a 'Saved' status.

Monitoring setup

## User options

Price

Rules

Task Plan

Default values

Discussions

History

+ New field × Delete field

### Display name

▼ vCenter Compute Flex Options

▼ Server Count

Server Count

▼ Deployment Configurations

> Monitoring

> Instance Type

Workflow Designer | HYBRID CLOUD MANAGEMENT | Content Store | admin

**Projects**

Filter the tree

To start working, either create a project or import a repository from SCM

**Dependencies**

Filter the tree

- snapshots
- tags
- volumes
- deploy\_instance
- reboot\_instance
- start\_instance
- stop\_instance
- undeploy\_instance

Configuration

**deploy\_instance**

Graph | Properties

```

    graph LR
      run_instances[run_instances] -- SUCCESS --> check_instance_state[check_instance_state]
      run_instances -- FAILURE --> fail1((FAILURE))
      check_instance_state -- SUCCESS --> create_tags[create_tags]
      check_instance_state -- FAILURE --> fail2((FAILURE))
      create_tags -- SUCCESS --> describe_instances[describe_instances]
      create_tags -- FAILURE --> fail3((FAILURE))
      describe_instances -- SUCCESS --> search_and_replace[search_and_replace]
      describe_instances -- FAILURE --> fail4((FAILURE))
      search_and_replace -- SUCCESS --> parse_ip_address[parse_ip_address]
      search_and_replace -- FAILURE --> fail5((FAILURE))
      parse_ip_address -- SUCCESS --> success1((SUCCESS))
      parse_ip_address -- FAILURE --> fail6((FAILURE))
      fail6 --> terminate_instances[terminate_instances]
      terminate_instances -- SUCCESS --> fail1
      terminate_instances -- FAILURE --> fail2
  
```

**run\_instances**

endpoint: [C] 'https://ec2.amazonaws.com'

headers: headers

query\_params: query\_params

version: [C] '2016-04-01'

delimiter: [C] ';'

availability\_zone: availability\_zone

host\_id: host\_id

\* image\_id: image\_id

Inputs | Outputs

Debug

SCM

# Create Catalogue Entry for Deploying Application

Wide coverage: private and public cloud (AWS, Azure, GCP); virtual machines and bare metal servers

**HYBRID CLOUD MANAGEMENT** | SERVICE CATALOG MANAGEMENT | **CATALOG** | CATEGORIES | SERVICE DEFL... | OFFERINGS | FULFILLMENT... | Admin, Cloud |

### New Aggregated Offering

1 Select services from a provider | 2 Edit the display label of offering

**Providers**

- DnD

**DnD**

Tag: All | Search: Search service designs

- vCenter Compute - Deploy VM from Template**  
18.1.0 | CSA  
Deploys simple compute server from vCenter templates.
- MSSQL DB Server - [ Powered by vCenter ]**  
1.0.0 | DEMO Designs  
Deploys Microsoft SQL Database Server from vCenter templates.
- MSSQL DB Server - Powered by vCenter - Demo**  
2.0.0 | DEMO Designs  
Deploys Microsoft SQL Database Server from vCenter templates.
- MySQL - [ Powered by Microsoft Azure ]**  
1.0.0 | DEMO Designs  
This service design deploys MySQL on Microsoft Azure public cloud

**Offering (9)** + Add

Cloud Service Automation

Enter text for filtering

All | Active | Inactive | All

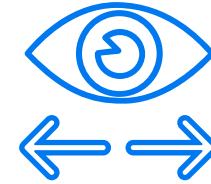
- WordPress Application Service - Powered by A...  
IT Service Offering
- MSSQL DB Server - Powered by vCenter - De...  
IT Service Offering
- MySQL - Powered by Microsoft Azure - Demo  
IT Service Offering
- WordPress Application Service - Powered by A...  
IT Service Offering

1-4 of 9 items

# Associated Tasks

## OBM

- OBM service discovery and monitoring policy



## BPM

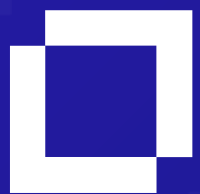
- Dev/Test writes/records BPM script and configuration
- Script is activated with API via APM



## RUM

- Create XML configuration – upload to APM

XML



# Micro Focus Tools: Request Service

# Catalog of Services

The screenshot displays the Micro Focus Service Portal interface. At the top, there is a navigation bar with the Micro Focus logo, a search bar containing "Hybrid Cloud", and user account information for "Admin, Cloud". Below the navigation bar, a search bar is visible with the text "Search in Hybrid Cloud". The main content area is titled "HYBRID CLOUD" and includes a description: "This category contains private and public cloud compute, storage, network, software and application offering". A filter button for "All Subcategories" is present. The "OFFERINGS" tab is selected, showing a list of services sorted by popularity. Each service entry includes an icon, a title, a brief description, a "REQUEST SERVICE" button, and pricing information. A right-hand sidebar contains sections for "Your requests", "RECENT OFFERINGS", and "QUESTIONS".

