

# Cloud Hosted Desktops:

Options, Decisions & A Proven Approach for Success

Brian P. Barnes - *Director of Solutions Architecture*



## Session Agenda:

# Cloud Hosted Desktops: Options, Decisions & A Proven Approach for Success

- Speaker Information:
- About Coretek Services:
- Cloud Misconceptions:
- Cloud Spending Forecasting:
- Why Microsoft Azure & Current Stats
- Clinical Workflow, Not Just a Cloud Desktop
- Cloud Foundations
- Cloud Desktop Architecture
- Microsoft CSP Advantages
- Questions:



# Speaker Information



Brian Barnes is the Director of Solutions Architecture of Coretek Services, an industry-leading and nationally recognized IT Professional Services and Consulting firm. Coretek's goal is to facilitate our Healthcare clients, as well as other industries, achieve and sustain predictable and effective IT results. Our mission: **Project Success, No Exceptions!**

Brian continues to speak and present new and emerging technologies at the national, as well as regional, HIMSS events along with other IT related conferences across the country. Mr. Barnes continues to investigate and test new technologies that complement Coretek's unique solutions based approach in solving complex business challenges of today and tomorrow.

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# Coretek Services

A Cloud Services & Healthcare consulting company delivering high value and innovative Healthcare solutions. A business driven by excellent people built upon strong customer relationships. **Project Success! No Exceptions.**



Inc. 500



Top 100 IT  
Services  
Companies



Top 100  
Michigan  
Companies



Detroit Metro  
Area

## Headquarters

Founded in 2005

Farmington Hills, Michigan

110+ employees

**85% of Staff is the Delivery Team**

## Culture

101 Best & Brightest Companies to Work for

National—5 Years in a Row

Metro Detroit—9 Years in a Row

***Project Success! No Exceptions.***

**ivanti**  
Platinum Partner

**CITRIX**  
PARTNER  
Platinum Solution  
Advisor

## PARTNERSHIPS

**Microsoft**  
Cloud Solution Provider

**CITRIX**  
PARTNER  
Service Provider

**vmware**  
PARTNER  
PREMIER  
SOLUTION PROVIDER

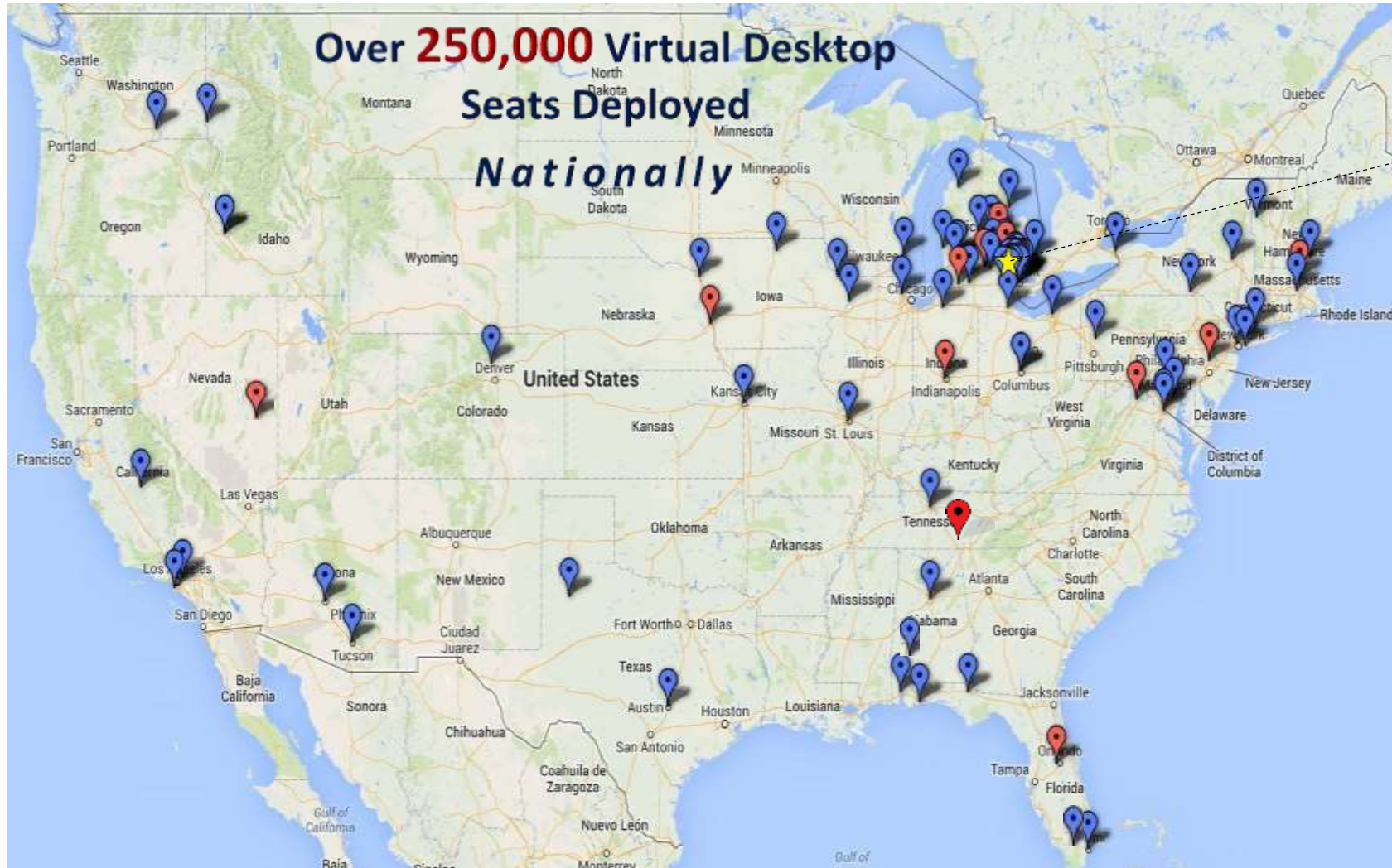
**NUTANIX**



**Microsoft**  
SPLA Partner

**fslogix**



# Bringing it All Together: Customers & Coretek Resources



-  Coretek Resources
-  Production Deployments

# 4 Common Cloud Misconceptions





# The 4 Common Cloud Misconceptions...



The Cloud is an “Either-Or” proposition: Either I go “all in” to the Cloud, or stay with supporting my existing Data Centers!



Most companies cant or wont take all their environment & data to the Public Cloud. With some applications, users accessing data across the internet, further away would suffer in user experience & performance.

# The 4 Common Cloud Misconceptions...



Once my company is in the Cloud, It becomes very easy to move from one public cloud provider to another!



This couldn't be more untrue; once workload is migrated, built & protected in the cloud, it becomes extremely hard to move workload to other cloud providers.



