



A Joint Webinar on Azure Stack Hub Migration by HPE - Microsoft - Corent on July 15, 2020 at 8:00 AM - 9:00 AM (PDT)

Agenda:

- 01 Azure Stack Hub overview and updates - Kevin Lopez
- 02 Azure Stack Hub Migration using SurPaaS - Shafi
- 03 Real life project experience - Kevin Lange

Speakers:



SHAFI SYED

CTO, EVP Operations & Co Founder
Corent



KEVIN LANGE

Master Database Architect
HPE



KEVIN LOPEZ

Global Black belt &
Partner Sales Executive
Microsoft

Will start in a few
minutes



In this Webinar, we will cover

- **Azure Stack Hub Overview and updates**
 - **Kevin Lopez - Microsoft**
- **Azure Stack Hub Migration using SurPaaS**
 - **Shafi Syed – Corent Technology**
- **Real Life Project Experience**
 - **Kevin Lange – HPE Pointnext**

- **Q&A**

8:00 AM

8:05 AM

8:20 AM

8:40 AM

8:50 AM

9:00 AM

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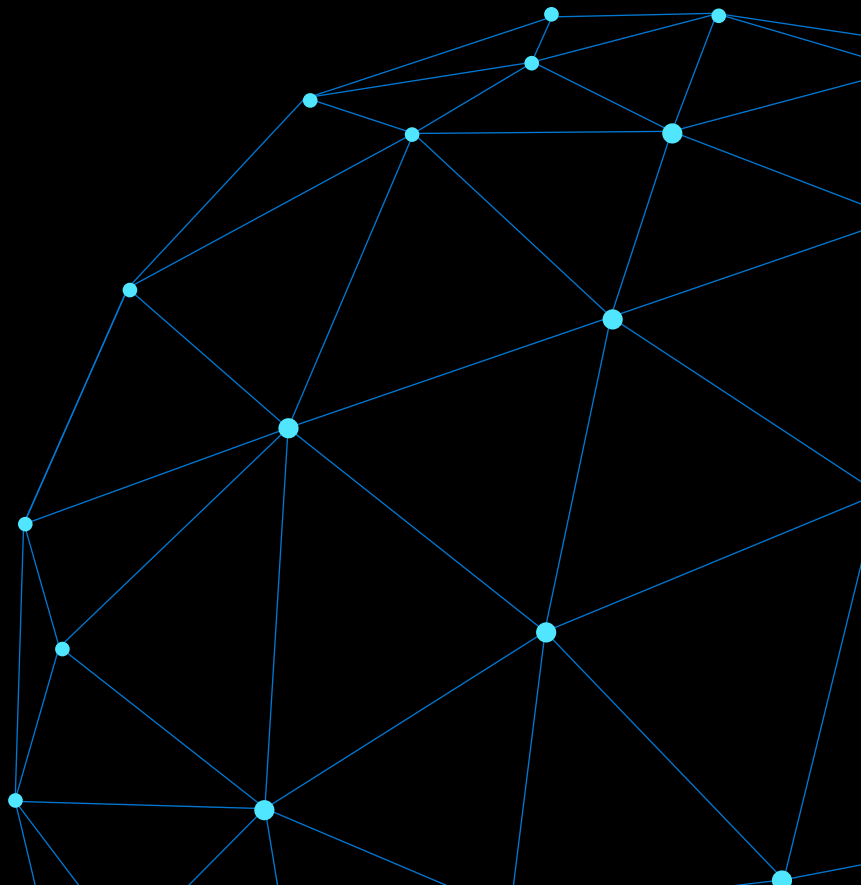
8:50 AM

9:00 AM

Azure Stack portfolio

An intelligent, consistent and comprehensive platform
from cloud to edge

Kevin Lopez
Sr. Specialist
Azure Intelligent Edge
Kevin.lopez@Microsoft.com



Azure Hybrid

Innovation anywhere with Azure

Microsoft Azure

Azure Stack Hub

Integrated systems



Azure Arc

Any datacenter, any cloud



Azure IoT

Any edge device



Management

Security + Identity

App + Data Services

Dev Tools + DevOps

Azure Stack Portfolio

Consistently build and run hybrid apps across on-premises, cloud, and edge



AzS Edge

Cloud-managed appliance

Machine learning at the edge
Edge compute and IoT solutions
Network data transfer to cloud



AzS Hub HCI

Hyperconverged solution

Scalable virtualization and storage
Remote branch office
High-performance workloads



AzS Hub

Cloud-native integrated system

Disconnected scenarios
Data sovereignty
Application modernization



What is + What's new Azure Stack Hub

(Formerly known as Azure Stack)



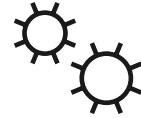
AzS Hub: an extension of Azure



Consistent
application development
and operations



Azure Services
available on-premises



Purpose-built
integrated system

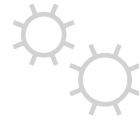
AzS Hub: an extension of Azure



Consistent
application development



Azure Services
available on-premises



Purpose-built
integrated system



Tools



Experiences



Deployments



Application patterns



Automations



Operations

AzS Hub: an extension of Azure



Consistent
application development



Azure Services
available on-premises



Purpose-built
integrated system



Serverless



App service



Containers



Marketplace



Virtual machines



Networking



Storage



Key Vault

AzS Hub: an extension of Azure



Consistent application
development



Azure Services
available on-premises



Purpose-built
integrated system



Architecture,
hardware, and
topology



Deployment,
configuration,
provisioning



Validation



Monitoring,
diagnostics



Security
and privacy



Business
continuity



Patching
and updates



Field
replacement
of parts

Ignite 2019 announcements for Azure Stack Hub



Partners and solutions



Azure Stack Hub and Azure Stack Edge Hybrid Patterns

- Retail - Foot Fall, Void Detection, Loyalty Program, Info
- Data - Elastic search
- ML training



Foundation Patterns

- Networking, Load Balancer
- Data Center Integration
- BCDR



New ISV/SI Program for Hub and Edge



NetApp Storage Attachment

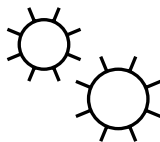


Scality Storage Attachment



Kognitiv Spark Holograms Remote Assist

And many more ...



Services



Cognitive Services **Public Preview**



Kubernetes on Azure Stack with AKS engine



Event Hubs **Public Preview 2020**



WVD **Private Preview**



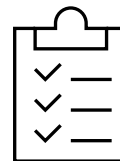
Azure Data Services with Azure Arc **Private Preview**



Azure Stream Analytics **Public Preview**



Edge Manager **Private Preview 2020**



Features



AMD GPU Support – GPU –P **Private Preview**



Nvidia GPU Support – Passthrough **Private Preview**



N-Series VM support



<https://aka.ms/azshigniteblog>



Azure Stack Edge



AzS Edge



An Azure-managed, edge appliance that brings the compute, storage, and intelligence of Azure right to where you need it



Hardware-accelerated machine learning

Accelerate ML inferencing using on-board GPU or FPGA to get results close to the data source



Edge compute

Run VMs, containers, and Azure services at the edge locations



Azure-managed appliance

Order and manage your appliance and workloads through the Azure portal



Cloud storage gateway

Transfer data to Azure over the network while retaining local access to blobs and files

Industry scenarios: Intelligent Edge



Financial services

Customer analytics

Financial modeling

Risk, fraud, threat detection



Health and life sciences

Clinical and claims data

IoT device analytics

Social analytics



Retail

Assortment optimization

Data-driven stock, inventory, ordering

Store design and ergonomics



Oil, gas, and energy

Digital field/production

Industrial IoT

Supply-chain optimization



Manufacturing

Predictive maintenance

Safety and security

Quality assurance



Public Sector

Smart city

Revenue management

Citizen engagement



What can run on Data Box Edge?

