AWS Workshop: Scaling Windows

Kevin Epstein | Head of Solutions Architects

aws partner network
PREMIER CONSULTNG PARTNER

Why Automate?

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- We all have to do more with less
- Consistently deliver stable, predictable environments
- Increase number of deployments, decrease time between deployments
- Deliver more secure environments
- Innovate faster

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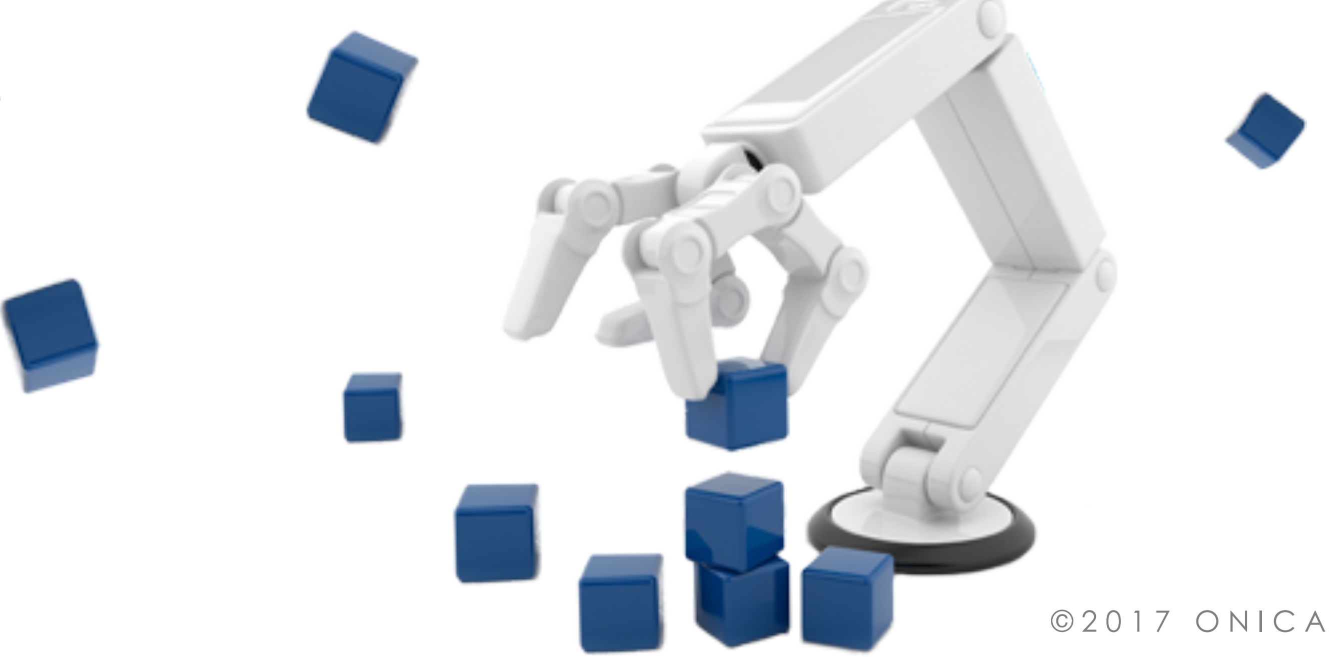
Patterns

- Automated end to end
- Automate “operating code” and “pushing code”
- Automate testing – don’t accept manual testing if at all possible
- Deployments should follow scorched earth principles
- Keep it as simple as possible
- Instrument everything
- Avoid remote access
- Start simple, and iterate



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Windows Challenges

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Legacy Security Models AD Dependencies

