



# CITRIX® Cloud

## 從雲端教室看 校務行政電腦虛擬化

Eric Chang 張晉瑞

Presales





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Mixed Reality

Integration

Security

Identity

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Management Tools

Blockchain

Azure Active Directory apps

Trials

All ▾

Operating System

All ▾

Publisher

All ▾

Pricing Model

All ▾

Product Type

All ▾

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Results in All apps for xendesktop essentials (10)

[View consulting services \(15\)](#)



### Citrix Virtual Desktops Essentials

By Citrix

Simplify Windows 10 on Azure deployment and management at-scale.

★★★★★ (7)

[Get it now](#)



### Citrix Virtual Apps Essentials

By Citrix

The easiest and fastest way to securely deliver Windows apps from Microsoft Azure to any

★★★★★ (19)



[Get it now](#)



### GFI Mail Essentials

By GFI MailEssentials

Use Azure AD to enable user access to GFI Mail Essentials. Requires an existing GFI Mail

[Get it now](#)



### Talent 2 Essentials

By Talent2 Pty Ltd.

Use Azure AD to enable user access to Talent 2 Essentials. Requires an existing Talent 2

[Get it now](#)



### SoftNAS Cloud Essentials

By SoftNAS



### ShookIoT Essentials for IIOT

By ShookIoT



### Silicon Valley Bank U.S. Bank TrustNow Essentials



### User Logon Experience for XenApp and XenDesktop

# Delivering Windows 10 on Azure with Citrix Cloud

## XenDesktop Essentials Service on Azure



**CITRIX** Cloud  
**XenDesktop Essentials**

- Citrix Cloud is hosted on Azure
- New XenDesktop service manages, monitors and provisions Windows 10 Enterprise CBB virtual desktops on Azure



**Microsoft Azure**

- Customer brings Azure subscription
- Customer pays for IaaS consumption for Windows 10 Enterprise CBB virtual desktops
- Azure Hybrid Use Benefit for Windows 10 Preview through Azure Image gallery.

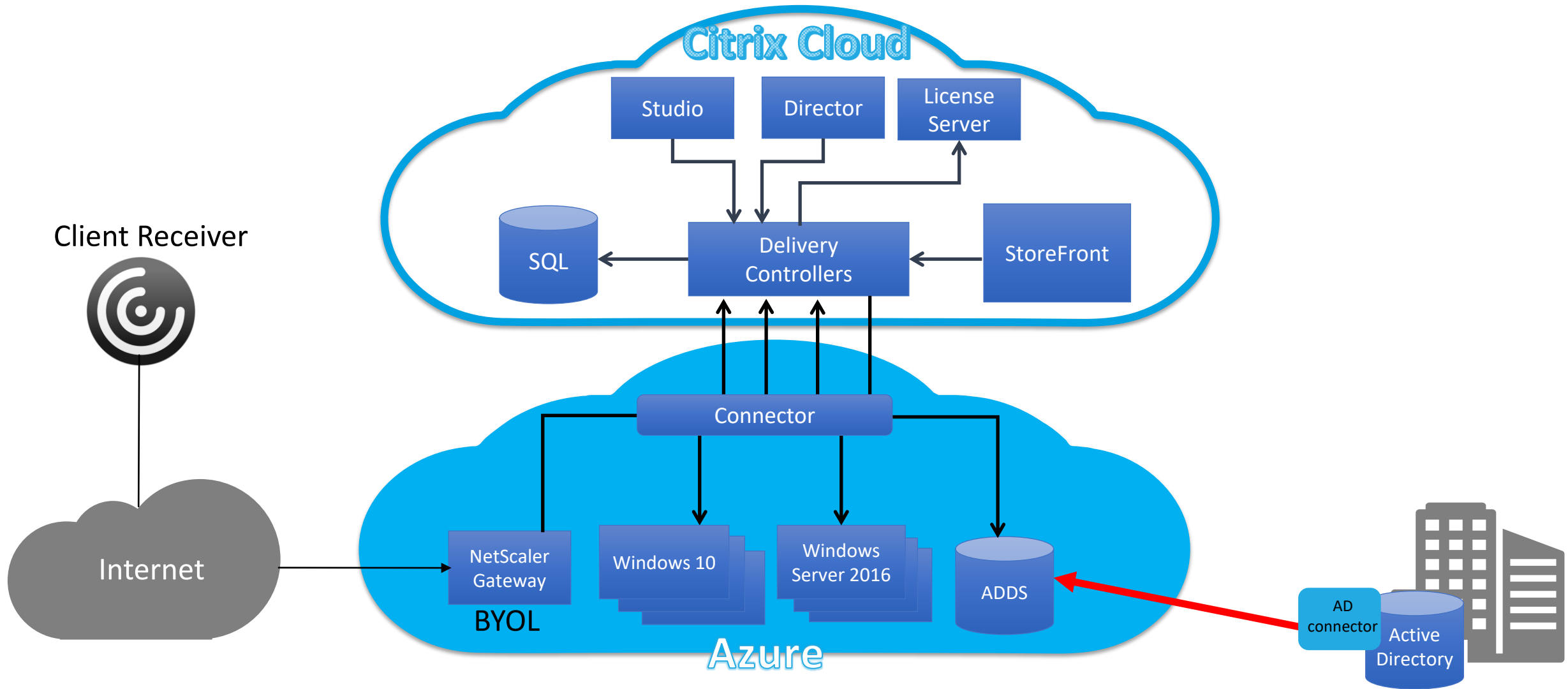


**Windows 10**

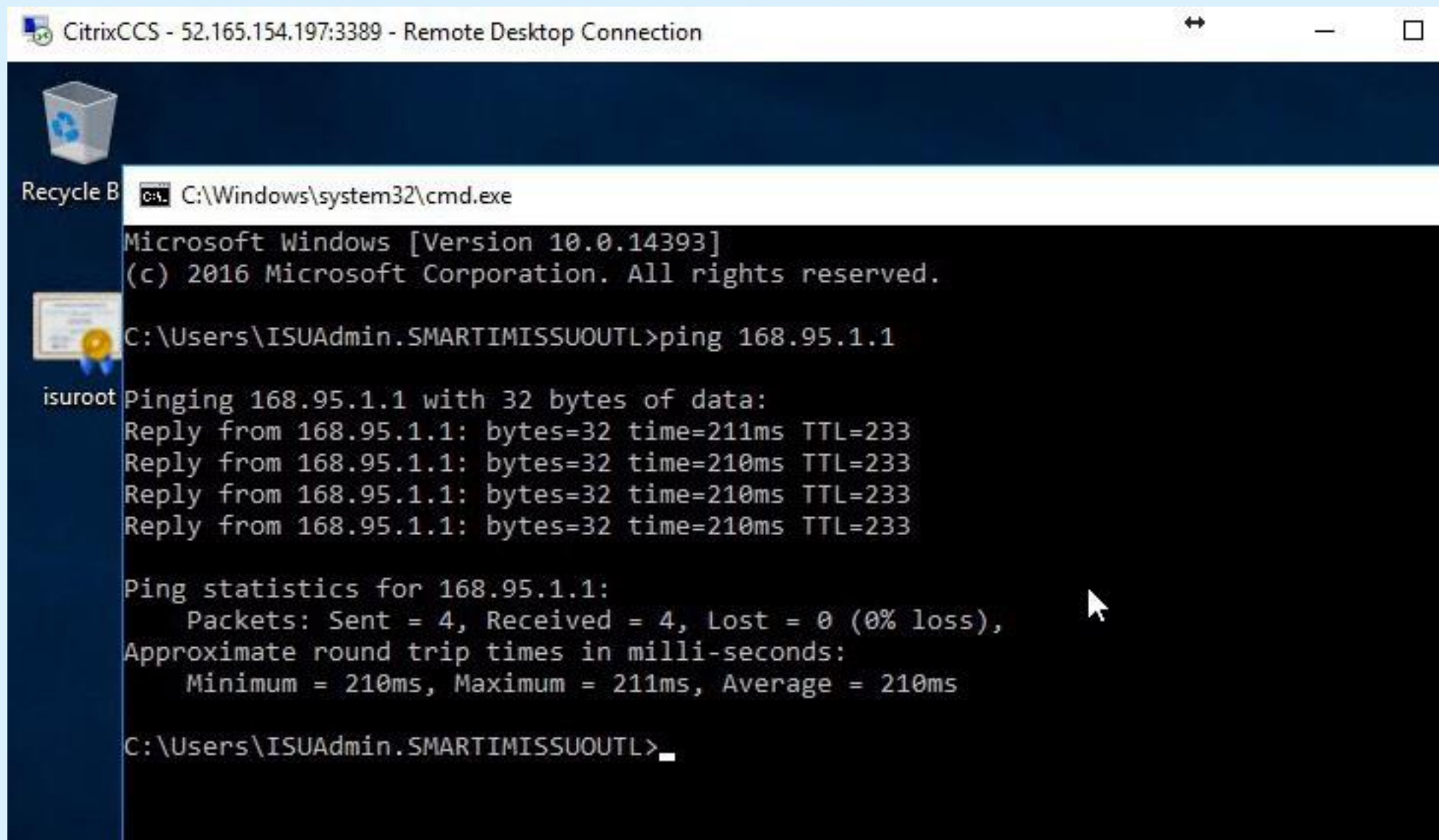
- Customers will need Windows 10 Enterprise E3/E5 Per user or Windows VDA Per User license
- Future VM Use Rights - Will include Windows 10 CBB virtualization rights for Azure and approved 3rd party partners

# XenApp/Desktop on Azure – Architecture 1

How it works



# 實際Demo: 連接美國中部Azure data center



The screenshot shows a Citrix Remote Desktop Connection window titled "CitrixCCS - 52.165.154.197:3389 - Remote Desktop Connection". The desktop background is dark blue. On the left taskbar, there is a Recycle Bin icon and a folder icon labeled "isuroot". A command prompt window is open, showing the following text:

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\ISUAdmin.SMARTIMISSUOUTL>ping 168.95.1.1

Pinging 168.95.1.1 with 32 bytes of data:
Reply from 168.95.1.1: bytes=32 time=211ms TTL=233
Reply from 168.95.1.1: bytes=32 time=210ms TTL=233
Reply from 168.95.1.1: bytes=32 time=210ms TTL=233
Reply from 168.95.1.1: bytes=32 time=210ms TTL=233

Ping statistics for 168.95.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 210ms, Maximum = 211ms, Average = 210ms