**MICRO FOCUS** | SERVICE PORTAL




Search in Hybrid Cloud | Hybrid Cloud

## HYBRID CLOUD

This category contains private and public cloud compute, storage, network, software and application offering

All Subcategories

FEATURED | OFFERINGS | Sort by: Popularity

	<b>MySQL - Powered by Microsoft Azure - Demo</b> (CLOUD SERVICE AUTOMATION) This service design deploys MySQL on Microsoft Azure public cloud	RECOMMENDED <a href="#">REQUEST SERVICE</a>	\$ 2187.51 + \$ 1887.51 / yr
	<b>WordPress Application Service - Powered by AWS - Demo</b> (CLOUD SERVICE AUTOMATION) WordPress Application Service	RECOMMENDED <a href="#">REQUEST SERVICE</a>	\$ 1765.96 + \$ 876.96 / yr
	<b>MSSQL DB Server - [ Powered by vCenter ] - 2.0.0</b> (CLOUD SERVICE AUTOMATION) Deploys Microsoft SQL Database Server from vCenter templates.	<a href="#">REQUEST SERVICE</a>	\$ 1971.67 + \$ 1631.67 / yr

**Admin, Cloud**

Your requests

Activate mobile app

### RECENT OFFERINGS

**MSSQL DB Server - [ Powered by vCenter ] - 2.0.0**  
APRIL 12 2020

**MySQL - Powered by Microsoft Azure - Demo**  
APRIL 12 2020

**WordPress Application Service - [ Powered by AWS ] - 1.0.0**  
APRIL 12 2020

**MySQL - [ Powered by Microsoft Azure ] - 1.0.0**  
APRIL 12 2020

### QUESTIONS

Do I really need to install Afaria?

**MICRO FOCUS**



**Almost done.**

Please help us with these additional details:



WordPress Application Service

Business justification \*

**B** *I* U A- A- Format

WordPress

## Preferred contact method

Email ✕ ▼

Start date \*

## End date

## Subscription name

## Subscription description

Action type  
Create subscription ✕ ▼

Service  
P0 Catalog ✕ ▼

AWS Configuration \*

Server Configuration ▲

region  
us-east-2

amiId  
ami-02557367

instanceType  
t2.micro

diskSize \*  
10.0

keyName  
hcmkeypair

subnetId  
subnet-995f4fdb

instanceName  
VM





Server Count \*

1

Set monitoring parameters



Amazon EC2 \*

Instance Configuration

Resource Provider \*

Amazon AWS

AWS Region \*

us-west-2

AWS Image ID (AMI) \*

ami-7d42201d

AWS Instance Type

t2.micro

Platform Type

-- Select an item --

# Confirming Your Request

**Subject:** Request 22730 successfully created.

**Service Management Automation**

Thank you, Pradeep Kumar

[Request 22730: MySQL – Powered by AWS](#) was successfully created

---

Sent automatically from Service Management Automation. Please do not reply directly to this email.

# Solution Provided

**Subject:** Pradeep Kumar , here's a solution for your request 22730.



Service Management Automation

Hi Pradeep Kumar

---

A solution has been provided to your request:

[Request 22730: MySQL – Powered by AWS](#)

## Request solution

---

Your service has been provisioned successfully. To view the details, go to the "Services and Assets" page to find your subscription.