Reboots are a pain

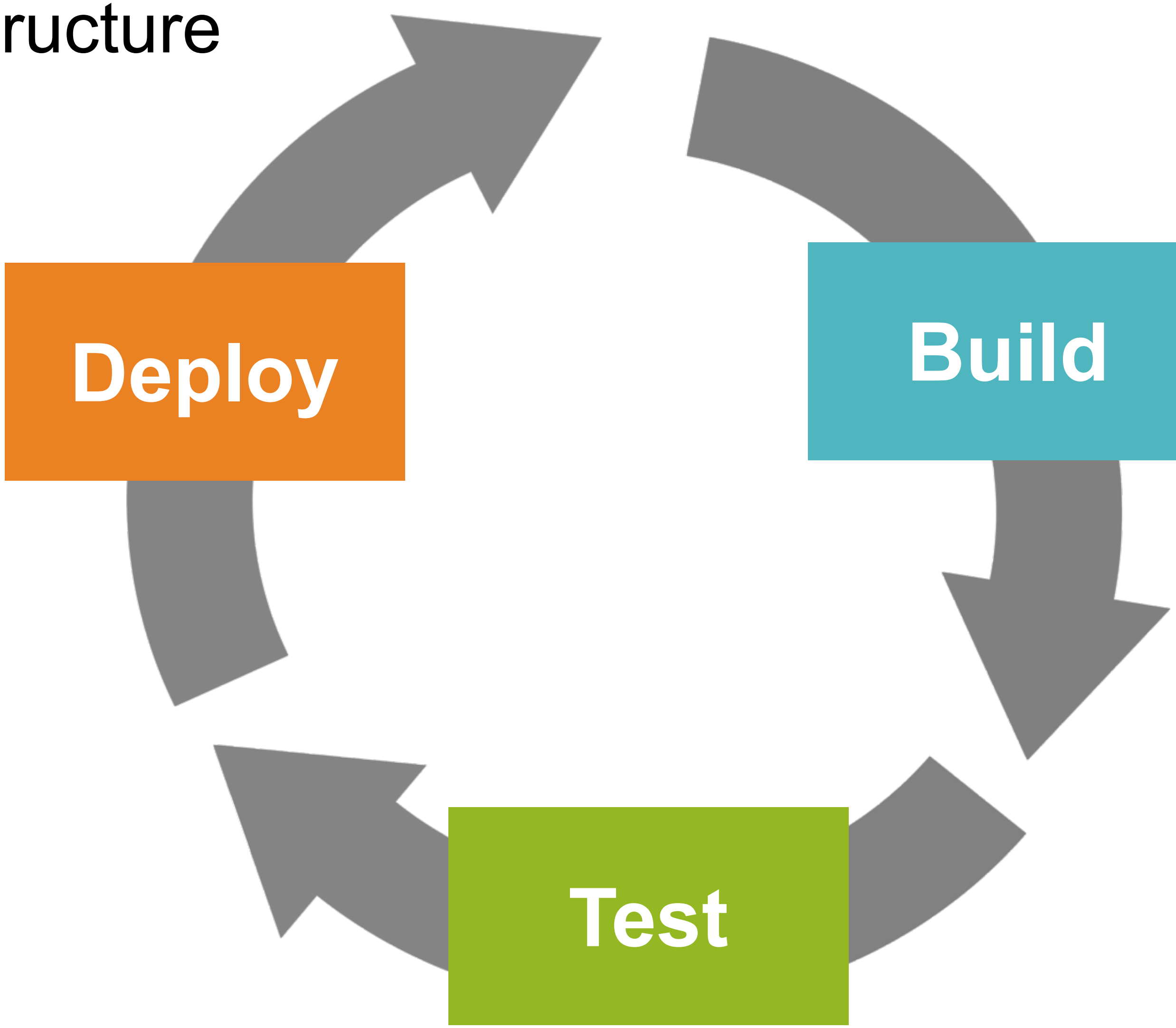
Typically heavy software packages

We can bootstrap, to a point

DevOps Processes

The Process

Think of infrastructure as code


Build
Test
Deploy

Then follow a well defined pattern

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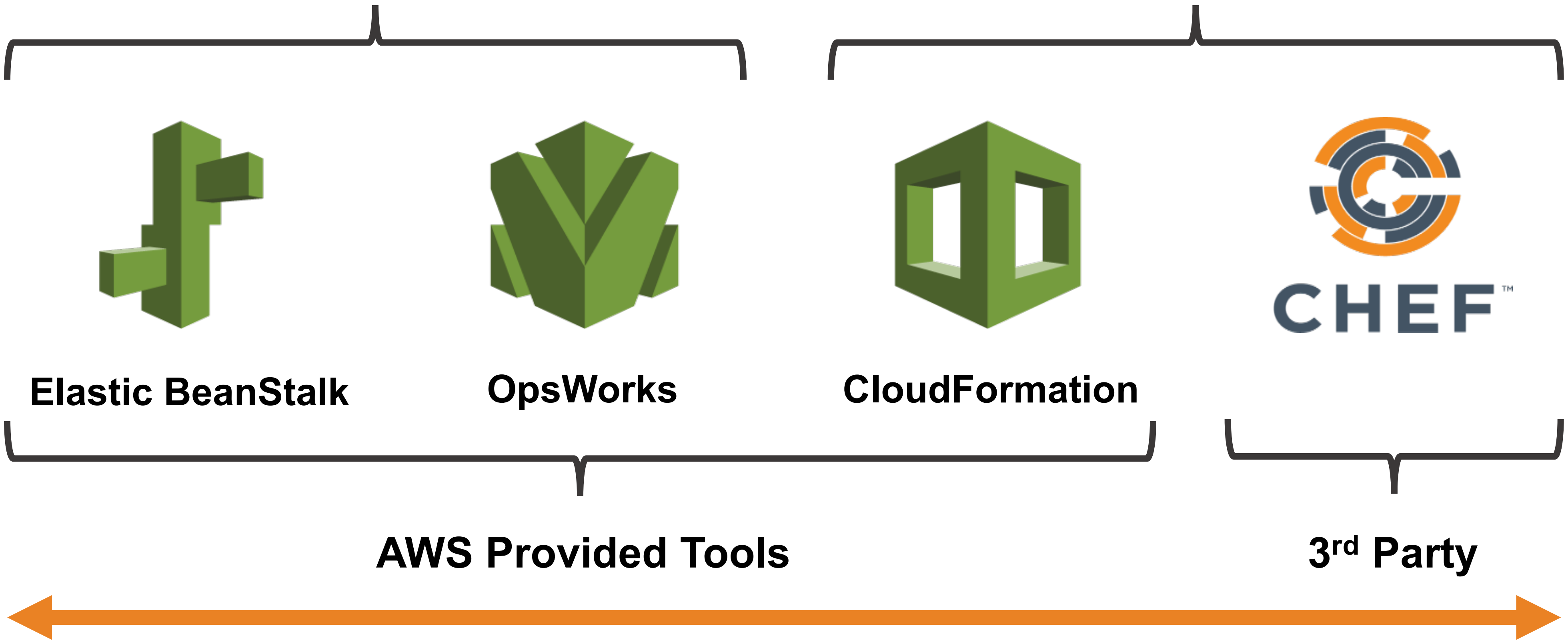
Decide between Control and Convenience



High Level Services

Do It Yourself

Elastic BeanStalk

OpsWorks

CloudFormation

AWS Provided Tools

3rd Party

Convenience

Control

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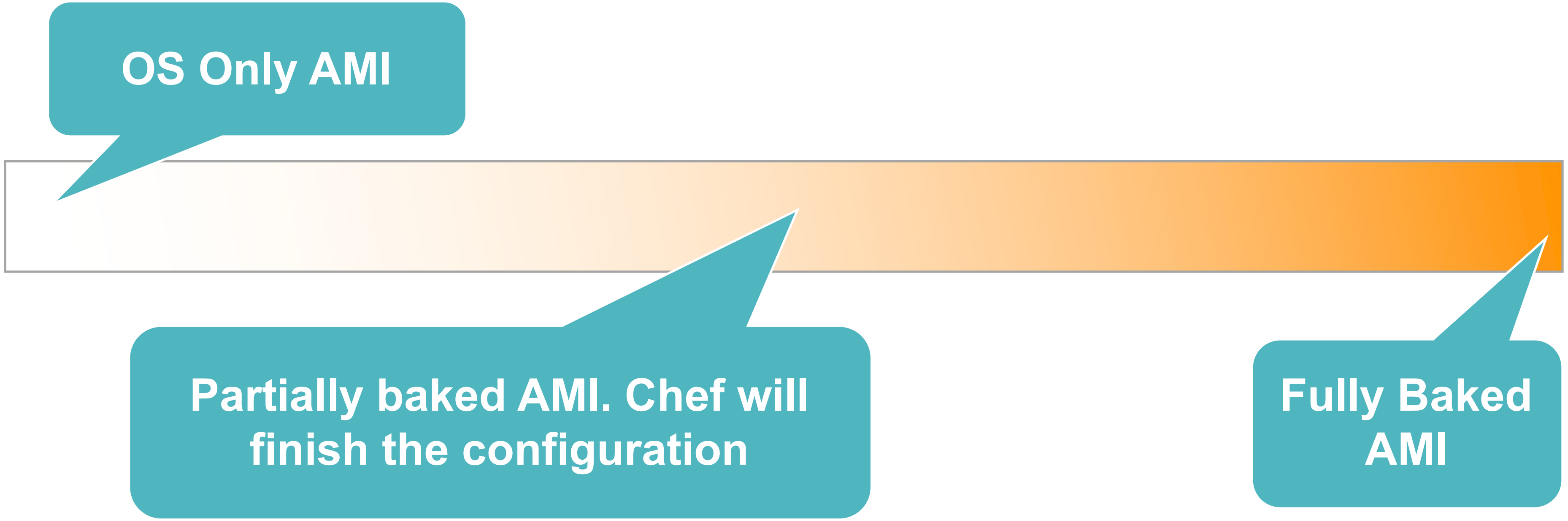
Bake vs Bootstrapping AMI's



OS Only AMI

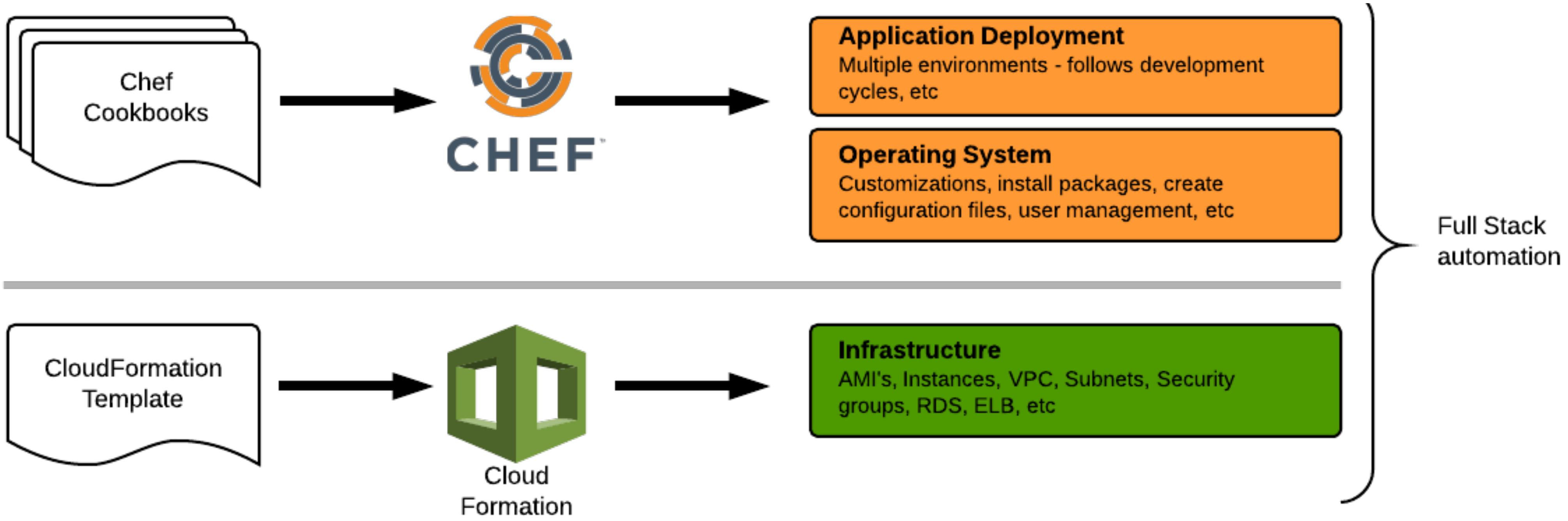
Partially baked AMI. Chef will finish the configuration

Fully Baked AMI

Preconfiguring an AMI is known as baking the AMI. Baking can speed up time to starting a new instance, but the AMI could become dated quickly. Bootstrapping with Chef gives more flexibility. Virtusa is rich in experience helping customers find the right blend of automation. Use CI & CD methodologies to automate AMI creation and updating.

- **For shorter to time to deployment pre-bake as much as possible**
- **For a more automated (but potentially slower) deployment pre-bake and then bootstrap the rest**

Automation with Chef



Chef Cookbooks

CHEF

Application Deployment
Multiple environments - follows development cycles, etc

Operating System
Customizations, install packages, create configuration files, user management, etc

Full Stack automation

CloudFormation Template

Cloud Formation

Infrastructure
AMI's, Instances, VPC, Subnets, Security groups, RDS, ELB, etc

- **Infrastructure expressed as code (Chef Cookbooks & CF Templates)**
- **Infrastructure is easily repeatable**
- **Version Control your Infrastructure**
- **No more tribal knowledge stuck in some SysAdmin’s head**
- **OpsWorks leverages Chef cookbooks.**
- **Chef is “platform agnostic”, use it in private data centers on physical or virtual infrastructure or on any cloud platform**

Tools

Tools

You’ve probably already heard of the most common tools

CHEF™

PowerShell is central to all these tools

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AWS Specific Tools

AWS Specific Tools

AWS OpsWorks

- Works with Windows (since 5/15)
- Reuse your Chef cookbooks!