..... Many Azure services offered as IoT Edge modules



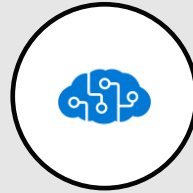
Azure functions



Azure machine learning



Azure steam analytics



Azure cognitive services



AI toolkit



SQL server databases

Or write your own:

Modules are simply containers.

Visual Studio and VSCode have tools available and language support includes:

C#, C, Node.js, Python, and Java

Get started here:

<https://docs.microsoft.com/en-us/azure/iot-edge/>

Coming Soon for AzS Edge



Services



Virtual Machines



Multi-Access Edge Compute



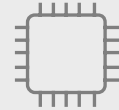
Features



K8S



High Availability



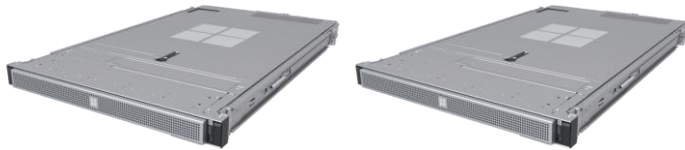
Hardware



GPU Options



Ruggedization



Commercial Series



Rugged Series

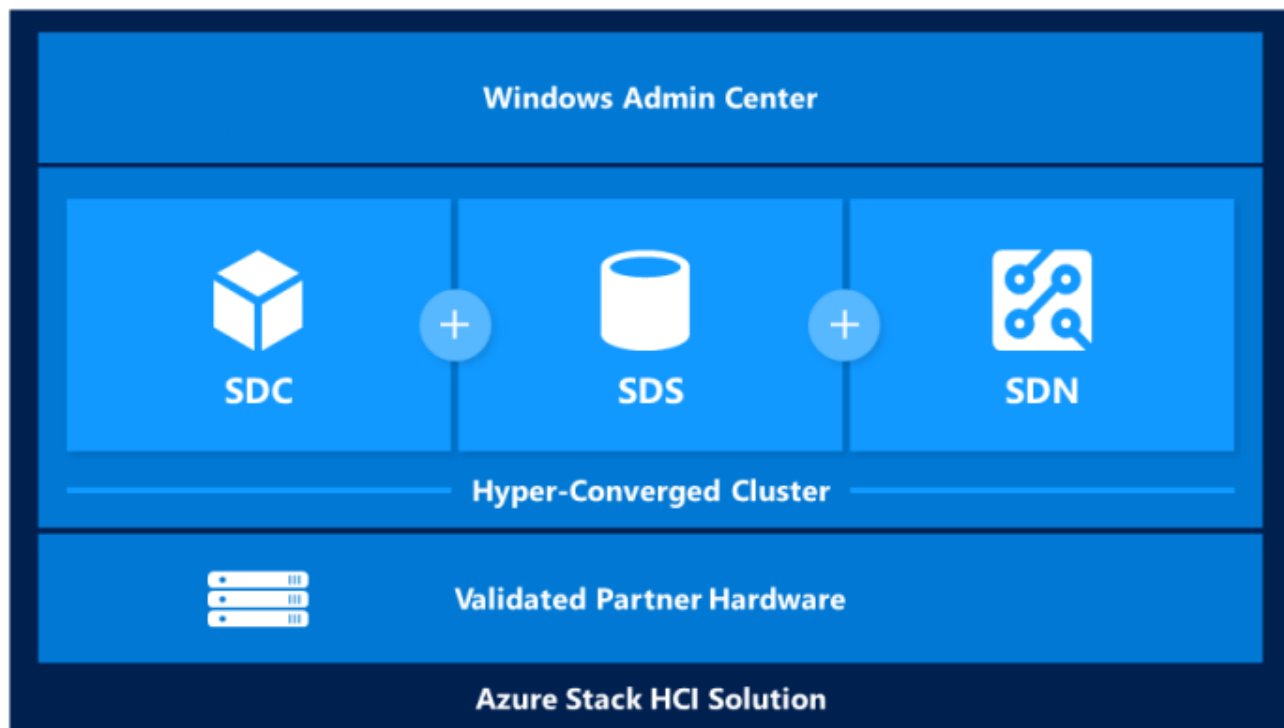


Azure Stack HCI



Azure Stack HCI Overview

Azure Stack HCI is a hyper-converged Windows Server 2019 cluster that uses validated hardware to run virtualized workloads on-premises.





Branch office and edge

Meet the evolving IT demands of branch offices, retail stores, and field locations. Deploy both container-built edge workloads and business-critical applications in highly available virtual machines; cost-effective at scale with a small minimum footprint. With Azure Monitor integration, keep a global view of system health.



Virtual desktop infrastructure

Use Remote desktop services to support large scale virtual implementations with highly available virtual machines and integrated scalable storage. Connect your virtual desktops to Azure Update Management for cloud control of your enterprise VDI configuration.



High-performance SQL Server

Deploy high performance, scalable Microsoft SQL Server on a top performing hyperconverged infrastructure. Run mission-critical applications with the flexibility of virtualization. Your data is protected with application-consistent Azure Backup.



Trusted enterprise virtualization

Protect workloads by leveraging Virtualization Based Security, Assurance-certified hardware and Shielded VMs. Connecting this trusted infrastructure to Azure Security Center enables dynamic capabilities to account for rapidly changing workloads and sophisticated attacks to keep your company safe.



Scale-out storage

Combine Azure Stack HCI's industry-leading storage performance with validated hardware to centralize your organization's file shares. Azure File Sync keeps the flexibility, performance, and compatibility of an on-premises file server while replacing an aging SAN or aggregating files from various sources.



New - Azure Arc



Azure Arc

Bring Azure services and management to any infrastructure



Run Azure data
services anywhere



Extend Azure management
across your environments



Adopt cloud
practices on-premises

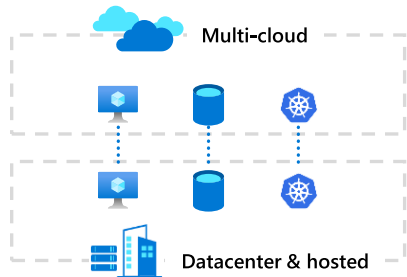


Implement Azure
security anywhere

Azure Arc is a set of technologies that extends Azure management and enables Azure services to run across on-premises, multi-cloud, and edge.

Azure Arc

Customer use cases



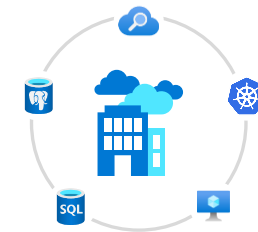
Organize and govern across environments

Get Kubernetes clusters and servers that are sprawling across clouds, datacenters and edge under control by centrally organizing and governing from a single place.



At-scale Kubernetes app management

Deploy and manage Kubernetes applications at scale across environments using DevOps techniques. Ensure that applications are deployed and configured consistently from source control, at scale.



Run data services anywhere

Deploy and manage data services where you need it for latency or compliance reasons. Always use the most current technology and seamlessly manage and secure your data assets across on-premises, clouds and edge.