Accept

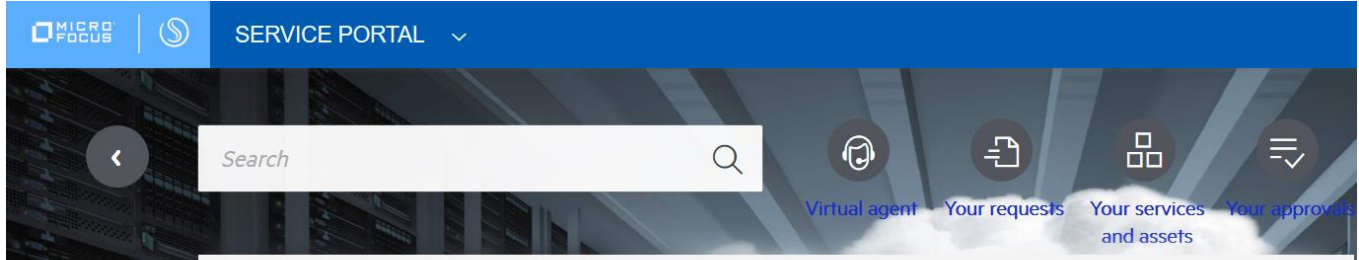
Add comments

---

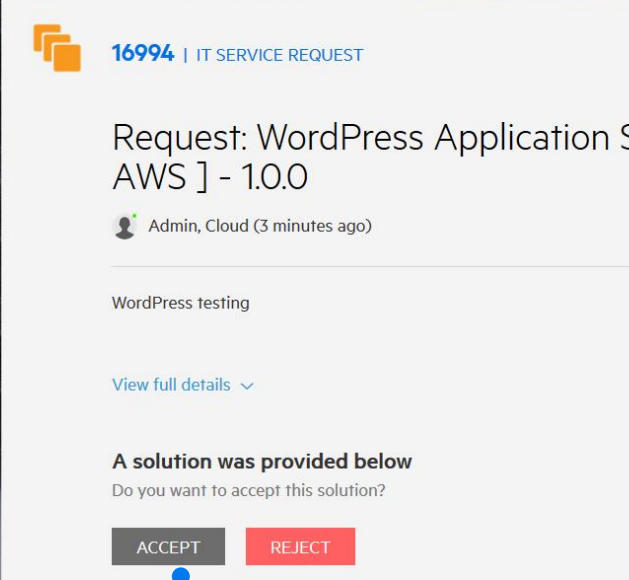
Sent automatically from Service Management Automation. Please do not reply directly to this email.

# Service Request and Subscription Management

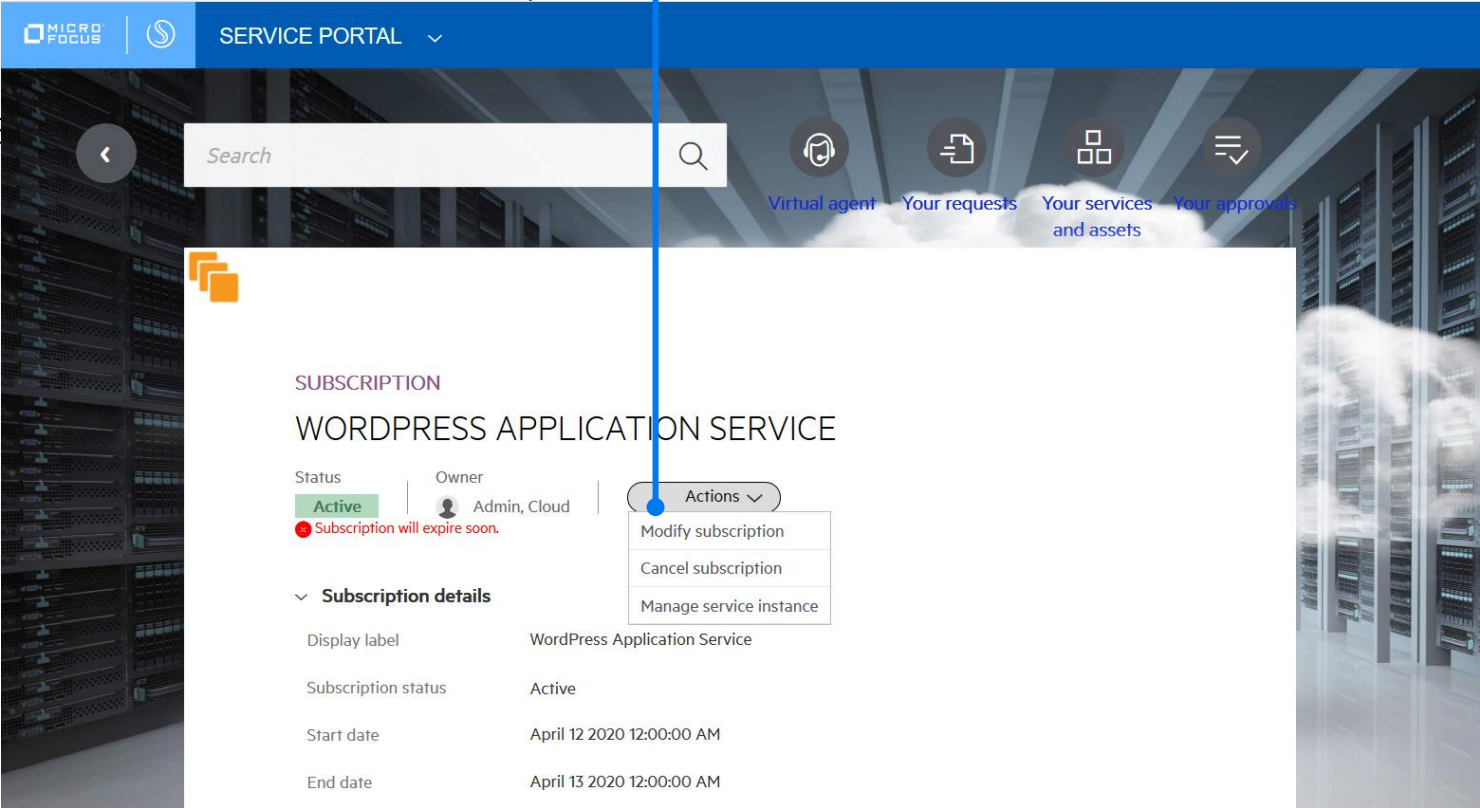
Intuitive and simple service request and management processes