EC2 Simple Systems Manager

- Run Command
- SSM Config

Elastic Beanstalk

CloudFormation

CodePipeline

CodeDeploy

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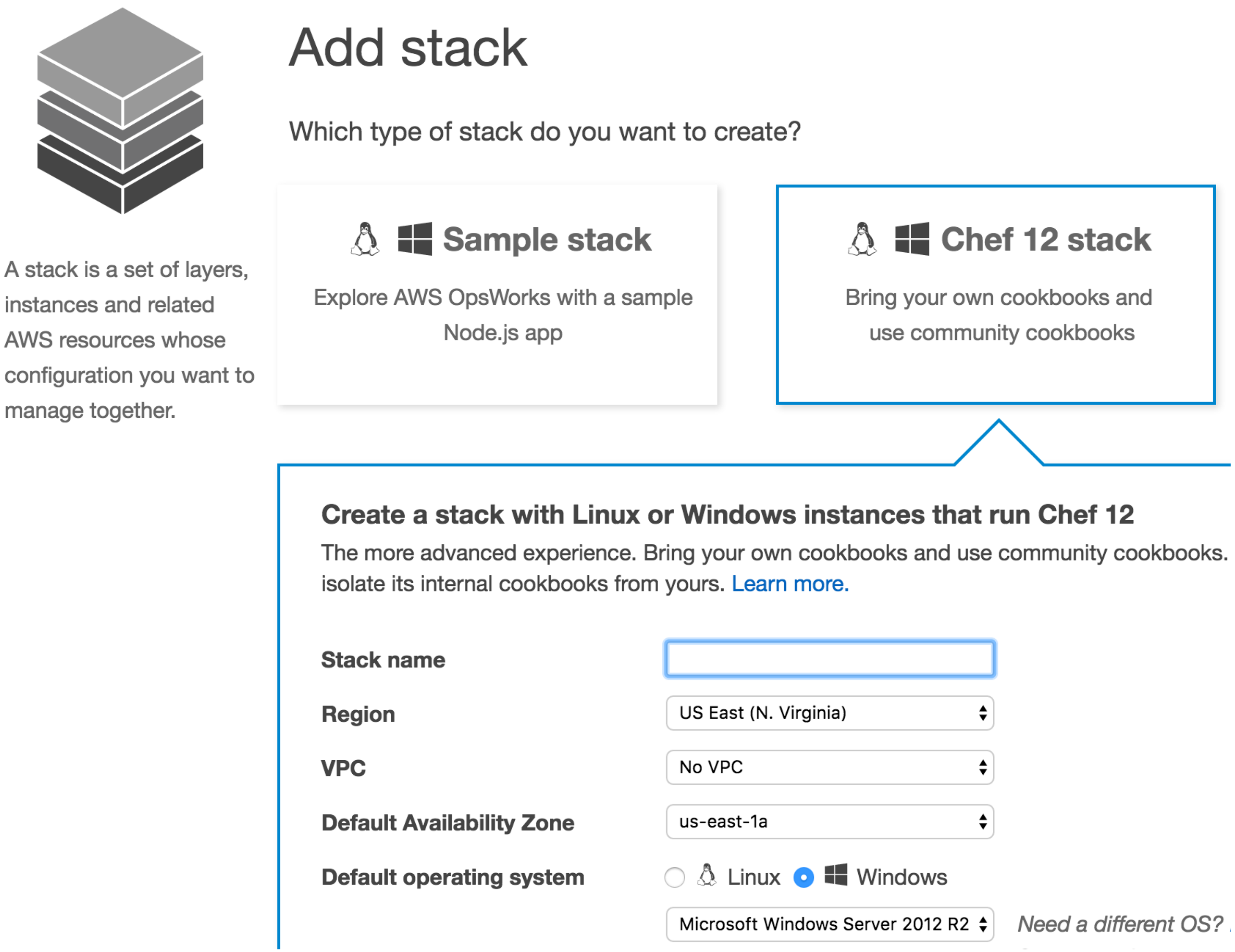
OpsWorks



Add stack

Which type of stack do you want to create?

A stack is a set of layers, instances and related AWS resources whose configuration you want to manage together.

Sample stack

Explore AWS OpsWorks with a sample Node.js app

Chef 12 stack

Bring your own cookbooks and use community cookbooks

Create a stack with Linux or Windows instances that run Chef 12

The more advanced experience. Bring your own cookbooks and use community cookbooks. isolate its internal cookbooks from yours. Learn more.

Stack name	
Region	US East (N. Virginia)
VPC	No VPC
Default Availability Zone	us-east-1a
Default operating system	○ Linux ● Windows
	Microsoft Windows Server 2012 R2

Need a different OS?

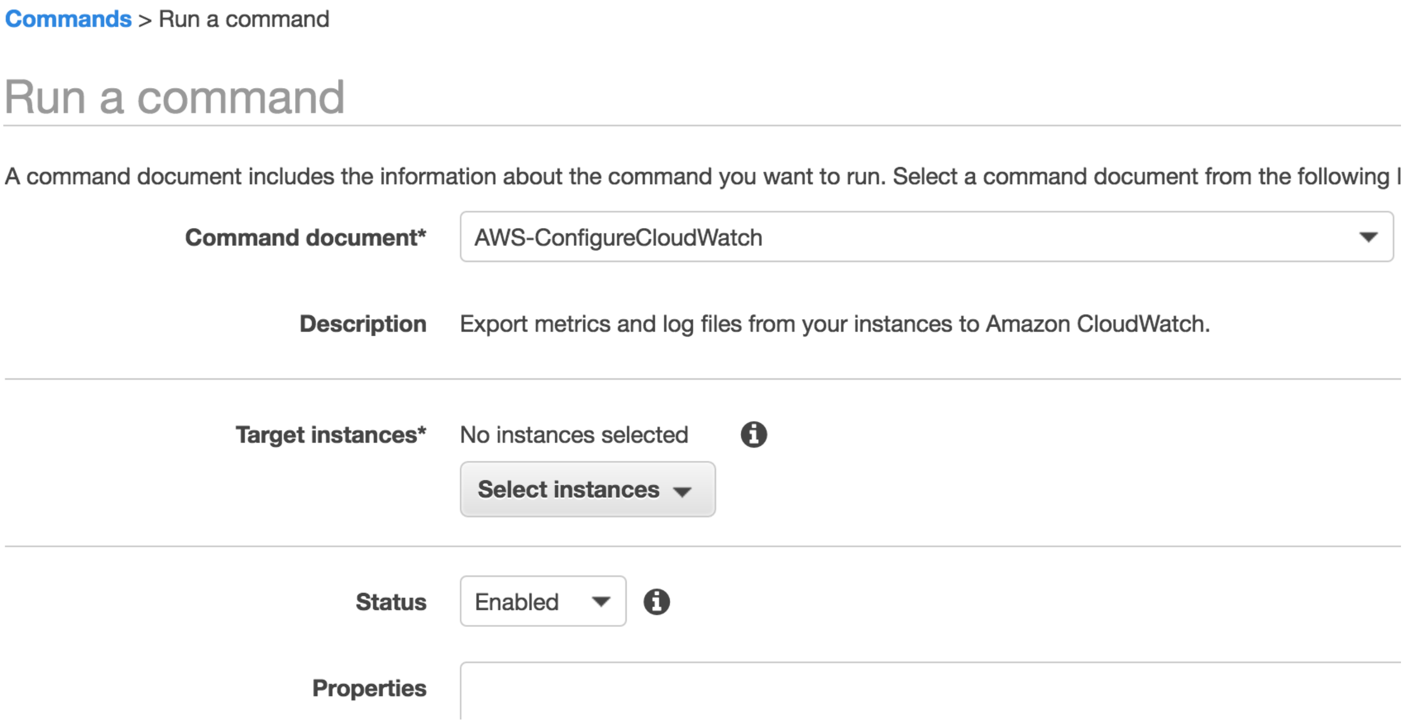
Deploy your Windows apps using OpsWorks

Define:

- **Stacks**
- **Layers**
- **Apps**

Deploy apps

EC2 Simple Systems Manager (SSM)



Commands > Run a command

Run a command

A command document includes the information about the command you want to run. Select a command document from the following l

Command document* AWS-ConfigureCloudWatch

Description Export metrics and log files from your instances to Amazon CloudWatch.