# The 4 Common Cloud Misconceptions...



The Cloud Costs too Much! I know what my costs are with Hardware & Software, not so much with the cloud



Raw, unautomated & unattended consumption costs can easily undo the cost benefit & efficiency of the Cloud.

# The 4 Common Cloud Misconceptions...



Cloud Computing is a Fad, Companies will return back to Normal Data Center Operations as soon as they Hype is over.

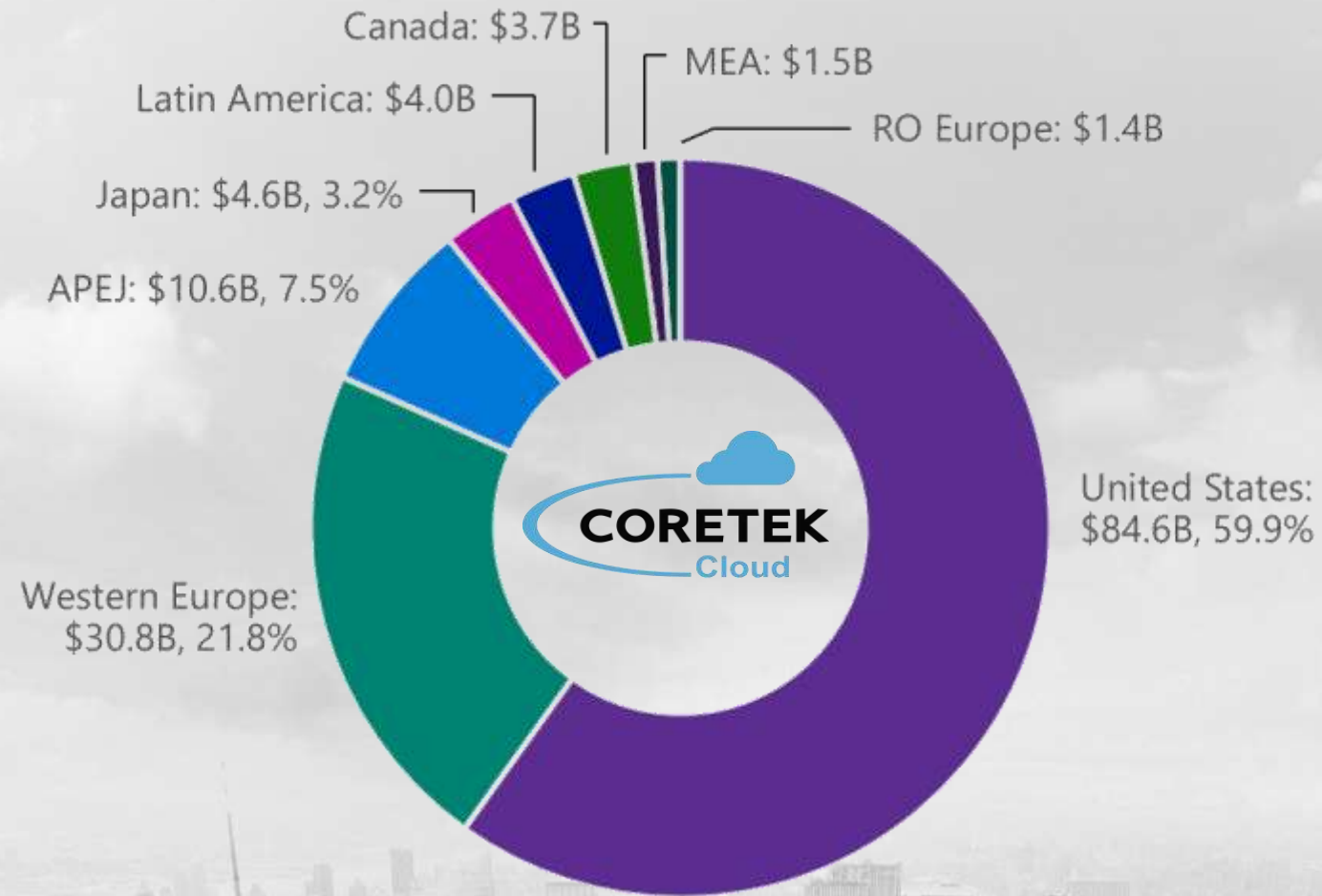


Transformative change is underway. Entire Industries are evolving to support the needs of Cloud.

Cloud computing is The Beatles of modern technology, not 98 Degrees!

**Lets see some stats!**

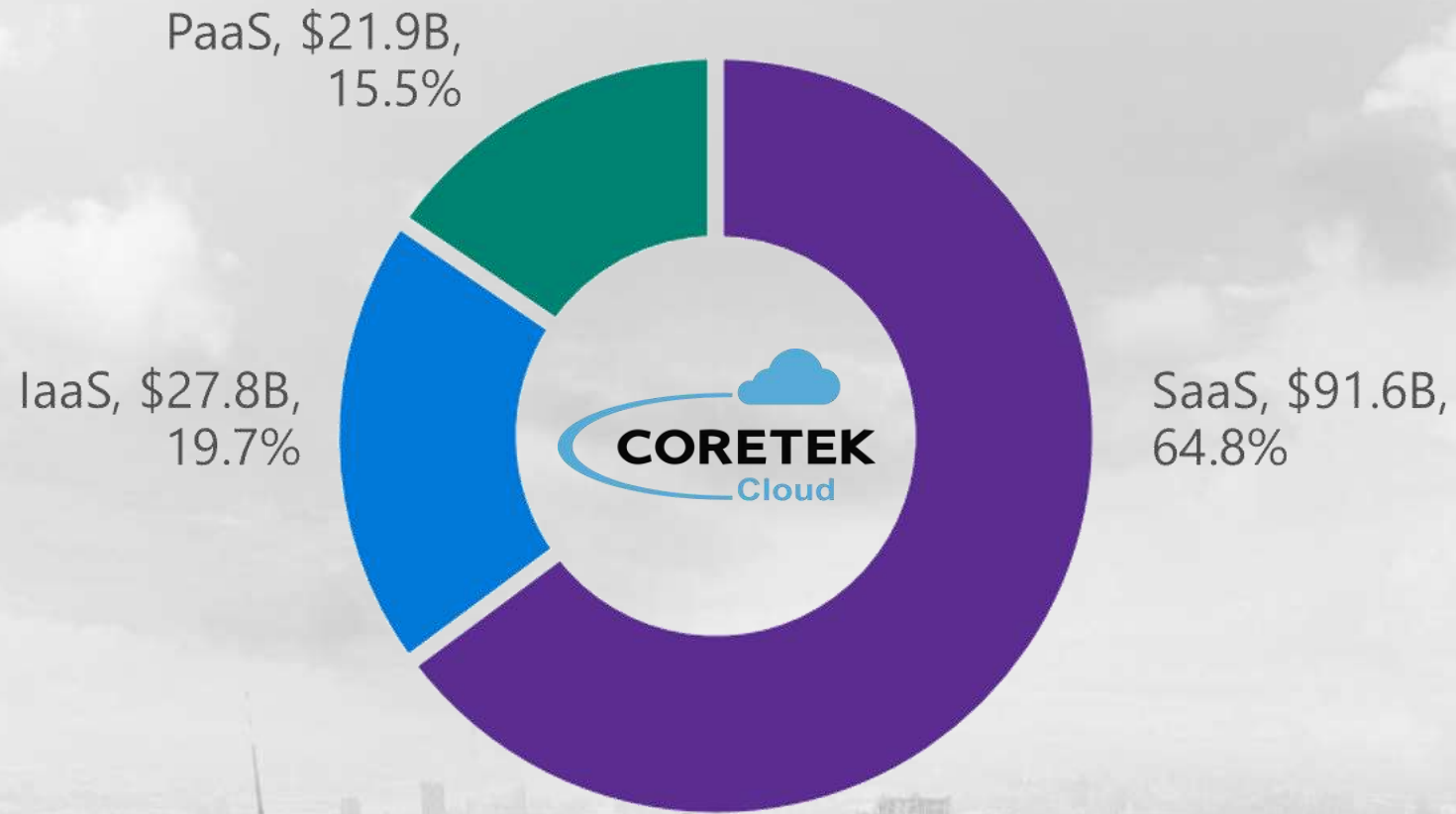
# IT Services Spending Forecasted in the Public Cloud by 2019