Manage subscription to modify or cancel the provisioned resources



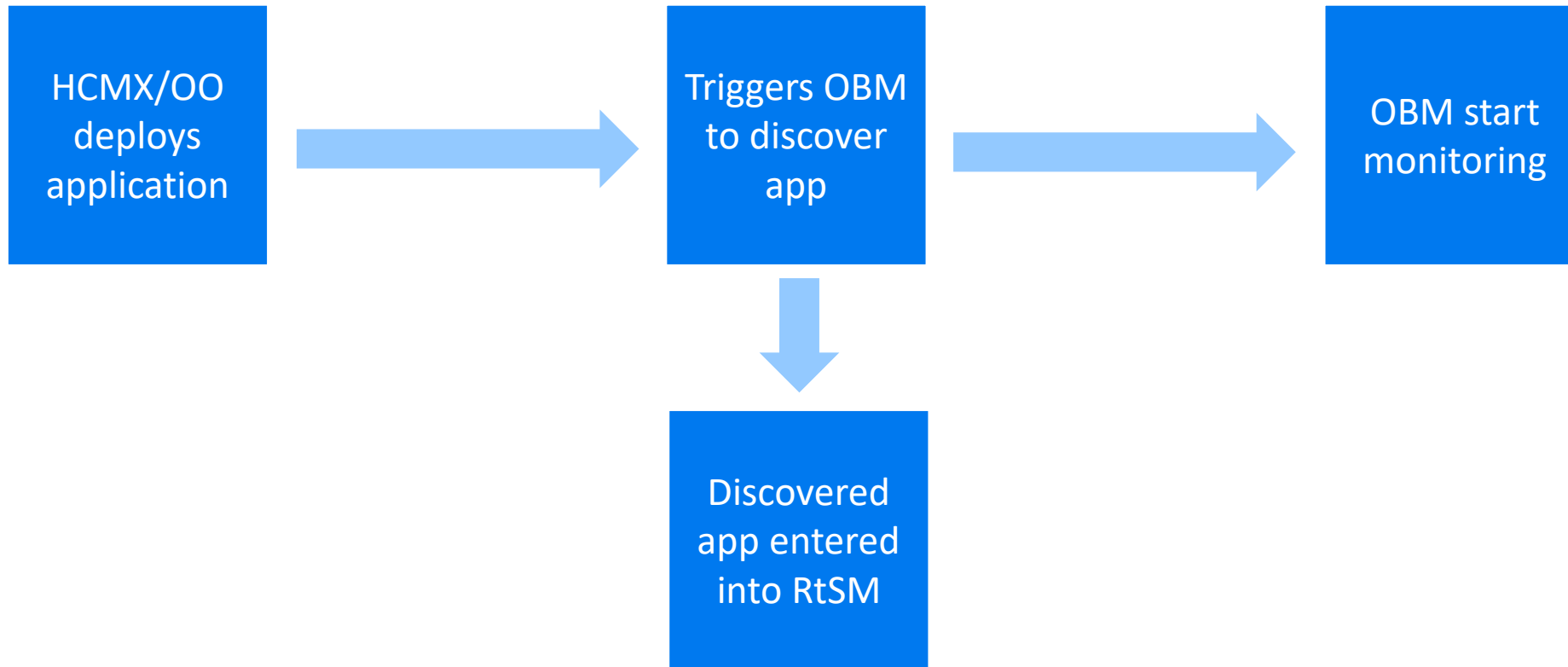
User confirmation upon service request completion