Target instances* No instances selected

Status Enabled

Properties

Agent based

Control Privileges via IAM

Run Command

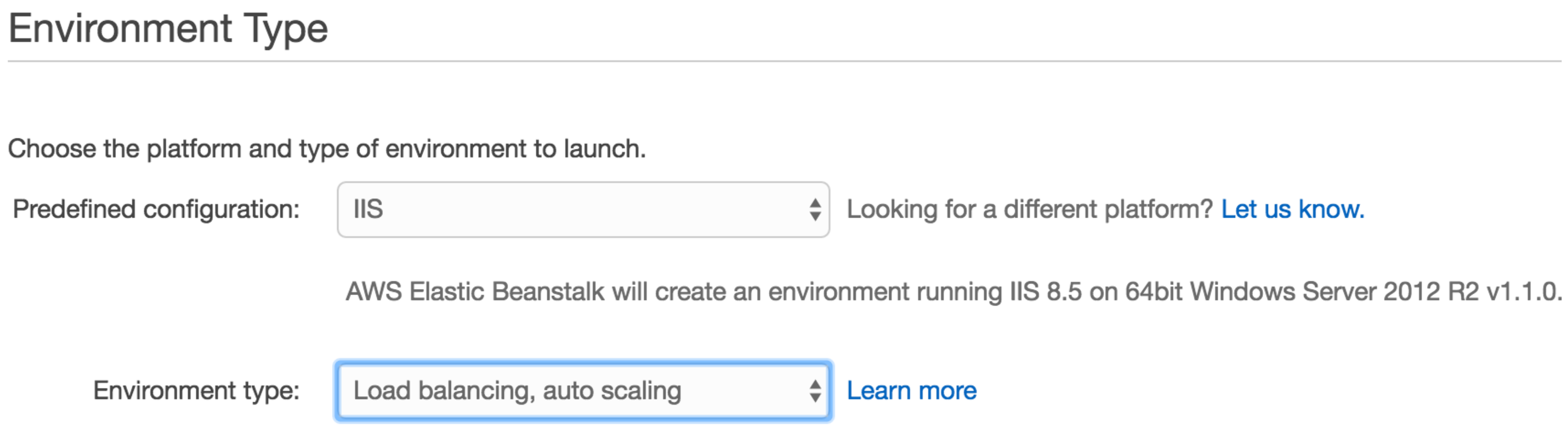
- Windows and Linux

SSM Config (Windows only)

- Join Domain
- Run PowerShell scripts
- Update EC2Config
- Configure Windows Update
- Install Applications
- Install PowerShell Module
- Configure CloudWatch

Elastic Beanstalk

- Developers focus on code
- Beanstalk provisions the Infrastructure
- Blue / Green Deployments



Environment Type

Choose the platform and type of environment to launch.

Predefined configuration: IIS

Looking for a different platform? Let us know.

AWS Elastic Beanstalk will create an environment running IIS 8.5 on 64bit Windows Server 2012 R2 v1.1.0.

Environment type: Load balancing, auto scaling

Learn more

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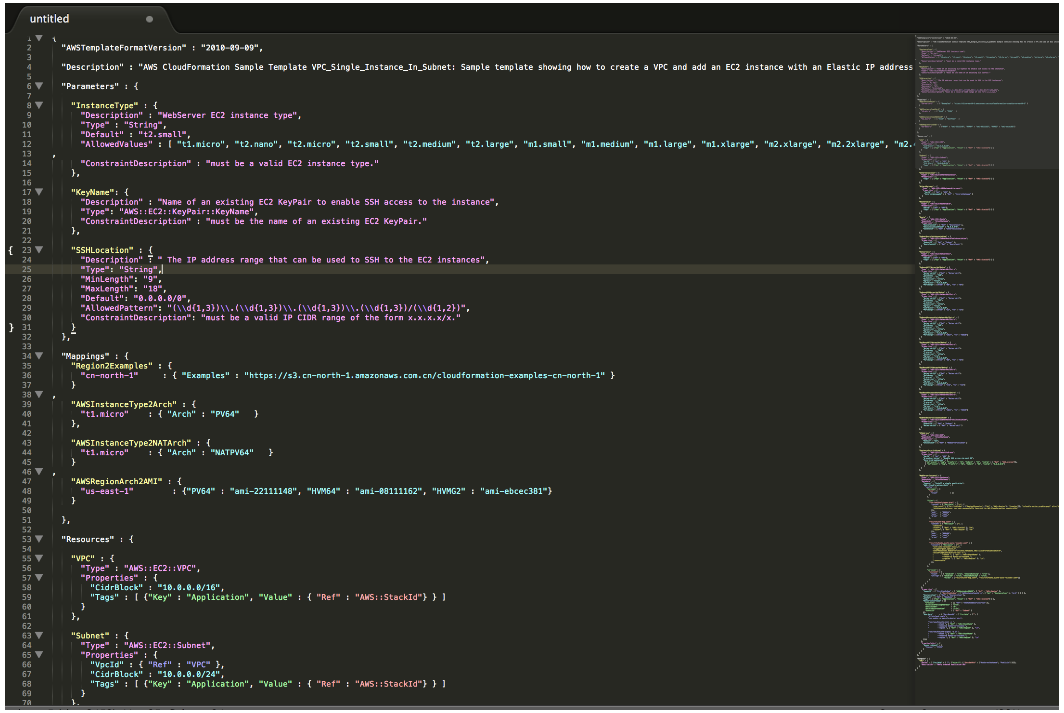
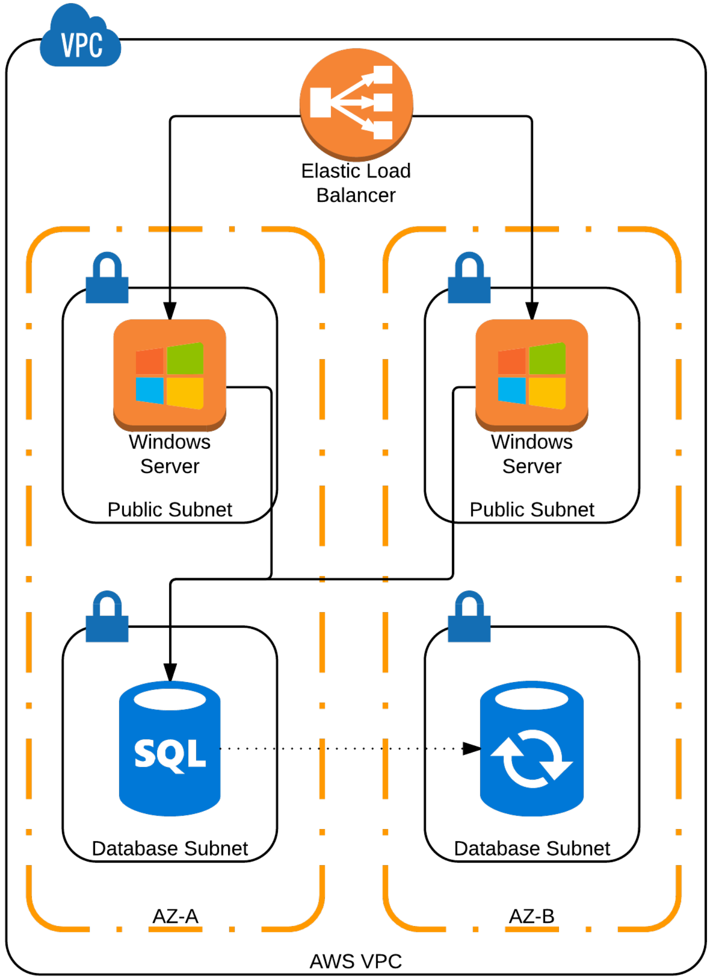
CloudFormation

ONICA



```
{
  "AWSTemplateFormatVersion" : "2010-09-09",

  "Description" : "AWS CloudFormation Sample Template VPC_Single_Instance_In_Subnet: Sample template showing how to create a VPC and add an EC2 instance with an Elastic IP address

  "Parameters" : {

    "InstanceType" : {
      "Description" : "WebServer EC2 instance type",
      "Type" : "String",
      "Default" : "t2.small",
      "AllowedValues" : [ "t1.micro", "t2.nano", "t2.micro", "t2.small", "t2.medium", "t2.large", "m1.small", "m1.medium", "m1.large", "m1.xlarge", "m2.xlarge", "m2.2xlarge", "m2.
,
      "ConstraintDescription" : "must be a valid EC2 instance type."
    },

    "KeyName": {
      "Description" : "Name of an existing EC2 KeyPair to enable SSH access to the instance",
      "Type": "AWS::EC2::KeyPair::KeyName",
      "ConstraintDescription" : "must be the name of an existing EC2 KeyPair."
    },

    "SSHLocation" : {
      "Description" : " The IP address range that can be used to SSH to the EC2 instances",
      "Type": "String",
      "MinLength": "9",
      "MaxLength": "18",
      "Default": "0.0.0.0/0",
      "AllowedPattern": "(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})/(\\d{1,2})",
      "ConstraintDescription": "must be a valid IP CIDR range of the form x.x.x.x/x."
    }
  },

  "Mappings" : {
    "Region2Examples" : {
      "cn-north-1"     : { "Examples" : "https://s3.cn-north-1.amazonaws.com.cn/cloudformation-examples-cn-north-1" }
    }
,
    "AWSInstanceType2Arch" : {
      "t1.micro"    : { "Arch" : "PV64"   }
    },

    "AWSInstanceType2NATArch" : {
      "t1.micro"    : { "Arch" : "NATPV64"   }
    }
,
    "AWSRegionArch2AMI" : {
      "us-east-1"        : {"PV64" : "ami-22111148", "HVM64" : "ami-08111162", "HVMG2" : "ami-ebcec381"}
    }

  },

  "Resources" : {

    "VPC" : {
      "Type" : "AWS::EC2::VPC",
      "Properties" : {
        "CidrBlock" : "10.0.0.0/16",
        "Tags" : [ {"Key" : "Application", "Value" : { "Ref" : "AWS::StackId"} } ]
      }
    },

    "Subnet" : {
      "Type" : "AWS::EC2::Subnet",
      "Properties" : {
        "VpcId" : { "Ref" : "VPC" },
        "CidrBlock" : "10.0.0.0/24",
        "Tags" : [ {"Key" : "Application", "Value" : { "Ref" : "AWS::StackId"} } ]
      }
    },
```



