Cisco Office in a Box: Virtual Desktop Infrastructure for Superior User Experience at the Branch

What You Will Learn

The ubiquitous nature of the Internet is changing the world, and strides in virtualization technology are accelerating IT transformation globally. Businesses are trying to get closer to their customers globally and see the need to establish their presence in strategically important areas. Cisco and VMware have developed a distributed virtual desktop infrastructure (VDI) architecture that provides the benefits of centralized administration and the richness of a superior user experience.

Challenge

Advances in virtualization and compute technologies are changing the IT landscape - doing more with less infrastructure - which is, in turn, compelling changes in branch-office network infrastructure. Business continuity is accelerating resource centralization, with more and more critical assets moving into the enterprise headquarters and data center. This situation is creating a ripple effect on branch and remote offices. To meet regulatory compliance and cost-control requirements, many organizations are optimizing resources and reducing complexity in the branch office.

Although centralizing branch resources and increasing access can bring significant benefits, it can also pose security, latency, business continuity, and performance challenges. Businesses can achieve optimal productivity only when the same level of services is available in the branch office as in the corporate headquarters. Branch-office networks need to be secure, available, remotely manageable, and extensible, and they must deliver application performance and quality of experience that is as good as in the main offices.

Business Benefits

Cisco® branch-office solutions distinguish themselves from other branch-office offerings. Cisco delivers multiservice routers with high performance, availability, and density for concurrent data, security, voice, application acceleration, and compute services with maximum headroom for growth. Cisco Integrated Services Routers Generation (ISR G2) feature server blades, embedded security, onboard digital signal processors (DSPs), performance and memory enhancements, and high-performance interfaces that feature the latest WAN technologies. All of these features combine to meet the needs of the most demanding enterprise branch offices.

With the integration of the compute ability with the Cisco UCS® E-Series, Cisco and VMware have built an optimal architecture that can deliver VDI to branch offices. This architecture offers the benefits of centralized administration and control, while at the same time enhancing user experience and business continuity. The architecture does so by hosting the virtual desktops locally at the branch and delivering them from the Cisco UCS E-Series Server.

Solution

Cisco UCS E-Series Servers bring data center-class blade servers to the branch office. These servers are virtualization-ready, high-density, onboard CPU blade servers designed to balance simplicity, performance, and application density while operating in an energy-efficient environment. These powerful, x86, 64-bit blade servers are housed within Cisco ISR G2 networking platforms, and are designed to host essential infrastructure services and mission-critical business applications in the lean branch office. The Cisco ISR G2 provides a highly secure and reliable platform for scalable multiservice integration at enterprise and commercial branch offices of all sizes and in small- to medium-sized businesses. The excellent service delivery on a single platform offers the ultimate user experience with the architectural scalability and investment protection needed to minimize overall deployment costs.

VMware View simplifies desktop and application management while increasing security and control. The new release of View 5.2 provides centralized management of the virtual desktops hosted locally at the branches. The decoupling of the desktop management and desktop hosting is a key ability for businesses that want to provide superior application performance and quality of experience to their branch offices that is as good as in the main offices.

Figure 1 shows a traditional VDI deployment where all of the resources (virtual desktops, broker, View Manager) are centralized at the data center or at headquarters. Branch users run their desktops across the WAN. Challenges with this approach include:

- Latency introduced by the WAN link affecting the user experience
- Resiliency of WAN link - an outage will affect business at the branch
- Bandwidth upgrades - multiple desktops and applications competing for bandwidth