Source: IDC, 2016, #US40709515—Worldwide and Regional Public IT Cloud Services Forecast, 2015–2019



# IT Services Spending Forecasted in the Public Cloud by 2019



Source: IDC, 2016, #US40709515—Worldwide and Regional Public IT Cloud Services Forecast, 2015–2019

- **Microsoft Has Mature & Established Partner Channel**
- **Create Programs for Partners to Provide Real Value Based Solutions for Customers**
- **Allow for multiple and meaningful Consumption Models**
- **First to Deliver Windows 10 Client OS in Multitenant Public Cloud**



**100,000**

New Azure  
Subscriptions /  
Month



**5 Trillion**

Azure Storage  
Transactions  
every Month



**425 M**

Azure Active  
Directory Users  
Globally



**127%**

2016 Azure  
Revenue  
Growth



**1 T**

Messages  
delivered  
Monthly "EH"



**60 B**

Website Hits on  
Azure Web App  
Services



**50 Trillion**

Storage Objects  
in Azure



**1.4 M**

SQL Databases  
Deployed in  
Azure



**57%**

Fortune 500  
Using Azure  
Today



**20 M**

SQL Database  
hours used  
every day



**2017 Microsoft Azure Momentum**



Microsoft  
Azure



# Not a Cloud Desktop but a Cloud Based Clinical Workflow

So What Comprises a Clinical Workflow?