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CodePipeline

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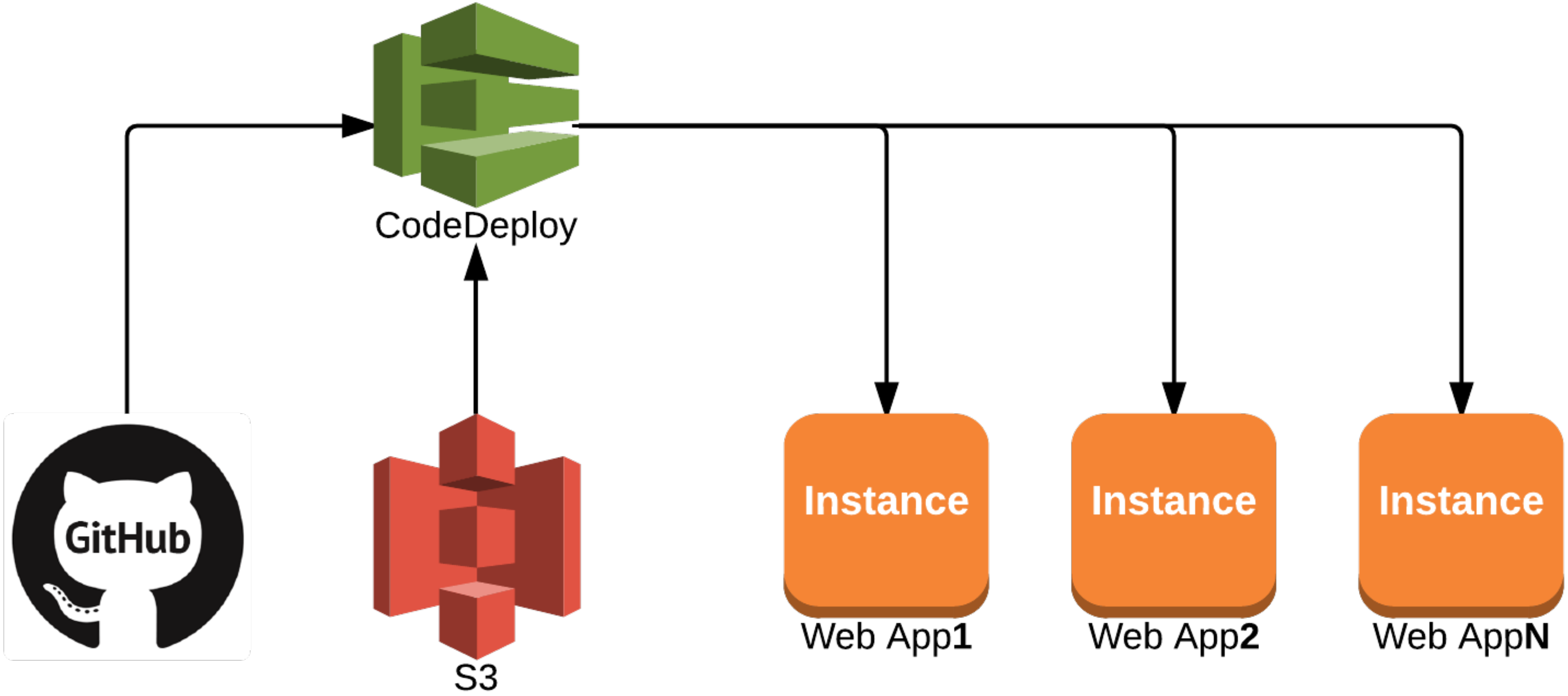
CodeDeploy


CodeDeploy
GitHub
S3
Instance
Web App1
Instance
Web App2
Instance
Web AppN

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Onica is one of the largest and fastest-growing Amazon Web Services (AWS) Premier Consulting Partners in the world, helping companies enable, operate, and innovate in the cloud. From migration strategy to operational excellence and immersive transformation, Onica is a full spectrum AWS integrator.

Santa Monica | Irvine | Chicago | Dallas | Houston | Milwaukee

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Best Practices:
Managing Your AWS Environment

Jeremy Bendat

PREMIER CONSULTNG PARTNER

30+ Years of Customer Success

ONICA

eHarmony
BEACHBODY
TRUECar
MONSTER ENERGY
SAMSUNG
glu
onelogin

EPSON
ReadyAtDawn studios
S D C
movie tickets.com
Medtronic
INGRAM MICRO
ixia

LifeLock
STX
LIVE NATION
ring
MINDBODY LOVE YOUR BUSINESS
YMI
LIONSGATE

TEN THE ENTHUSIAST NETWORK
AP Associated Press
SHEKNOWS
Edwards
technicolor
K·SWISS
Hunter

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Reborn in the Cloud as ONICA

ONICA

2015

Named fastest ever AWS Premier Partner

272

Customers migrated to AWS

157+

AWS certifications & 8 Competencies

17,256

EC2 instances under management

2017

Launched industry leading CloudOps Pilot & Cloud Optimizer solutions

OFFICE LOCATIONS IN CALIFORNIA & TEXAS

AWS Competencies

aws competency

- Premier Consulting Partner
- Managed Service Partner
- AWS 100+ Certified
- AWS Channel Reseller
- AWS Government Reseller
- Marketplace Partner
- Public Sector Partner

- Big Data Competency
- DevOps Competency
- Healthcare Competency
- Microsoft Competency
- Migration Competency
- Storage Competency

Cool Stuff

$
9
%
+
3
=
8
NFL
SUPER BOWL
20:00

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> “We believe we’re moving out of the Ice Age, the Iron Age, the Industrial Age, the Information Age, to the participation age. You get on the Net and you do stuff. You IM, you blog, you take pictures, you publish, you podcast, you transact, you distance learn, you telemedicine. You are participating on the Internet, not just viewing stuff. ”

– Scott McNealy, Former CEO Sun Microsystems

SOAP

Driving Force

Services Over Server

Hardware is Passé

Sheep instead of pets

MEET BUSINESS NEEDS NOT BE IN THE IT BUSINESS

Server Names Don't Matter!

Everything is ephemeral

ONLY PAY FOR WHAT YOU NEED

CONVENTION OVER CONFIGURATION

Don't bring me solutions… bring me problems and WE provide the solutions

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The Road to Full Service

Leverage CorpInfo

ONICA

amazon
web services | Partner Network

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MANAGED SERVICE PARTNER

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Success In Managed Services

Tools

- CRM
- Ticketing
- Monitoring
- Costing
- Reporting
- APM

People

- Responder
- Implementers
- Support
- Security

Processes

- Incident Response
- Change Management
- Onboarding
- Security
- Monthly Reviews