Figure 1. Traditional VDI Deployment

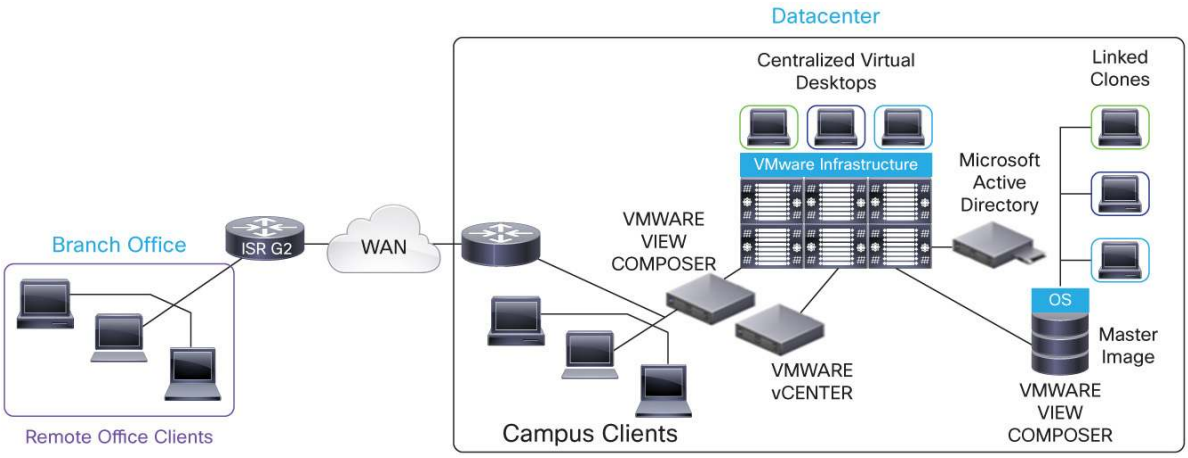
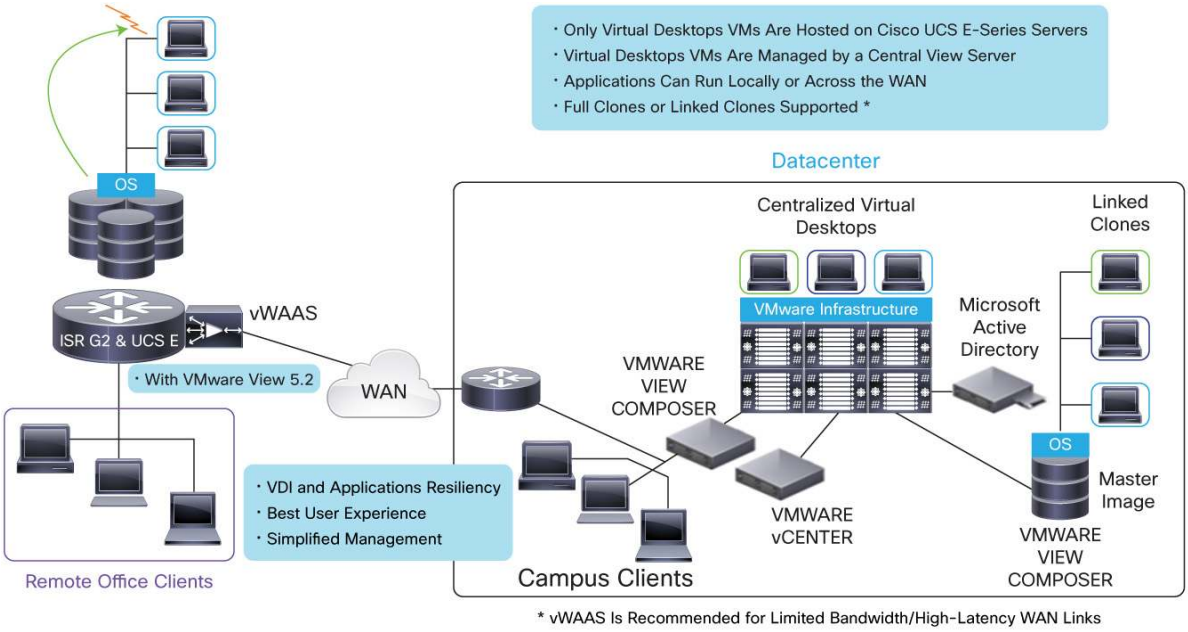


Figure 2 illustrates a distributed VDI deployment using Cisco UCS E-Series Servers.

Figure 2. Distributed VDI on Cisco UCS E-Series Servers



With the distributed VDI architecture, the virtual desktops can now run locally on the Cisco UCS E-Series Server within the ISR G2. This provides connectivity, as well as other services, to the branches in terms of VPN connectivity or unified communications services. Cisco virtual Wide Area Application Services (WAAS) is recommended, depending on the type of desktop implementation (full clones or linked clones) and the bandwidth availability running the acceleration services available on the ISR G2.

Key benefits with this distributed VDI architecture include:

- A superior user experience since the virtual desktops are local to the branch
- No negative effects to users who are already working on their local desktops in the event of a WAN outage
- Centralized management of desktops, image management, and patch updates

As businesses start deploying VDI at branches, this distributed VDI architecture gives them the flexibility of centralized management and a local LAN-like user experience.

Why Choose Cisco

To summarize, the Cisco ISR G2s with UCS E-Series Servers running VMware View 5.2 provide a completely robust and reliable VDI deployment - exemplifying a true branch in a box. Designed for a variety of deployments, the Cisco ISR G2s deliver a significant payback in terms of TCO because of improved facilities use, simplified installation and upgrades, and significantly reduced downtime. This solution allows IT managers to take full advantage of their existing knowledge, training, and infrastructure to more cost effectively implement enterprise-wide branch solutions.

For More Information

To learn more about Cisco UCS E-Series Servers visit http://www.cisco.com/go/ucse.

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