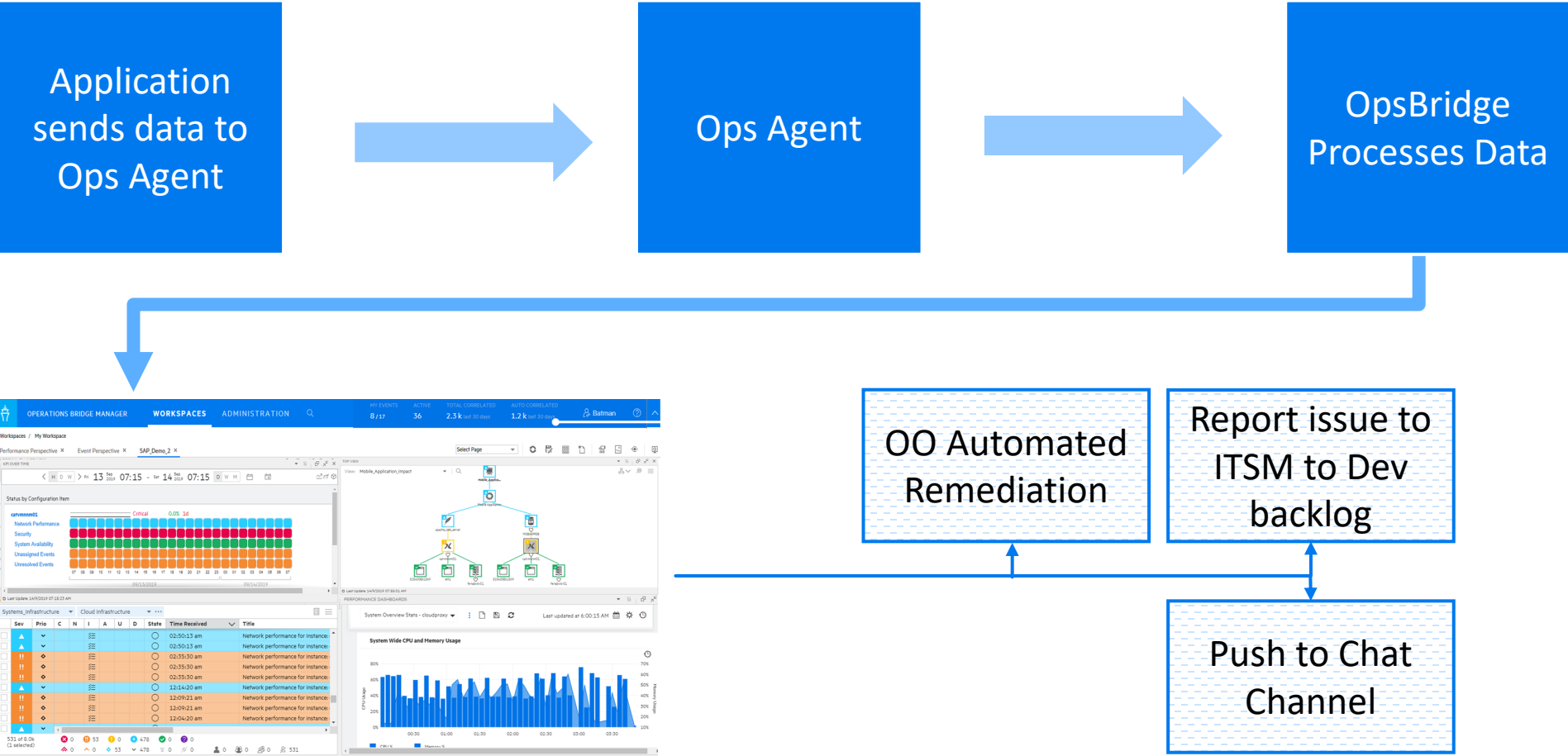


# Micro Focus Tools: Behind the scene

# Operations Orchestration Does the Work



