# Cisco's Desktop Virtualization and Desktops-as-a-Service (DaaS) solutions and what it means for your Business

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-Global Business Manager Cloud Go-To-Market-

# Agenda

- Introduction

- Market update

- Cisco's solution

- Examples

- Conclusions and Next Steps

- Resources

# The Workspace Used to Look Like This:



# Now It Looks Like This:

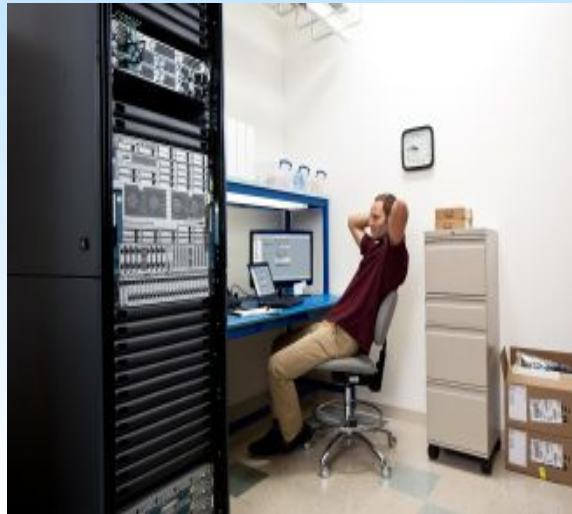# Customers Have Diverse Priorities

## Business

- Growth
- Agility
- Risk Management



## IT

- Business Enablement
- Security
- TCO Management



## Users

- Anywhere, Any Device
- Full Functionality
- Collaborative Workspaces

# Customers Are Moving to Desktop Virtualization

**59 million** new virtual desktop users between 2013-2016[1] (Gartner)

**77%** of global IT decision makers "implementing or expanding application or desktop virtualization"[2] (Forrester)

**45%** of global enterprise IT decision makers considering "Cloud hosted/Desktops-as-a-Service"[2] (Forrester)

**84.6%** 5-year CAGR for workspace as a service software between 2011 and 2016[3] (IDC)

**63%** plan to use both on-premises and cloud-based desktop virtualization (VDI and DaaS)[4] (ESG)

# There is a lot going on around Desktops-as-a-Service

- VMware acquires Desktone (DaaS pioneer) – Oct 2013

- AWS announces DaaS on Cloud called "Workspaces" – Nov 2013

- Vmware announces vCHS DaaS – March 2014

- Citrix to launch Avalon (Citrix' DaaS architecture) – Apr 2014

Recent Analyst / Bloggers:

- VMWare, Citrix, Microsoft Desktops-as-a-Service solutions will make 2014 "The Year of DaaS"
  – *Brian Madden (blogger)*

- "The DaaS floodgates are open thanks to Amazon Workspaces"
  –*Gartner's Gunnar Berger*

*Announcement of Cisco DaaS with Vmware & Citrix – Dec 17th 2013*

# Compelling reasons for DaaS

- Windows 7 (8) migration has started

- New Mobile Devices / BYOD

- Security

- Disaster Recovery

- Tighter IT budgets  $$

- Cost and complexity of VDI



Windows

Windows XP SP3 and Office 2003
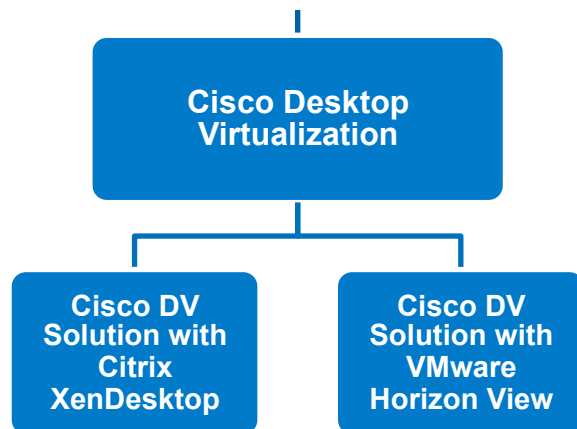Support Ends April 8, 2014

# Cisco DaaS Strategy

- Expanding reach for virtual desktop solutions by complementing existing investment in VDI (VXI) with new as-a-Service models

- SPs delivering Virtual Desktop-as-a-Service, Data-as-a-Service, Applications-as-a-Service

