



Application Delivery in hybride en multi- cloudomgevingen

Tijl Van den Broeck
Lead Systems Engineer Networking, Belux

NOVEMBER 14, 2019



Application Delivery in a HMC world

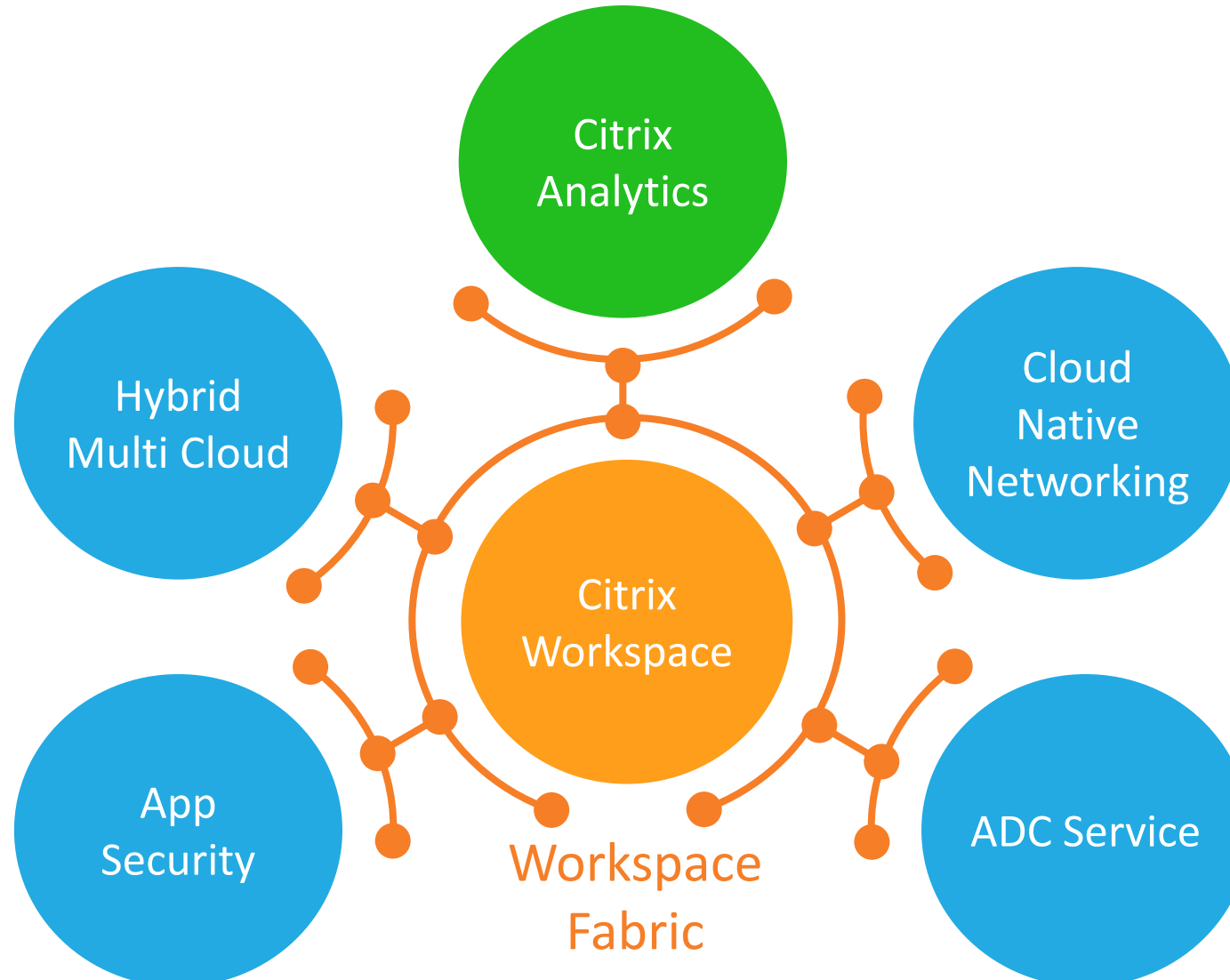
- **Hybrid and Multi-Cloud**
 - Why?
 - Licensing: Pooled and vCPU
 - Citrix Application Delivery Management
- **Citrix ADC v 13.0 Update**
 - Cloud Native Integration
 - In Service Software Upgrade
 - AlwaysOn SSLVPN
 - Self Service Password Reset
 - nFactor Flows
- **Security**
 - Bot Management
 - Content Inspection



Citrix ADC Strategic Themes

**Software ADC
ADC Platforms**
ADM Analytics
Pooled licensing
BLX/VPX/CPX in Cloud

App Security
Integrated WAF + Bot
API Protection
Cloud Native Security



Cloud Native
Ingress w/ security functions
Service Mesh w/ CPX-Lite
ADM Analytics

ADC Service
Intent based Application delivery
across HMC



Hybrid and Multi-Cloud

Why Hybrid Multi-Cloud?



Applications drive the business

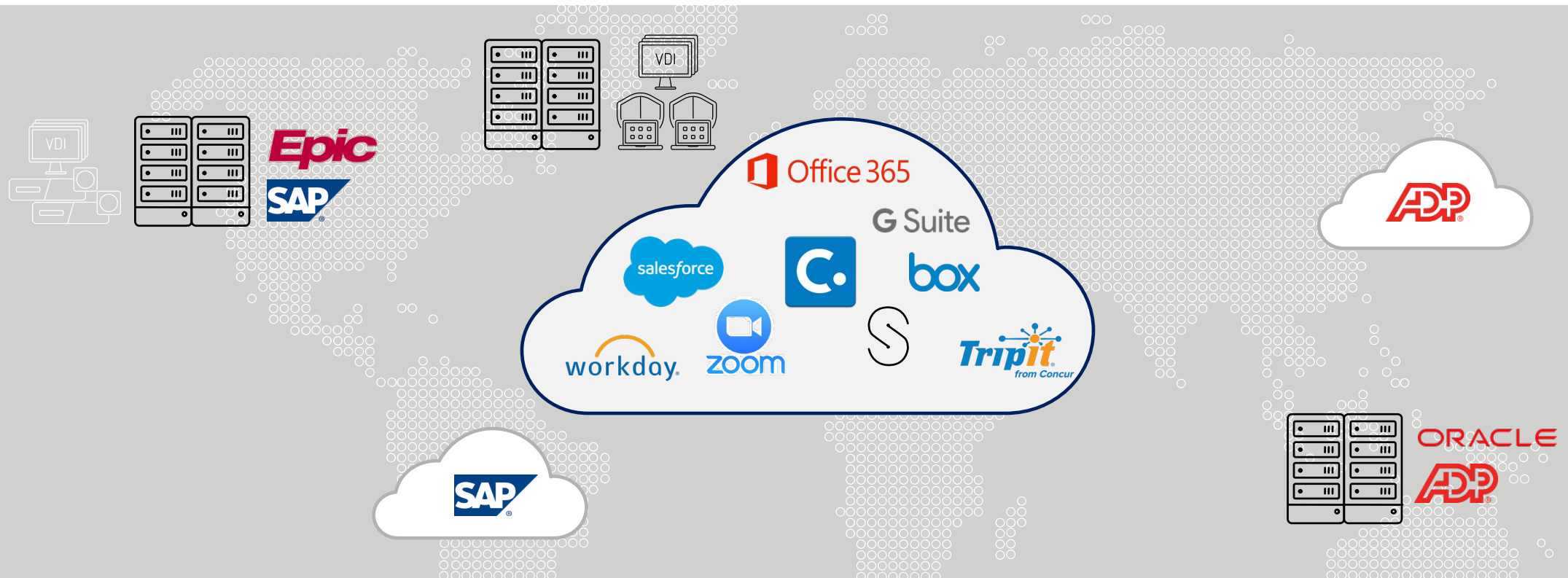
Innovation and growth driven by applications