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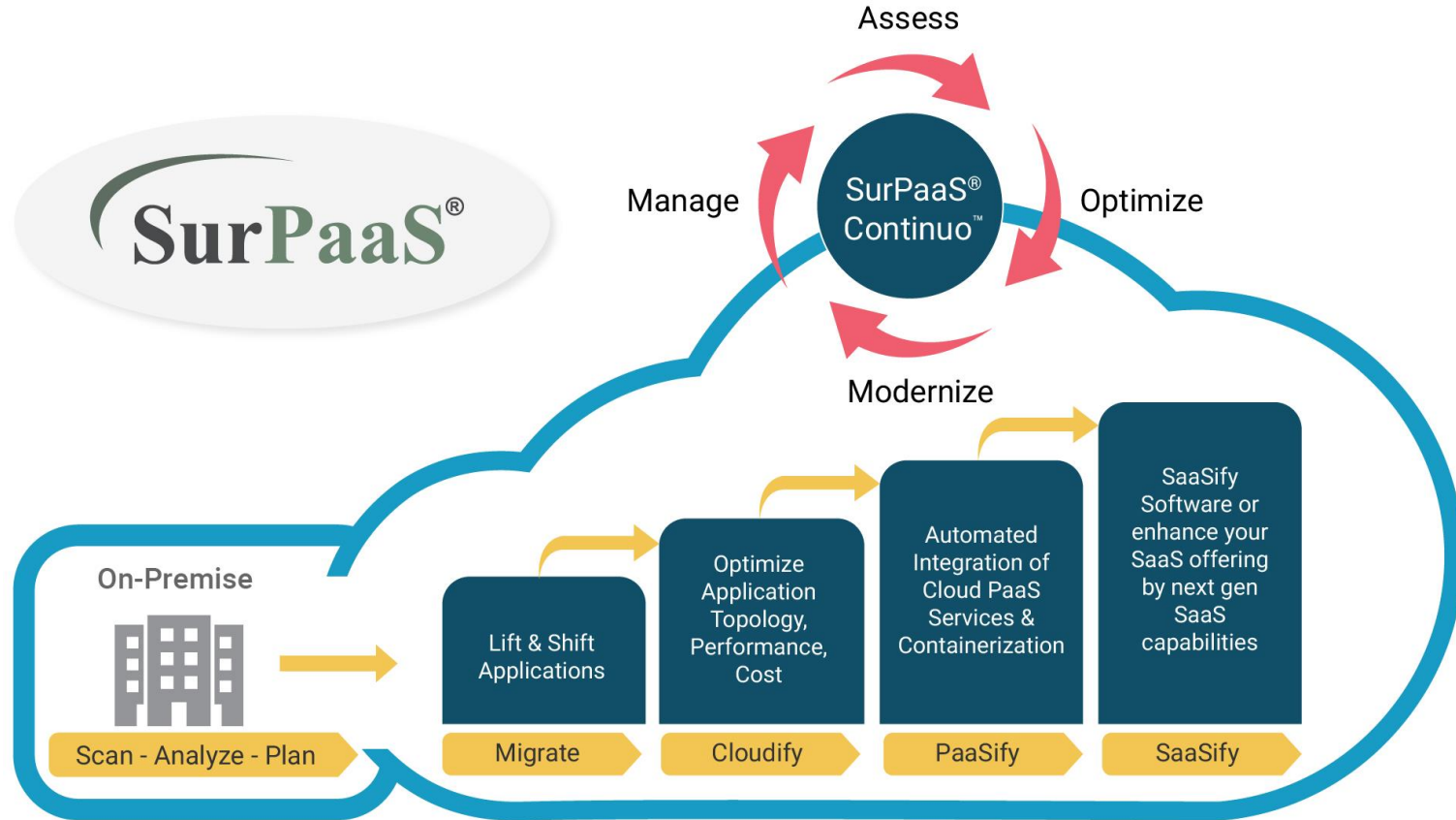
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Migrating to Azure Stack Hub using SurPaaS®

Corent SurPaaS® Manages the entire the Cloud Journey

Gold
Microsoft Partner
Cloud Platform



An innovative approach for datacenter assessment

Rapidly build AzS Hub Knowledgebase



Workload Knowledgebase for adaptive learning



Workload connectivity map

What-If Scenario analysis

Scanning

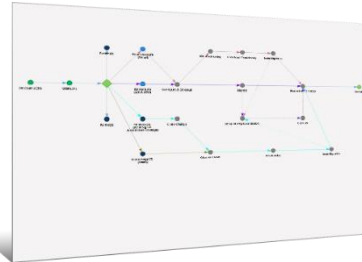
- Agentless Discovery and Pre-flight checks
- Multilevel parallel scans
- Scans any Server, Hypervisor or VM

Assessment

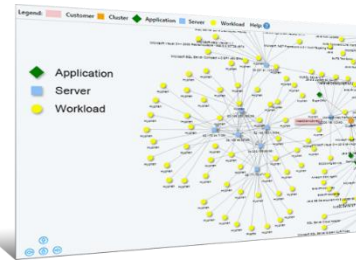
- Best practices & PaaS advisory
- Objective based Sizing & cost modelling
- Multiple What-If scenario analysis, move group analysis and R'lane (6R) charts



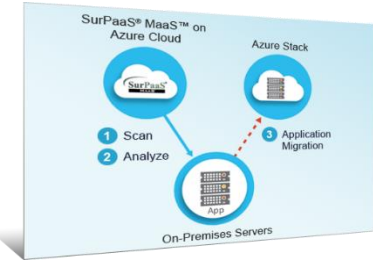
Right sizing



Migration R'lane Strategy

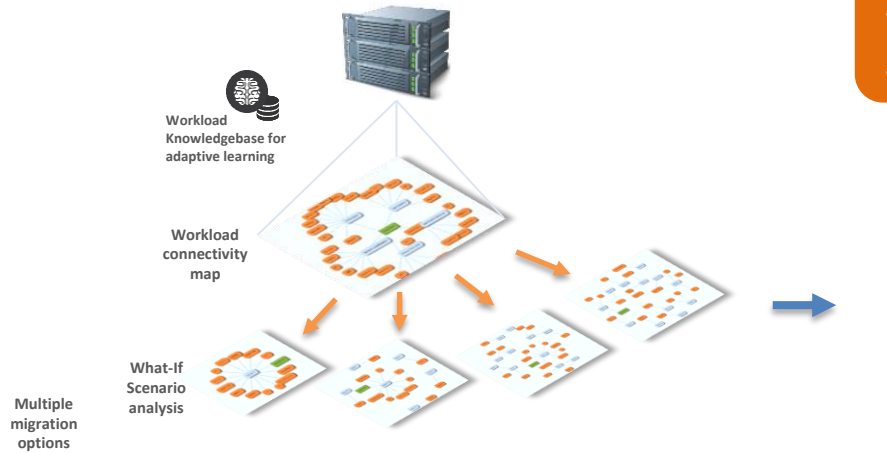


Connectivity map



Hybrid Cloud migration

Integrated multiple migration options



Migration

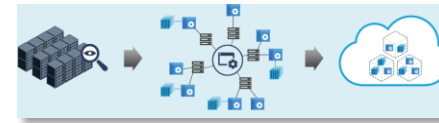
- Multilevel Parallel Lift & Shift
- Smart, PaaS & Hybrid Shift to Azure/Azure Stack
- Integration of Microsoft ASR/DMS