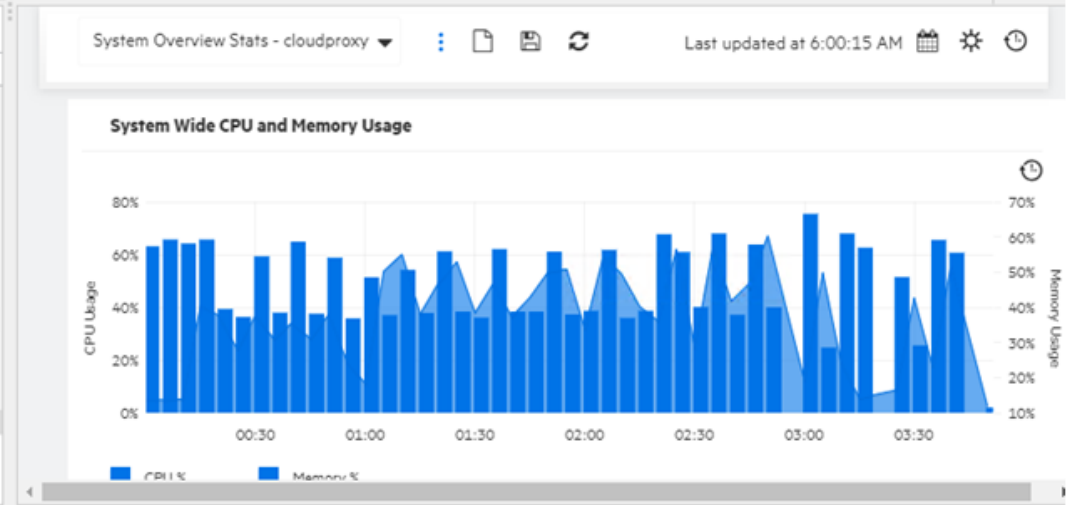
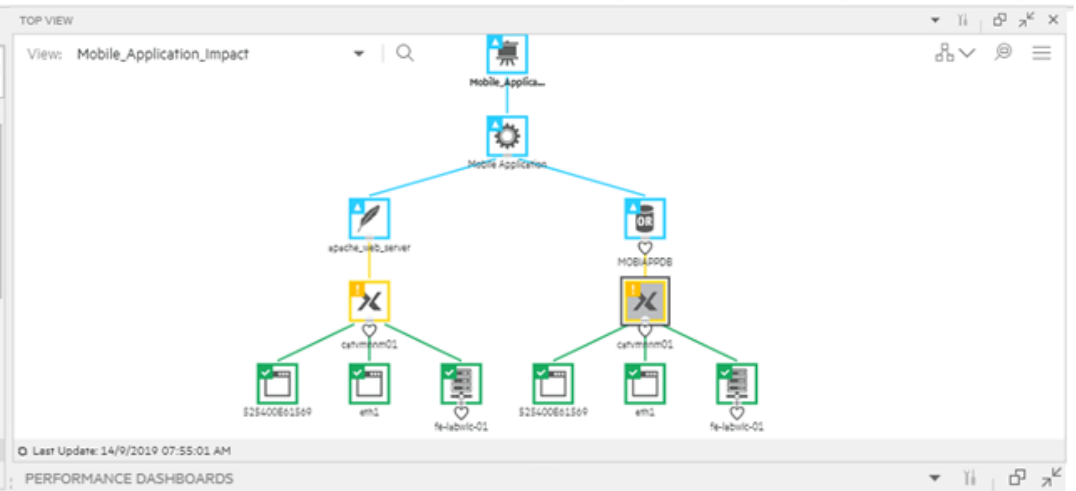
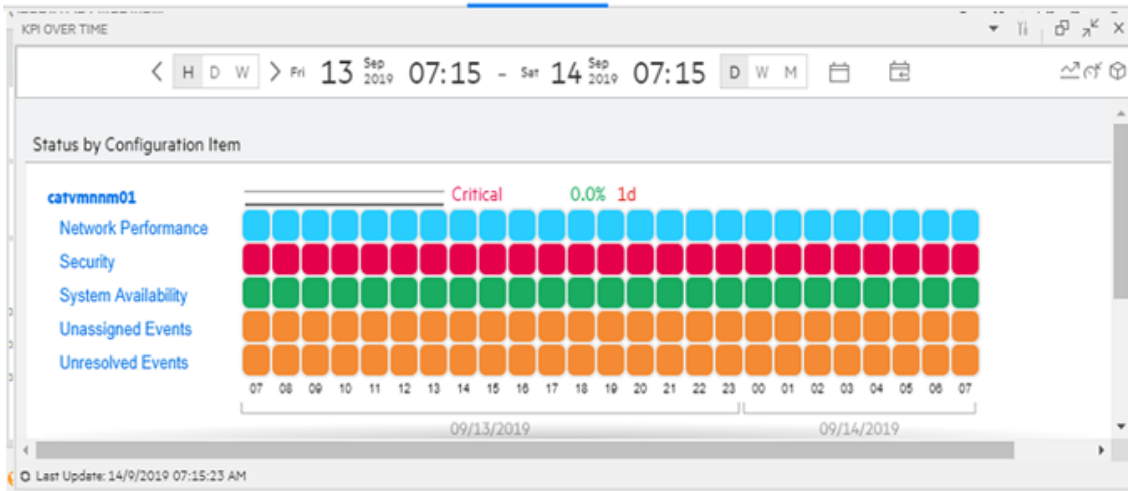
# For Data to Display to Remediation