Application down time means loss

Business agility is governed by application agility

We live in the application economy

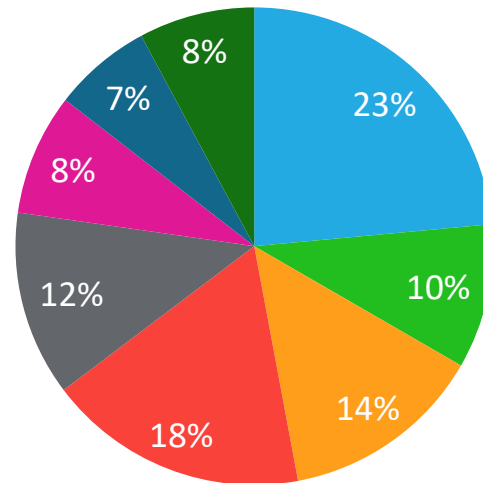
Applications Are Key to Transformation and Shifting to the Cloud



100's of Applications used by average business, Netskope

59% Mission-critical apps run on IaaS, 451 Research

Poll Question: How much cloud do you see?



Hybrid Multi Cloud Journey Requirements

Current State

Single Cloud Lock-in
Legacy Monolithic Apps
Infrastructure Security
Fragmented Visibility & Manual Config
Optimize Experience Based on Server State
Static Licensing

Desired State

Freedom of Choice
Mix of traditional & Modern Micro-services Based Apps
Infrastructure & Application Security
Enterprise-wide Visibility & Automation
Optimize Experience Based on Server & Internet State
Dynamic Licensing

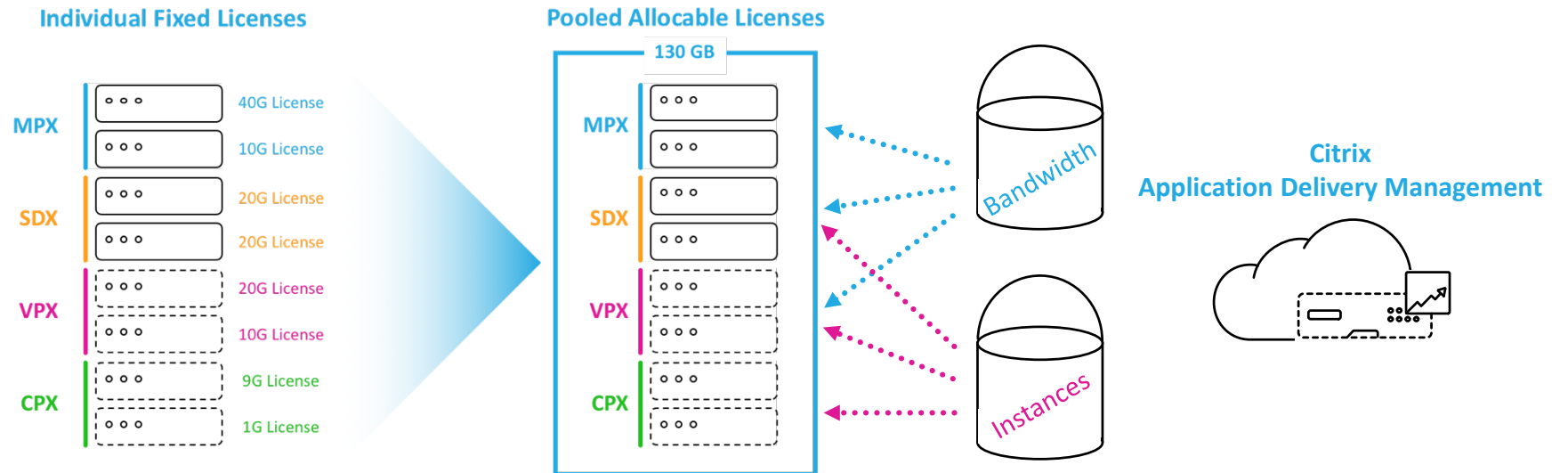
Choice | Agility | Security

Licensing: Pooled and vCPU



Pooled Capacity Licensing: Built for Hybrid Multi Cloud

More Agility and More Value



Flexibility

Move the capacity among ADCs in hybrid multi cloud

Better Economics

Better utilization, granularity, use cases

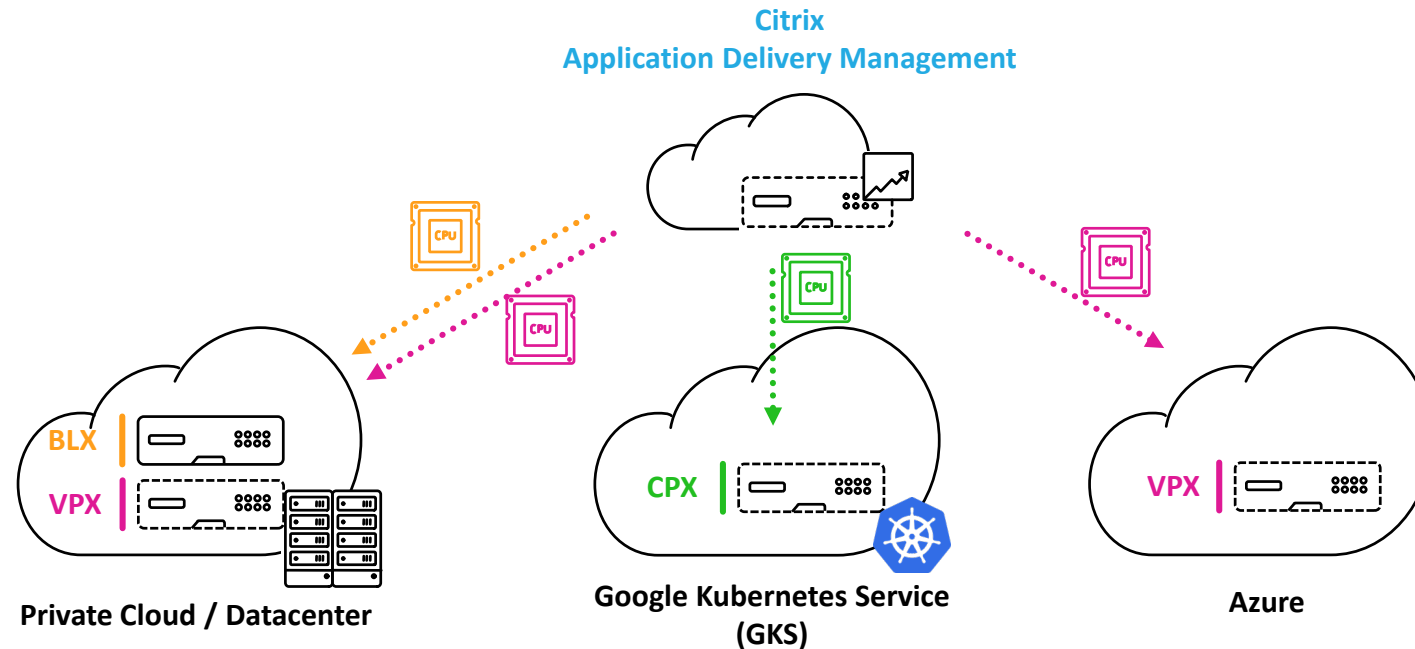
Simpler

Enterprise-wide visibility & automation

Transition to Hybrid Multi Cloud at your Business Speed

vCPU Licensing: Built for Hybrid Multi Cloud and Cloud Native

Lots of Little



Flexibility

Move the capacity among ADCs in hybrid multi cloud

Better Economics

Better utilization, granularity, use cases

Simpler

Enterprise-wide visibility & automation

Transition to Hybrid Multi Cloud at your Business Speed

Licensing types for Citrix ADC

Name	Dimension	Term	Platform(s)	License Host	Application
CLASSIC	Bandwidth	Perpetual + maint.	MPX, SDX, VPX	Local	-
POOLED	Bandw. + Instances	Subscription	MPX, SDX, VPX, CPX, BLX	ADM	Traffic shift
vCPU	vCPU	Subscription	VPX, CPX, BLX	ADM	Lots of Little Things