C:\Users\ISUAdmin.SMARTIMISSUOUTL>
```

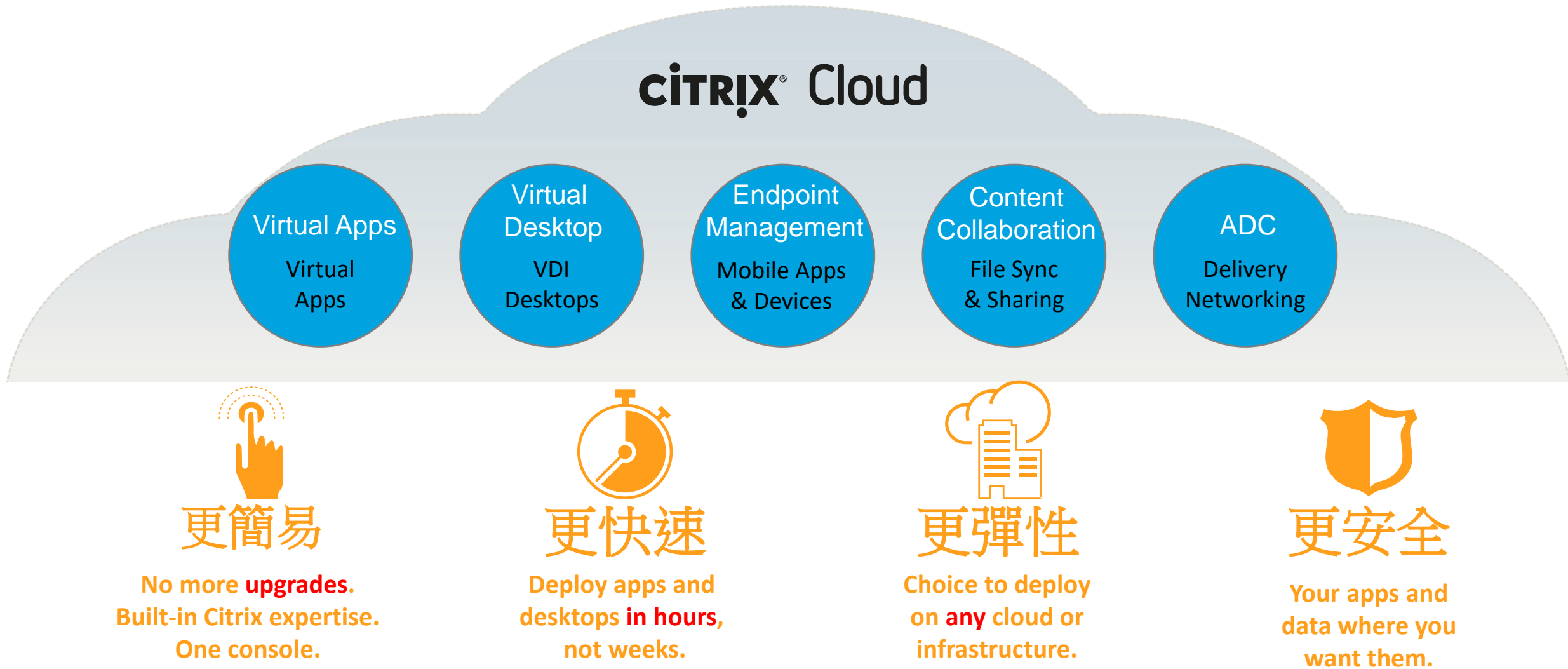


# 為何選擇Citrix Cloud services ?

- ✓ 更快的部署Citrix technologies
- ✓ 增加部署靈活性
- ✓ 整合Citrix environments
- ✓ 不再需要升級 – 自動取得最新功能
- ✓ 設定和管理的專業技術需求較低
- ✓ 不需維護實體infrastructure
- ✓ 較少的前期投資, 資本支出 -> 營業費用
- ✓ 本質上即multi-site
- ✓ 已包含基本的維護

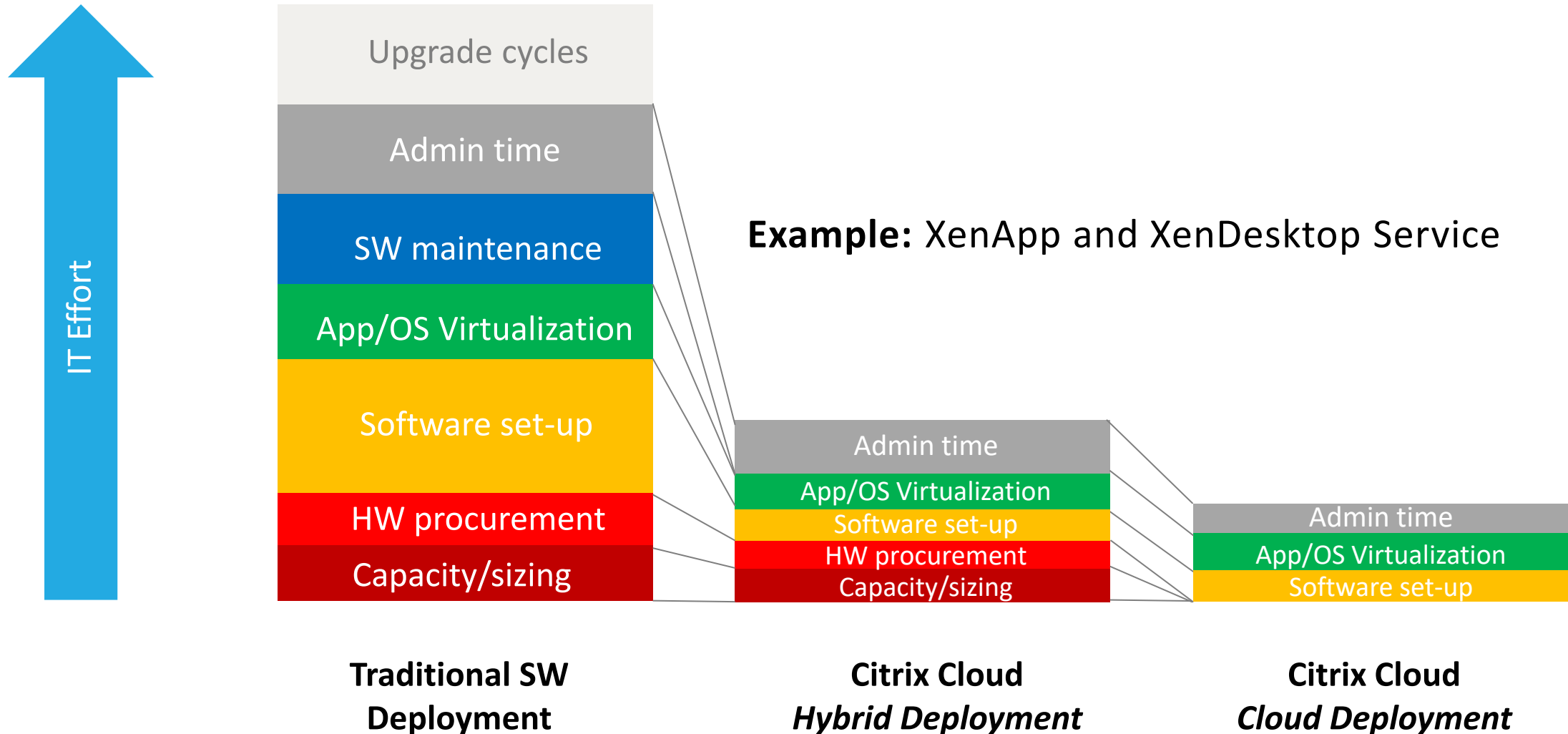


# 設計以最佳的方式傳遞Citrix services



# Citrix Cloud services的優點

Reduction in overall complexity, infrastructure, time





# 安全: Citrix Cloud 不接觸客戶的資料

## Credentials

Citrix Cloud Connector encrypts user credentials before they reach the cloud

## Customer Data

Machine images and application data always remain on customer premises

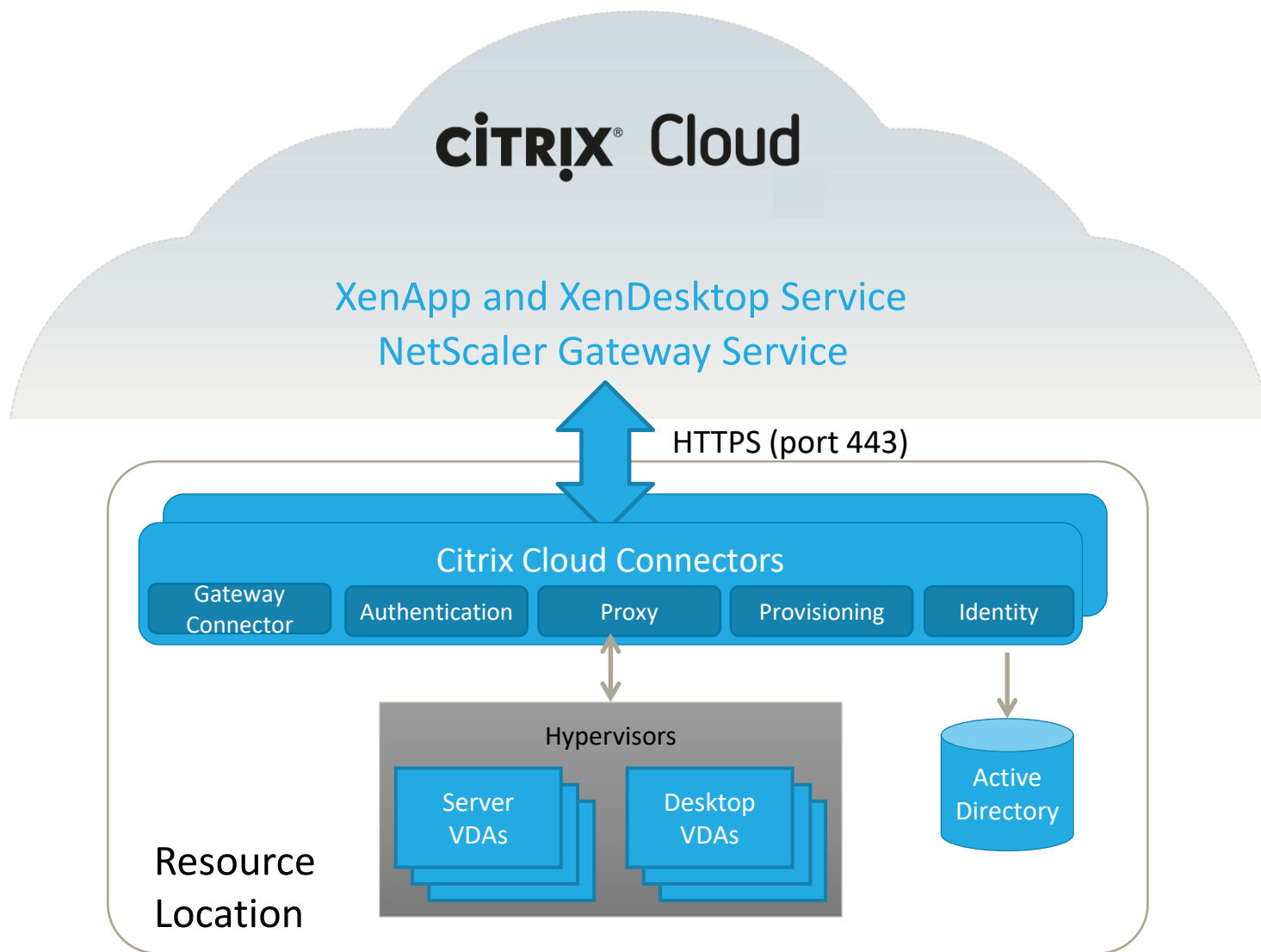
## Brokering Data

Citrix Cloud only stores metadata on users and applications



# 簡單, 安全: Cloud Connector

Secure connectivity... to any environment



## Cloud Connector

- Installs on any domain-joined Windows Server 2014 or 2012 R2 machine
- All traffic is outbound to the cloud over HTTPS (port 443)
- Works behind NATs and HTTP proxies
- Auto-updater keeps Connector evergreen
- Redundant configuration option for high availability

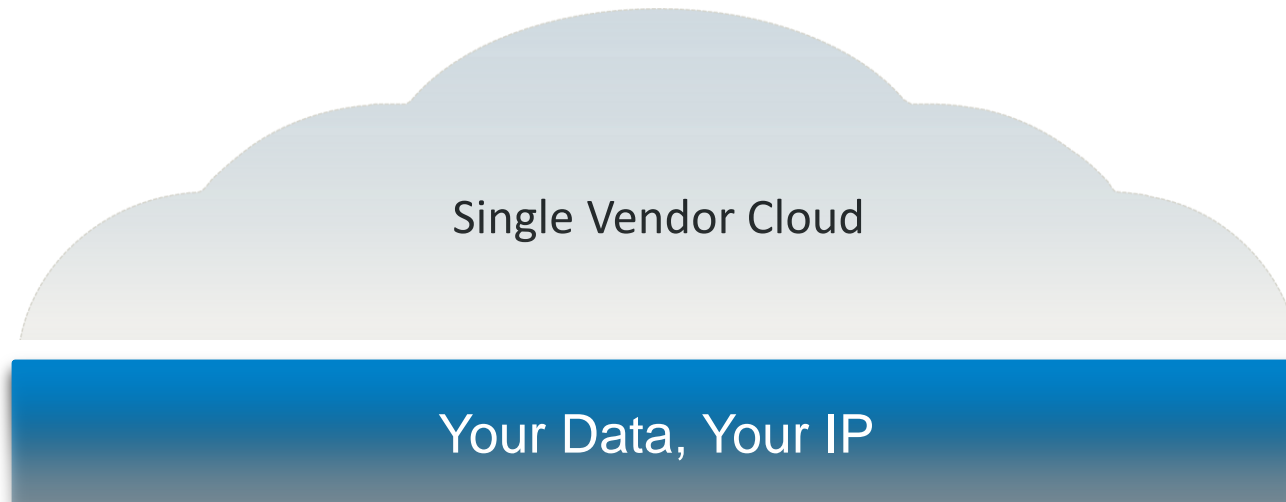


**CITRIX® Cloud**

**XenApp Service and  
XenDesktop Service**

# 傳統雲端佈建方式

Trade-off Between Cloud Simplicity or IT Control

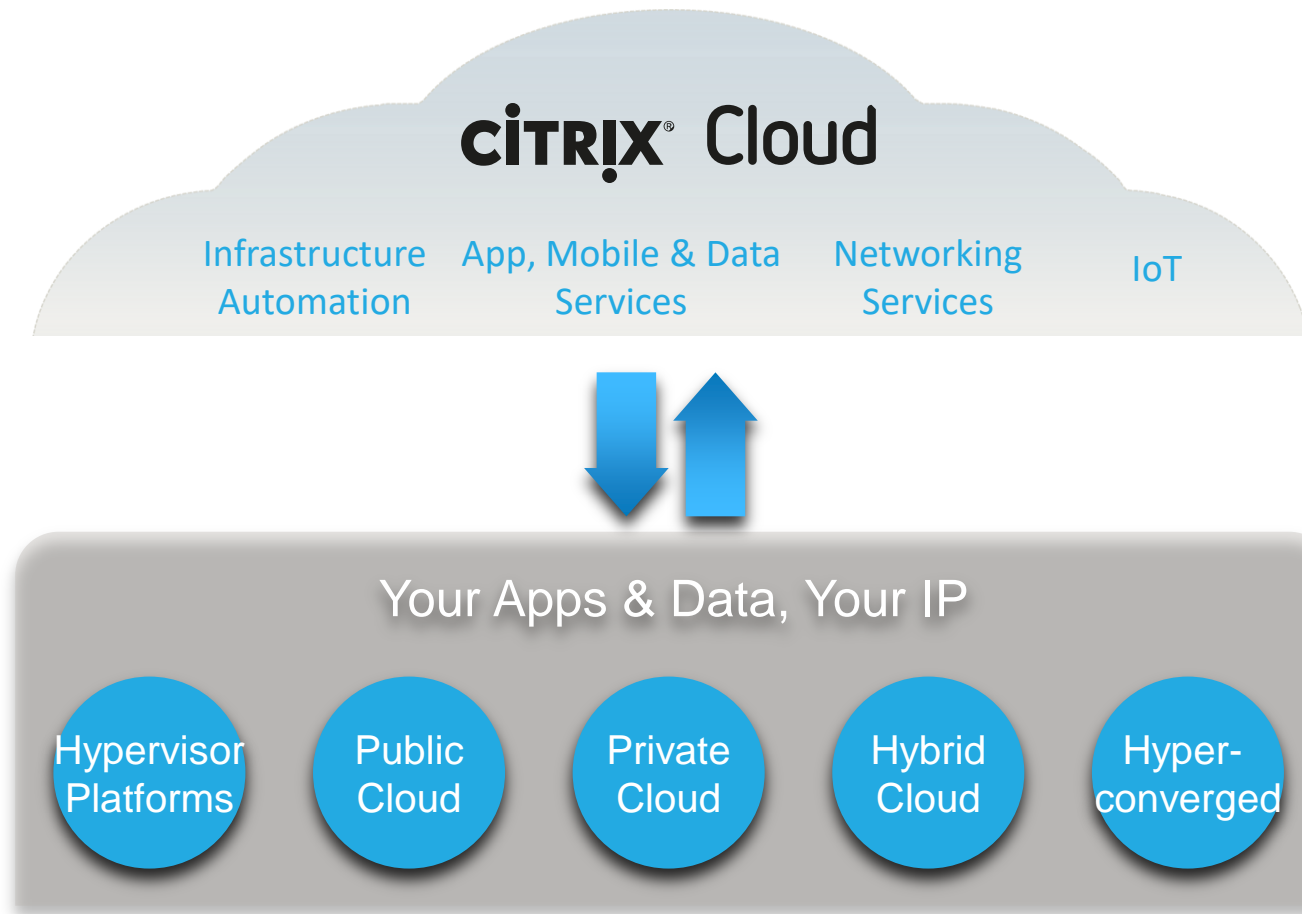


Management *and* your IP had to be in one cloud

- Limits choice
- Limits economics
- Limits app performance
- Limits control