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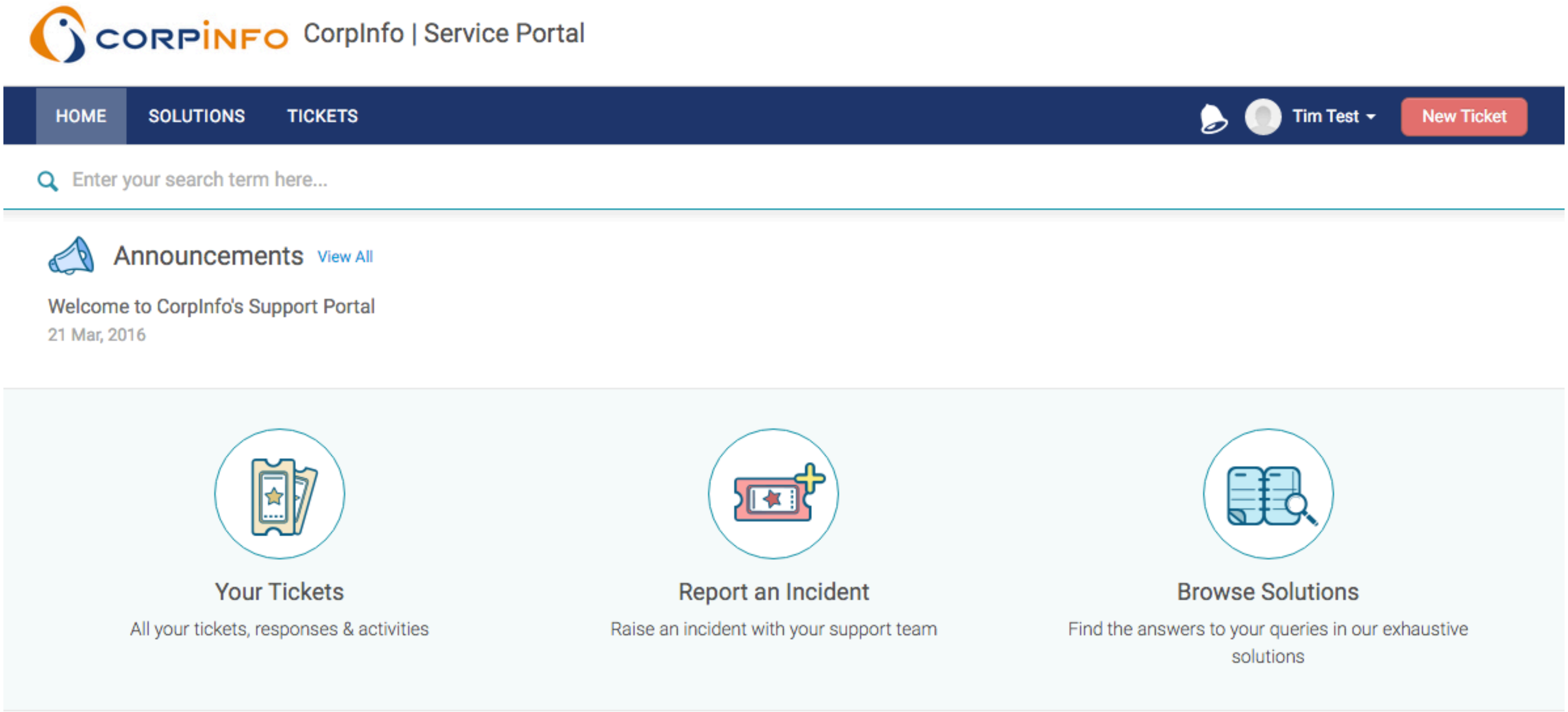
Tools

Support Portal – Service.CorpInfo.com


CorpInfo | Service Portal
HOME
SOLUTIONS
TICKETS
Tim Test
New Ticket
Enter your search term here...
Announcements
View All

Welcome to CorpInfo's Support Portal

21 Mar, 2016

Your Tickets

All your tickets, responses & activities

Report an Incident

Raise an incident with your support team

Browse Solutions

Find the answers to your queries in our exhaustive solutions

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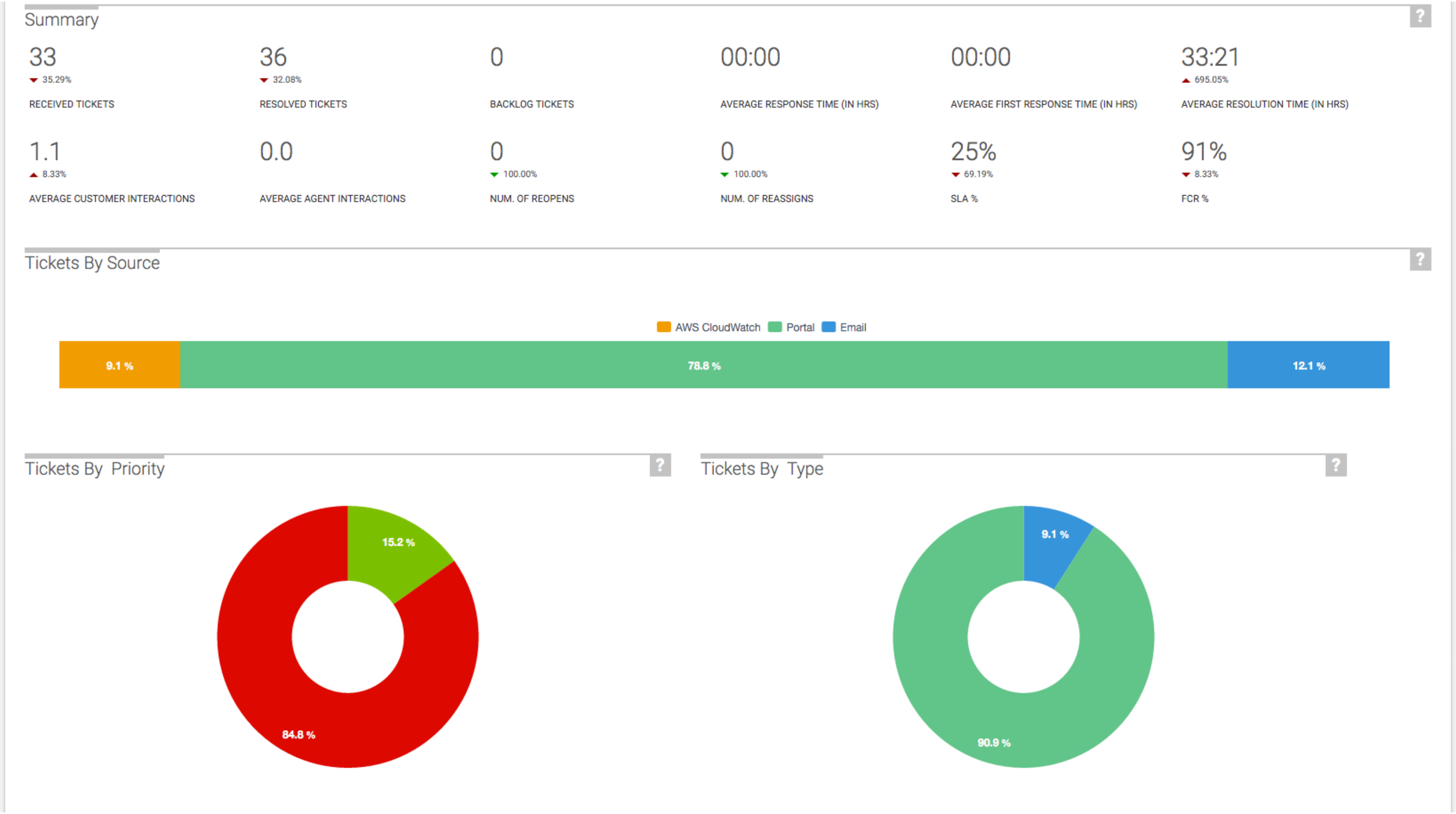
CRM / Ticketing



Summary

33
▼ 35.29%
RECEIVED TICKETS

36
▼ 32.08%
RESOLVED TICKETS

0
BACKLOG TICKETS

00:00
AVERAGE RESPONSE TIME (IN HRS)

00:00
AVERAGE FIRST RESPONSE TIME (IN HRS)

33:21
▲ 695.05%
AVERAGE RESOLUTION TIME (IN HRS)