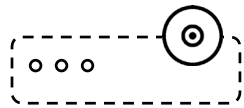
Managing HMC: Application Delivery Management



Citrix ADC Portfolio: Built for Hybrid Multi Cloud

Most Comprehensive, Feature Rich & Software-Centric

For Your Every Step for Transition to Hybrid Multi Cloud



Virtual Appliances
DC & Private Cloud, VPX



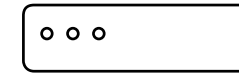
In Public Cloud
VPX for AWS, Azure, GCP



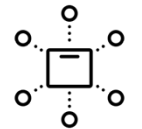
Containers
Public & Private Cloud, CPX



Bare Metal
Private & Public Cloud, BLX



Hardware Appliances
DC & Private Cloud, MPX



Multi-Tenant
MSP & Private Cloud, SDX

Single Software Code Base

across Portfolio for

Features, APIs & Operational Consistency, and Innovation Velocity

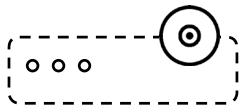
Making Hybrid Multi Cloud Simple with Citrix ADM

Integrated with
VMware, Cisco ACI, OpenStack,
Kubernetes



Choice of
On-Prem & SaaS

Single Pane of Glass across Hybrid Multi Cloud



Virtual Appliances
DC & Private Cloud, VPX



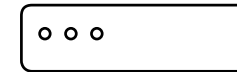
In Public Cloud
VPX for AWS, Azure, GCP



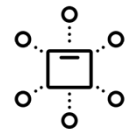
Containers
Public & Private Cloud, CPX



Bare Metal
Private & Public Cloud, BLX



Hardware Appliances
DC & Private Cloud, MPX



Multi-Tenant
MSP & Private Cloud, SDX

Automation | Orchestration | Management | Analytics

Citrix Application Delivery Management



Automated Configuration

Define once, deploy everywhere
automated configuration



Actionable Insight

Across infrastructure, applications,
security and hybrid multi cloud



Faster Troubleshooting

Intuitive, proactive,
Interactive

Window across your hybrid multi cloud

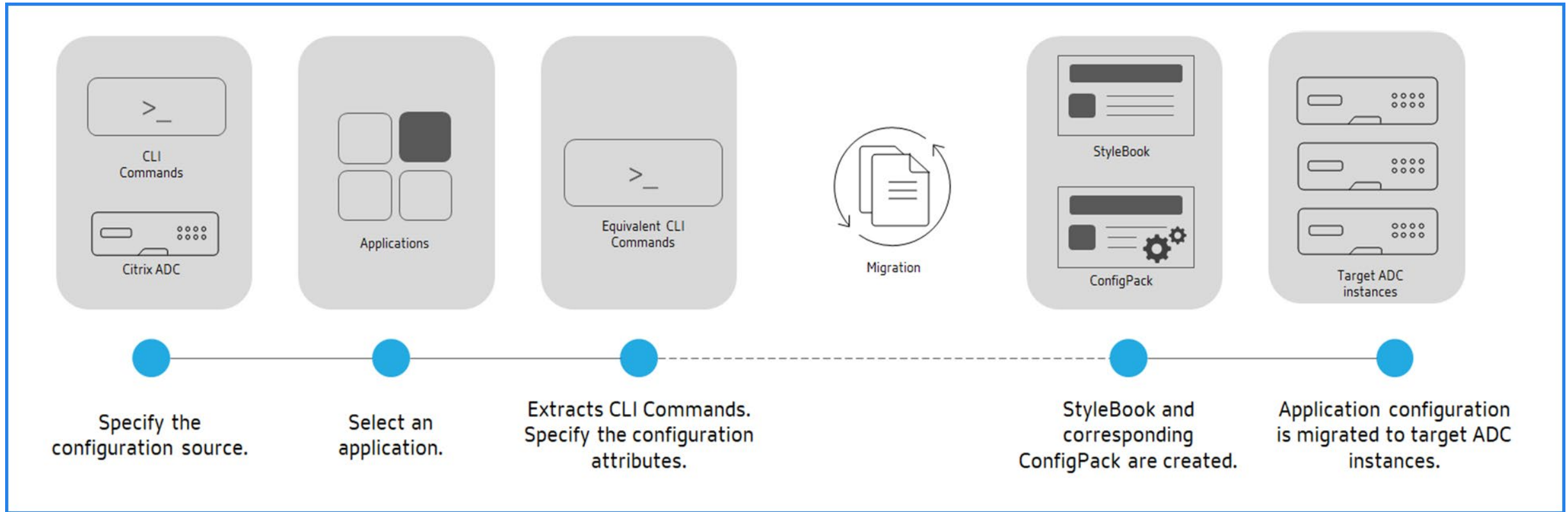


Stylebooks

- **App Centric building blocks**
 - Composable elements
 - Atomic Execution
 - Version controlled
- **Human Readable Format**
 - Declarative
 - YAML
 - Auto-generated UI
- **API enabled**
 - Integrate with Automation and Orchestration

Reduce configuration time from hours to minutes. Migrate apps more easily

One Click Migration



Identify problems faster with intuitive ADC health score

Comprehensive visibility

- Holistic view of all ADC instances across entire hybrid multi cloud environment