# Citrix建議方式

More Flexibility, Simplicity, And IT Efficiency



## Management in the cloud

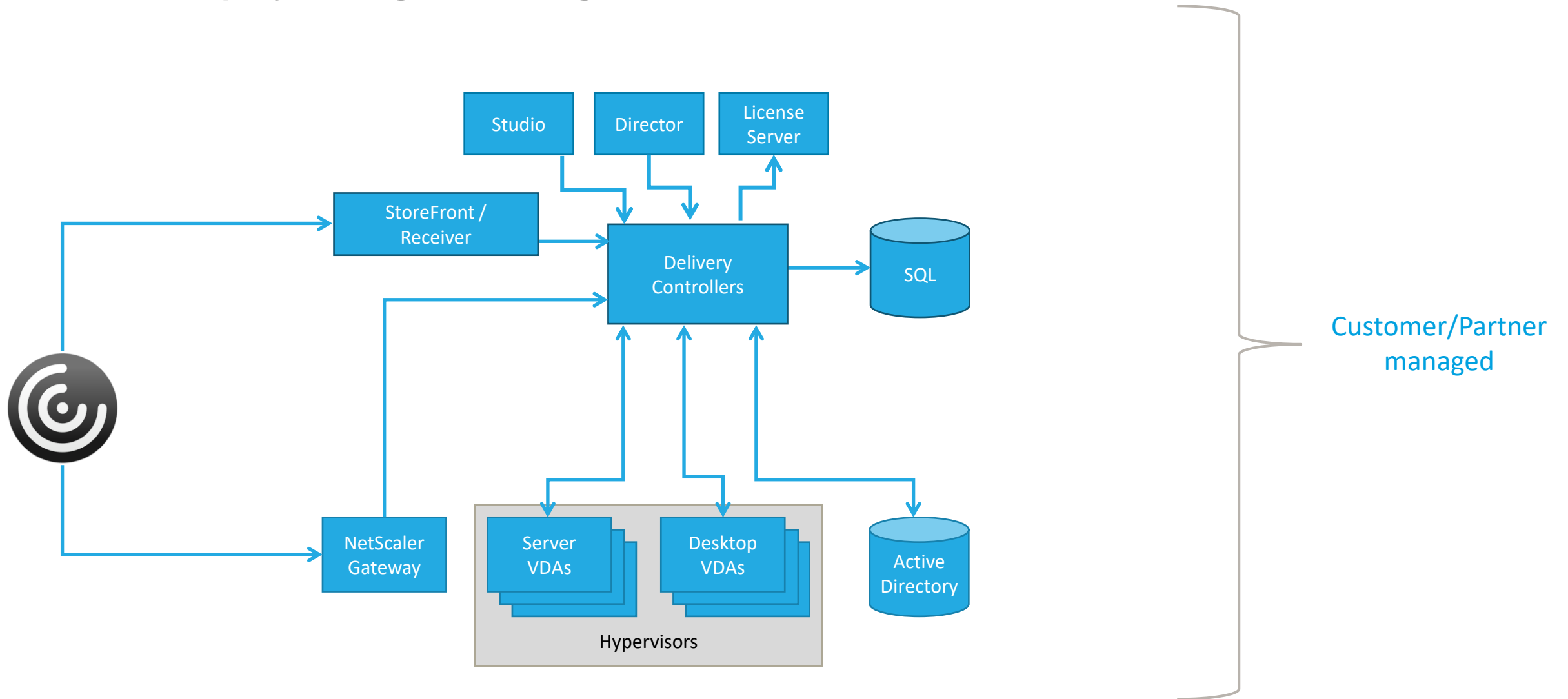
- Consistent user experience
- Single, unified administration
- Service integrations
- Automatic updates

## IP wherever you want it

- Better compliance
- Better security
- Better data sovereignty
- Choice of economics

# 傳統 Citrix 佈建方式 (Apps & Desktops): On-Premises

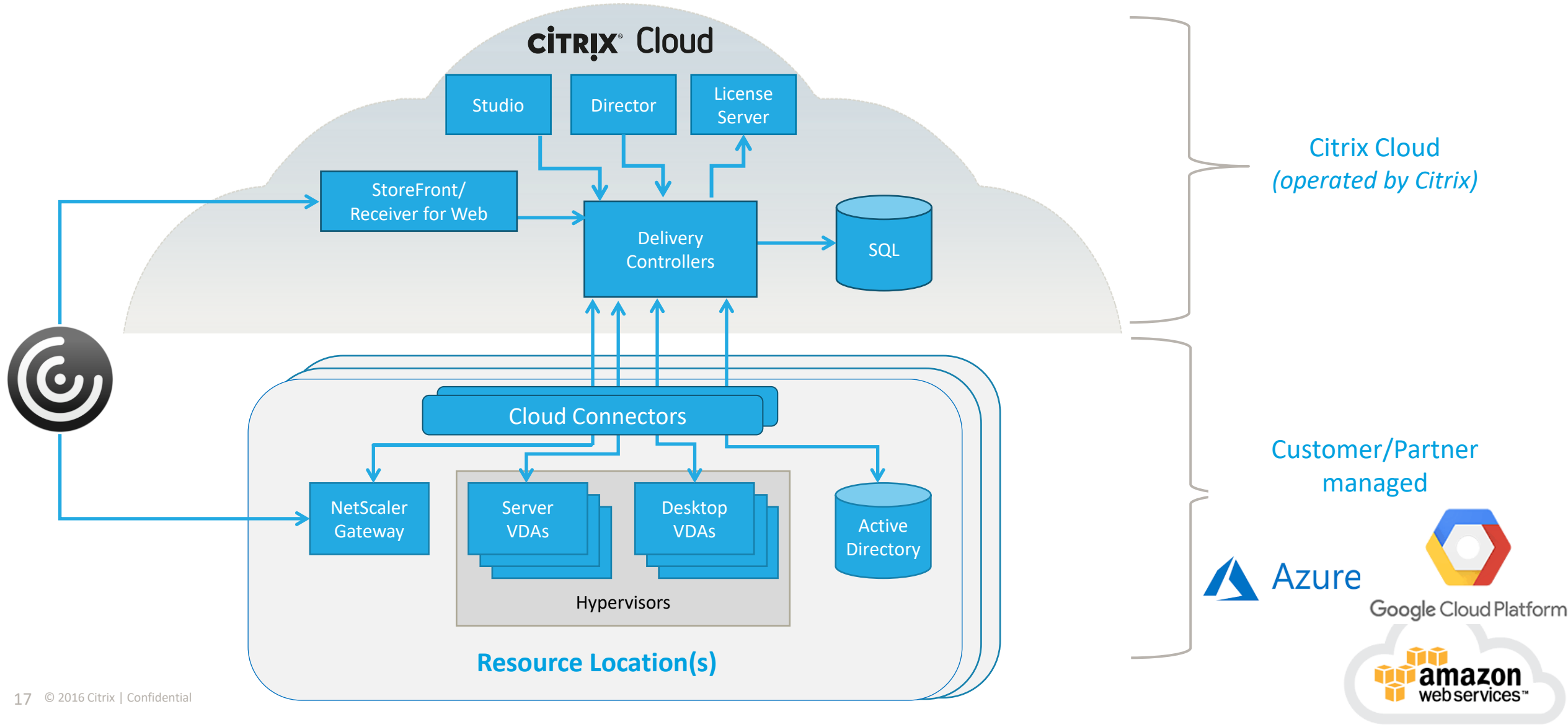
Lots to deploy, configure, manage





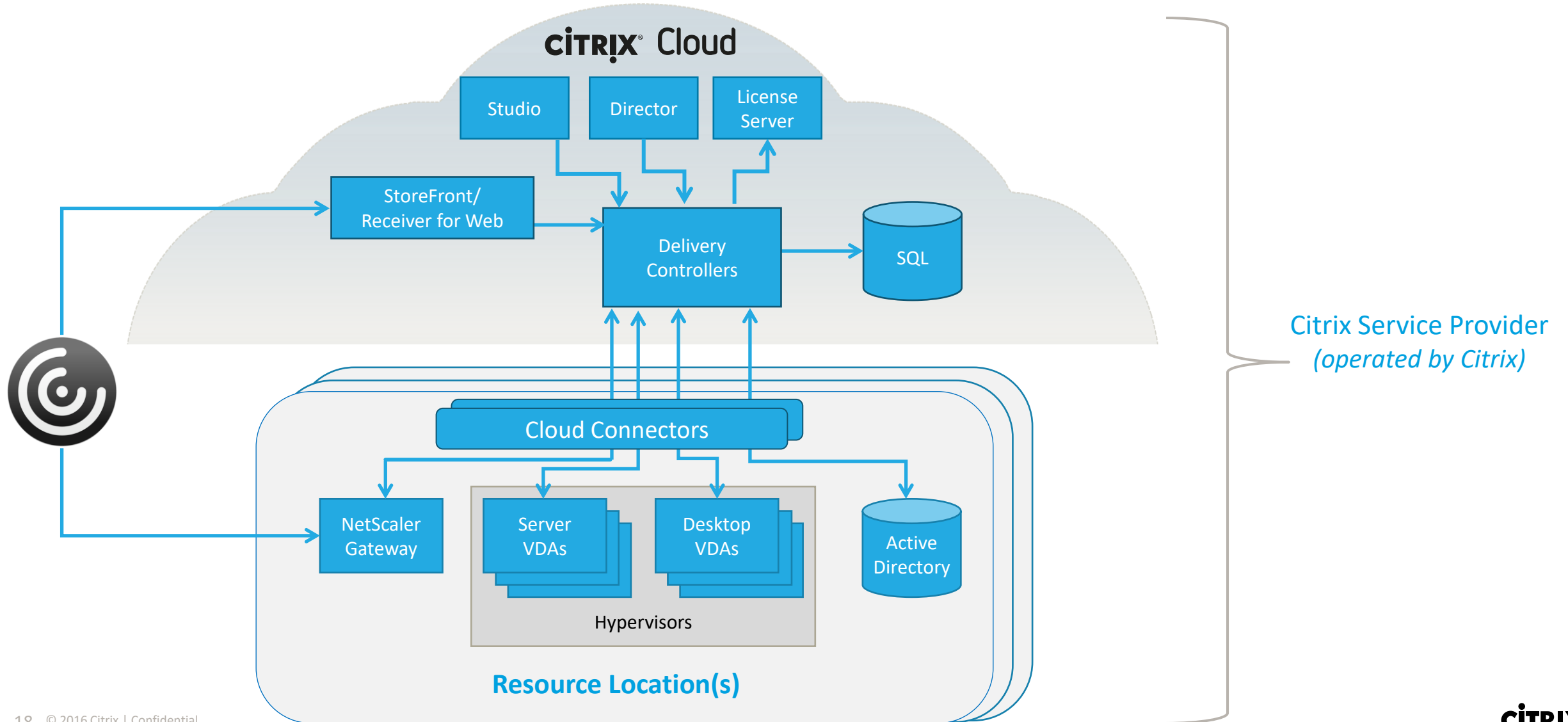
# 使用Citrix Cloud佈建 (Apps & Desktops): Citrix Cloud Service

Cloud-based management, local resources – less to deploy plus faster, simpler deployment

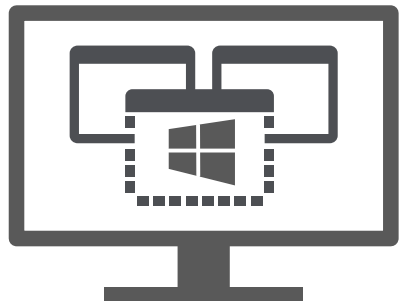


# 使用Citrix Cloud佈建 (Apps & Desktops):CSP

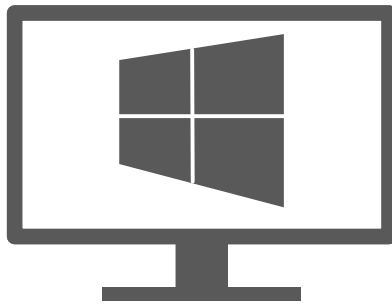
Cloud-based management, local resources – less to deploy plus faster, simpler deployment



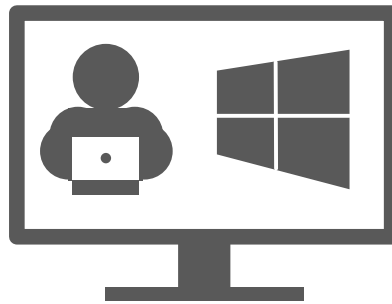
## Windows Desktops



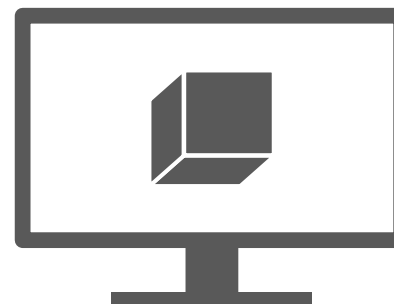
Shared



Pooled



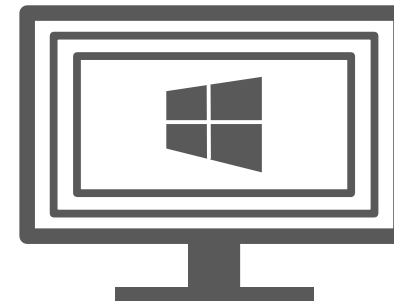
Personal



Pro Graphics



Remote PC

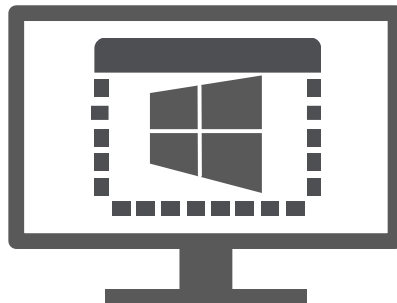


Local VM

## Windows Apps



Server  
Virtualized Apps



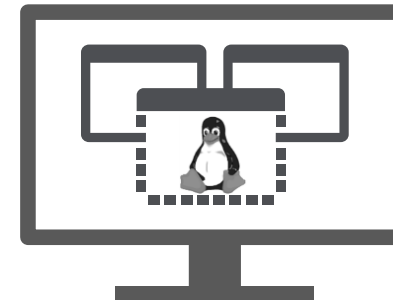
Desktop Virtualized  
Apps

## Web Apps

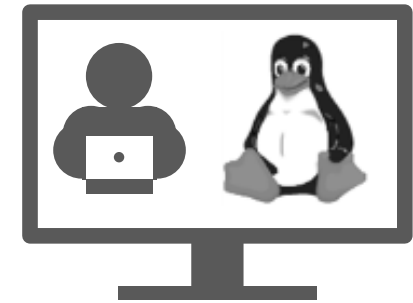


Secure Browser  
Apps

## Linux Desktops



Shared



Personal



Smartphones



Tablets



Laptops



Desktops

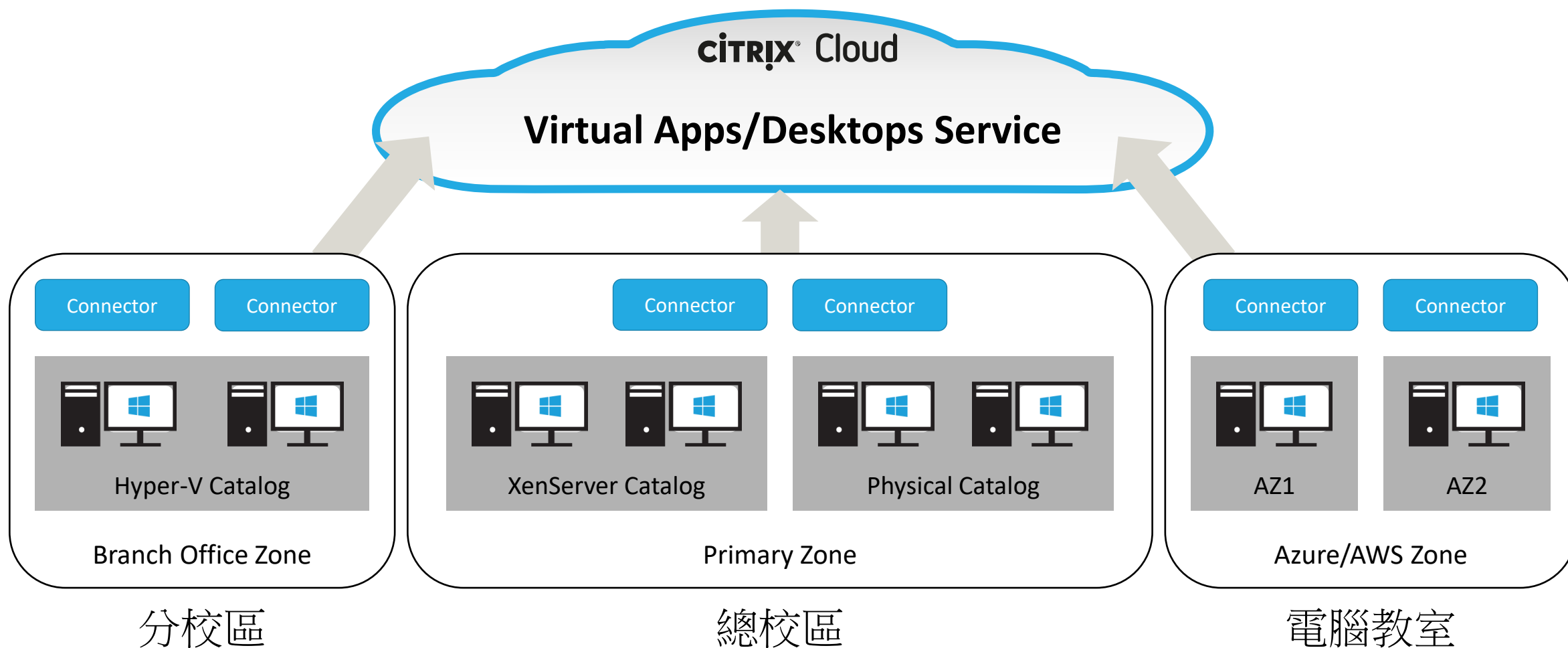


# Citrix 觀點

把“人”放在中心的IT轉型