Post Migration

- Application Config Automation
- Zero point sync till Switchover
- Source Server auto shutdown



Advanced migration strategies



4 Scan methods in SurPaaS®

Fast Scan

For Lift & Shift

Scans 100s of servers in an hour

Minimal data gathering

Detailed Scan Agentless

For Lift & Shift / Smart migration

15-30 min* per VM/Server

Comprehensive reports with
Dependency mapping

Extended Scan Agentless

Can run for specified days/hours

Perf data gathered over time

Accurate sizing

Deep Scan Agent

For Smart migration

Additional workload specific data

Re-platforming and Hybrid
migration

3 Secure methods for Datacenter Assessment



Software Penetration Tested

Security Guidelines documents


Secure SaaS



SurPaaS accessed as SaaS connected to Vanguard

Direct data ingestion


Isolated



SurPaaS accessed as SaaS isolated from Vanguard

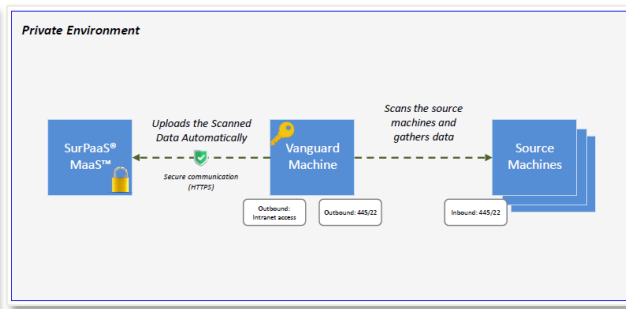
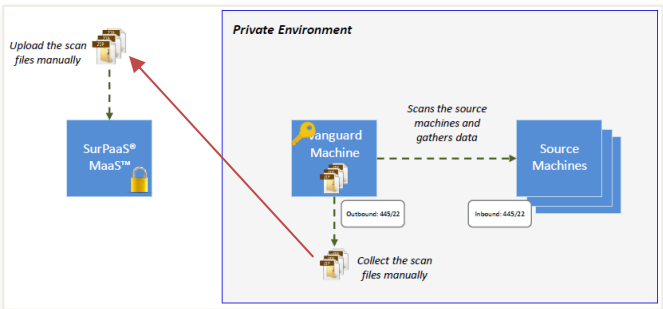
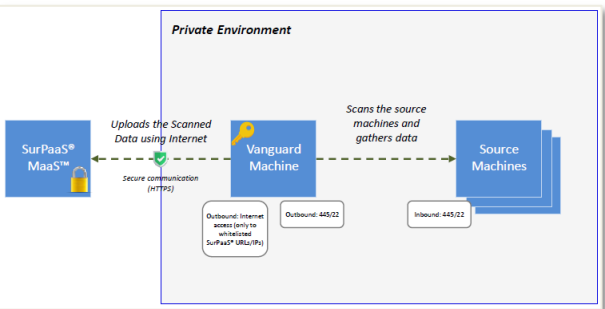
Data uploaded on demand

Embedded



Embedded installation of SurPaaS and Vanguard

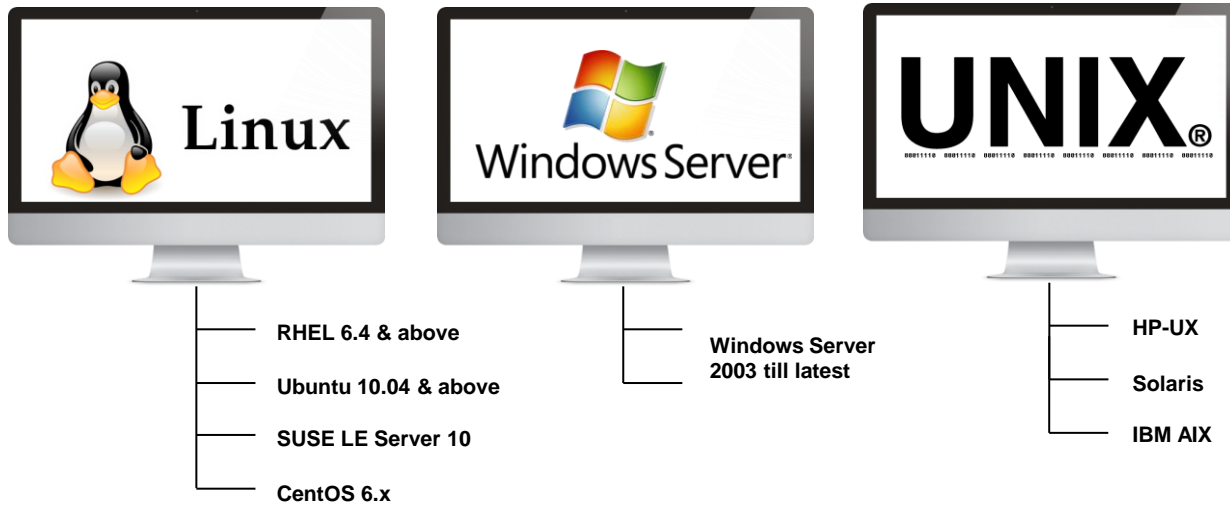
Data secured within Datacenter



*Results experienced by study participants



Target customers and qualifying criteria



- ❑ Typical Scenarios - Web based/Client server applications > 50
- ❑ Avoid Desktop applications

Deciphering your infrastructure and workloads

Cloudplan(s) Infrastructure Setup Cloud Feasibility Analysis

Filter by Application Name +

Default Cluster(5)

NetworkCluster(6)

Demo Infra App

- Default Cloudplan
- CloudPlan
- UcloudPlan
- CloudPlan22
- gdgdgdgd

Infra

- Infra@2
- Profile
- adf
- InfraName

111A1(0)

Network123(0)

Shiftplan(s)

Automatic linking of servers and workloads

Infrastructure

Overall classification of servers based on their compatibility with different Clouds, migration models, and PaaS services.

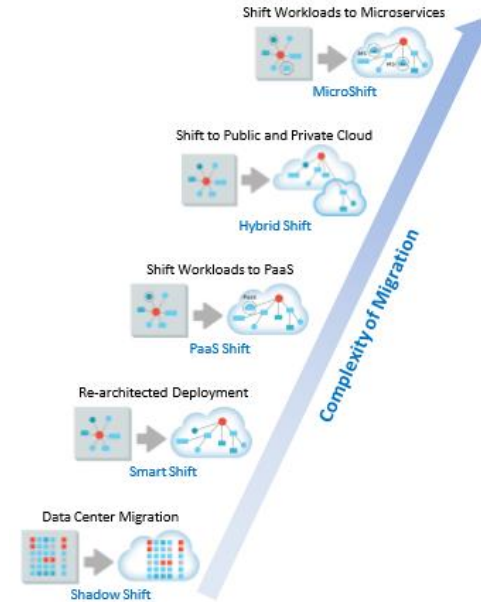
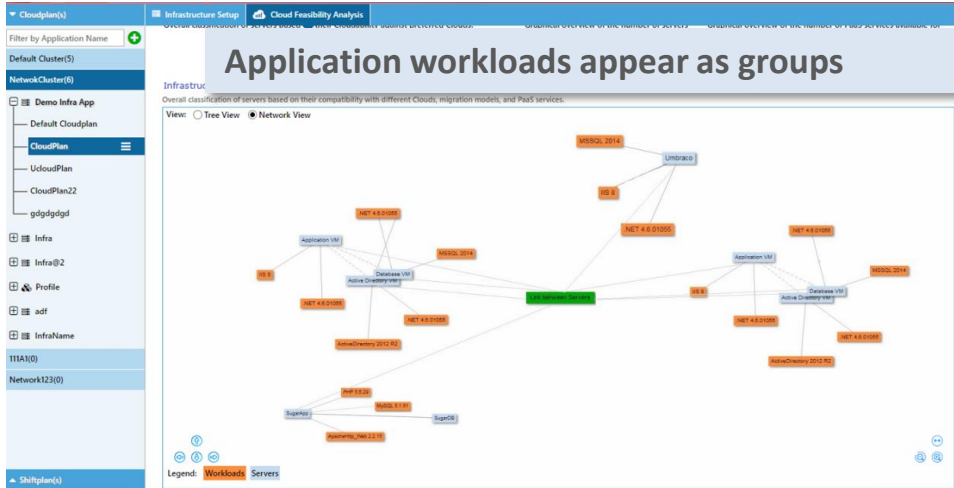
View: Tree View Network View