Organize

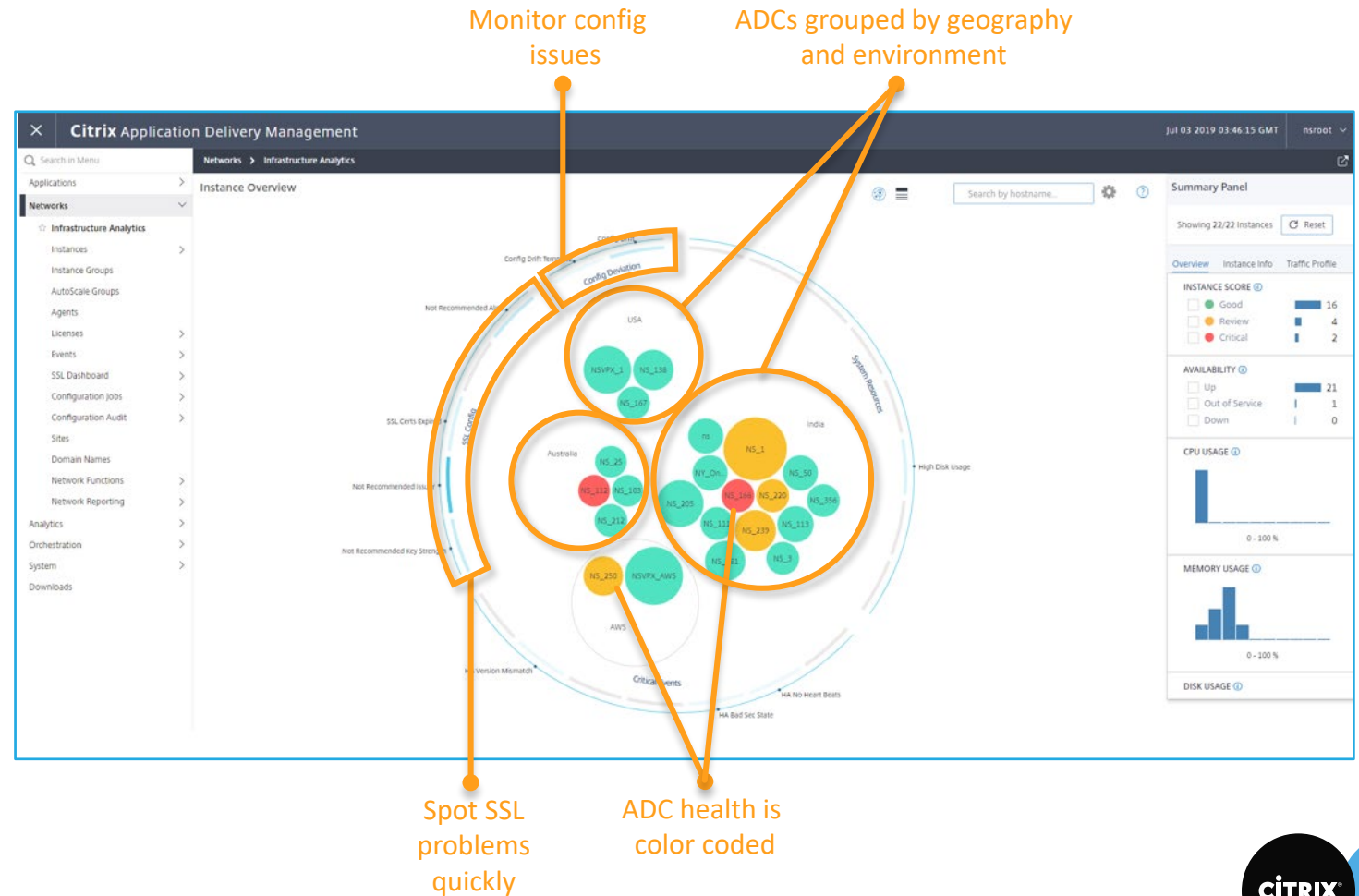
- Group your ADCs logically based on site, instance

Spot problems easily

- Easily identify ADC health based on color
- Config, SSL and System resources issues

Find causes quickly

- Drill into individual ADC instances for detailed metrics
- Filter views



Easy application status monitoring with comprehensive Application Dashboard

Scan quickly

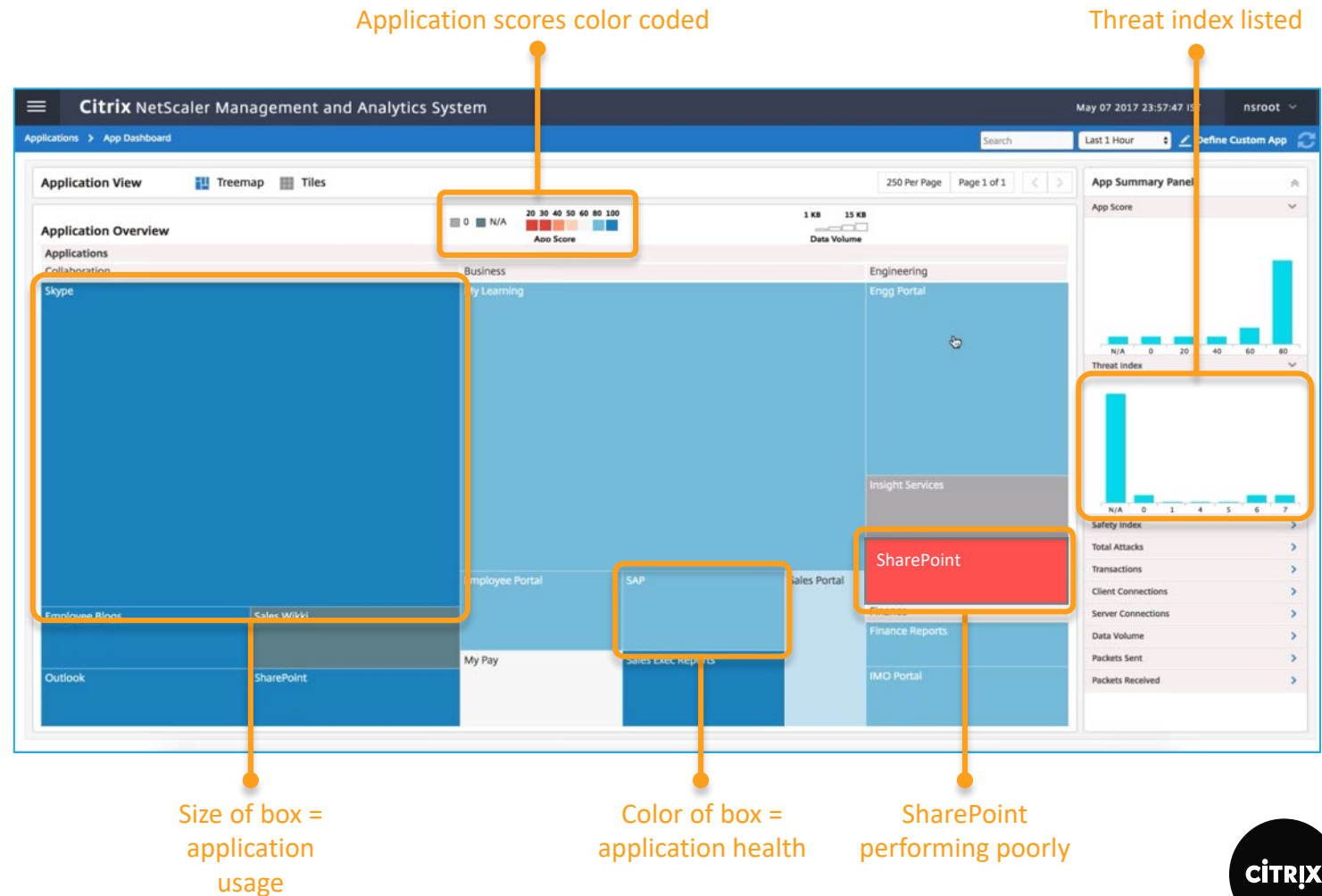
- See all your applications in one place
- ADM will automatically discover applications or define your own

Spot anomalies easily

- See applications status immediately
- Application usage by size of box
- Application health by color
- Security indicators