# 在Citrix Cloud管理多Virtual Apps/Desktop使用地點



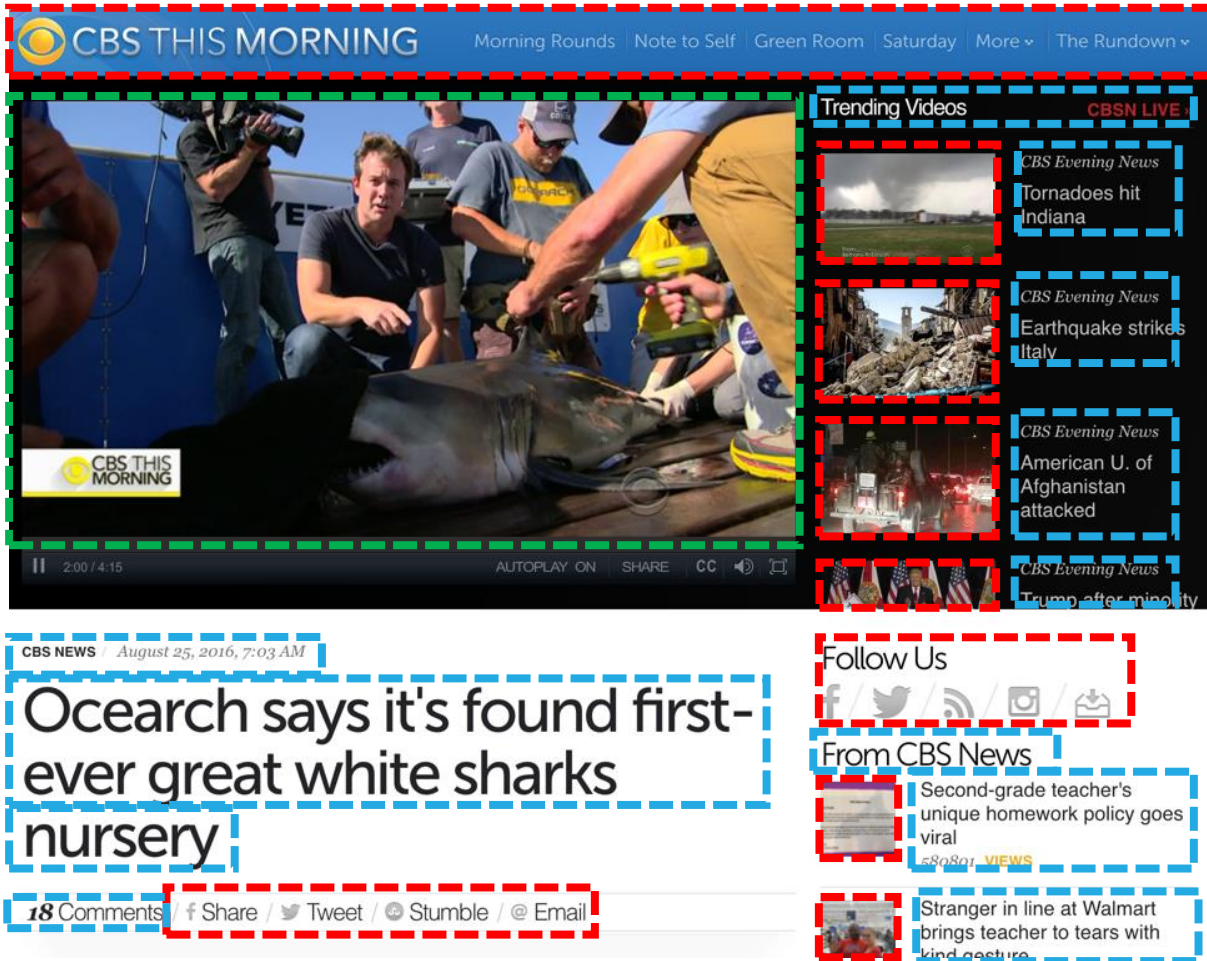




使用者體驗

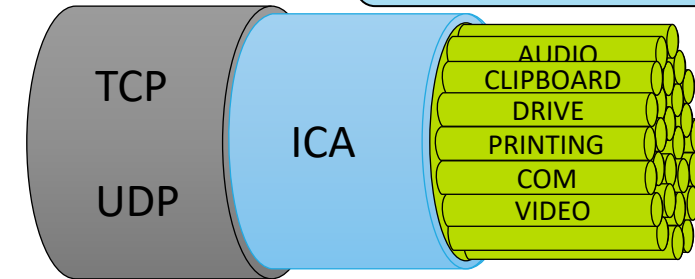
# 彈性調整的傳輸協定 Adaptive Display

## Overview



Transport Layer

Application Layer



ICA has multiple virtual channels

- **Green** = Video / 3D graphics

H.264 = Most efficient for video and 3D graphics, but with higher CPU usage

- **Red** = JPEG / Images

Thinwire = Most efficient for static images with low CPU usage

- **Blue** = Text

Overlay lossless = Most precise for text to avoid blur

# 高解析度的使用體驗



## **HDX Broadcast**

ICA and RDP protocol support for access from any device, anywhere



## **HDX MediaStream**

Video and audio playback



## **HDX RealTime**

Voice and video for real-time collaboration



## **HDX Mobile**

Touch navigation for Windows apps; local device features



## **HDX Plug-n-Play**

Access to local resources and peripherals, including USB devices and printers



## **HDX RichGraphics**

2D/3D graphics incl. Adaptive Display, HDX 3D Pro and Microsoft RemoteFX



## **HDX WAN Optimization**

Performance and bandwidth optimizations for branch offices with Citrix CloudBridge



## **HDX Adaptive Orchestration**

Best user experience based on server, network connection and user device



# 文字清晰度

VMware Blast

D13	A	B	C	D	E	
1	0.627263193	0.478229703	0.754958774	0.055954359	0.43560528	0.55
2	0.040807087	0.476450432	0.100902088	0.812052996	0.31310057	0.258
3	0.765937883	0.587061898	0.367604339	0.317132026	0.071105532	0.619