- Cisco is partnering with leading vendors in this space;
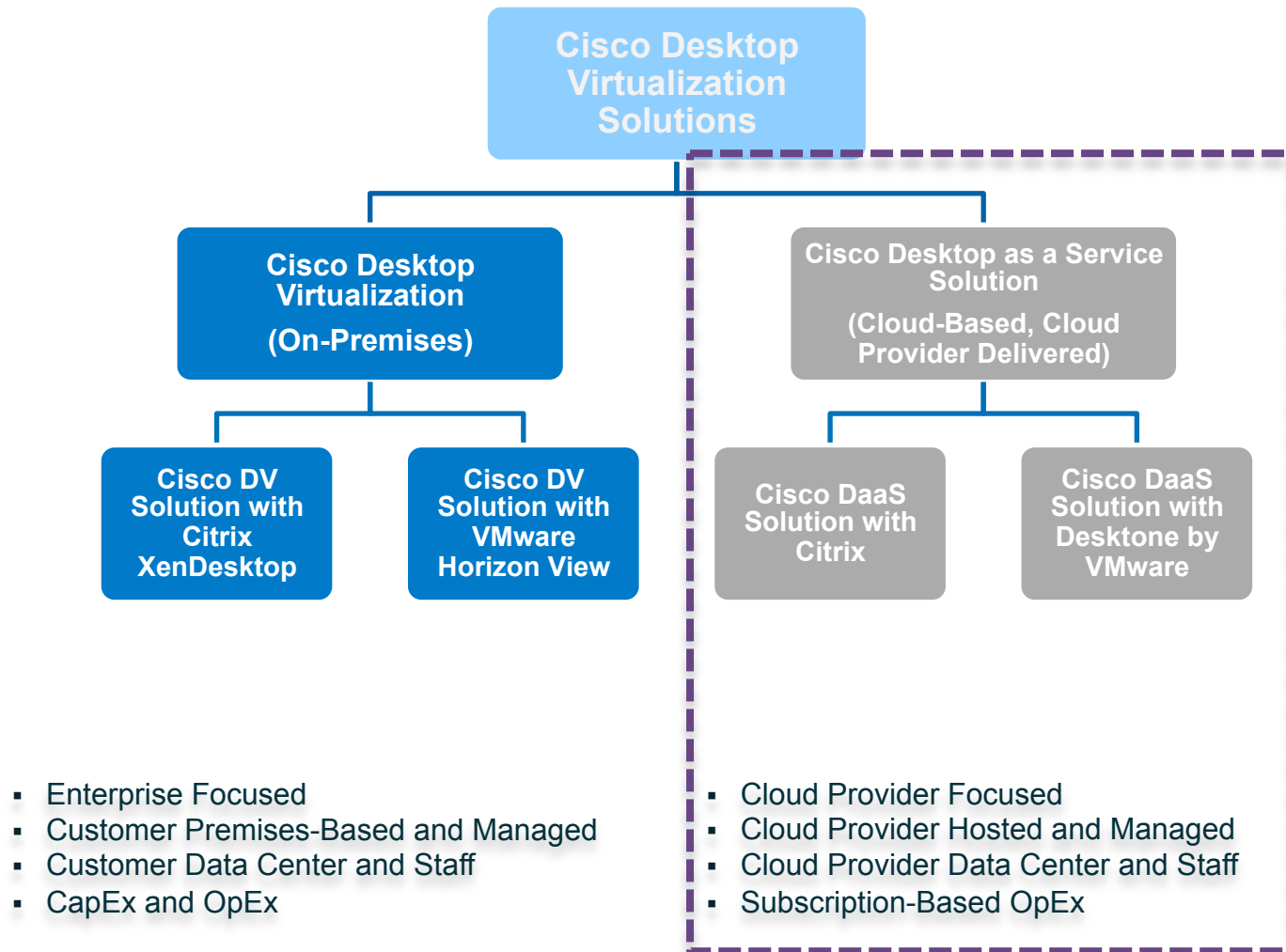  - Vmware (Desktone) and Citrix

Cisco is committed to continued solution investment in both VDI/VXI and Desktop-as-a-Service

# Cisco Desktop Virtualization

```
        ┌─────────────────────────┐
        │    Cisco Desktop        │
        │    Virtualization       │
        └─────────────────────────┘
              │           │
    ┌─────────────────┐ ┌─────────────────┐
    │   Cisco DV      │ │   Cisco DV      │
    │  Solution with  │ │  Solution with  │
    │     Citrix      │ │     VMware      │
    │   XenDesktop    │ │  Horizon View   │
    └─────────────────┘ └─────────────────┘
```

- Enterprise Focused
- Customer Premises-Based and Managed
- Customer Data Center and Staff
- CapEx and OpEx

# Cisco Desktop Virtualization Portfolio



**Cisco Desktop Virtualization Solutions**

**Cisco Desktop Virtualization (On-Premises)**

- Cisco DV Solution with Citrix XenDesktop
- Cisco DV Solution with VMware Horizon View

- Enterprise Focused
- Customer Premises-Based and Managed
- Customer Data Center and Staff
- CapEx and OpEx

**Cisco Desktop as a Service Solution (Cloud-Based, Cloud Provider Delivered)**

- Cisco DaaS Solution with Citrix
- Cisco DaaS Solution with Desktone by VMware

- Cloud Provider Focused
- Cloud Provider Hosted and Managed
- Cloud Provider Data Center and Staff
- Subscription-Based OpEx