Investigate issues

- Drill into individual application metrics



Faster troubleshooting Provide access to the right views for each stakeholder

Different views

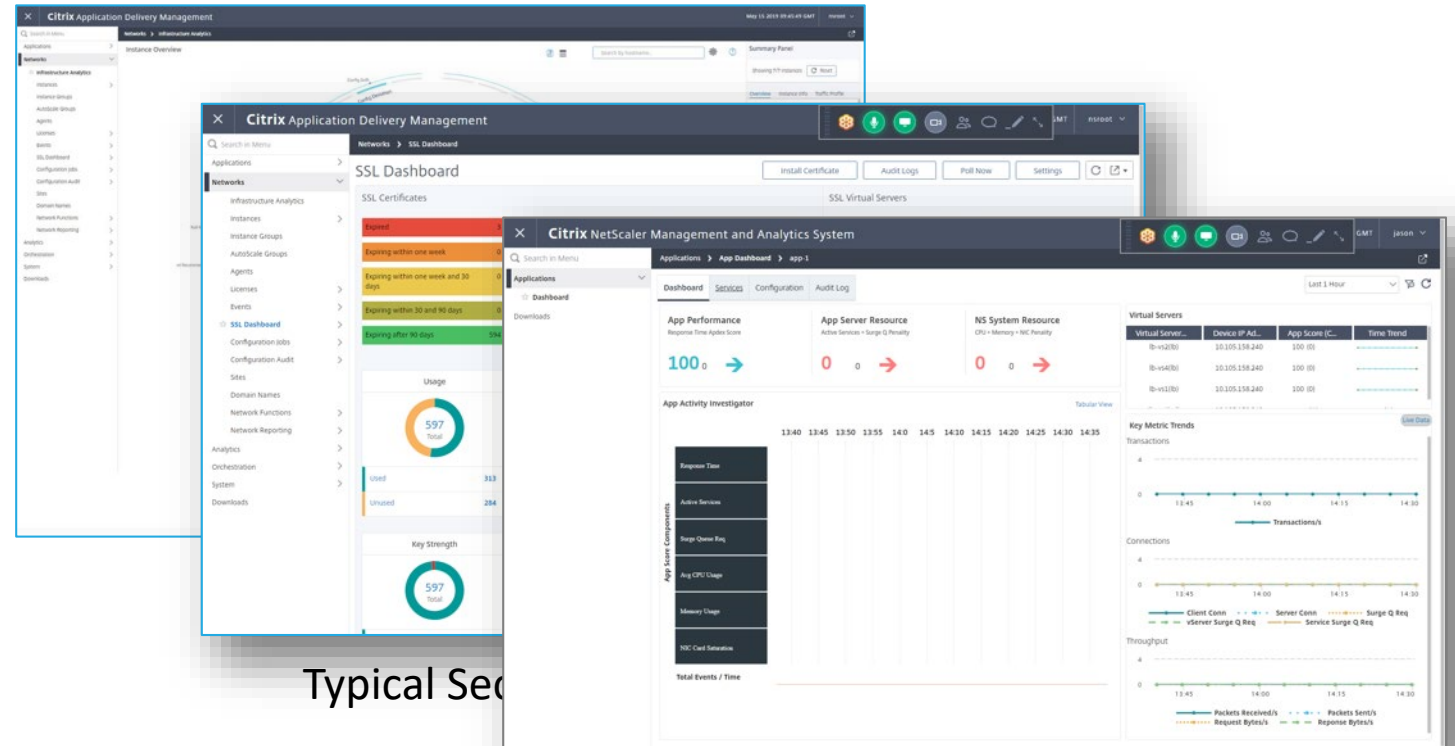
- Different emphasis to bring the right skills to monitoring and trouble shooting

Fully configurable

- Fit with your different stakeholders' roles and responsibilities

Multi-dimensional

- Define access to items in various ways
- Per application
- Functionality (e.g security)
- Infrastructure-based



Typical Sec

Typical application owner dashboard

The same data from different perspectives leads to faster troubleshooting

Citrix ADM Service Express: Introducing Free Tier

Free Features	Availability
Management & Monitoring + Infrastructure Analytics	Yes (Full feature set)
Pooled Licensing	Yes (Full feature set)
Config Management (Config Job & StyleBooks)	Yes (Limited to 2 config jobs / 2 config pack deployments)
All Analytics	Yes (Limited to 2 vservers)
Network Reporting & Network Functions	Yes (Limited to 2 vservers)
Data Retention Policy	Yes (500 MB or 1 Day, whichever breaches first)

[Documentation here](#)

Get Started Today: Visit <https://onboarding.cloud.com/>

Welcome! Let's get you started with your Citrix ADM service.

Initialization : 1 of 4 complete

- Validating account information
- Creating an account
- Creating RBAC policies
- Adding a license

You can log off from your browser while the initialization completes, which might take some time.

Citrix ADC v13.0

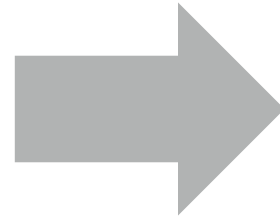
Update

Cloud Native





Waterfall



Agile

Citrix Solution Portfolio for Cloud Native Applications

Application Delivery Controllers (ADC)

Best in Class; Container, Virtual, Bare Metal, Physical

Ingress Controller (CIC)

Makes ADC Container Aware, Control Plane, Container & CPX

Application Delivery Management (ADM)

Automation, Visibility
Container, On-Prem, As Service

Cluster Node Controller (CNC)

Establish Routes between ADC and Kubernetes Nodes

Istio-Adaptor

Service Mesh Integration Istio, Ingress Gateway, Sidecar Proxy

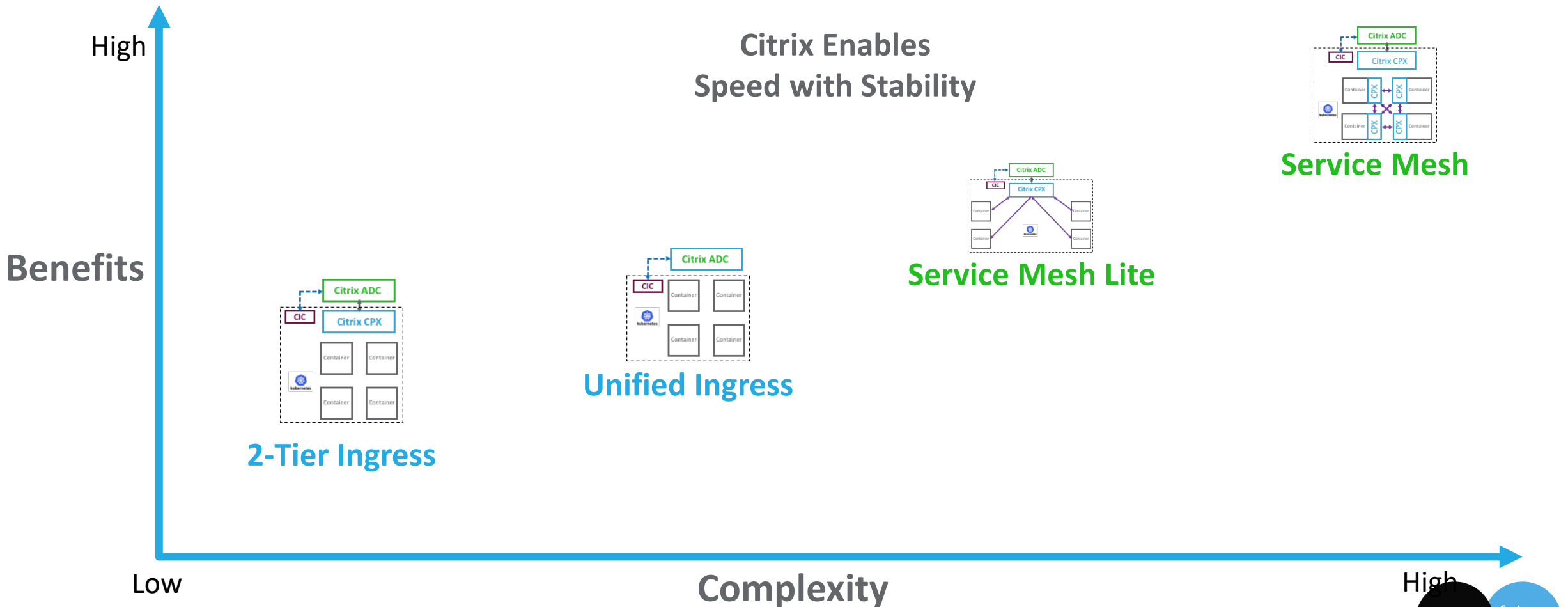
Integration Eco System

Cloud Native Platforms | Cloud Managed Kubernetes | CNCF Tools for Visibility, Logging, Metrics & More