Operations team monitors 24/7 – Dev has access on-demand

Workspaces / My Workspace

Performance Perspective x Event Perspective x SAP\_Demo\_2 x





# INFRASTRUCTURE EXECUTIVE SUMMARY

## INVENTORY

**5040**  
OPERATIONS AGENT  
MANAGED NODES

**750**  
SITESCOPE  
MANAGED NODES

**70000**  
NETWORK NODES

**130000**  
NETWORK  
INTERFACES

**240**  
APPLICATIONS

## AVAILABILITY

System node  
availability

Network node  
availability

Application  
availability

**LEAST AVAILABLE SYSTEM NODES (TOP 5)**

NODE	AVAILABILITY (%)
node1	93.5
srve11	94.8
serv29	95.3
syst41	95.5
sysl15	96.5

**LEAST AVAILABLE NETWORK NODES (TOP 5)**

NODE	AVAILABILITY (%)
rtr33	94.3
swc4	94.5
nwn3	94.8
rtr53	96.3
rtr23	96.5

**LEAST AVAILABLE APPLICATIONS (TOP 5)**

APPLICATION	AVAILABILITY (%)
msapp9	91.1
vbapp2	91.8
abapp6	92.3
msapp1	97.5
msapp3	98.4

## PERFORMANCE

**SYSTEM PERFORMANCE**

CPU Utilization % **2620**  
hosts below 10%

**1420**  
hosts above 90%

Memory Utilization % **2840**  
hosts below 10%

**1200**  
hosts above 90%

Filesystem Utilization % **2500**  
hosts below 10%

**2230**  
hosts above 90%

**NETWORK PERFORMANCE**

CPU Utilization %

62.4

Memory Utilization %

63.7

Buffer Utilization %

60.9

**APPLICATION PERFORMANCE**

DirectPayPortal

**42 / 380**  
Impacted locations

ITOMDocPortal

**32 / 350**  
Impacted locations

AOS

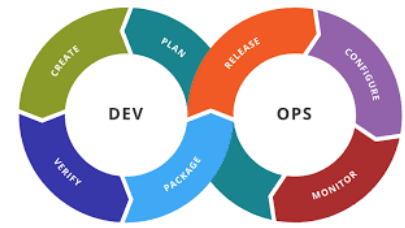
**14 / 180**  
Impacted locations

# Using Operations Agent to Collect Data

API Type	Summarization Type	Data Type	How to choose an API Type
AddCounter	Gives the last value of the summarized interval.	Integer	Use the Counter metrics to submit a cumulative count of activity, such as CPU times, physical IOs, paging, network packet counts and the like, to the datastore.
AddGauge	Gives the average of all values in the summarization interval.	Integer, Real	Use the Gauge metrics to submit an instant value at the time of the observation, such as the run queue, number of users, file system space utilization and the like, to the datastore.
AddAttribute	Gives the data that does not change frequently. No summarization is applicable. History of Attribute data is not saved in the datastore. Whenever an Attribute is changed, it is replaced in the datastore.	Integer, Real, String	Use the Attribute metrics to submit static definitions or value such as the OS name, version, release, physical memory, CPU clock speed and the like, to the datastore.
AddString	Gives the last value of the summarization interval.	String	Use the String metrics to submit string values that change often.

[https://docs.microfocus.com/itom/Operations\\_Agent:12.06/API/Submit\\_API](https://docs.microfocus.com/itom/Operations_Agent:12.06/API/Submit_API)