# Desktop Virtualization Can Be Challenging
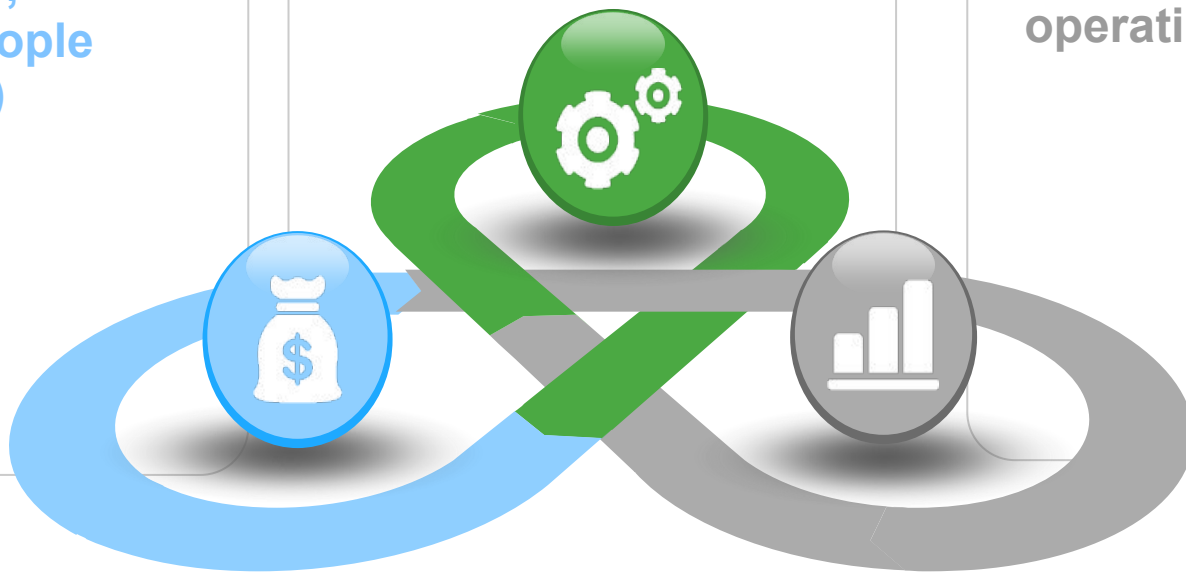
## Costly

- **High start-up costs (CapEx)**
- **Ongoing expenses for hardware, software, people skills (OpEx)**

## Complex

- **Complicated to design, build, manage, and maintain**

## Constant

- **Hard to deliver 24x7, global performance**
- **It takes a service provider-class operation to achieve**

# DaaS Value Propositions

## For Enterprises

- Improved security
- Business continuity
- Better data recovery and backup
- Easier deployment
- Access desktop from multiple devices (BYOD)
- Repurpose PCs and laptops
- Self provisioning
- Reduced IT desktop operations
- Predictable OpEx model

## For Cloud Providers

- Additional customer offering in high-growth market
- Leverage datacenter investments
- Increase network utilization
- Sell additional services and desktop add-ons
- Offer multiple offerings from the same infrastructure
- Self provisioning by customer
- Customer "stickiness"

# Relevant to a Broad Set of Customers

| **Healthcare** | **Education** | **Finance** | **Government** | **Retail** | **Contact Center** |

- <100 Employees

  Desktop Replacement and Management

- 100 – 1000 Employees

  Reducing TCO, Improving Security

- 1000+ Employees

  Reducing TCO, Improving Security, BYOD

 Cisco Public

# Cisco DaaS User Workgroup Categories

| Task Workers | Remote Workers | Knowledge Workers | Guest Workers | Mobile Workers |
|---|---|---|---|---|
| • Factory worker<br>• Retail clerk<br>• Bank teller<br>• Call center | • Offshore workers<br>• Outsourcers, contractors<br>• Branch offices<br>• Teleworkers | • Finance<br>• Operations<br>• Marketing<br>• Administration | • University computer lab<br>• Training center | • Sales<br>• Executives<br>• Field service |

## Requirements

| | | | | |
|---|---|---|---|---|
| • Simple<br>• Locked down<br>• Limited application | • Secured access and control<br>• Location and device flexibility<br>• Diverse applications and users | • Rich PC experience<br>• Personal<br>• Diverse applications and users | • Rich PC experience<br>• Instant resets<br>• Standard application set | • Offline access<br>• Secure<br>• Diverse applications and users |

# Packaging example 1

| | $49.99/mo Knowledge User | $29.99/mo Cloud User | $79.99/mo Power User |
|---|---|---|---|
| Desktop RAM in GB per desktop | 2 GB | 1.5 GB | 4 GB |
| CPU's per desktop | 1 CPU | 1 CPU | 2 CPU's |
| Persistent Storage per desktop | 4 GB | 250 MB | 8 GB |
| Desktop Bandwidth 100 Mbps | Unlimited | Unlimited | Unlimited |
| Free Support 24/7 Infrastructure & Connectivity | ✔ | ✔ | ✔ |
| Number of Users Minimum Amount | 50 Users + | 50 Users + | 50 Users + |
| More than 150 users ? Talk to us about pricing | $ Price On Application | $ Price On Application | $ Price On Application |

MOST POPULAR

\* No MSFT licensing costs included

# Packaging Example 2

| Tipo de Desktop | Recursos Computacionais | Imagem base |
|---|---|---|
| **Quiosque** | • 1 vCPU<br>• 1 GB RAM<br>• 2 GB de Disco<br>**Mensalidade – Desde € 17,00** | • Sistema Operativo (Licenciamento adicional)<br>• Updates<br>• Free Software<br>   • Adobe Reader<br>   • Adobe Flash Player<br>   • Cute PDF<br>   • Java<br>   • ShockWave<br>   • Silverlight |
| **Standard** | • 1 vCPU<br>• 1,5 / 2 GB RAM<br>• 20 GB de Disco<br>**Mensalidade – Desde € 20,00** | • Instantant Messaging Services:<br>   •Sapo Messenger |
| **Admin - Power** | • 1 vCPU<br>• 3GB RAM<br>• 40 GB de Disco<br>**Mensalidade – Desde € 31,00** | • Browser<br>   • Internet Explorer<br>   • Mozilla Firefox<br>   • Google Chrome |