4	0.710559995	0.529636117	0.269901803	0.762827733	0.951373277	0.612
5	0.443247993	0.922109633	0.525466437	0.89655205	0.703628107	0.781
6	0.909279425	0.021669944	0.394710064	0.016779998	0.2255579	0.664
7	0.182169923	0.051619492	0.577513116	0.10831292	0.963351181	0.640
8	0.704188995	0.507097671	0.043908736	0.666599733	0.393696637	0.011
9	0.759268353	0.433371849	0.221726949	0.547181503	0.285921524	0.416
10	0.778614311	0.386862385	0.981485599	0.545414396	0.056687897	0.639
11	0.203725977	0.954514547	0.15578897	0.416741242	0.001362248	0.227
12	0.568030142	0.936730722	0.874534932	0.834174251	0.675211572	0.412
13	0.507874998	0.595470758	0.655902522	0.972850214	0.39219352	0.656
14	0.352738174	0.767325439	0.325662024	0.989171449	0.527077999	0.318
15	0.947376678	0.506689413	0.891891074	0.108743508	0.534254064	0.662

Citrix HDX/EDT

D13	A	B	C	D	E	
1	0.416665352	0.877752261	0.681311571	0.673626481	0.811244931	0.89
2	0.269220738	0.440568722	0.143212357	0.514532099	0.362974217	0.270
3	0.597028229	0.524023724	0.455418749	0.249281787	0.22779237	0.561
4	0.961620244	0.613490115	0.285695862	0.485094769	0.867890423	0.352
5	0.070503303	0.305177292	0.323741868	0.344107453	0.418914438	0.091
6	0.440445977	0.209797067	0.247618124	0.396628691	0.754508544	0.687
7	0.15783259	0.149404522	0.32796204	0.0258451	0.230813985	0.878
8	0.990143619	0.531212637	0.745200086	0.46710982	0.400962719	0.411
9	0.659563843	0.835359178	0.308381268	0.391503435	0.63671435	0.121
10	0.273276005	0.779089661	0.829078837	0.93421841	0.204901882	0.092