# Creating Clinical Workflow



Client Types



Authentication



VDI & App Delivery



EMR / EHR



Profile & Control



Hypervisor



Compute



SAN / NAS



# Workflow Technologies





# Workflow Technologies

Client Types



Authentication



VDI & App Delivery



EMR / EHR



Profile & Control



Hypervisor

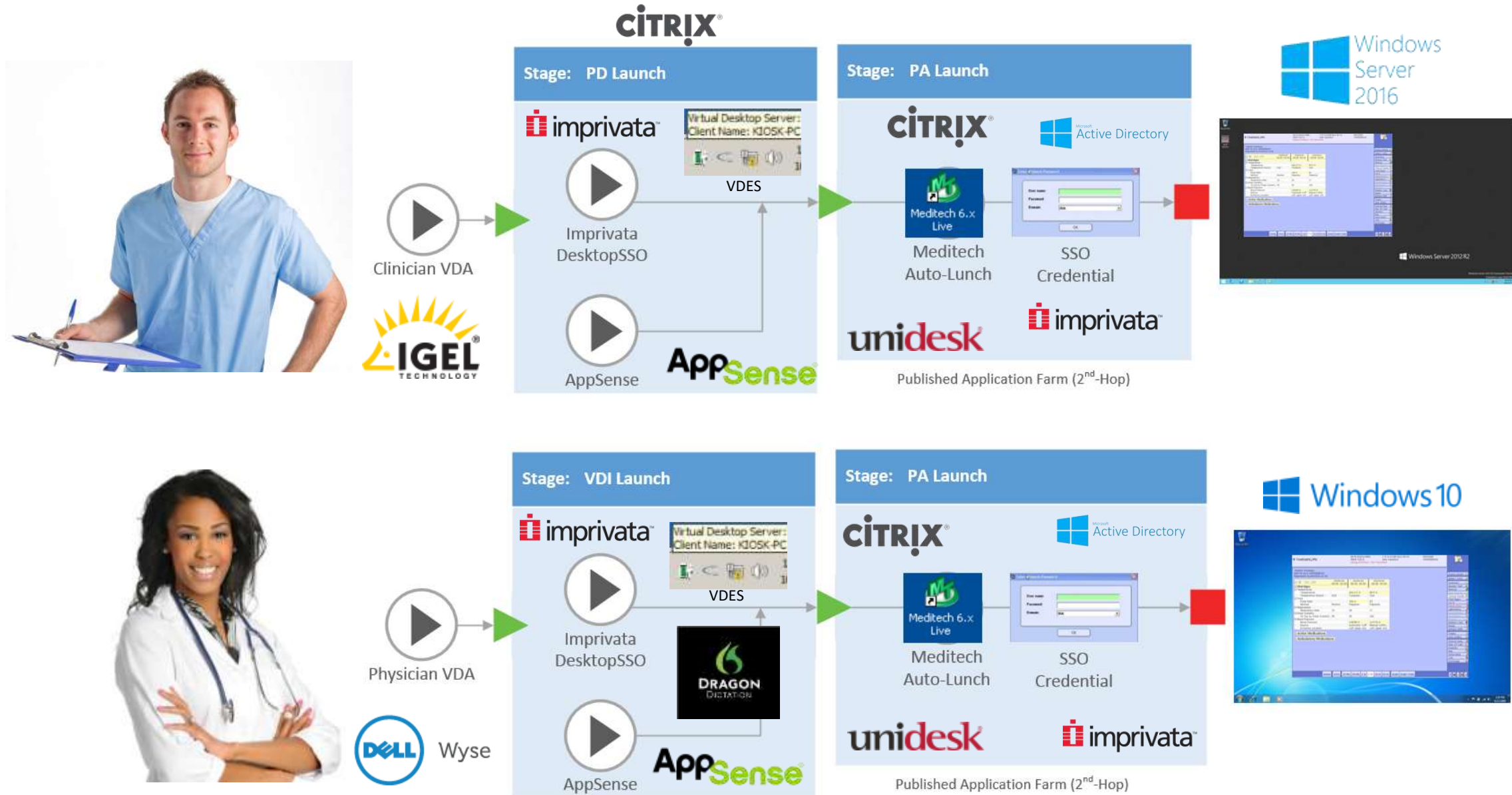


Compute

SAN / NAS



# Unique Workflows for Each User



# So Where Does the Cloud Come In?

Cloud Desktop Architecture  
*Clinical Cloud Desktop*





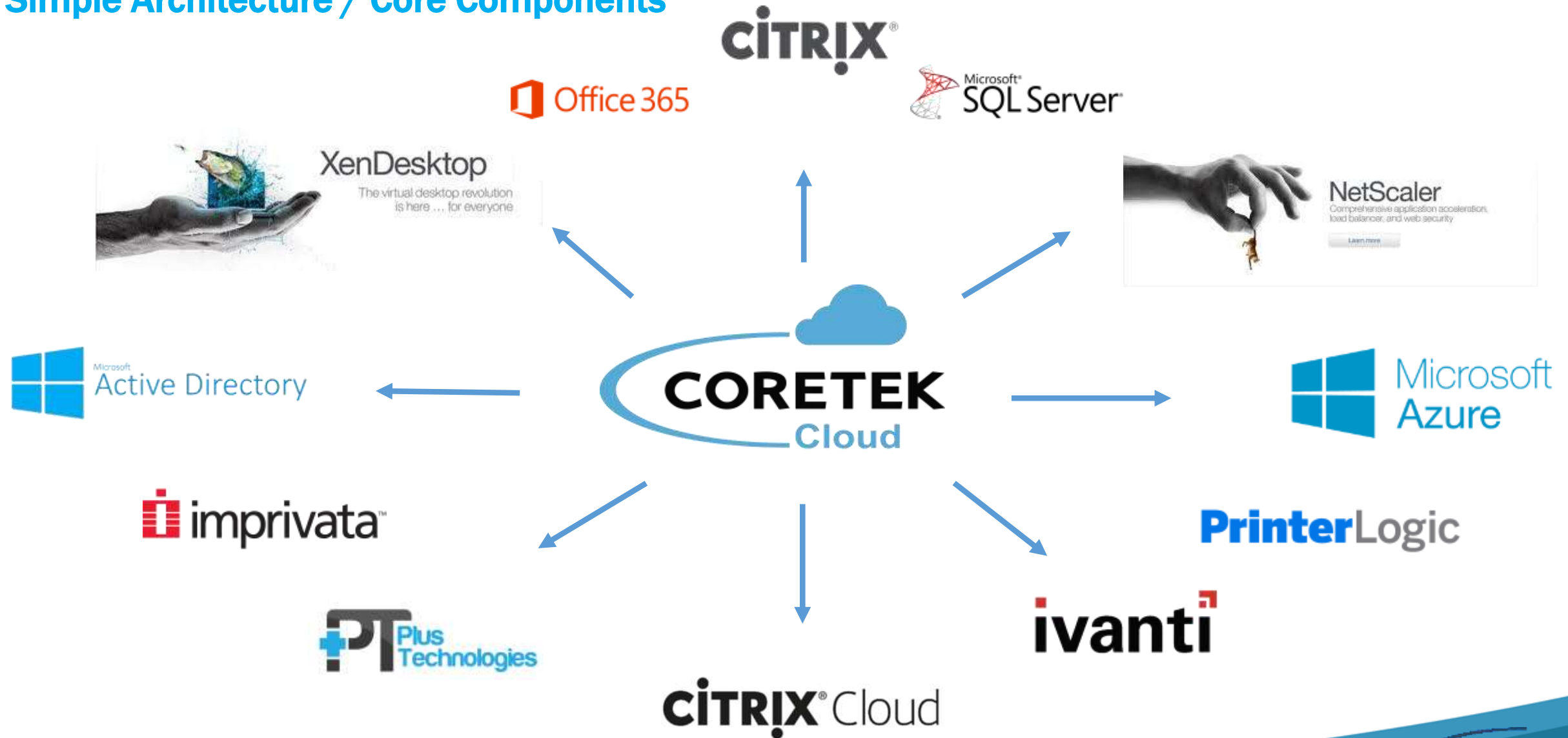
# Cloud Desktop: Introduction



*Any Device - Any Location - Any Time*

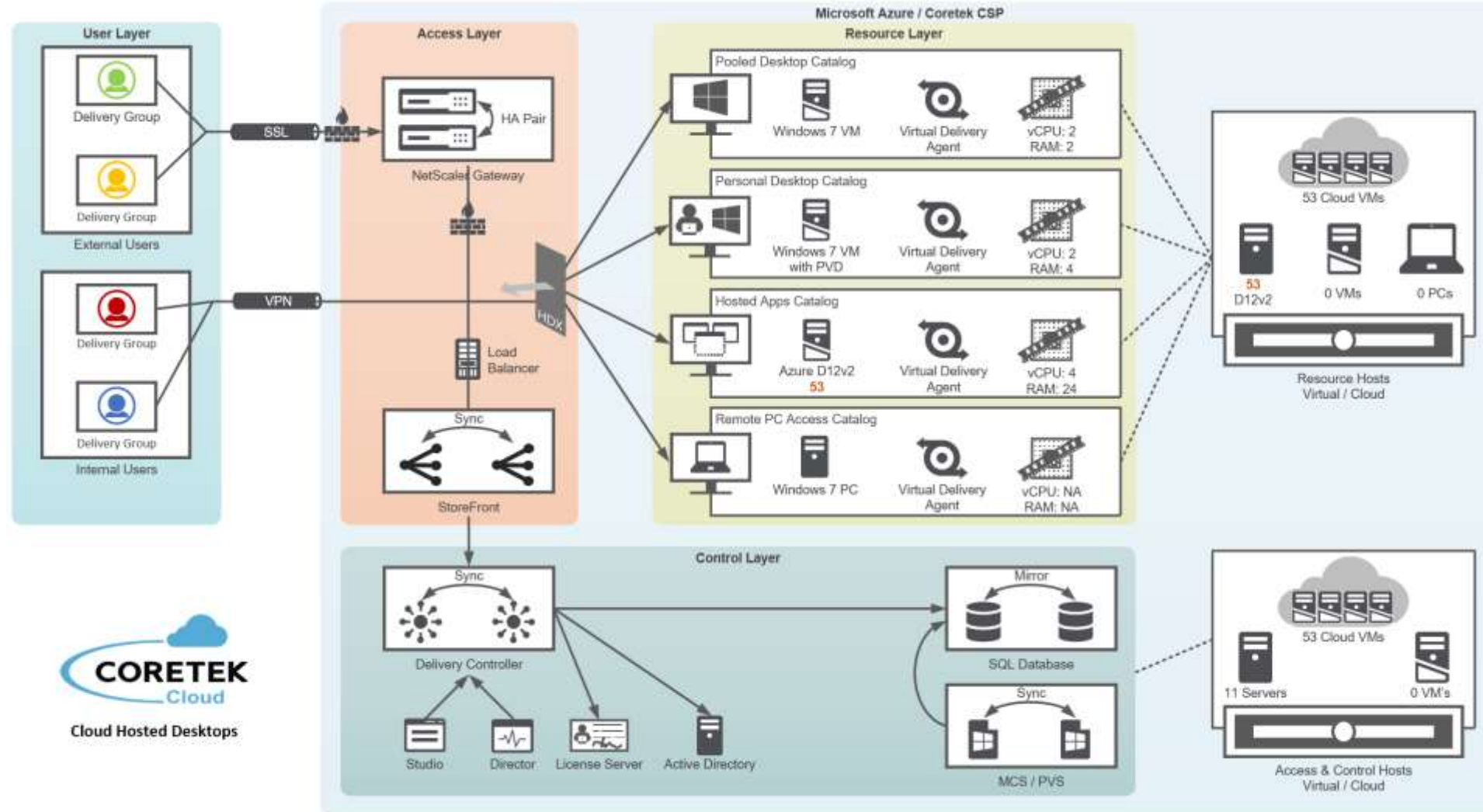
# Cloud Desktop ...