# Packaging Example 3

| DaaS package 1 | Description | Price / Month/ User | | |
|---|---|---|---|---|
| | | Option 1 | Option 2 | Option 3 |
| Shared Desktop | Windows Server 2008 R2 based desktop sessions | $24* | $31* | $45* |
| Hard Disk | Default storage capacity for server image | 40 | 50 | 60 |
| Bandwidth | Bandwidth for each desktop, aggregated for the customer | 150Kbps | 150Kbps | 150Kbps |
| Application Publishing | Publish applications from each desktop (RDP Only) | Yes | Yes | Yes |
| Microsoft Licensing | Uses Service Provider License Agreement (SPLA) to provide the needed RDS SAL for each Shared Desktop along with any MS Office, Project , etc. and available with Commercial or Academic pricing | | | |

| DaaS package 2 | Description | Price / Month / User | | |
|---|---|---|---|---|
| | | Option 1 | Option 2 | Option 3 |
| Virtual Desktop | Windows 7 or XP client based desktop | $38* | $48* | $67* |
| CPU Cores | Higher provides better performance | 1 | 2 | 4 |
| Memory | Higher provides better performance | 2 | 4 | 8 |
| Virtual Hard Disk | Default storage capacity for desktop image | 25 | 30 | 35 |
| Bandwidth | Desktop bandwidth aggregated for the customer | 150Kbps | 150Kbps | 150Kbps |
| Application Publishing | Publish applications from each desktop (RDP Only) | Yes | Yes | Yes |
| Microsoft Licensing | Uses the customer's volume license agreement with Microsoft and each endpoint device needs either a VDA license or Windows Desktops covered under SA | | | |
| Upgrades | Additional storage per desktop and additional bandwidth per customer are available | | | |

# DaaS Provides Additional Opportunities

Unified Communications

SaaS/Virtualized Apps (SFDC, Webex)

WebContent Filtering (ScanSafe)

Anti-Virus Management

Patch Management/Desktop Management

Extra Storage

Extra RAM/Extra CPU

Bandwidth Optimization (WAAS)

*"The additional services tied to [DaaS] offerings could potentially be as valuable as 5–6x every dollar earned for a virtual desktop or an application."*[1] (IDC)

# Cisco DaaS Solutions Provide Cloud-Based Service Essentials

On-Demand Consumption

desktone™ by vmware

Multi-Tenant Architecture

Orchestration

Best in class technology partners

Service Assurance

Capacity at Scale

CITRIX®

Security at Scale

# Cisco DaaS Provides Flexibility, Performance, Scale, and Security

- Can support all DaaS deployment model:

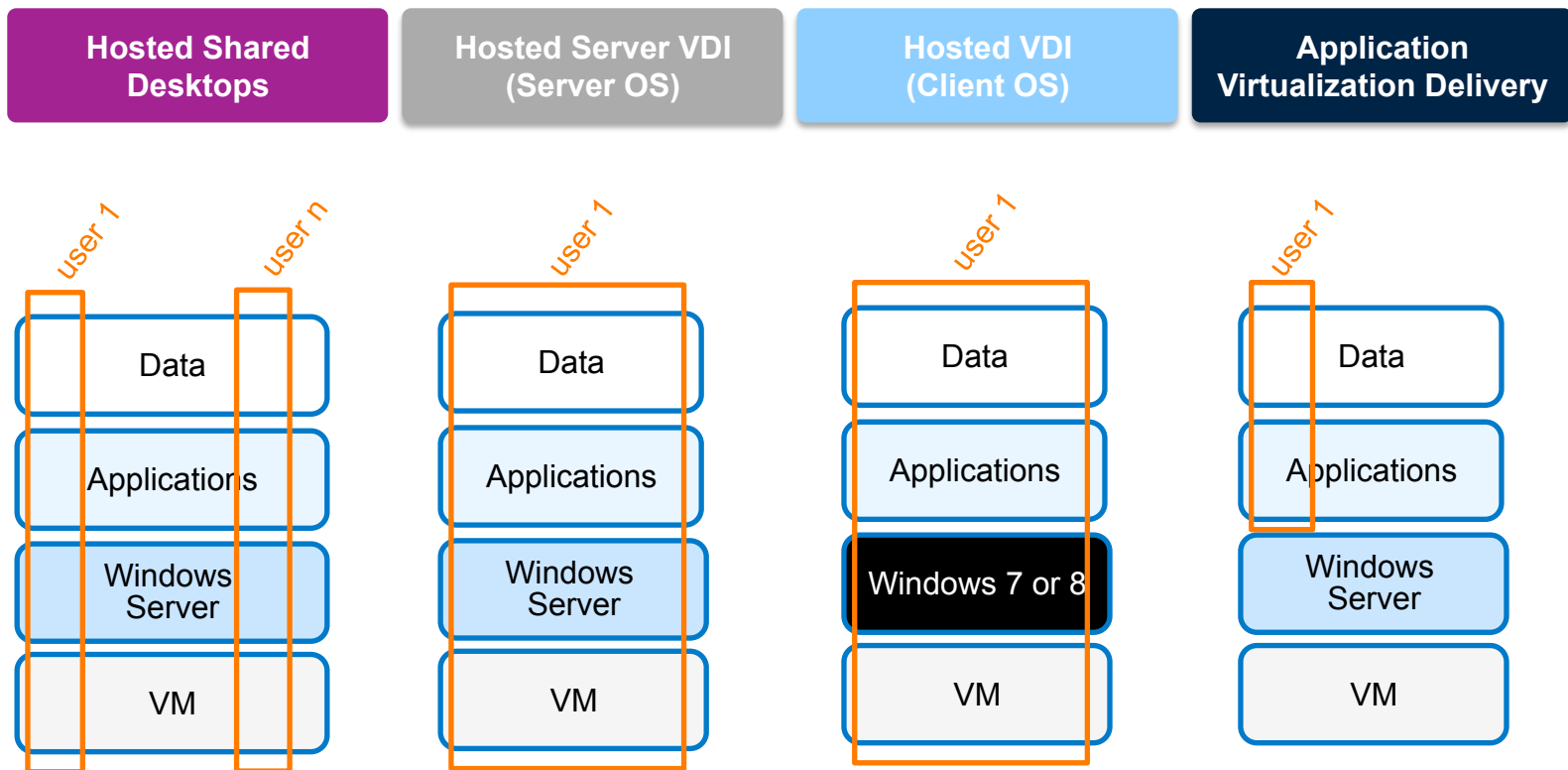| Hosted Shared Desktops | Hosted Server VDI (Server OS) | Hosted VDI (Client OS) | Application Virtualization Delivery |
|---|---|---|---|