1.1
▲ 8.33%
AVERAGE CUSTOMER INTERACTIONS

0.0
AVERAGE AGENT INTERACTIONS

0
▼ 100.00%
NUM. OF REOPENS

0
▼ 100.00%
NUM. OF REASSIGNS

25%
▼ 69.19%
SLA %

91%
▼ 8.33%
FCR %

Tickets By Source

AWS CloudWatch
Portal
Email
9.1 %
78.8 %
12.1 %

Tickets By Priority

Tickets By Type

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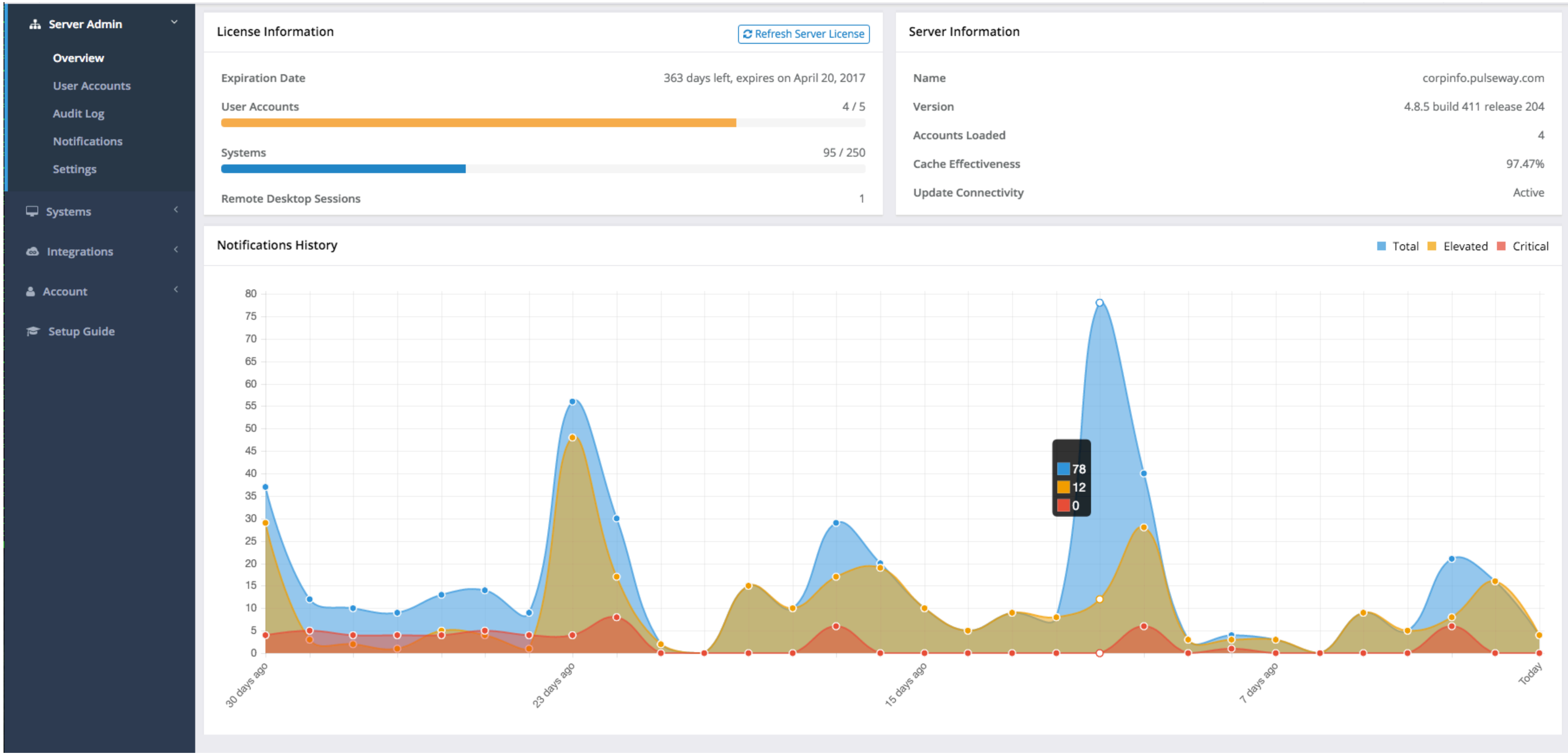
Remote Management & Monitoring


Server Admin
Overview
User Accounts
Audit Log
Notifications
Settings
Systems
Integrations
Account
Setup Guide
Refresh Server License

License Information

Expiration Date	363 days left, expires on April 20, 2017
User Accounts	4 / 5
Systems	95 / 250
Remote Desktop Sessions	1

Server Information

Name	corpinfo.pulseway.com
Version	4.8.5 build 411 release 204
Accounts Loaded	4
Cache Effectiveness	97.47%
Update Connectivity	Active

Notifications History

🟦 Total
🟨 Elevated
🟥 Critical
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
30 days ago
23 days ago
15 days ago
7 days ago
Today
🟦 78
🟨 12
🟥 0

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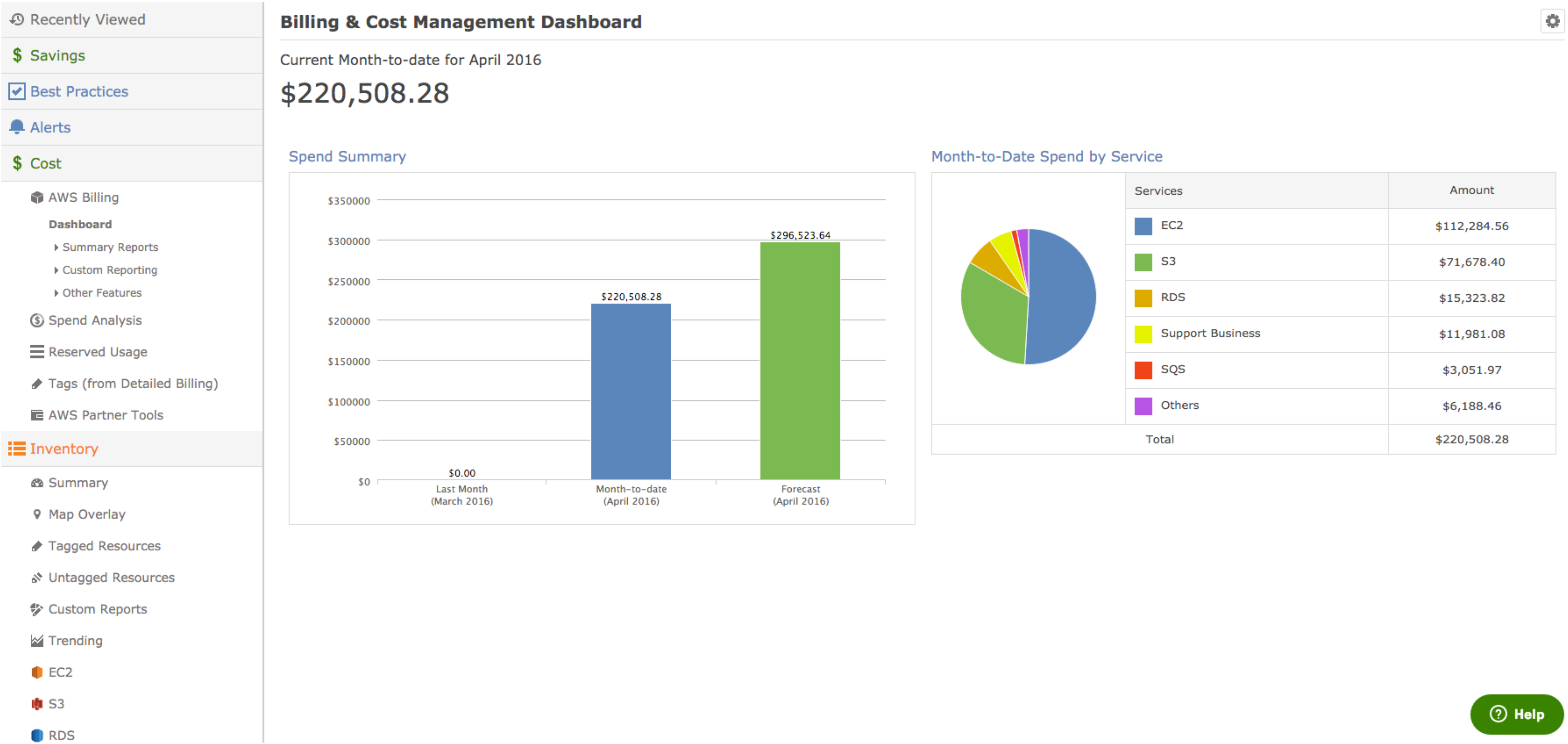
Cost Management


Recently Viewed
$ Savings
Best Practices
Alerts
$ Cost
AWS Billing
Dashboard
Summary Reports
Custom Reporting
Other Features
Spend Analysis
Reserved Usage
Tags (from Detailed Billing)
AWS Partner Tools
Inventory
Summary
Map Overlay
Tagged Resources
Untagged Resources
Custom Reports
Trending
EC2
S3
RDS
Help

Billing & Cost Management Dashboard

Current Month-to-date for April 2016

$220,508.28

Spend Summary

$350000
$300000
$250000
$200000
$150000
$100000
$50000
$0
$0.00
$220,508.28
$296,523.64
Last Month (March 2016)
Month-to-date (April 2016)
Forecast (April 2016)