11	0.1559122	0.196740278	0.720795309	0.109644959	0.026318343	0.338
12	0.906420549	0.319591314	0.771688153	0.905518926	0.446537635	0.304
13	0.157925038	0.765376356	0.312169447	0.80091908	0.13357872	0.914
14	0.868695193	0.68417603	0.837922003	0.58476676	0.392149213	0.979
15	0.725658056	0.451940109	0.189765461	0.633914748	0.978413628	0.621

- Blurred characters, especially with colored background
- Yellowish haze around the characters
- Very tiring on the eyes

# 高頻寬環境(1Gbps Network)

- CPU usage(1Gbps Network)

Low

High

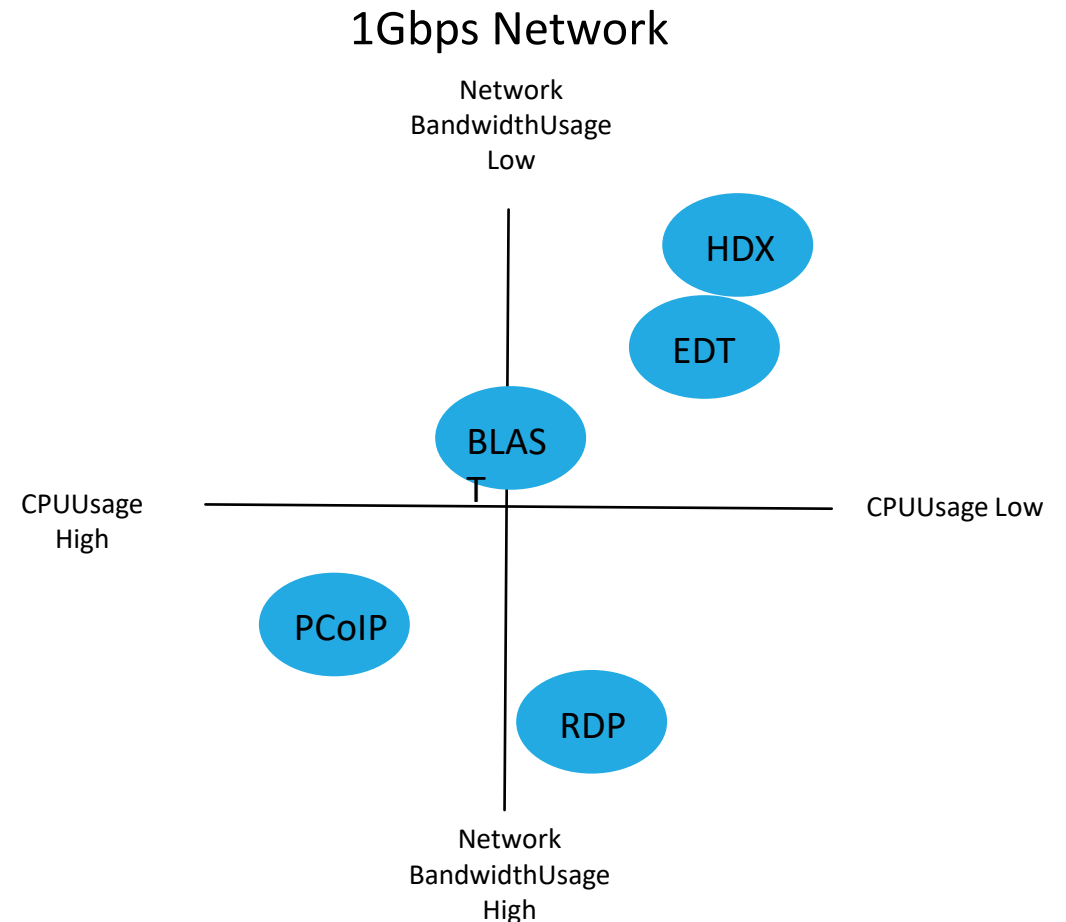
HDX < EDT < RDP < BLAST < PCoIP

- Network Bandwidth usage(1Gbps Network)

Low

High

HDX < EDT < BLAST < PCoIP < RDP



# 低頻寬環境(10Mbps Network)

- CPU usage(10Mbps Network)

Low

High

EDT < HDX < RDP < BLAST < PCoIP

- Network Bandwidth usage(10Mbps Network)

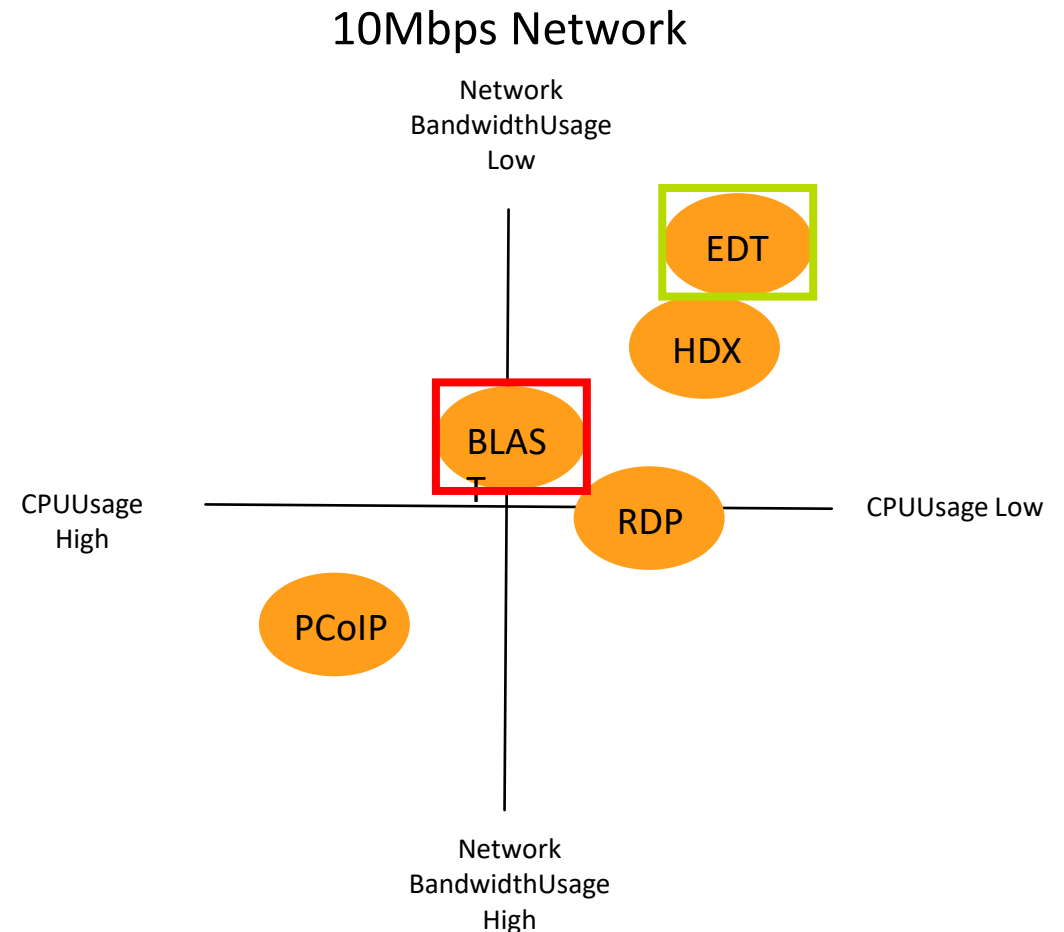
Low

High

EDT < HDX < BLAST < RDP < PCoIP

EDT worked effectively under the network conditions

BLAST did not work effectively under the network conditions

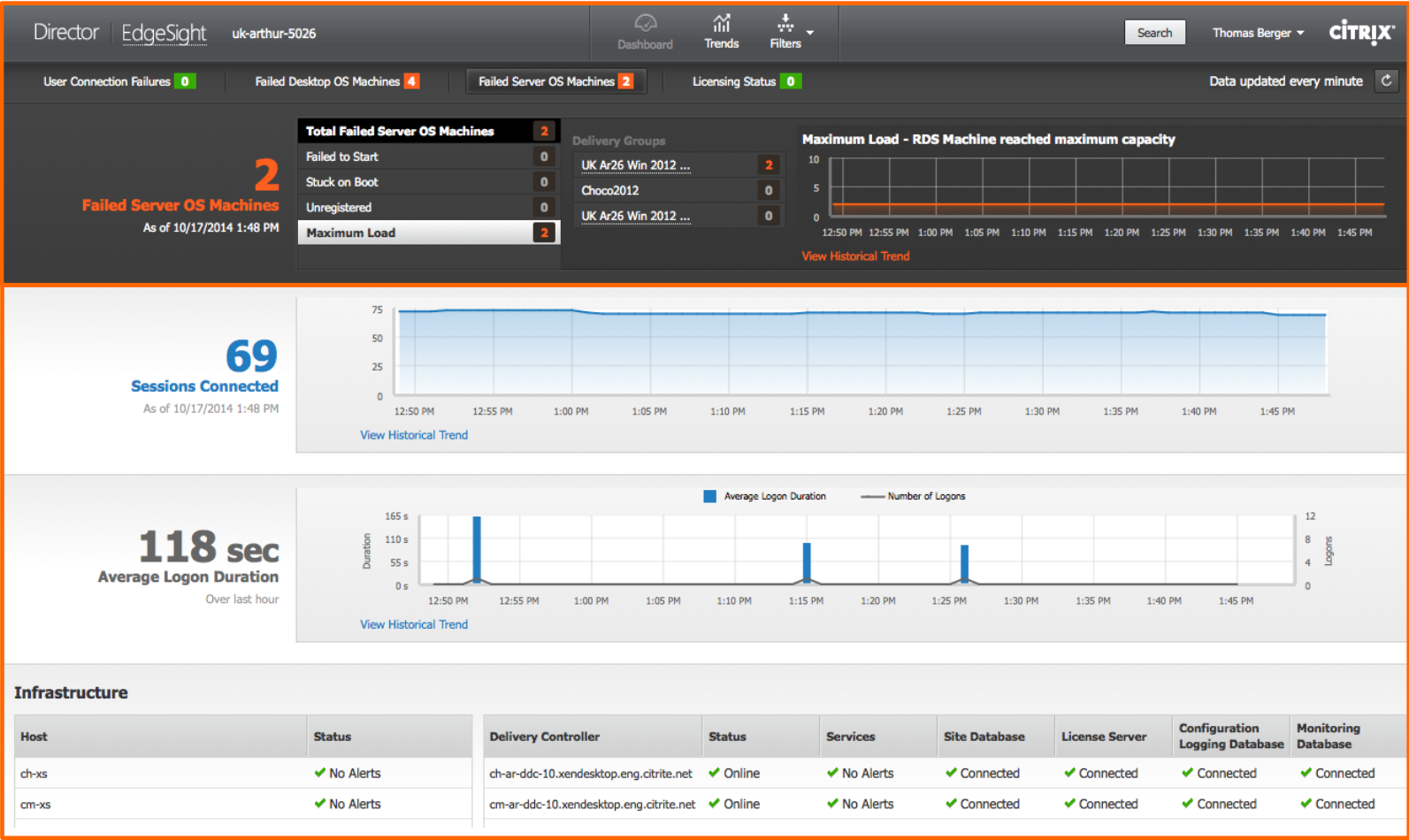




# Citrix 提供完整的系統狀況主控台 Director – System Dashboard

動態示警  
(incl. License Server & License Usage)

提供重要資訊, 但簡單  
操控的互動式主控台  
(real-time) for support  
staff



# Citrix Workspace Environment Management



**Optimize User Experience**



**Simplify Administration**

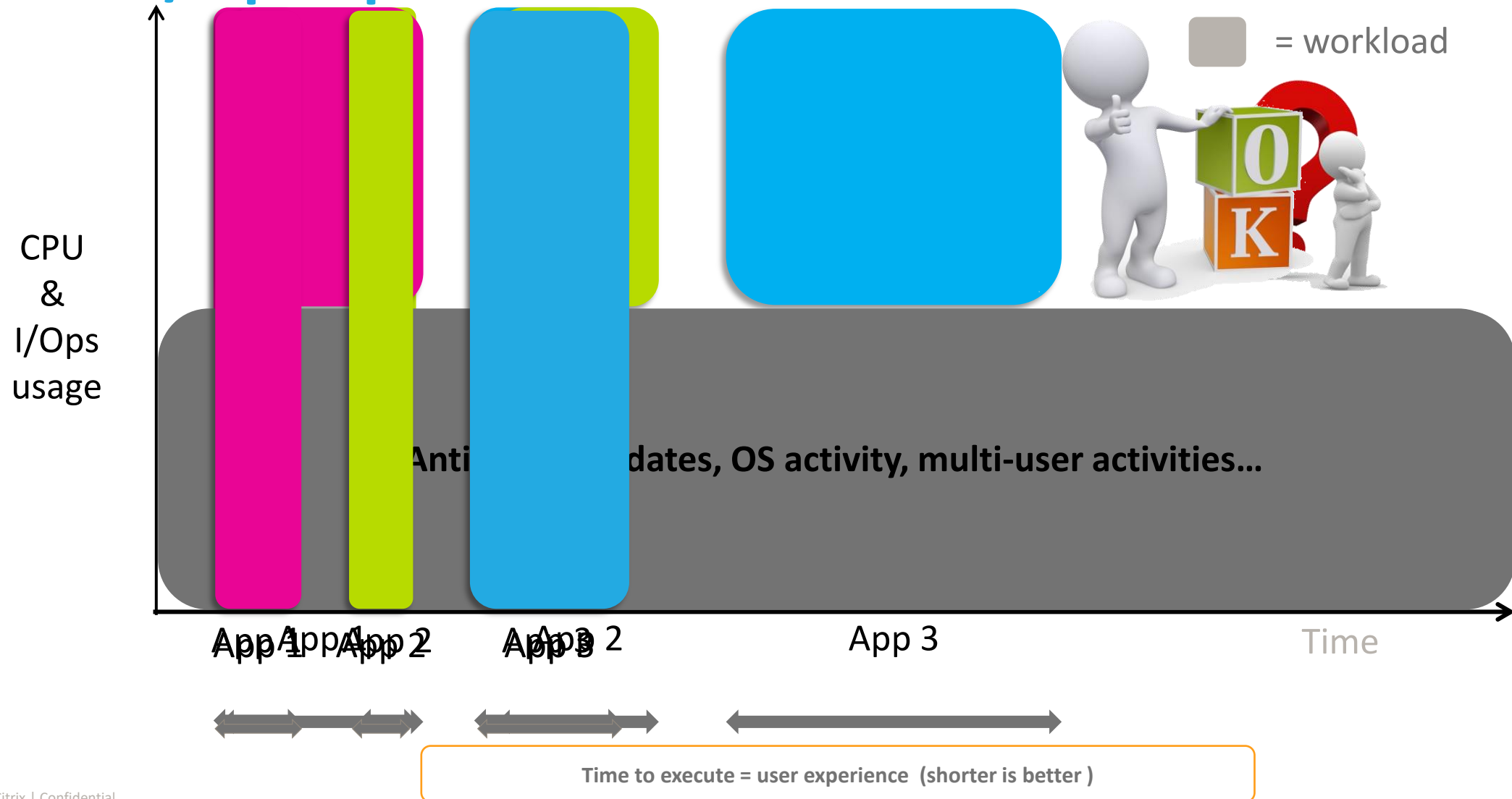


**Accelerate Logins**

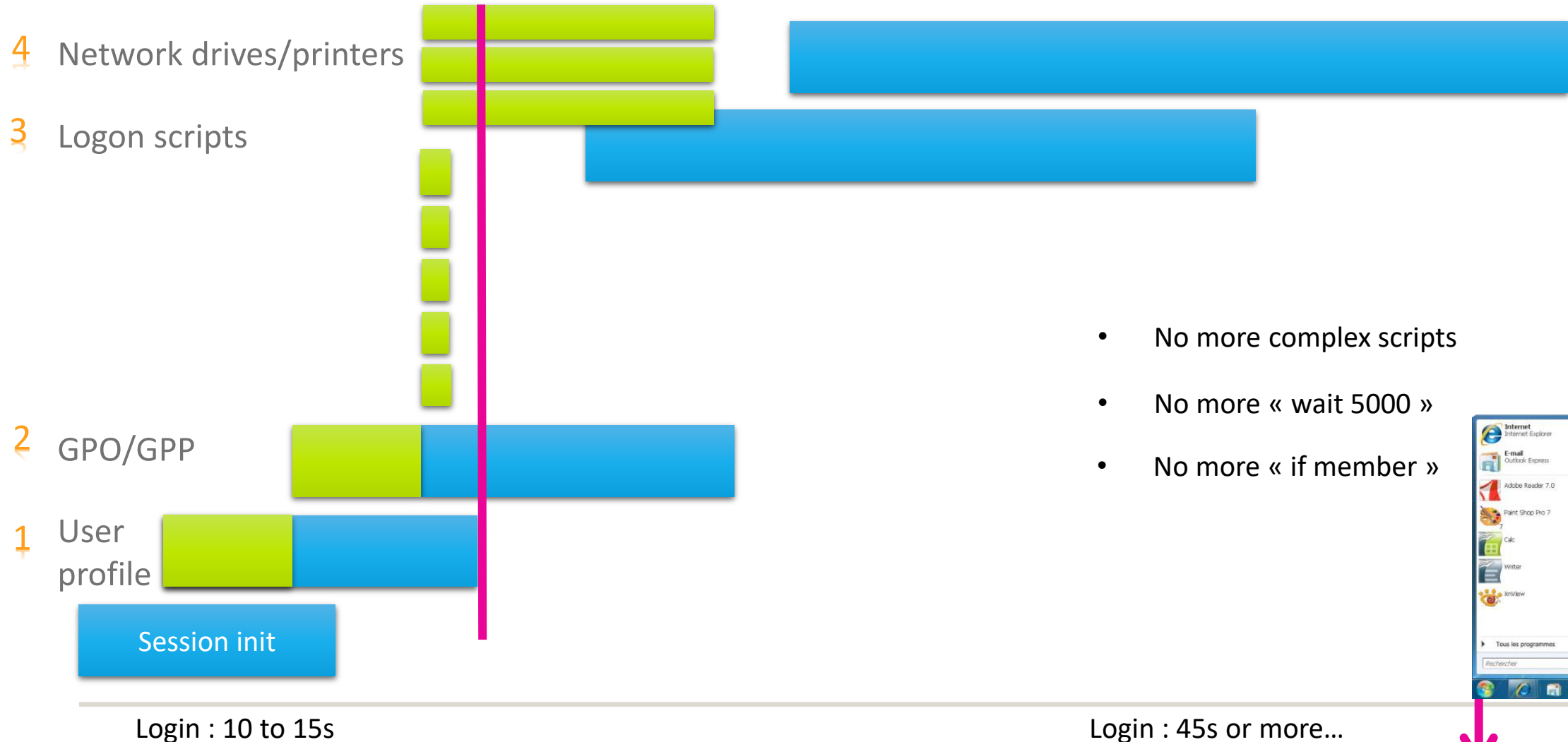