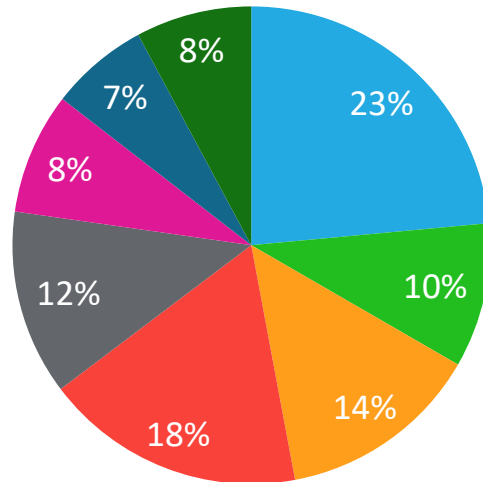


Citrix Choices for Kubernetes and OpenShift Environments

Architecture flexibility so you can move to Cloud Native at your pace;



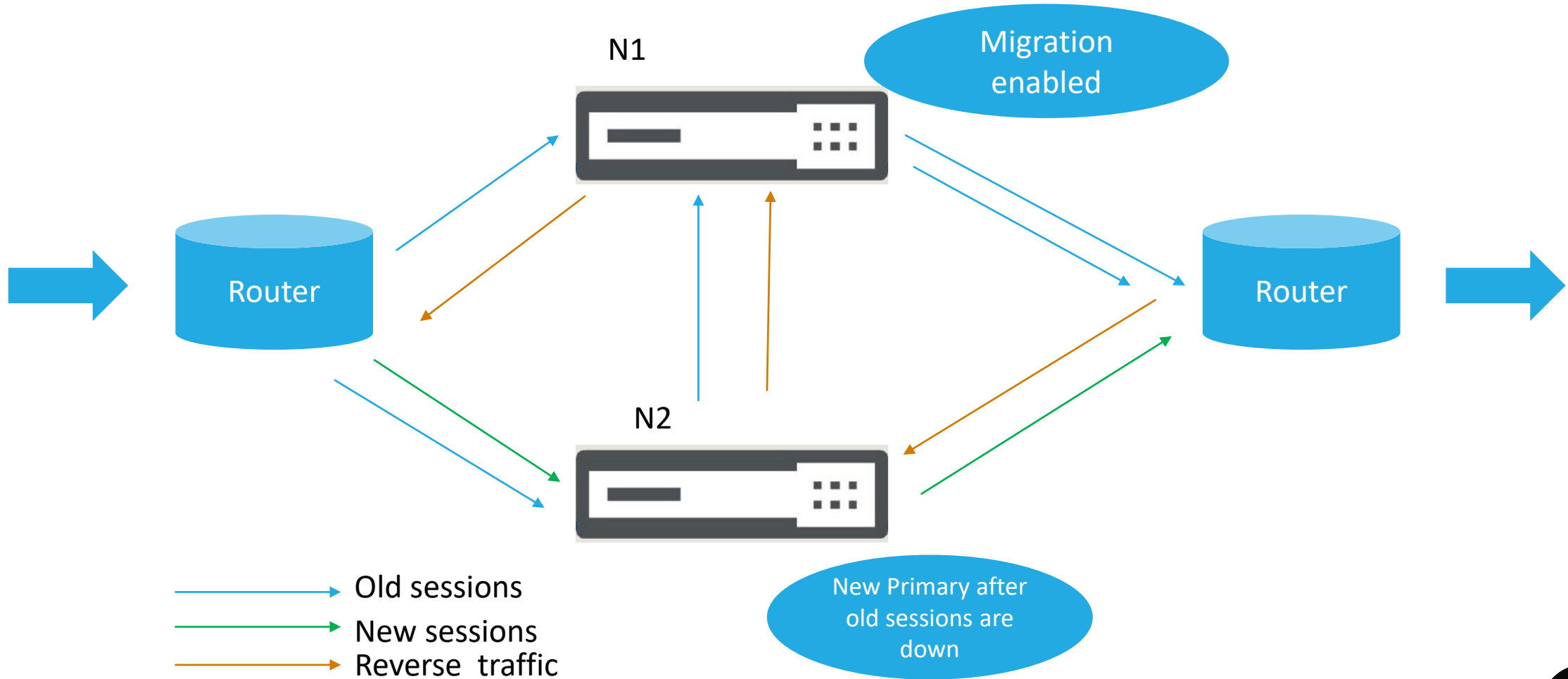
Poll Question: Are you looking into Cloud Native?



In Service Software Upgrade (ISSU)



In Service Software Upgrade (ISSU)



AlwaysON SSLVPN

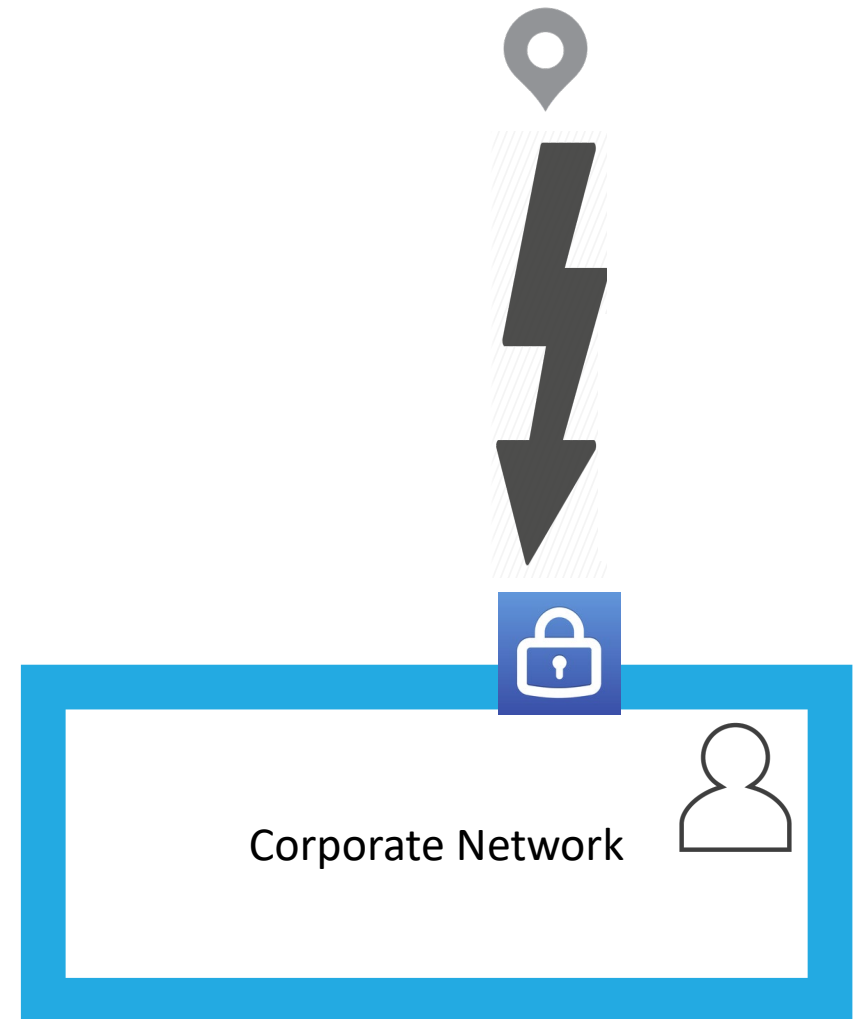


Always-On keeps you connected

Location-aware automatic VPN for best security and user experience

- Seamless end-user experience
- Tight control over managed devices
- Location-awareness
- Flexible config model to suit wide set of use cases
- Revamped and Intuitive Plugin UI
- Always-On Service: At Boot Time SSLVPN (device cert)
- Always-On Service: User Persona after login

```
set vpn parameter -alwaysON <enabled/disable>  
                  -restrictAccessOnVPNFailure <ON/OFF>  
                  -clientControl <allow/deny>  
                  -locationBasedVPN <remoteOnly/Everywhere>
```