- Citrix or Desktone by VMware; Storage options

- Service Profiles simplify virtual desktop provisioning

- 252 virtual desktops on a single UCS B200 M3 blade*

- Single pane of glass management for up to 10,000 hosts

- 29% more responsive Hosted Shared Desktops with VM-FEX**

\* Ivy Bridge CPU single blade testing, VMware Horizon View 5.2 on ESX 5.5
\*\*Principled Technologies whitepaper – Citrix XenApp
UCS Central provides single pane of glass management of up to 10,000 hosts. Seamless operational governance for over 2.5M hosted virtual desktops.

# Deployment models explained



| Hosted Shared Desktops | Hosted Server VDI (Server OS) | Hosted VDI (Client OS) | Application Virtualization Delivery |
|---|---|---|---|

**Hosted Shared Desktops**

user 1 — user n

- Data
- Applications
- Windows Server
- VM

**Hosted Server VDI (Server OS)**

user 1

- Data
- Applications
- Windows Server
- VM

**Hosted VDI (Client OS)**

user 1

- Data
- Applications
- Windows 7 or 8
- VM

**Application Virtualization Delivery**

user 1

- Data
- Applications
- Windows Server
- VM

# Cisco DaaS Solutions

| Unified Data Center | Citrix or Desktone by VMware | Cisco Validated Designs | Cisco Powered Program |

# Cisco Desktop Virtualization Portfolio – in words

- Comprehensive portfolio that provides all desktop virtualization deployment models

- Cisco UCS uniquely positioned for DaaS with scale out fabric and network isolation architectures

- Proven Cisco validated designs and advanced services

- Cloud providers can leverage DaaS to deliver additional applications and value added services

- Cisco Powered Program provides commercial terms, go-to-market support, and industry acknowledged certification programs offering customer assurance