Detecting Microsoft workloads

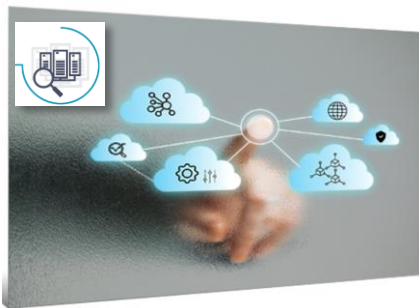
The diagram illustrates a network of servers and workloads. A central green box labeled 'IaaS Software Services' is connected to various workloads (orange ovals) and servers (blue rectangles). Workloads include 'MSSQL 2014', 'NET 4.6.0.10055', 'IS 8', 'Application VM', 'Database VM', 'Active Directory VM', 'ActiveDirectory 2012 R2', 'SugarApp', 'PHP 5.5.20', 'MySQL 5.1.51', 'SugarCR', and 'ApacheHttp_Vab 2.2.15'. Servers include 'Umbraco', 'Application VM', 'Database VM', 'Active Directory VM', 'ActiveDirectory 2012 R2', and 'SugarCR'. A callout box 'Detecting Microsoft workloads' points to the 'MSSQL 2014' and 'NET 4.6.0.10055' workloads. Another callout box 'Choose the dependent application servers and workloads to migrate' points to the 'Application VM', 'Database VM', and 'Active Directory VM' servers.

Legend: Workloads Servers

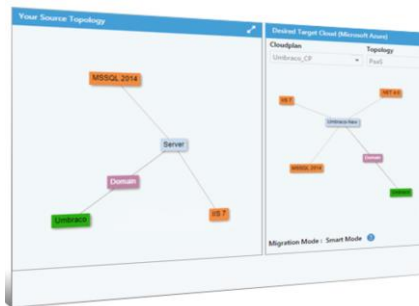
Better decision making and smart migration options



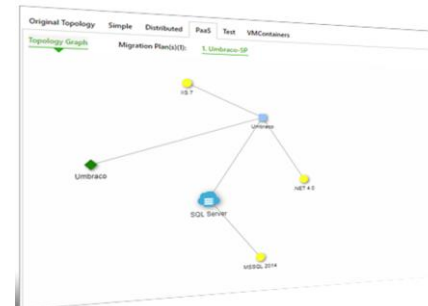
Advanced Application Modernization choices



Scan and Assess for Modernization

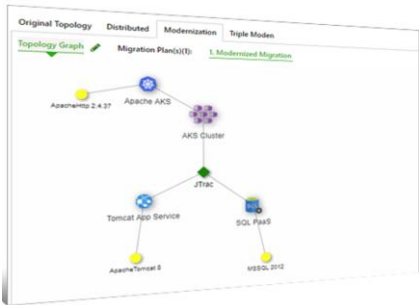


Re-platforming to redeploy workloads

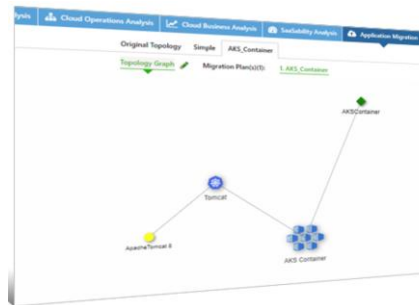


DB PaaS Service mapping and Migration

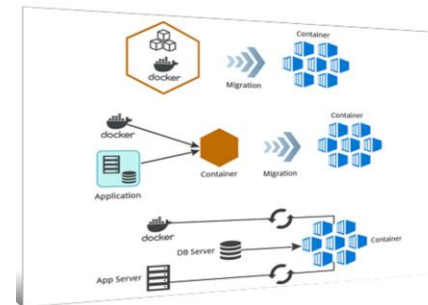
Explore multiple re-platforming & modernization options



Serverless Application Services mapping and Migration



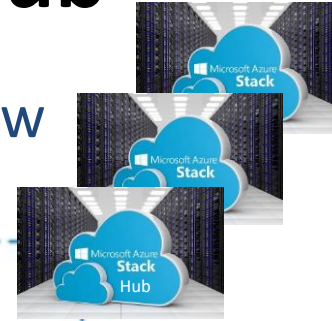
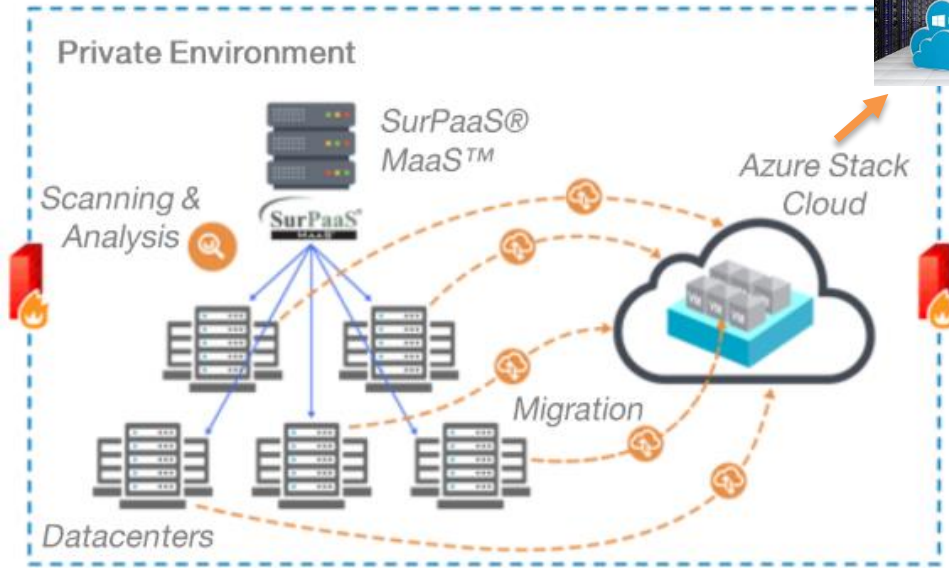
Containerization of workloads