## Simple Architecture / Core Components



# Cloud Desktop...

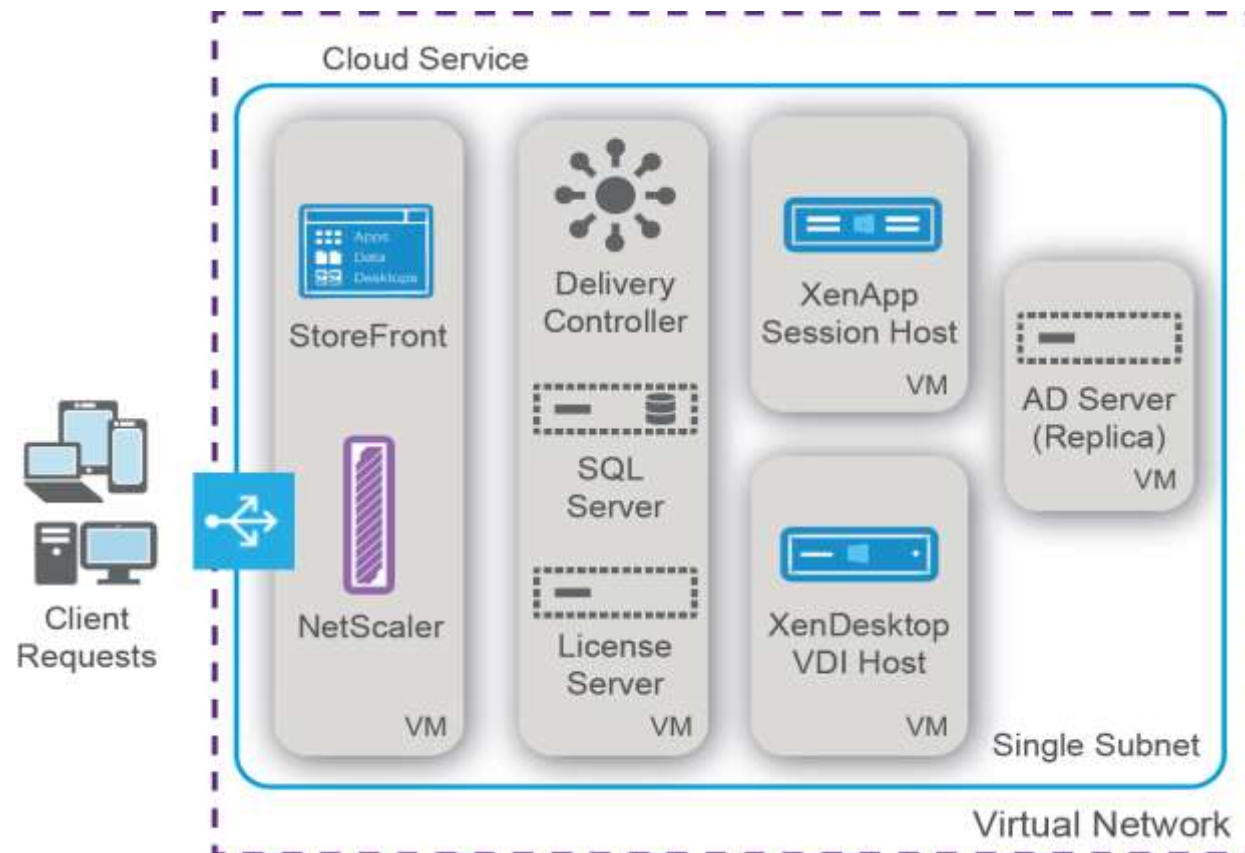
## Simple Architecture Core Components





# Basic Citrix Topology and Networking

## Simple Architecture Core Components



- A single Azure Cloud Service is limited to a maximum of 50 VMs.
- A single Storage Account is limited to a maximum of 20,000 IOPS (40 VHDs of 500 IOPS each)

The NetScaler service receives client requests and proxies network traffic to the XenApp/XenDesktop worker hosts in the virtual network. StoreFront servers provide login services and a directory from which users select desktop and application services. Delivery Controllers distribute connections and set up service delivery from XenApp session and XenDesktop VDI hosts.