Self Service Password Reset



Self Service Password Reset

Between 20% to 50% of Service Desk calls are related to password resets

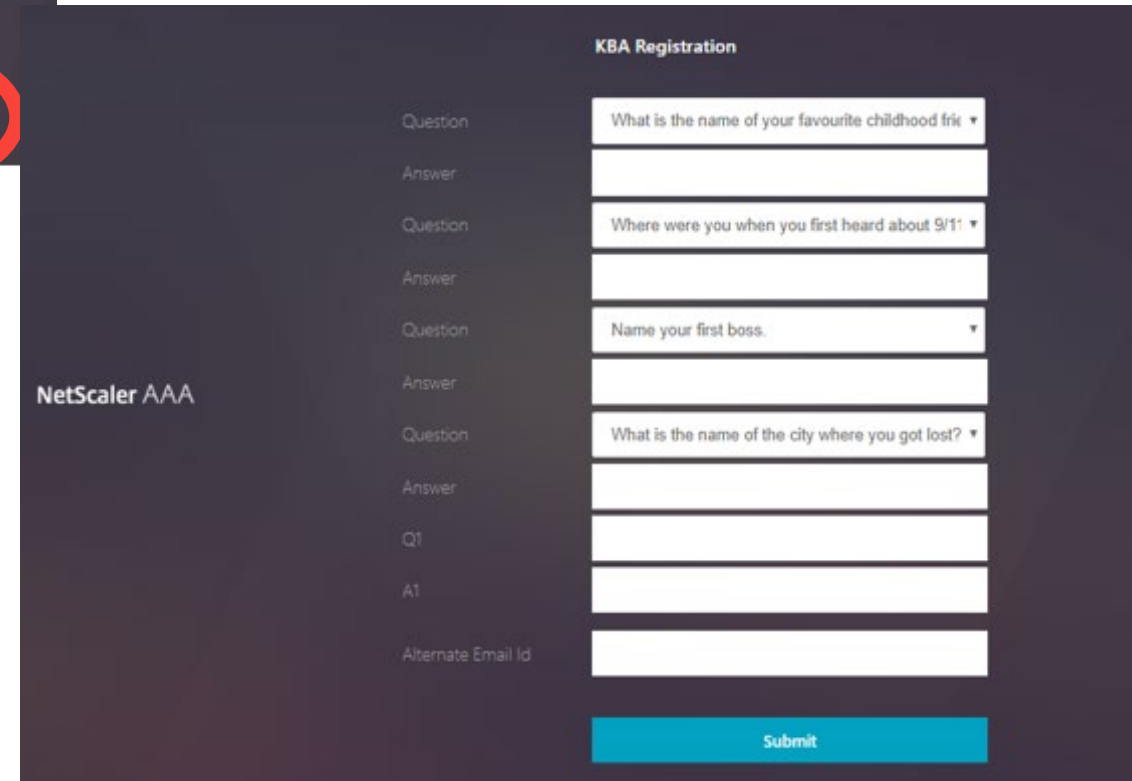


NetScaler AAA

User name:

Password:

[Forgot Password](#)



NetScaler AAA

KBA Registration

Question: What is the name of your favourite childhood frik ▼

Answer:

Question: Where were you when you first heard about 9/11? ▼

Answer:

Question: Name your first boss. ▼

Answer:

Question: What is the name of the city where you got lost? ▼

Answer:

Q1:

A1:

Alternate Email Id:

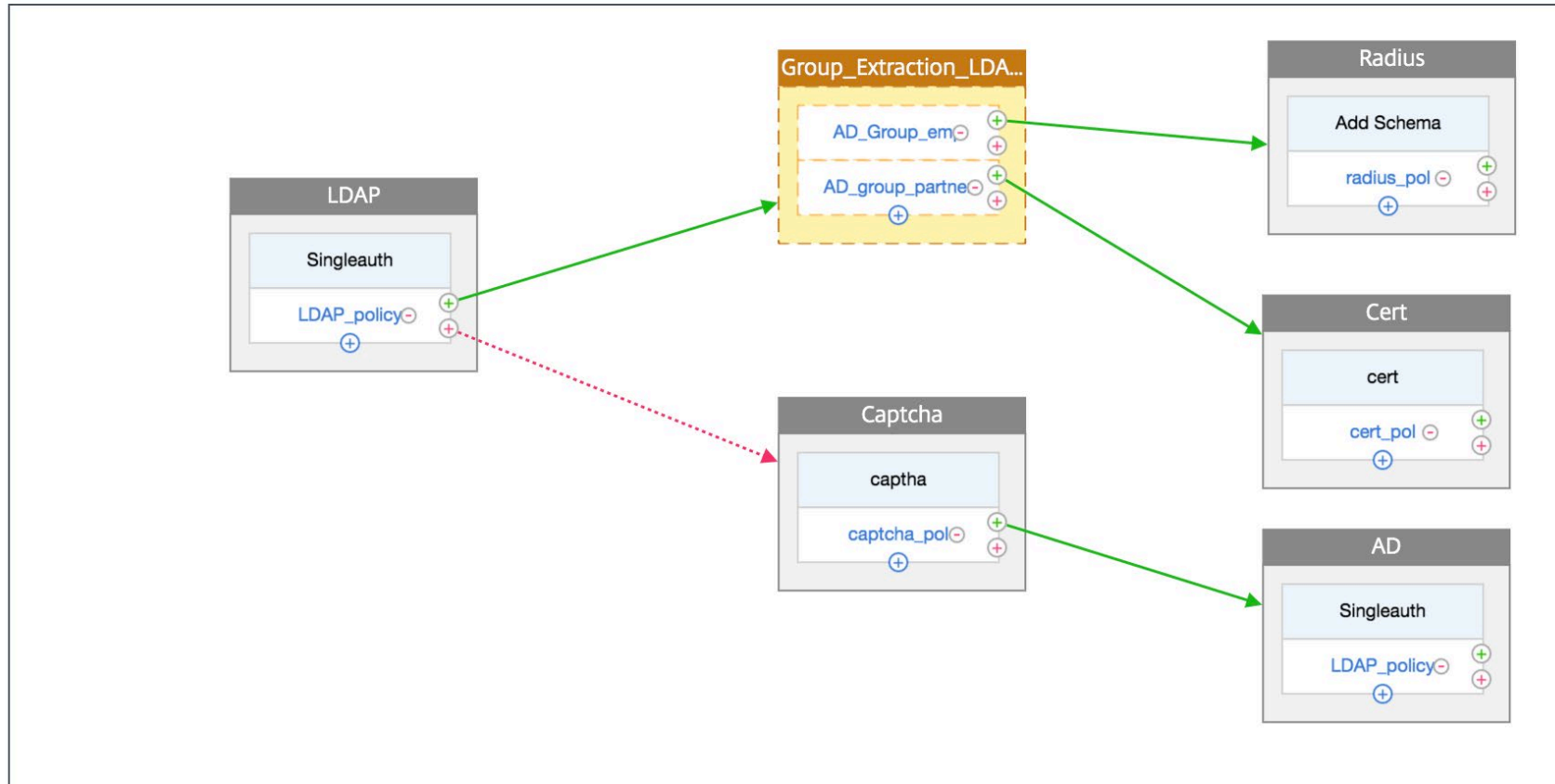
- Enable User initiated Password Reset
- Knowledge Based Authentication (KBA)
- Stored Encrypted in LDAP