Migration to Kubernetes Services

Migration to Azure Stack Hub

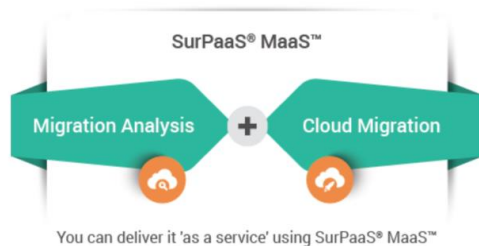
Assessment and Migration Workflow



*Migration across
Multiple Azure Stack
Hubs*

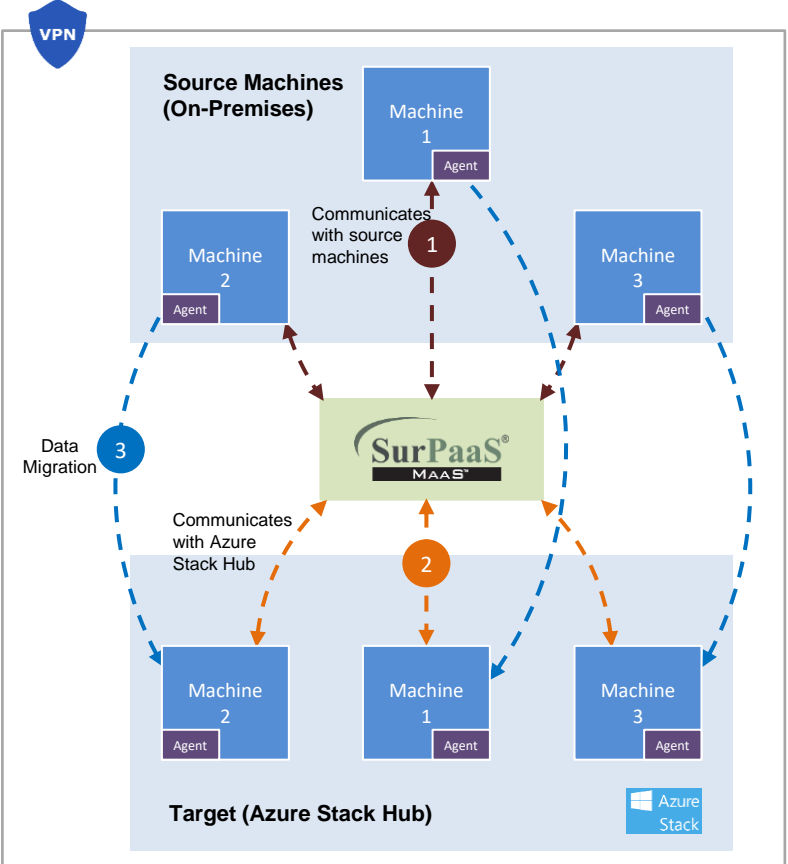
Supported capabilities for Azure Stack Hub in SurPaaS®

- ❑ **Discovery/Scan** - Both agent and agentless
- ❑ **Infra Analysis** - Driven by KB, Azure Stack catalog
- ❑ **Portfolio analysis** – Move groups and R’lanes
- ❑ **Migration** – Both lift n Shift & Smart Shift

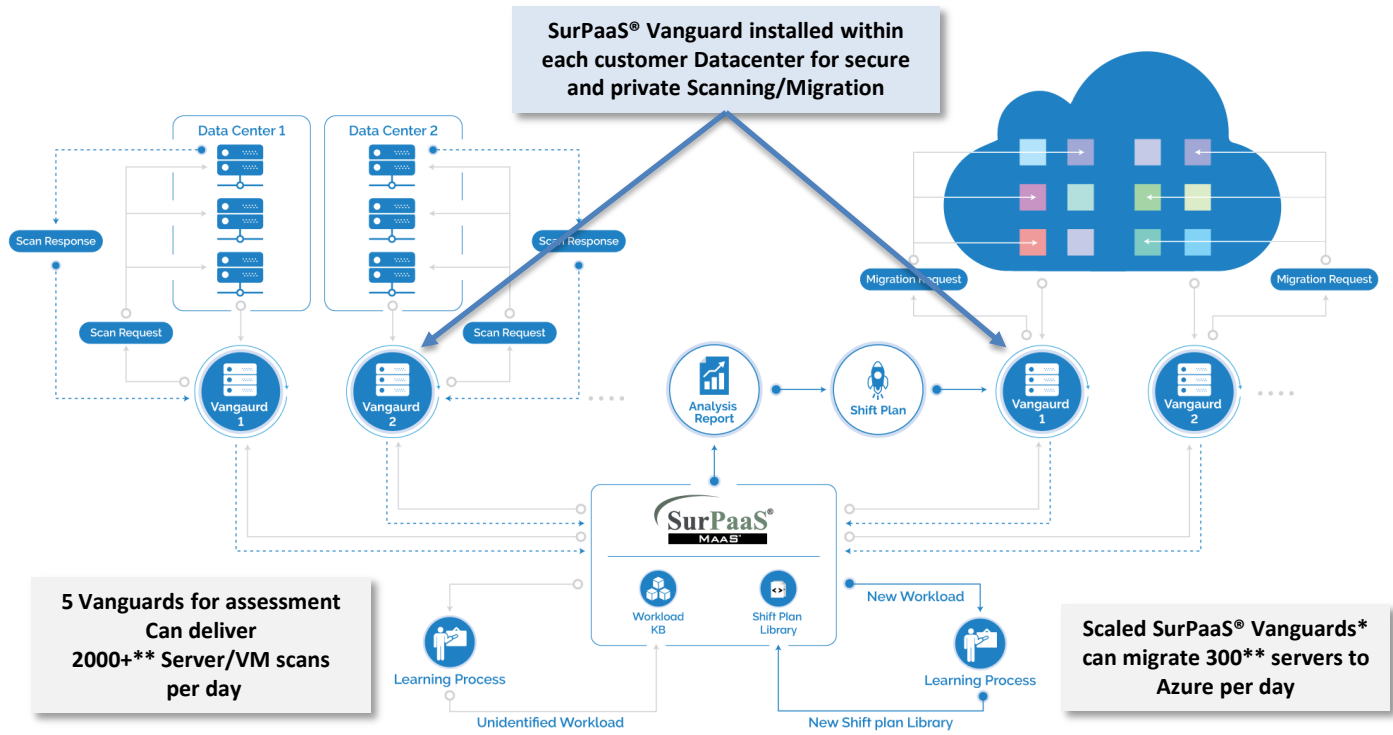


On the Roadmap
PaaS & Containers

Azure Stack Hub Migration – An example

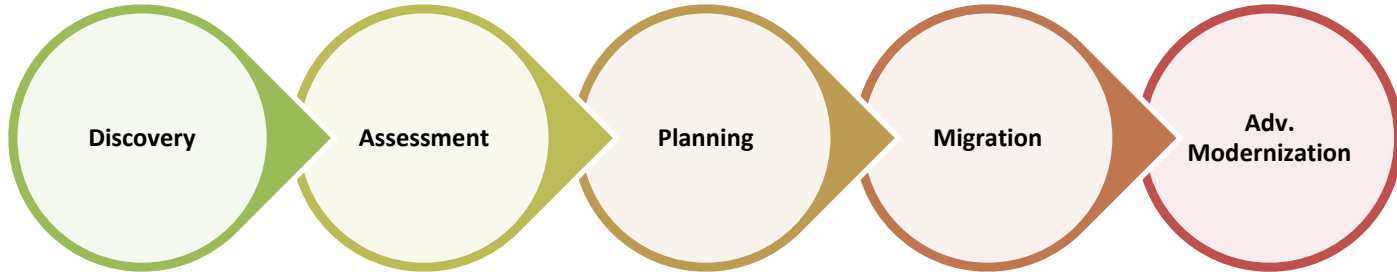
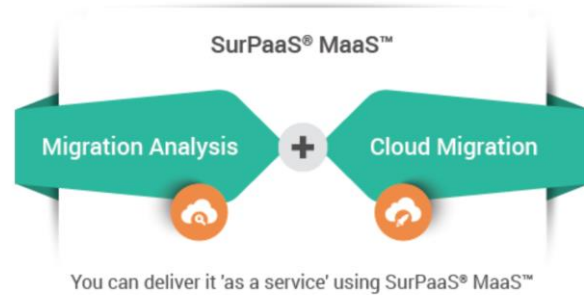


Assessment & Migration for a single Customer



* Provided there's sufficient bandwidth and multiple ExpressRoute connections between customer datacenter and Azure
 ** Each customer can easily scale to use up to 20 Vanguards, increasing the scanning and migration capacity.