# Azure Design: Single Azure Region

## Workload Example for Mixed Workload Deployment

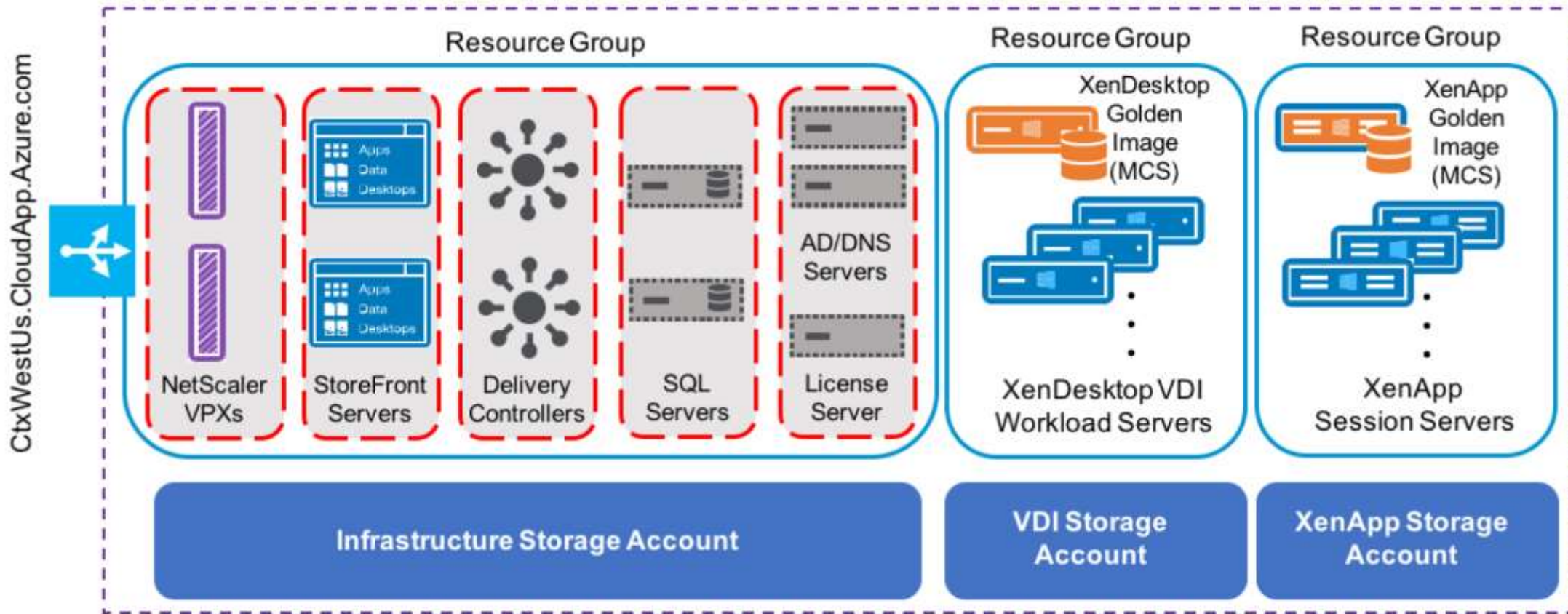
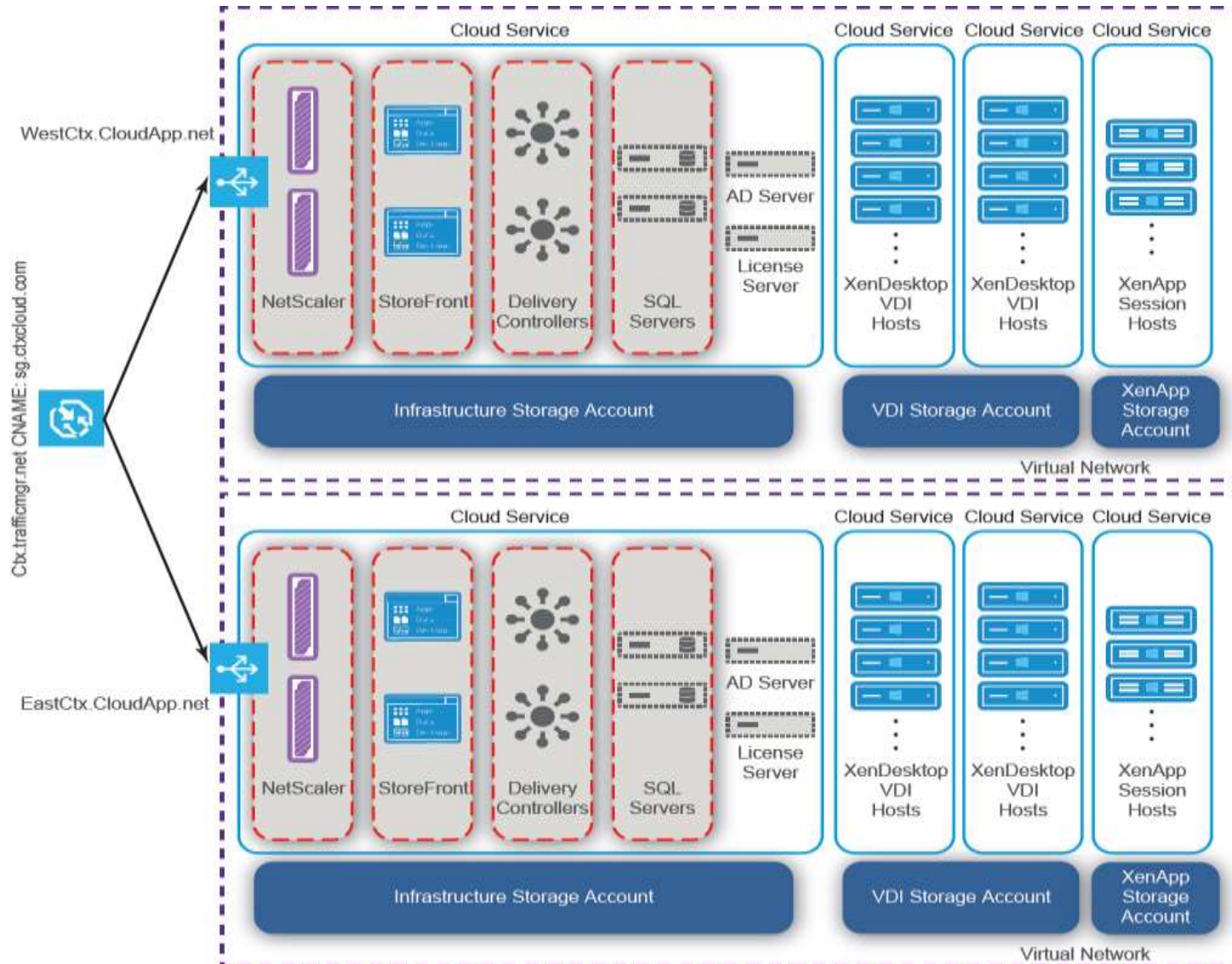


Figure 10: Architecture for a 400/100-seat mixed workload deployment in a single Azure region.

# Citrix with Citrix NetScaler GSLB & Azure Traffic Manager

## Architecture for a 1000-seat mixed workload deployment on Microsoft Azure.



- One Azure Traffic Manager
- Two Azure Load Balancers, one per region
- Six Storage Accounts: three per region (one for infrastructure, one for XenApp workloads, and one for XenDesktop workloads)
- Eight Cloud Services: four per region (one for infrastructure, one for XenApp workloads, and two for XenDesktop workloads)
- Eight Availability Sets: four per region (hosting VM pairs for NetScaler, StoreFront, Delivery Controller, and SQL services)
- 125 VMs per region: 10 Infrastructure VMs, 15 VMs for XenApp workloads, 100 VMs for XenDesktop VDI workloads



# Technologies That Enable Cloud Desktop Solutions for Clinical Environment!

- Microsoft Azure CSP, Citrix CSP & Cloud, Windows Server & Windows10
- Imprivata OneSign (SSO, Authentication, EPCS, & Remote Access)
- Ivanti, FSLogix, PrinterLogic & Plus Technologies
- Coretek VDES



# CORETEK Virtual Desktop Enhancement Suite (VDES) Services



## XAppNow

Get faster reconnect time to your applications when roaming between devices with a virtual desktop.