nFactor Flows



nFactor Flows

← nFactor Flow



Security

Update

Securing Apps & APIs in Hybrid Multi-Cloud

A Comprehensive Approach

DDoS Protection, IP Reputation

L3 Firewall

Authentication



API Security

Content Inspection

Web Application Firewall

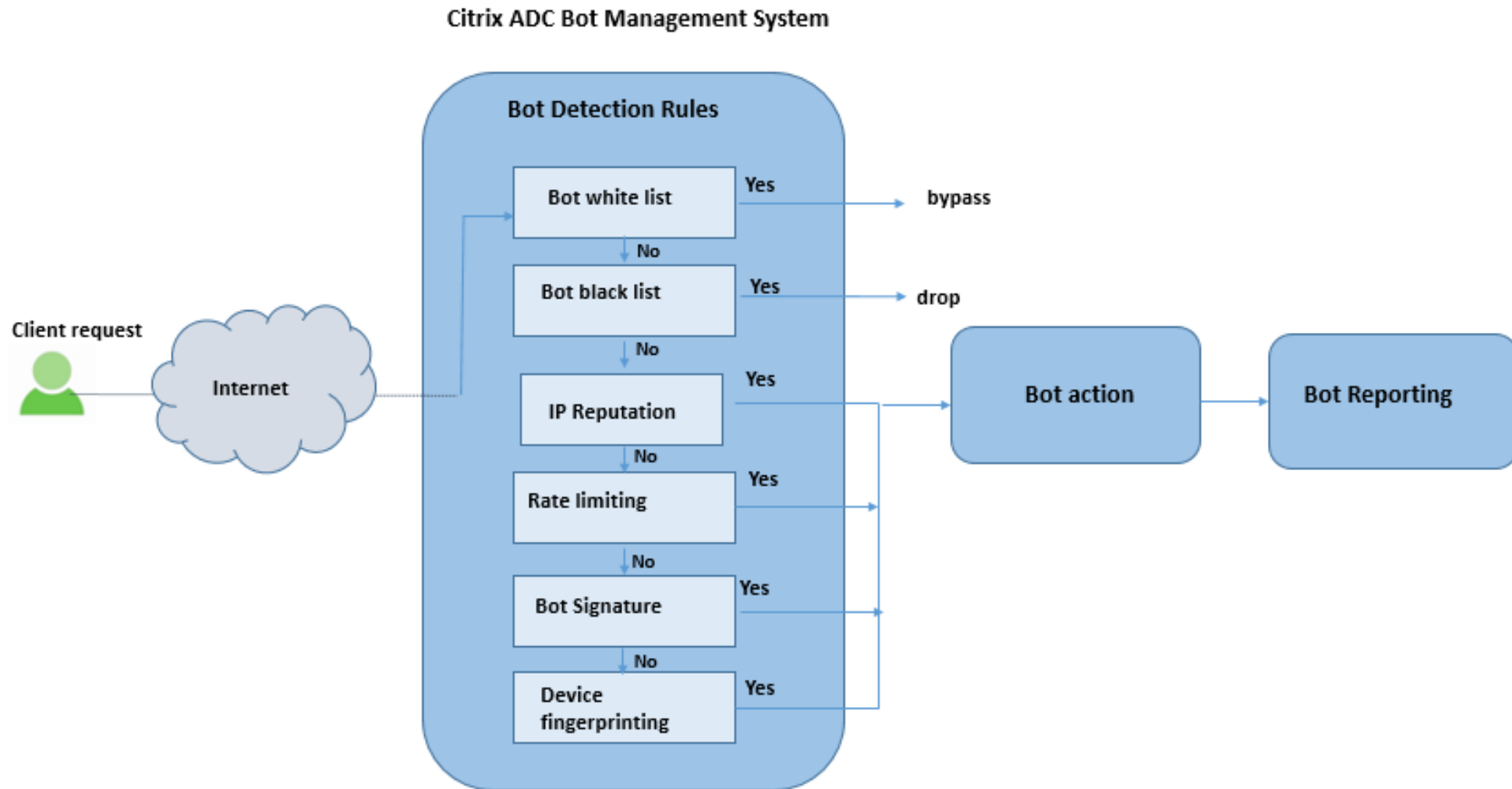
Bot Management

Comprehensive Protection with Simplicity & Lower TCO

Bot Management



This is How It Works



Bot Management Configuration

- Enable Bot Management
- Import Bot Signature
- Add Bot Profile
- Add Bot Policy
- Bind Bot Policy
- Configure Bot Settings

Device Fingerprint

Enabled

Configuration

No Action Drop Redirect

Log

Update Signature

Done

Bot Signatures

Configure Static Signatures

Edit

<input type="checkbox"/>	ID	ENABLED	NAME	VERSION	DROP	TYPE	CATEGORY	LOG
<input type="checkbox"/>	1	<input checked="" type="checkbox"/> ENABLED	a.pr-cy.ru	2.1	<input checked="" type="checkbox"/> ENABLED	Bad Bot	Crawler	<input type="checkbox"/> DISABLED
<input type="checkbox"/>	2	<input checked="" type="checkbox"/> ENABLED	AddThis.com	2.1	<input type="checkbox"/> DISABLED	Good Bot	Crawler	<input type="checkbox"/> DISABLED
<input type="checkbox"/>	3	<input checked="" type="checkbox"/> ENABLED	Adidxbot	2.1	<input type="checkbox"/> DISABLED	Good Bot	Crawler	<input type="checkbox"/> DISABLED
						Crawler		<input type="checkbox"/> DISABLED
						Crawler		<input type="checkbox"/> DISABLED
						Crawler		<input type="checkbox"/> DISABLED

Rate Limit

Enabled

Session

Enabled

Rate*
100 Requests Per Second (RPS)

Period*
2000 Seconds

Cookie Name
manju_bot_ns_id

Redirect
 Drop
 Log

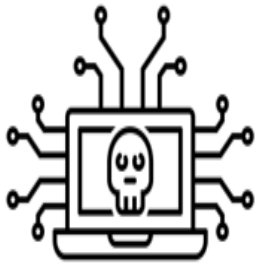
Log Message
Session Based Rate Limit

Comment

Content Inspection



Content Inspection Capabilities



ICAP

- For antimalware, DLP and content scrubbing system integration
- Secure ICAP policy support
- ICAP policy support (coming soon)



Inline Device Integration (L2)

- IPS, Next-Gen Firewall and ATP integration
- SSL Offloading of single or multiple inline devices
- Better solution than sandwich mode

Key Takeaways

Flexibility & Choice

NETWORK TRAFFIC	Data Center	Branch Citrix SD-WAN	Multi-Cloud	
LICENSING MODEL	Perpetual	Subscription	Pooled	
FORM FACTOR	Hardware	BYO Hardware	Virtualized	Micro-Services
	ADM			