SurPaaS® for your AzS Hub needs



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- ☐ **Azure Stack Hub Migration using SurPaaS**

- **Shafi Syed – Corent Technology**

- ➔ ☐ **Real Life Project Experience**

- **Kevin Lange - HPE**

- ☐ **Q&A**

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9:00 AM

The background features a dark night sky filled with a dense field of colorful, multi-colored light trails in shades of blue, green, yellow, and red, creating a sense of motion and data flow. At the bottom, a black silhouette of a city skyline with various skyscrapers is visible against the light trails.

Bank Azure Stack POC

Kevin Lange
Master Database Architect
HPE PointNext Consulting

July 15, 2020

Timeline Discussion

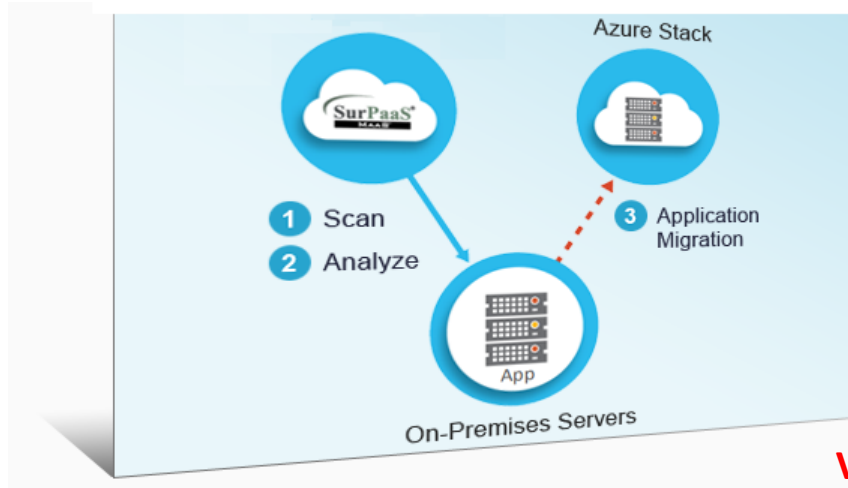
Migration Lab Tests

- ❑ Deployment Team On Site Target Dec 2nd
 - Expecting to complete on December 13th
- ❑ Migration –
 - Preparation already have begun
 - Expect the prerequisites to be completed by Dec 31st
 - Migration Tool Install - Onsite team to be in place Jan 13th
 - Migration Tool Discovery –
 - Team to do discovery Jan 20th
 - Bank to identify workloads and how to validate them on Jan 21st
 - Migration Tests
 - Jan 22nd through 31st
- ❑ Review Success Criteria to the output on Jan 31st

Success Criteria

- Ability to migrate a Workload to Azure Stack through the Migration process identified from Discovery though Migration.
- Validation of the Workload by Bank Team

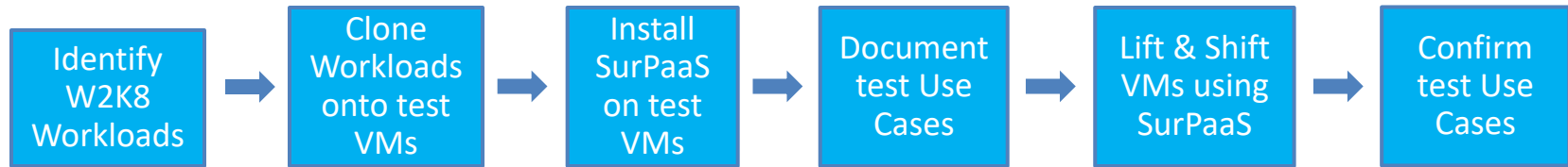
Migration POC – using Corent SurPaaS



Move to Private Cloud

Using SurPaaS®, securely migrate from any environment to private Cloud such as Microsoft Azure Stack. Once Microsoft Azure Stack environment is installed and set up successfully, model SurPaaS Cloud Knowledgebase first with the details of your own Microsoft Azure Stack configurations. Start migrating your resources to Microsoft Azure Stack almost immediately after the Knowledgebase is updated with the configurations.

VM/Esx [Windows 2008R2] → Azure Stack [lift & shift]