## Reboot Manager

Manage the reboot of your servers with greater control and flexibility. Ideal for Citrix server maintenance.



## Support Info

Provides an easy way to get key support information your Help Desk requires in a Virtual Desktop environment.

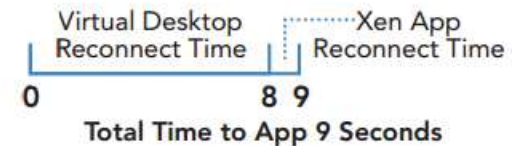
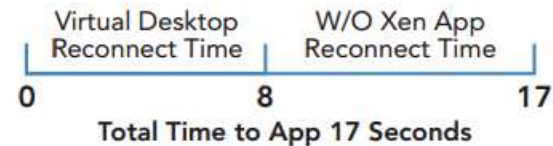


## Battery Monitor

When accessing a virtual desktop from a mobile windows based device or windows based device on a mobile cart, the battery monitor will show you the battery strength on the local device from within the system tray of your virtual desktop.

## XAppNow

XAppNow reduces the reconnect time to access applications in a "Double Hop" configuration. A "Double Hop" configuration is when a user accesses a virtual desktop and then accesses applications that are delivered into the virtual desktop as XenApp presented applications. The issue here is when the end user reconnects to their virtual desktop, they must also wait for the reconnect to the XenApp presented application to occur before they are productive. This basically doubles the amount of time to access an application in a virtual desktop configuration. XAppNow manages the reconnect process and when the user enters their login credentials XAppNow starts the reconnect to the virtual desktop and the presented applications in parallel to each other. This eliminates the performance degradation of a "Double Hop" configuration. See the illustration below:



## Reboot Manager:

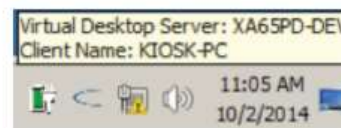
Reboot Manager provides for very granular and flexible management of server reboots. It allows you to do the following:

- Create customer Reboot Schedules for each date or time that you want to perform a reboot with the following configurable attributes:
  - The time you want to disable login to the server
  - Set a time to warn any "logged in" users that the server will be rebooted
  - Set the time you want the server to be rebooted
  - Select who, if anyone, you want to be notified via e-mail when the server reboots successfully
  - Add individual servers to each reboot schedule you create

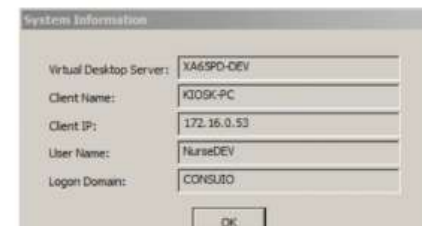
## Support Info

The ability to move your cursor over the Coretek logo to see Server and Client information specific to each individual laptop.

When you "hover" over the Coretek icon...



When you double-click the Coretek icon...



## Battery Monitor

When working from a windows presented virtual desktop, by default the battery icon in the system tray will display the battery life on the server the presented desktop is located on. The VDES Battery Monitor will display the battery life of the actual Windows endpoint device that the virtual desktop is being accessed from.



# Cloud Foundations

Taking a Strategic Approach



# Strategic Cloud Approach

## Cloud Foundations - The Pillars of Cloud Enablement

### Subscription

Windows Azure account, through which resource usage is reported and services are billed

1. *Credit Card*
2. *EA*
3. *CSP*

### Identity

A Single Azure AD directory associated with an Azure subscription. As the identity service in Azure, Azure AD then provides all identity management and access control functions for cloud-based resources