# Monitoring as code: The Micro Focus way

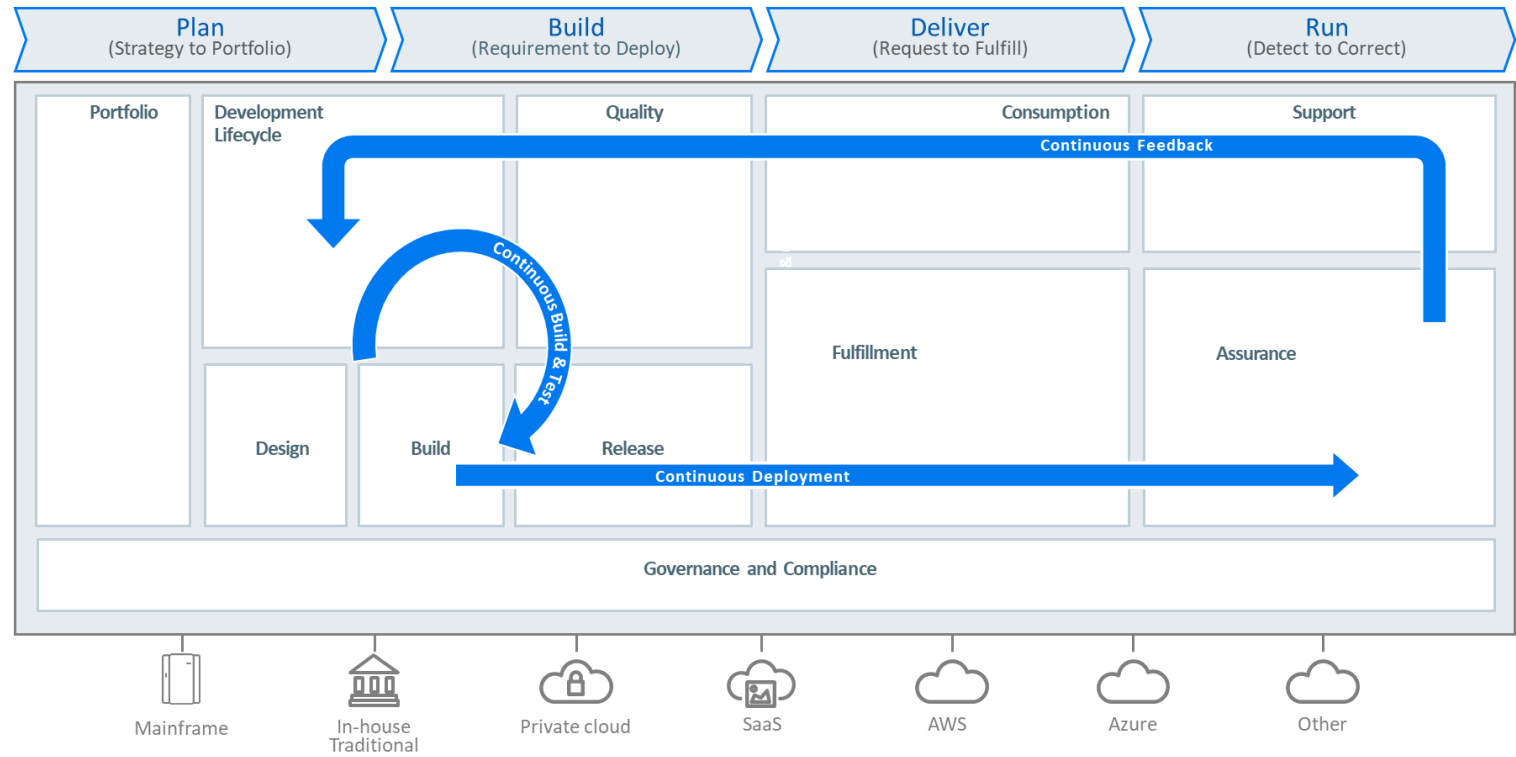


Development output:  
Service Models & **OO** scripts

Common Framework:  
**HCMX**

Common target: **OpsBridge**

## The **Factory** of the Digital Enterprise



# Where to Find Out More

- Article: [How to do monitoring as code the DevOps way](#)
- Blog: [How Operations Bridge and hybrid IT tools do monitoring as code](#)
- Blog: [Easily collect custom metrics using Perl and visualize in OBM](#)
- Web page: [Hybrid Cloud Management X web page](#)
- Web page: [Operations Bridge web page](#)
- Web page: [Operations Orchestration web page](#)
- Docs: [Agent API doc page](#)

# Questions & Answers

**Please type your questions in the questions pane.**

YOUR INDEPENDENT MICRO FOCUS SOFTWARE USER COMMUNITY



# Upcoming Events

## VIVIT:

Tuesday, September 22, 2020

**Vivit Florida User Group Virtual Lunch & Learn: Making ALM Your Own with Workflow Customization**

12:00 - 1:00 PM EDT

<https://www.vivit-worldwide.org/events/EventDetails.aspx?id=1409489&group=>

## Micro Focus:

Operations Bridge Events:

[https://community.microfocus.com/t5/Operations-Bridge/ct-p/Ops\\_Bdg](https://community.microfocus.com/t5/Operations-Bridge/ct-p/Ops_Bdg)

YOUR INDEPENDENT MICRO FOCUS SOFTWARE USER COMMUNITY



# Thank you

- Complete the short survey so your Vivit leaders can better serve you in the future

<https://www.vivit-worldwide.org/>

YOUR INDEPENDENT MICRO FOCUS SOFTWARE USER COMMUNITY







**Thank You**

[vivit-worldwide.org](http://vivit-worldwide.org)