VXME software

# CVD for Cisco Desktop as a Service
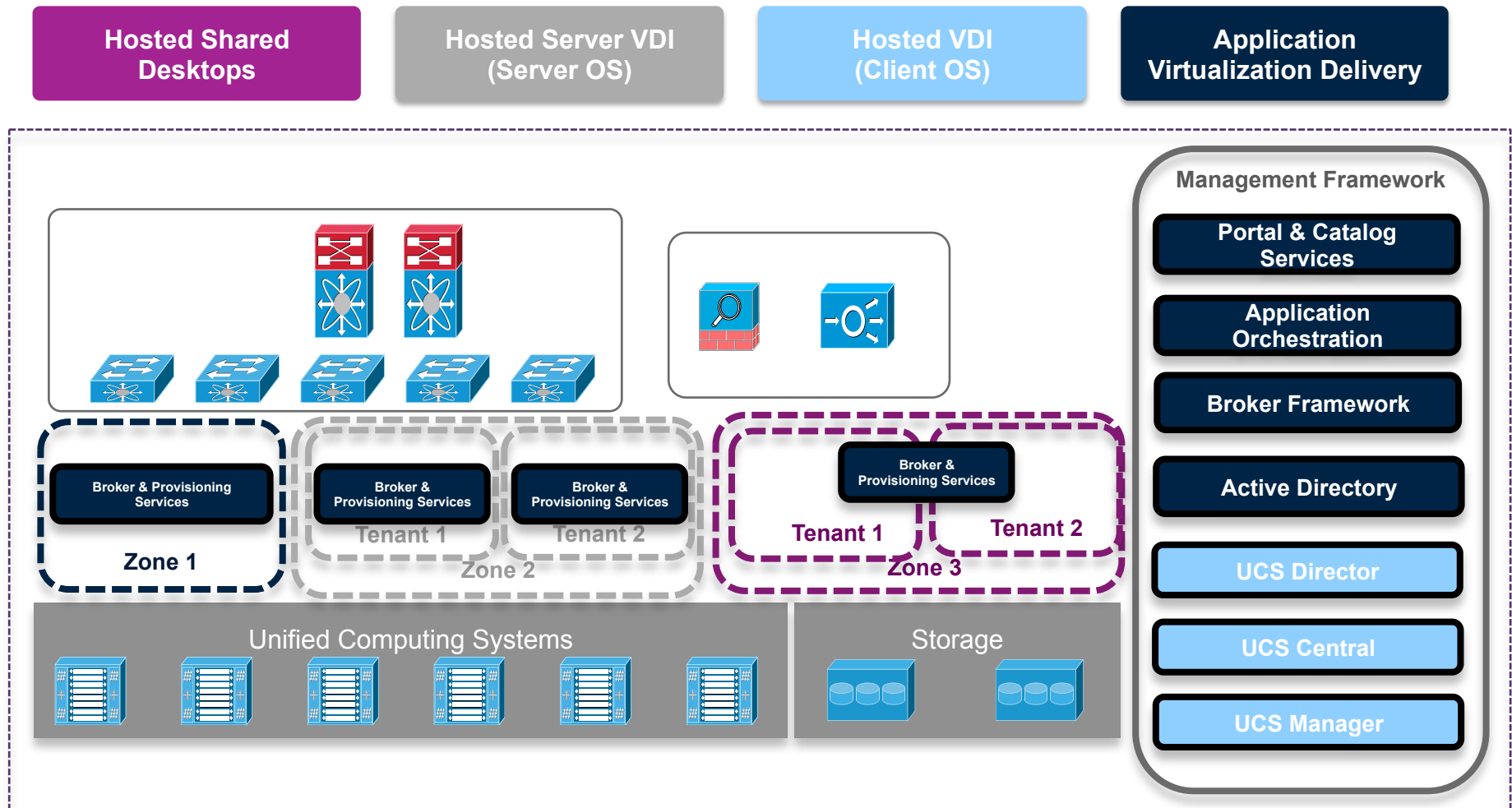
## Cisco Validated Design (CVD)

- Validated with data center architecture including UCS, storage, and virtualization

- Pre-tested, ready to deploy

- Reduce complexity

- Reduce risk

- Accelerate time-to-market

Design Zone link for DaaS CVD

# Cisco DaaS Solutions Architecture

## Supporting All Four DaaS Deployment Models

| Hosted Shared Desktops | Hosted Server VDI (Server OS) | Hosted VDI (Client OS) | Application Virtualization Delivery |
|---|---|---|---|



Broker & Provisioning Services

**Zone 1**

Broker & Provisioning Services — **Tenant 1**

Broker & Provisioning Services — **Tenant 2**

**Zone 2**

Broker & Provisioning Services

**Tenant 1**

**Tenant 2**

**Zone 3**

**Unified Computing Systems**

**Storage**

**Management Framework**

- Portal & Catalog Services
- Application Orchestration
- Broker Framework
- Active Directory
- UCS Director
- UCS Central
- UCS Manager