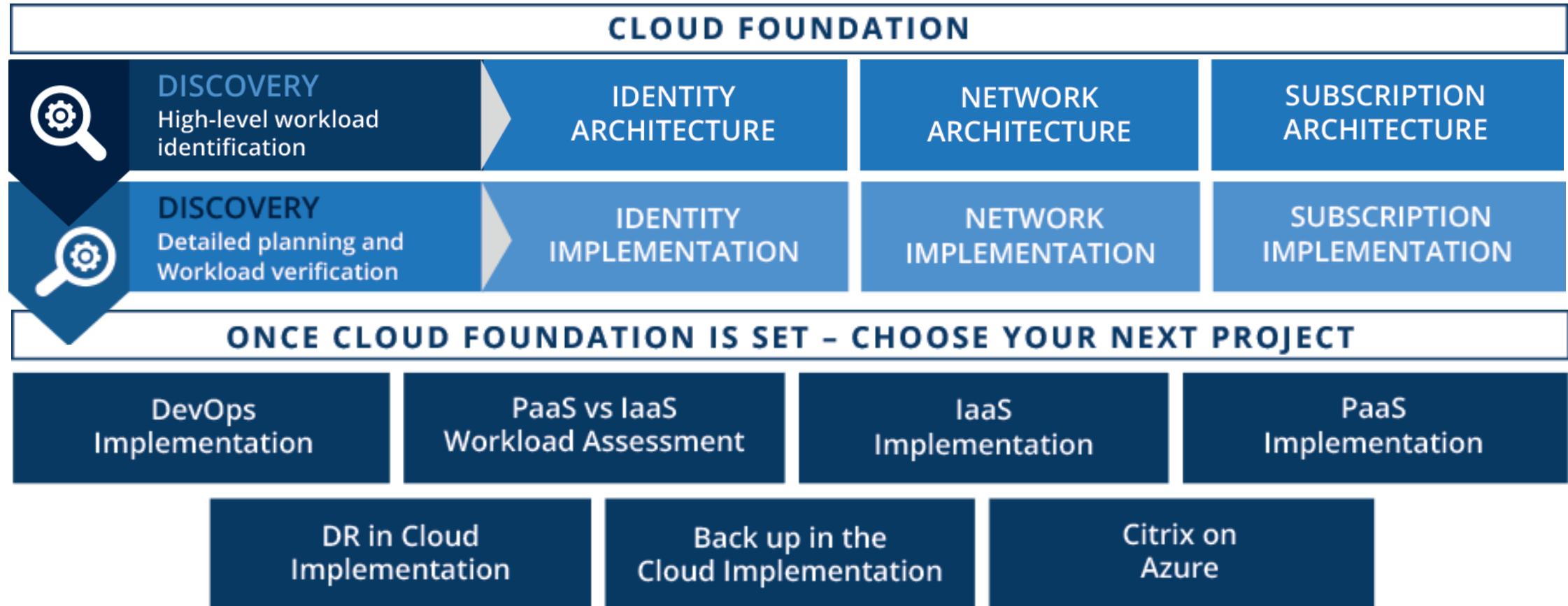
### Tenant

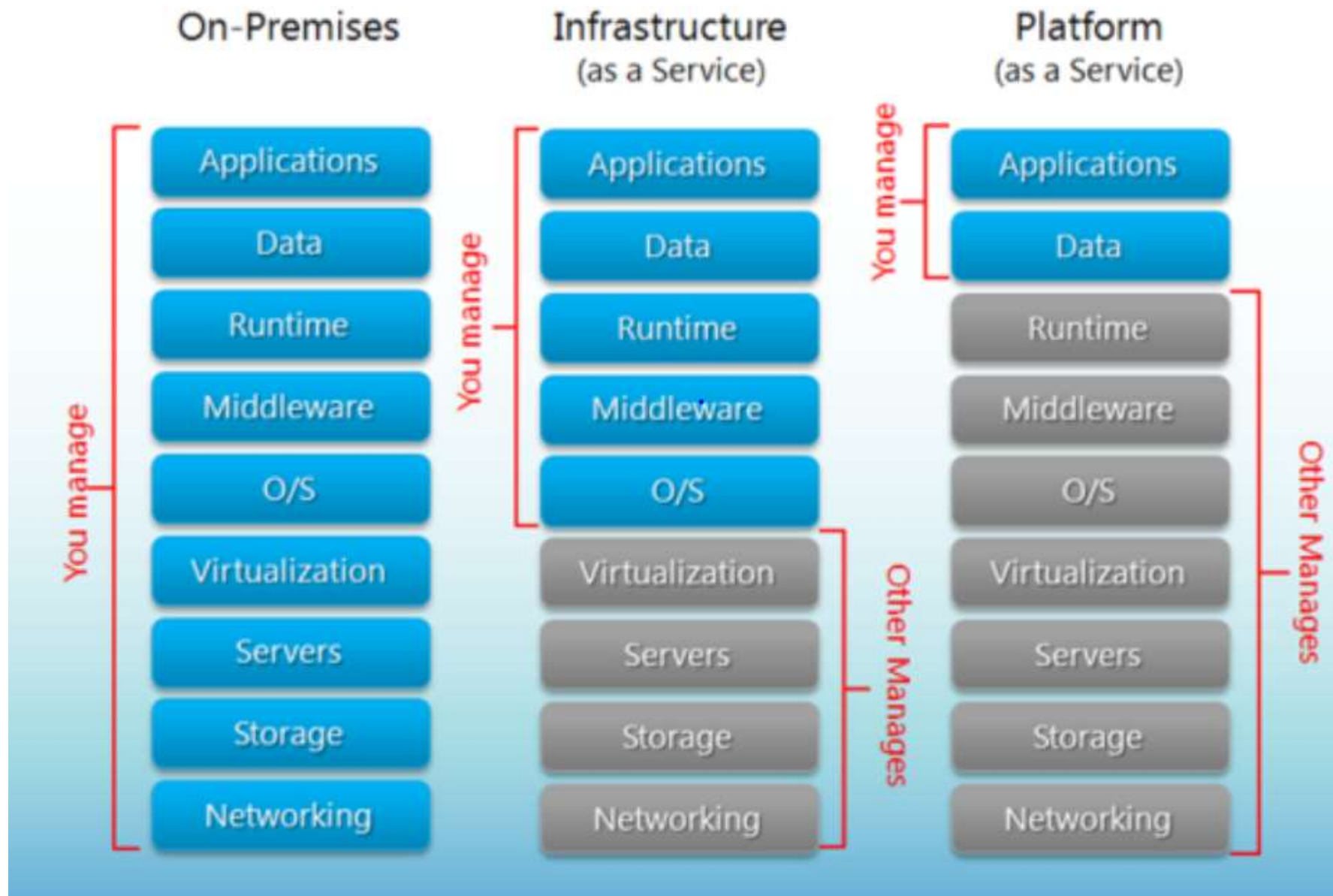
Representative of an organization. It is a dedicated instance of the Azure AD service that an organization receives and owns when it signs up for a Microsoft Azure

### Network

The Physical Connection establishing connectivity to Cloud Based Resources for an Organization while providing access to On Premise Resources

# Strategic Approach to Cloud







# Introduction to Microsoft CSP Program



The Cloud  
Solution Provider  
(CSP) program



Delivers a platform for partners to own the end-to-end customer engagement by enabling partners to directly provision, bill, and support Microsoft Cloud Services for their customers

# Benefits of the Microsoft CSP Program



Set the price, the terms and directly bill customers



Directly provision and manage subscriptions



Be the first point of contact for customer support



1

Create cloud subscription + partner offer

2

Set package price and sell to customers

3

Place order for Microsoft Cloud Services

4

Offer single packaged solution

# A Microsoft Cloud services Provider (CSP):



Enabled by Microsoft to directly manage the entire customer lifecycle



Lifecycle



# A Microsoft Cloud services Provider (CSP):



Package consumption, services & IP  
and combine them into a monthly bill



Lifecycle



One-Bill



# A Microsoft Cloud services Provider (CSP):



Achieve and maintain strict Microsoft requirements and standards



Lifecycle



One-Bill



Standards



# A Microsoft Cloud services Provider (CSP):



Provide all major commercial suites and standalone products for O365, Azure & EMS



Lifecycle



One-Bill



Standards



Provide



# Azure Consumption through a Microsoft CSP Compared to EA

## Enterprise Agreement



Long Term locked-in commitment whether resources are consumed or not!



Locked in to Microsoft pricing structure at prices that may not make sense!



No custom billing & reporting matching the needs of your organization



Consumption in Enterprise Agreement is an expensive difficult migration to CSP!



Consumption amounts at EA renewal time is difficult to predict and off the mark!

## Cloud Solution Provider



No CSP commitment levels- Pay for what you consume and as you grow!



CSP Partner provides discounts below Microsoft price structure and abilities



CSP can provide customized billing for charge-back or department requirements



CSP can tie directly into Azure API's to provide customized automation



CSP to CSP migration is simple – no CSP lock-in



# Microsoft CSP Contractual Structure

The Microsoft Cloud Reseller Agreement and Program Guide is the contract that the CSP partner signs with Microsoft. The Microsoft Customer Agreement is the contract between Microsoft and the end Customer that the CSP partner presents and get acceptance



# Why should you use Coretek CSP?

- Coretek Services is one of only 4 Globally Managed CSP's in North America
- Coretek Services is the largest CSP Consumer in North America! (2015 - 2016)
- Globally Managed CSP's are managed directly by Microsoft
- Globally Managed CSP's are an Elite group with proven cloud proficiency
- Global CSP's have the deepest relationship with Microsoft Azure group
- Global CSP Resources have implemented the largest projects in the world while working in the Microsoft Azure group
- Only Global CSP's have the complete cloud lifecycle understanding to help guide customers in their "Cloud Journey"





The background is a blurred hospital hallway with people walking. In the foreground, on the left, is a close-up of an IV drip chamber and tubing hanging from a stand.

# Questions?