**Save Money**

# CPU & I/Ops optimizations



# Login time optimizations





**CITRIX® Cloud**

**Analytics Service**

# 國家資通訊安全發展方案(102~105年)

行政院102年12月25日 核定

行動方案	執行要點	績效指標	主（協）辦單位
4.3.1.資安納入各級學校課程或學程	<div>1. 鼓勵各級學校資安訓練納入通識教育。</div> <div>2. 建構我國教育體系資安訓練科普課程，並提供資安先備課程及教材。</div> <div>3. 落實大專院校設立資安學程及資安系所。</div>	<div>1. 每年辦理至少 2 場涵蓋資安人才培育議題之研討會。</div> <div>2. 103 年起發展資安先備(基礎)課程教材。</div> <div>3. 103 年起推動大專院校設立資安學程及資安系所至少達 20% 以上。</div> <div>4. 推動資安素養議題納入中小學課程。</div>	教育部(資通安全辦公室)



# 國家資通訊安全發展方案(106~109年)

工作項目	分年重要進程	主(協)辦部會
10. 增加產業資安人才供給		
10.1 投入資源厚植大專校院資安人才培育量能	<ol style="list-style-type: none"><li>107 年底前建立選派資安種子師資赴外研習機制。</li><li>109 年底前建立大專院校系統化培育資安專業人才之機制。</li></ol>	教育部
10.2 拔擢在職人士培育產業所需之資安專業人才	<ol style="list-style-type: none"><li>定期辦理國際資安競賽，培育資安競賽實戰選手。</li><li>107 年底前引進國外符合產業需求之資安先進課程並試行。</li></ol>	經濟部

# 資安人力短缺; 組織處於風險中

## Gap in Cybersecurity Professionals by Region

LATIN AMERICA  
~136K

EUROPE, THE MIDDLE  
EAST, AFRICA  
~142K

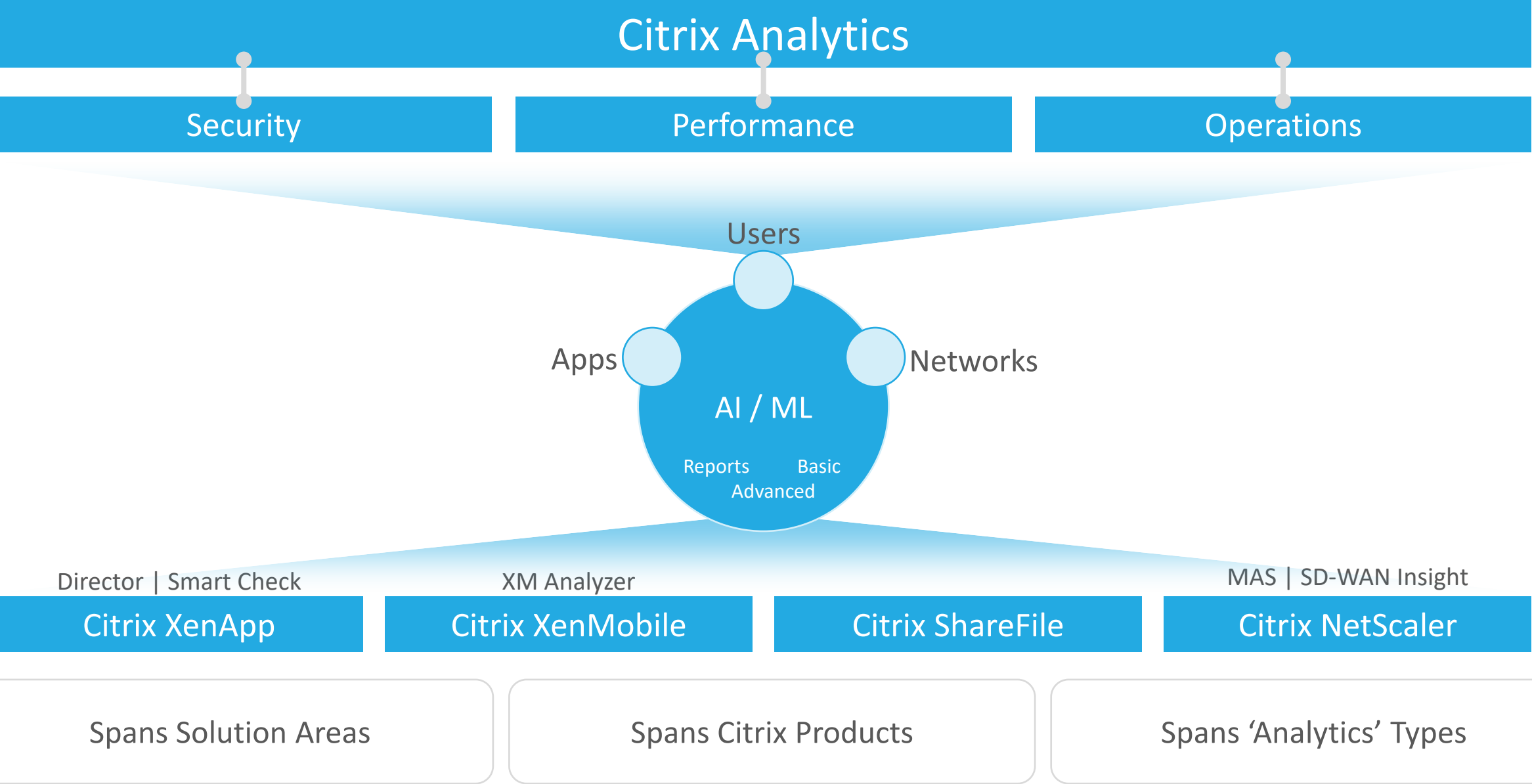
NORTH AMERICA  
~498K

ASIA PACIFIC  
~2.14M

GLOBAL  
~2.93M



# Citrix Analytics



# Security Analytics

What is it?



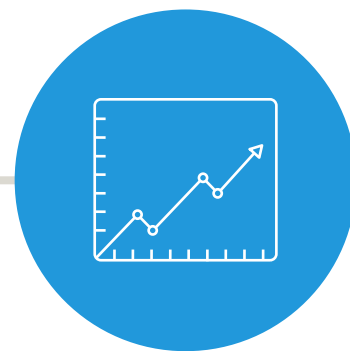
紀錄描述

What happened?



診斷

How it happened?



預測

What will happen?



執行作動

What to do?



**Excessive (sensitive)  
file downloads**



**Stolen  
credentials**



**Loss of  
(sensitive) data**

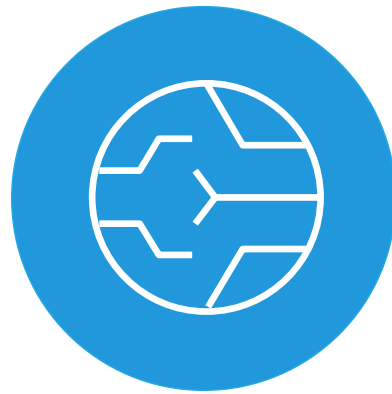


**Quarantine  
User**

# Citrix Analytics 是獨一無二的



Sense



Analyze



Respond

# 使用者行為安全分析

- 偵測和減輕來自受信任的內部使用者的惡意威脅
- 透過細部辨識行為功能輕鬆識別高風險用戶