Per HPE Best Practice
AZ Stack Compliant

Per Bank Requirements

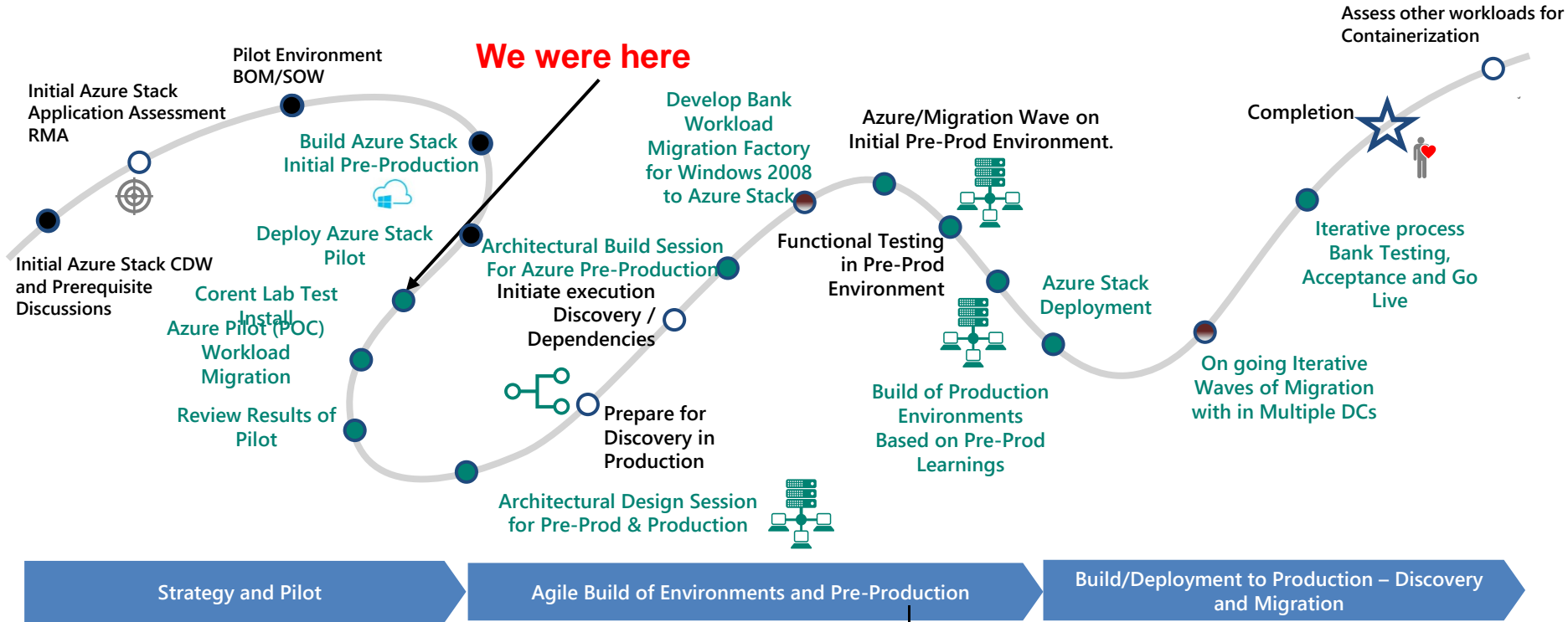
Per Corent Best Practice

From Bank

Corent and HPE
Bank Observes

- Functionality
- Accuracy
- Performance

Bank Azure Stack Roadmap to Production



- Conducted at Bank Site
- Conducted at Customer Site & Remotely
- Conducted Remotely
- Completed

Azure Stack Migration Prerequisites ~sample~

Status	Pre-Requirement	Information and References
●	Direct Skype or WebEx connectivity between Bank facility for collaboration with Corent Engineering	<ul style="list-style-type: none"> Bank has agreed we will be able to connect through Skype or other collaboration tool.
●	External media to be carried into Bank facility with SurPaaS installation code, will need to be connected to lab network for install	<ul style="list-style-type: none"> Bank has agreed this can be done
●	Candidate VMs to be migrated need to be decided upon, reviewed and discussed	<ul style="list-style-type: none"> The Bank team will need to be able to identify VMs within their test lab and provide use case/success criteria
●	VM's to be used for SurPaaS and Vanguard need to meet minimum specifications [CPU, Memory, Disk, OS Version]	<ul style="list-style-type: none"> The VMs will be provisioned in the Azure Stack Solution and will be created by HPE
●	Local and Remote UAC must be disabled on Source, SurPaaS and Vanguard servers, after disabling UAC, the servers must be restarted	<ul style="list-style-type: none"> Will be carried out by Corent script, need Bank concurrence in running
●	Whitelisted must be deployed in client security services for surpaas.exe and PsExec	<ul style="list-style-type: none"> These [2].exes pertain ~only~ to the SurPaaS and VanGuard servers deployed within the Bank test lab
●	Admin\$ and IPC\$ shares must be enabled for accessing Vanguard server from SurPaaS and Source Servers from Vanguard	<ul style="list-style-type: none"> Must be completed by Bank
●	IE Security must be disabled [on Vanguard and SurPaaS servers only]	<ul style="list-style-type: none"> Will be carried out by Corent script, need Bank concurrence in running
●	bcdedit must be executed in the Source servers for scan: bcdedit /set {bootmgr, current} device and osdevice partition=C: bcdedit /default {current}	<ul style="list-style-type: none"> Will be carried out by Corent script, need Bank concurrence in running
●	Domain Name and a SSL Certificate for the same domain which would be assigned to SurPaaS® MaaS™ for accessibility Apache SSL file: <ul style="list-style-type: none"> Intermediate File in ".cer" format Root File in ".cer" format Domain name Key File in ".key" format Tomcat certificate file: <ul style="list-style-type: none"> Tomcat certificate file in ".pkcs12" format Password for the above certificate 	<ul style="list-style-type: none"> Must be completed by Bank, details available from Corent Engineering

● Completed ● In Process ● Not Started ○ N/A

Azure Stack Migration

Customer Name : HPE - Bank

Project Details : Plan for Scan and Analysis of Servers

WBS #	Work Breakdown Structure (WBS) & RACI Matrix Activity Lists	Effort in Days
1	Deployment of SurPaaS® MaaS™ on Bank's Azure Stack	
1.1	Ensuring Prerequisites of the Source Server	
1.2	Initiate Deployment of SurPaaS® MaaS™	
1.3	Run Sanity Check after deployment of SurPaaS® MaaS™	2
2	Project Initiation SurPaaS® MaaS™ on Bank's Azure Stack	
2.1	Provision Customer account & required Customization	
2.2	Target Azure Stack for migration & Update KB	1
2.1	Scanning and Analysis Azure Stack Feasibility	
2.1.1	Vanguard server for scanning should be setup with required pre-requisites	
2.2	Ensuring Pre-Requisites for Analysis is met	
2.2.1	Source instance permissions Pre-Requisites (Random Instance Check)	
2.2.2	Network Pre-Requisites	
2.2.3	Public Internet connectivity	1
2.2.4	Port Accessibility	
2.2.5	Ensure Vanguard Server Pre-Requisites are met	
2.3	Preparing to initiate Scan	
2.3.1	Provide list of IP of Source Server to Initiate Scan	
2.4	Download the Scanner bundle in Vanguard server from SurPaaS®	2
2.5	Perform scan(Agentless) using SurPaaS® Scanner™ using a Vanguard server	
2.6	Grouping source VM (for - Servers - Create clusters - n VM's per Cluster)	
2.6.1	Group the VM's based on the Infrastructure	
2.6.2	Update of Knowledge Base with missing workloads if any	1
2.7	Perform Cloudability Analysis based on Cluster(for 1 or 2 Servers)	1
2.8	Review Cloudability reports Analysis based on Cluster	
2.8.1	Cloudability check	
2.8.2	Hardware configuration check	1

Azure Stack Migration

Customer Name : HPE - Bank

Project Details : Plan for Scan and Analysis of Servers

Work Breakdown Structure (WBS) & RACI Matrix

WBS #	Activity Lists	Effort in Days
3	Azure Stack Migration	
3.1	Azure Stack account credentials	
3.1.1	Provide the Azure Stack account credentials	1
3.1.2	Ensure Azure Stack account credentials for migration	
3.2	Topology Selection for Lift n Shift	
3.2.1	Desired Topology will be selected for migration	1
3.3	Setup Vanguard Server for Migration	
3.3.1	Vanguard server for migration should be setup with required pre-requisites	1
3.3.2	Ensure the Vanguard server's pre-requisites for migration are setup properly	
3.4	VM Migration Initiation	
3.4.1	Initiate VM migration to Azure Stack using 2 Vanguard servers	
3.4.2	Initiate Zero Point Sync	2
3.4.3	Ensure the readiness status of the initiated VM and Handover	
3.4.4	Ensure VM's post Handover	
3.5	Environment Configuration	
3.5.1	Configure the application in Azure Stack instances (Based on complexity of application)	1
3.5.2	Ensure the Migrated application works as expected	
4	Project Sign-off	
4.1	Post Migration walkthrough/Sign Off	1

Azure Stack Migration Results

- Over 100 Candidate Windows 2008 VMs initially scanned
- 20 Candidate Windows 2008 VMs deep scanned
- 5 Initial VMs selected and migrated
 - VM/ESx → Azure Stack
- All 5 VM workloads initialized, error checked and regression tested
- 5 Additional VMs selected and migrated
 - VM/ESx → Azure Stack
- All 5 VM workloads initialized, error checked and regression tested
- Documentation created and delivered to Client
- Client reviewing project proposal for ~20K similar workloads to migrate using SurPaaS

HPE
POINTNEXT

Thank you

Q & A