Month-to-Date Spend by Service

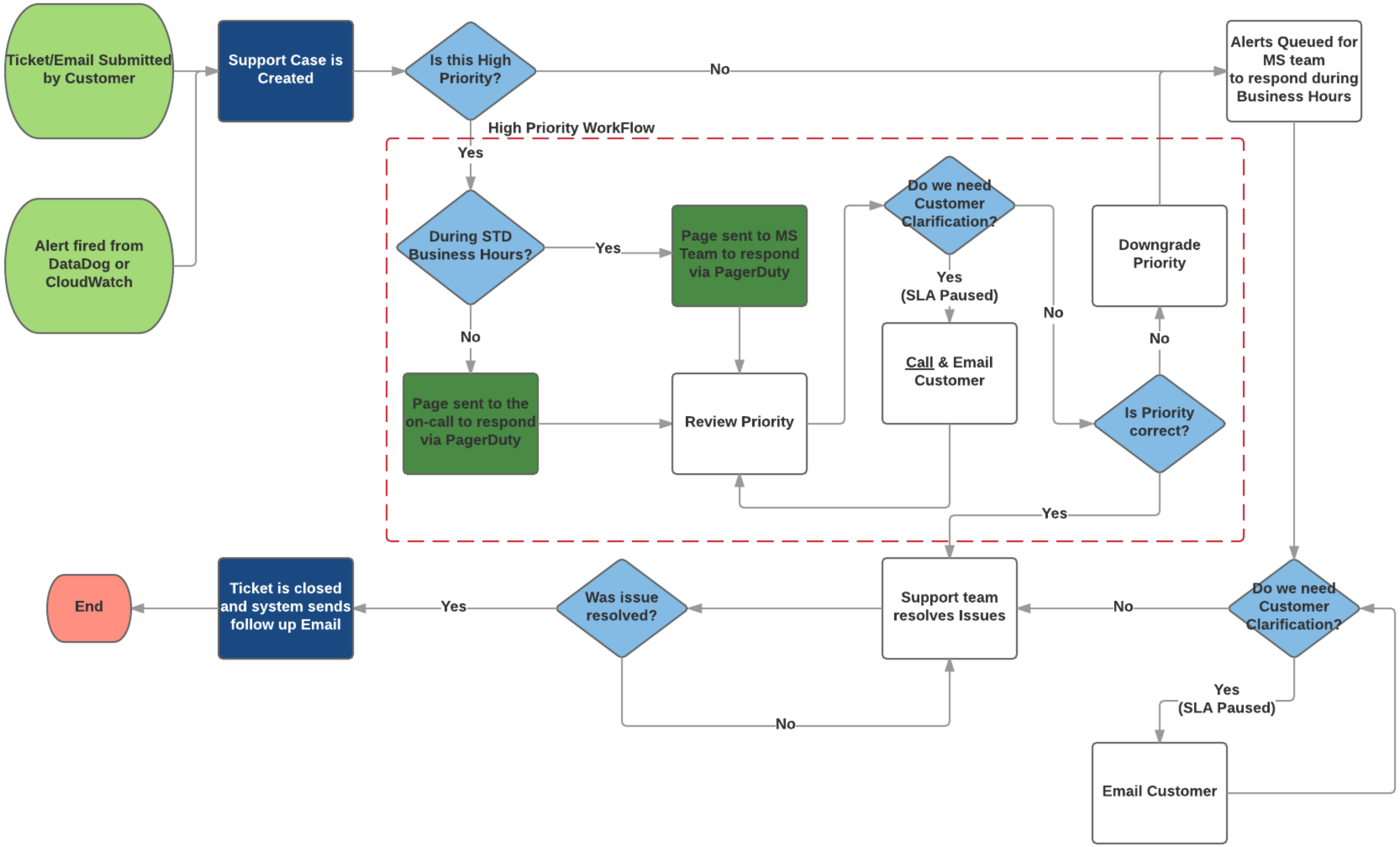
Services	Amount
🟦 EC2	$112,284.56
🟩 S3	$71,678.40
🟧 RDS	$15,323.82
🟨 Support Business	$11,981.08
🟥 SQS	$3,051.97
🟪 Others	$6,188.46
Total	$220,508.28

Procedures

Issue Response

SUPPORT PROCESS V1 - MANAGED SERVICES

Tim Fox | February 29, 2016



Ticket/Email Submitted by Customer

Alert fired from DataDog or CloudWatch

Support Case is Created

Is this High Priority?

No

Alerts Queued for MS team to respond during Business Hours

High Priority WorkFlow

Yes

During STD Business Hours?

Yes

Page sent to MS Team to respond via PagerDuty

No

Page sent to the on-call to respond via PagerDuty

Review Priority

Do we need Customer Clarification?

Yes (SLA Paused)

Call & Email Customer

No

Is Priority correct?

No

Downgrade Priority

Yes

Support team resolves Issues

Was issue resolved?

Yes

No

Ticket is closed and system sends follow up Email

End

Do we need Customer Clarification?

No

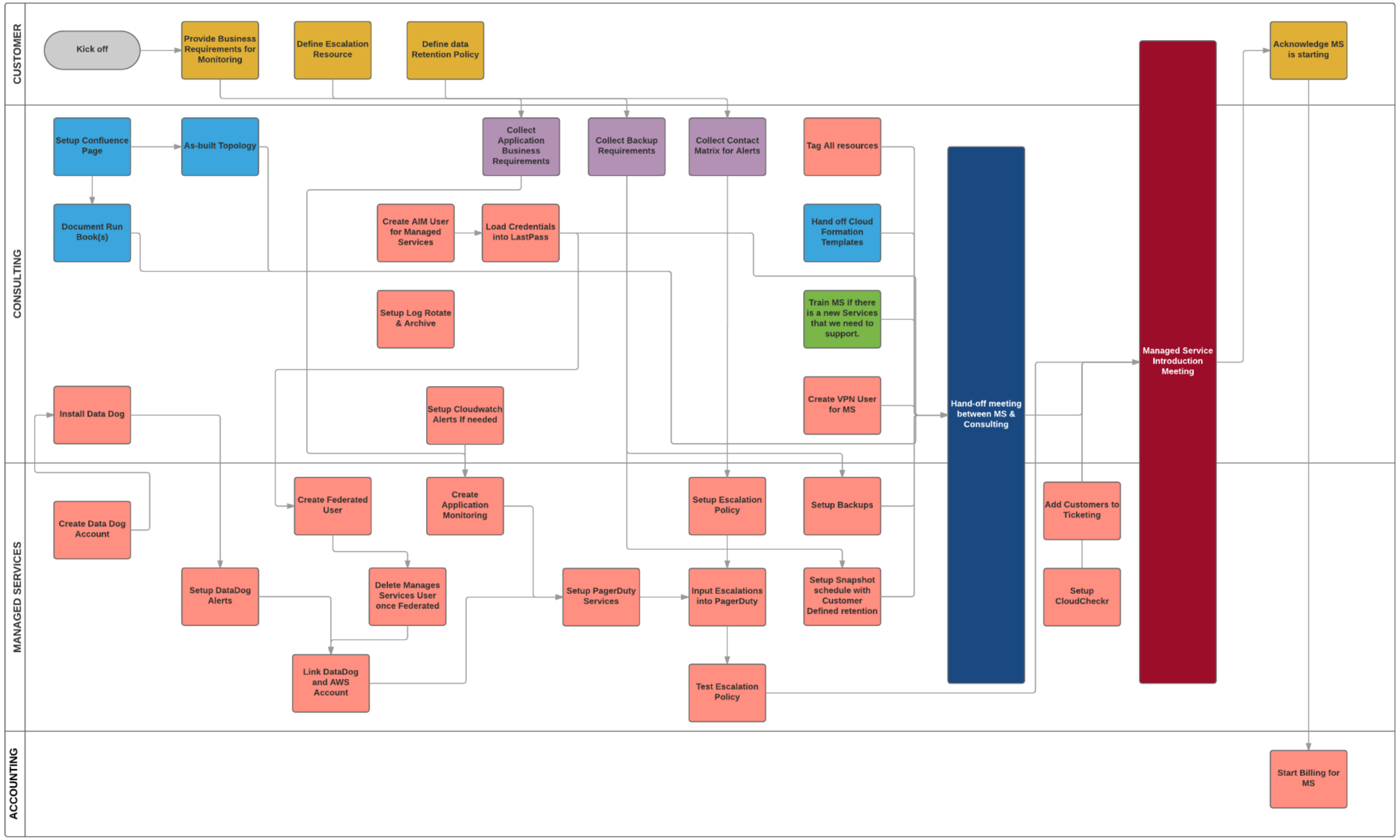
Yes (SLA Paused)

Email Customer

Onboarding

MANAGED SERVICES ON-BOARDING
Text

Tim Fox | March 25, 2016



CUSTOMER
- Kick off
- Provide Business Requirements for Monitoring
- Define Escalation Resource
- Define data Retention Policy
- Acknowledge MS is starting

CONSULTING
- Setup Confluence Page
- As-built Topology
- Document Run Book(s)
- Collect Application Business Requirements
- Collect Backup Requirements
- Collect Contact Matrix for Alerts
- Create AIM User for Managed Services
- Load Credentials into LastPass
- Setup Log Rotate & Archive
- Install Data Dog
- Setup Cloudwatch Alerts If needed
- Tag All resources
- Hand off Cloud Formation Templates
- Train MS if there is a new Services that we need to support.
- Create VPN User for MS
- Hand-off meeting between MS & Consulting
- Managed Service Introduction Meeting

MANAGED SERVICES
- Create Data Dog Account
- Setup DataDog Alerts
- Create Federated User
- Delete Manages Services User once Federated
- Link DataDog and AWS Account
- Create Application Monitoring
- Setup PagerDuty Services
- Setup Escalation Policy
- Input Escalations into PagerDuty
- Test Escalation Policy
- Setup Backups
- Setup Snapshot schedule with Customer Defined retention
- Add Customers to Ticketing
- Setup CloudCheckr

ACCOUNTING
- Start Billing for MS

The Extra Mile

WWW.ONICA.COM

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What We Do

24/7 Onica Staff

Standard Tool Sets
Standard Template Library

Best Practice Review

Build Out Service Automation
Monitor SERVICE not Server

Security Management

Monthly Cost Reviews
Quarterly Cost & Architecture Reviews

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