- 採取糾正措施

The screenshot displays the Citrix Analytics Service interface. At the top, a blue banner reads "This is a demo environment." with a "Start the Tour" button. Below this is a navigation bar with tabs for Security, Performance, Operations, Settings, Help, Search, and Alerts (274). The main content area shows a timeline for user "Andrew Jackson" (last updated April 24, 2019, 02:07 HKT). The timeline includes several events:

- 5/8/2018 (header)
- 09:45:00 AM: MEDIUM risk, 100% confidence. Event: "Device with blacklisted".
- 09:45:00 AM: MEDIUM risk, 100% confidence. Event: "Unmanaged device de".
- 09:45:00 AM: Action applied: "Start session recording".
- 09:26:00 AM: HIGH risk, 100% confidence. Event: "Excessive access to sensitive files (DLP aler..." with a right arrow.
- 09:00:00 AM: LOW risk, 100% confidence. Event: "EPA scan failures" with a right arrow.
- 08:59:00 AM: LOW risk, 70% confidence. Event: "Excessive file uploads" with a right arrow.

A modal window is open over the timeline, showing various actions that can be taken:

- GLOBAL:**
  - ☐ Add to watchlist
  - ☐ Notify administrator(s)
- CITRIX GATEWAY:**
  - ☐ Log off user
- CITRIX CONTENT COLLABORATION:**
  - ☐ Disable user
  - ☐ Expire All Links
- CITRIX ENDPOINT MANAGEMENT:**
  - ☐ Stop Session Recording
  - ☐ Lock device
  - ☐ Notify Admin
  - ☐ Notify user
- CITRIX VIRTUAL APPS AND DESKTOPS:**
  - ☐ Log off user
  - ☐ Start session recording

Buttons at the bottom of the modal are "Clear All" and "Apply".