# Cisco Desktop Virtualization Performance

## 252
VMware Horizon View Windows 7 desktops on a single B200 M3 Blade Server

## 50%
Lower cost storage per View desktop and…

## 16x
Less power consumed per desktop
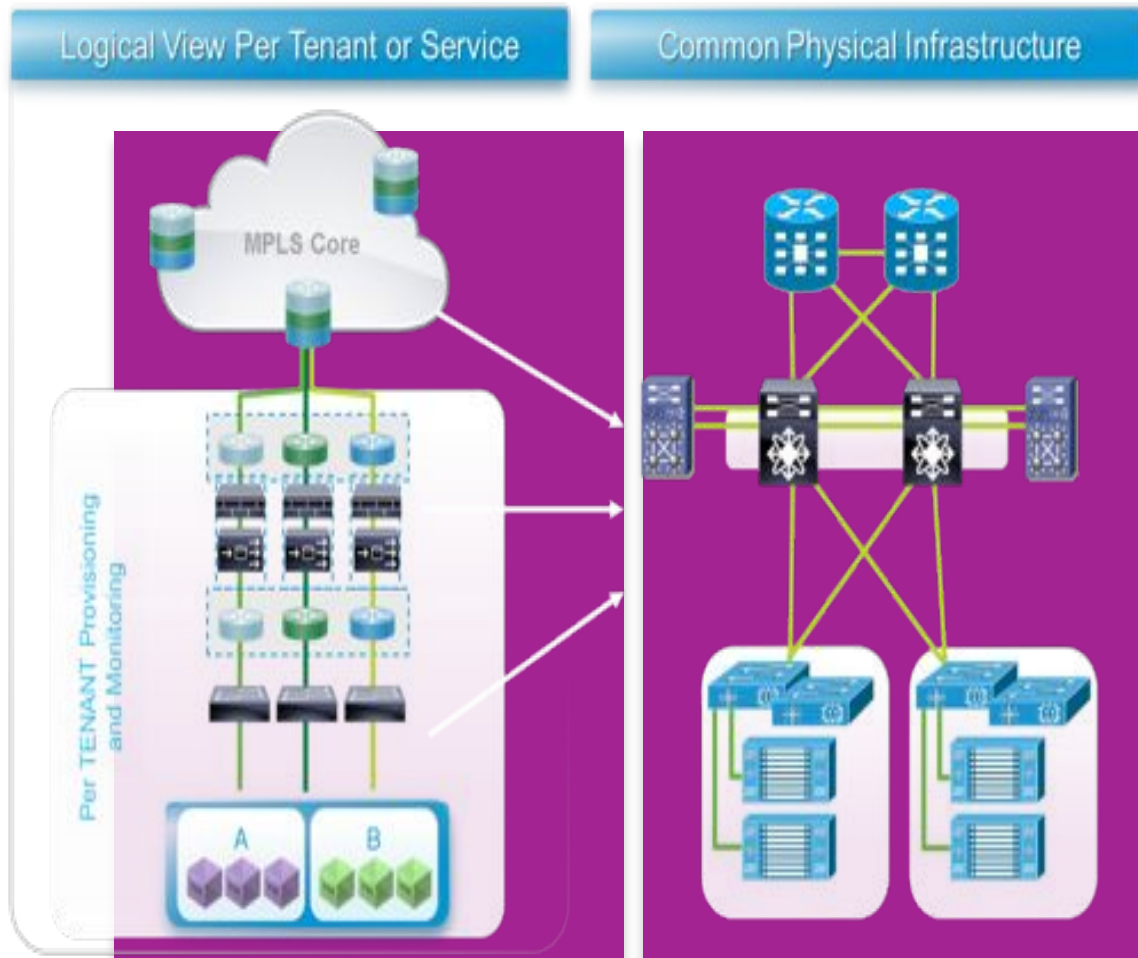
## 29%
More responsive Citrix XenApp sessions with…

## 53%
better CPU

## 5,000
Citrix XenDesktop users booted

- Citrix XenApp / VM-FEX Performance Report: http://bit.ly/164pije
- Citrix 5,000 Mixed-Workload Solution: http://cs.co/9008jC8K
- VMware with Cisco UCS Storage Accelerator: http://bit.ly/14LBIiU

# Network Containers for Multi-Tenancy



Logical View Per Tenant or Service

Common Physical Infrastructure

- Per-tenant segmentation of traffic on physical and virtual infrastructure

- Value added application services on a per tenant basis (e.g. Firewall, SLB)

- Seamless extension of tenants within and across DCs via OTV, LISP, MPLS

# Cisco Powered

## The Industry Standard for Cloud and Managed Services
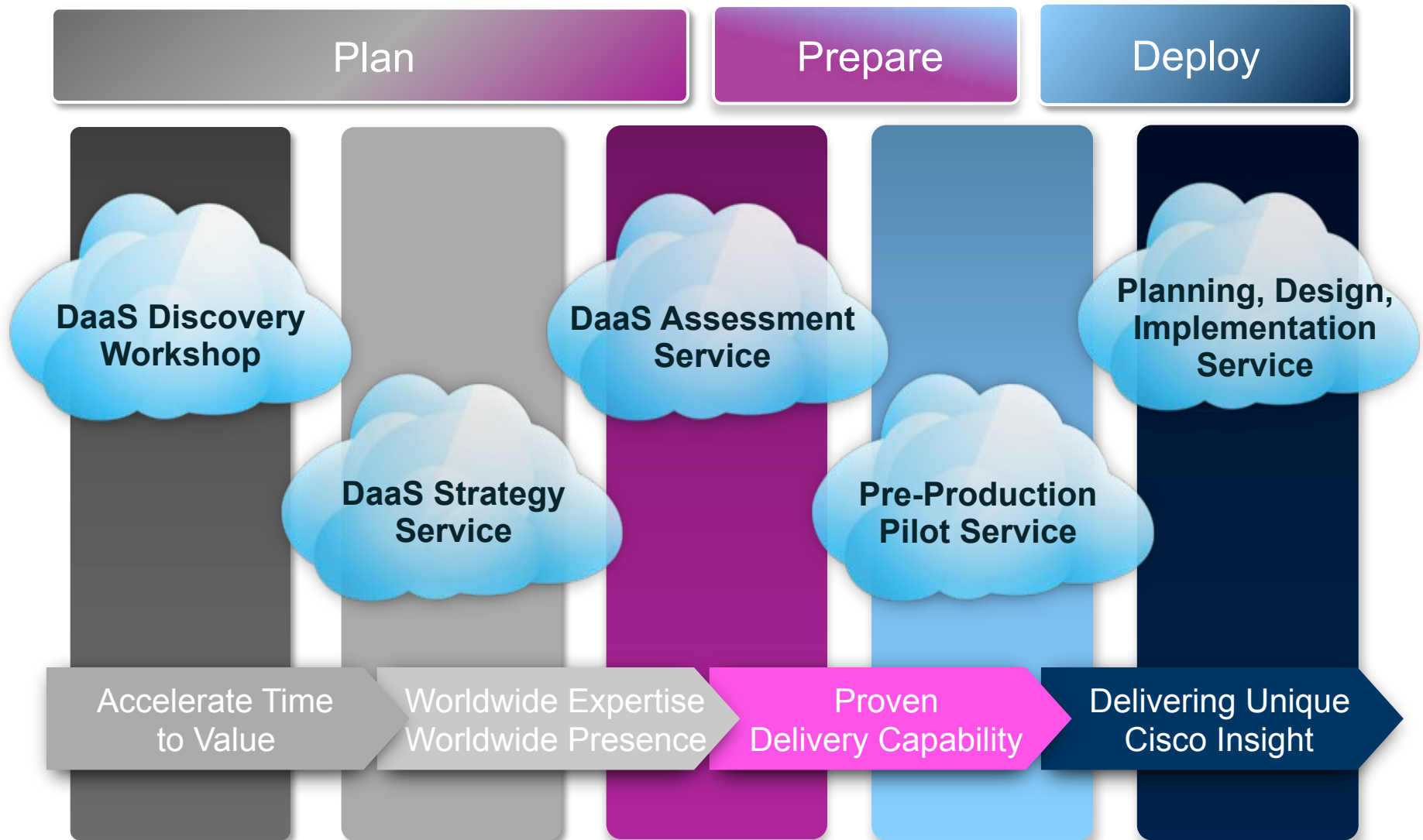
### Enterprise Benefits:

- Built and delivered on proven, Cisco validated architectures

- Providers meet strict qualifications for delivering Cisco Powered services

- Every service is third-party audited

### Cloud Provider Benefits:

- Partner training and sales enablement

- Cisco generated end user awareness, demand generation, and marketing resources

- Cisco sales commission on partner cloud services sales

- Cisco Capital programs

# Cisco DaaS Services

| Plan | Prepare | Deploy |
|------|---------|--------|

**DaaS Discovery Workshop**

**DaaS Strategy Service**

**DaaS Assessment Service**

**Pre-Production Pilot Service**

**Planning, Design, Implementation Service**

Accelerate Time to Value → Worldwide Expertise Worldwide Presence → Proven Delivery Capability → Delivering Unique Cisco Insight

# Cisco DaaS Solutions Advantages for Cloud Providers

**Integrated, Tested, Validated, and Optimized**

**Flexibility, Scale, Performance, and Security**

**Service Readiness, Operations, and Support**

**Commercial Terms**

**Go-to-Market Support**

CISCO Powered

# Cloud Provider Success

"Cisco gives us the scalability, performance, and efficiency to deploy and expand desktop as a service rapidly for our customers, no matter where those end users are located."

Tim Burke, President and Chief Executive Officer

"Cisco management makes deployment incredibly easy with high levels of automation for the virtual environment. We can add additional capacity in hours or scale out hundreds of desktops in minutes."

Rick Chapman,
Co-Founder and CTO

# Cloud Providers and Cisco DaaS Solutions
## Summary

1) DaaS represents a significant opportunity and key offer for Cloud Providers in a fast-growing market

2) Supports multiple use cases and provides a range of ongoing revenue and upsell opportunities

3) Cisco offers proven, comprehensive solutions with best in class technology partners

4) Cisco DaaS Solutions helps Cloud Providers achieve time-to-market and economically scale their business

# Resources

# Amazon

| WorkSpaces Bundle | Hardware Resources | Applications | Monthly Price |
|---|---|---|---|
| Standard | 1 vCPU, 3.75 GiB Memory, 50 GB User Storage | Utilities (Adobe Reader, Internet Explorer 9, Firefox, 7-Zip, Adobe Flash) | $35 |
| Standard Plus | 1 vCPU, 3.75 GiB Memory, 50 GB User Storage | Microsoft Office Professional 2010, Trend Micro Worry-Free Business Security Services, Utilities (Adobe Reader, Internet Explorer 9, Firefox, 7-Zip, Adobe Flash) | $50 |
| Performance | 2 vCPU, 7.5 GiB Memory, 100 GB User Storage | Utilities (Adobe Reader, Internet Explorer 9, Firefox, 7-Zip, Adobe Flash) | $60 |
| Performance Plus | 2 vCPU, 7.5 GiB Memory, 100 GB User Storage | Microsoft Office Professional 2010, Trend Micro Worry-Free Business Security Services, Utilities (Adobe Reader, Internet Explorer 9, Firefox, 7-Zip, Adobe Flash) | $75 |

| Payment terms | Billed monthly, annually or prepaid for the life of the term |
|---|---|
| Required | Standard or Advanced Starter Pack (minimum order quantity of 50) Standard: $35/desktop/month MSRP Advanced: $50/desktop/month MSRP |
| Add-ons | • Hard Disk Storage<br>• Gold Pattern Template Storage |
| Included at no additional Cost | • Public IP address<br>• Disk I/O<br>• VPN<br>• Microsoft SPLA license for Windows Server desktops<br>• VMware Horizon View client software<br>• 2x30 GB of Gold Pattern Storage<br>• Service Level Agreement on availability 99.9%<br>• Production level support |