Server Deployment Overview

OpenText Exceed onDemand
Managed Application Access Solutions for Enterprise

OpenText Connectivity Solutions Group
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Abstract

No two business environments are identical, but many do share similar characteristics, such as the type of business applications deployed, the strategic distribution of application servers, the density of the user population, the relative distance between the user population and application servers, etc. These characteristics have definitive impacts on the IT infrastructure, which will ultimately shape the business environments. This whitepaper will outline five common business environments, at which accessing X Window-based business applications is one of the main requirements, and providing a recommended server deployment scenario for each.
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Overview

Exceed onDemand is the most powerful and dependable managed application access solution on the market. It is designed for Microsoft Windows, Apple Mac OS X, IBM AIX and Linux desktop users, and they are built on a sophisticated architecture that gives them the power, flexibility, and security to meet business needs.

No two business environments are identical, but many do share similar characteristics, such as the type of business applications deployed, the strategic distribution of application servers, the density of the user population, the relative distance between the user population and application servers, etc. These characteristics have definitive impacts on the IT infrastructure, which will ultimately shape the business environment. This whitepaper will outline five common business environments, at which the accessing of line of business applications is one of the main requirements, and provide a recommended server deployment scenario for each.

This document is part of the OpenText Managed Application Access Solutions for Enterprise Whitepaper series. For other technical topics, please visit http://connectivity.opentext.com.
Scenario 1: Single Application Server, Single Office Business Environment

A small-to-medium business (SMB) has an X Window business application running on a single application server. Users of the X application can be local, remote, or mobile.

**Recommendation**

Assuming the application server is a capable machine, Exceed Connection Server and X applications can share the same physical platform. This configuration is called Direct Client-Server Connection, and it will provide the following benefits:

- Reduce administrative overhead as there is only one server to manage
- Improve response time because communication between Exceed Connection Server and X applications will take place internally within the server
- Deliver high-performance over any network connection
- Enhance user productivity by offering the ability to suspend and resume Exceed onDemand sessions
- Safeguard work-in-progress through the built-in crash-and-resume feature
- Enable project collaboration with desktop sharing and session-shadowing feature
- Centralize control of application access and license usage
Scenario 2: Multiple Application Servers, Single Office Business Environment

A company has multiple UNIX business applications running on multiple application servers. All servers are located in a single office. Users can be local, remote, or mobile.

Recommendation

Exceed Connection Server supports Gateway Connection configuration. In this configuration, Exceed Connection Server and X applications are housed in separate machines. The server will act as a gateway between client PCs and those application servers. This configuration will provide the following benefits:

- Less Administrative Overhead
  - Administrators do not have to install Exceed Connection Server on each application server
  - Administrators do not have to manage multiple and often duplicate sets of configuration files
- Non-Intrusive
  - Servers hosting critical line of business applications are undisturbed
  - Since business applications and Exceed Connection Server are located on different machines, they do not have to share system resources
• Highly Scalable
  
  • The OpenText Managed Application Access solution can easily scale by forming an Exceed Connection Server Cluster
  
  • Company can enjoy the benefits of automatic load balancing and fail-over protection

• Other Features
  
  • Delivers high performance over any network connection
  
  • Improves user productivity by offering the ability to suspend-and-resume Exceed onDemand sessions
  
  • Safeguards Exceed onDemand sessions through the built-in crash-and-resume feature
  
  • Enables project collaboration with desktop sharing and session shadowing feature
  
  • Centralize control of application access and license usage
Scenario 3: Multiple X Application Servers, Multiple Offices

Business Environment

A company has multiple critical line of business applications running on multiple application servers located in many offices. It was the company’s decision, based on various technical factors and business reasons, to place application servers in each branch office. Local, remote, or mobile users must be able to access those applications in one or more offices.

Recommendation

Exceed Connection Server or Cluster will be installed in every branch office. Local, remote, or mobile users will be accessing business applications through an Exceed Connection Server or Cluster that is the closest to the application server.
This configuration will provide the following benefits:

- **High Performance**
  - The low-latency and high-speed connection between an application server and an Exceed Connection Server will guarantee the best performance

- **Less Administrative Overhead**
  - Administrators do not have to install Exceed Connection Server on each application server
  - Administrators do not have to manage multiple and often duplicated sets of configuration files

- **Non-Intrusive**
  - Servers hosting critical line of business applications are undisturbed
  - Since X applications and Exceed Connection Server are located on different machines, they do not have to share system resources

- **Highly Scalable**
  - The OpenText Managed Application Access solution can easily scale by forming an Exceed Connection Server Cluster
  - Company can enjoy the benefits of automatic load balancing and fail-over protection

- **Other Features**
  - Delivers high performance over any network connection
  - Improves user productivity by offering the ability to suspend-and-resume Exceed onDemand sessions
  - Safeguards Exceed onDemand sessions through the built-in crash-and-resume feature
  - Enables project collaboration with desktop sharing and session shadowing feature
  - Centralize control of application access and license usage
Scenario 4: Single Application Center, Multiple Offices (Centralized Application Deployment)

Business Environment

In order to achieve higher levels of economies of scale, an enterprise may consolidate computing resources to a centralized location, forming an application center where business-critical applications will be hosted in enterprise-class servers. The access to those applications must be delivered to users around the globe, regardless of the vast geographical distance between them and the center.

Recommendation
Exceed Connection Server or Cluster will be installed on an enterprise-class machine and placed in or close to the application center. Exceed Connection Server or Cluster will be acting as a gateway between users and X applications running on various hosts.

This configuration will provide the following benefits:

• Reduce the number of IT infrastructures in the organization, and possibly reduce the number of application servers through the consolidation of computing power

• Minimize administrative overhead as only one Exceed Connection Server or Cluster is needed, rather than establishing a server or cluster in each branch office and consuming resources of multiple administrators

• Reduce the complexity of application access by providing a single point of entry: one application center; one entry point for every user

• Deliver high-performance over any network connection

• Improve user productivity by offering the ability to suspend-and-resume Exceed onDemand sessions

• Safeguard work-in-progress through the built-in crash-and-resume feature

• Enable project collaboration with desktop sharing and session-shadowing feature

• Centralize control of application access and license usage
Scenario 5: Virtualization of High-End 3D Applications

Business Environment

For certain industries, such as oil and gas, automotive, aerospace, medical and others, they need to consolidate highly specialized CAD/CAM applications ran by design engineers, or 3D seismic imaging applications used by geologists, or 3D medical imaging applications used by medical professionals. These industries are seeking higher levels of economies of scale and higher return on investment through the consolidation of computing resources to centralized locations. The access to those bandwidth and resource hungry 3D X applications must be delivered to users around the globe, regardless of the great degree of geographical dispersion.

Recommendation
Exceed Connection Server or Cluster will need to run on top-of-the-line servers with state-of-the-art graphics subsystems in order to take advantage of the accelerated 3D rendering that is offered in Exceed onDemand. Exceed Connection Servers or Clusters must be connected to the application center over a high speed Ethernet network or better. Exceed Connection Servers or Clusters will be acting as a gateway between users and X applications.

This configuration will provide the following benefits:

• Greatly improve the performance of 3D application over LAN and WAN through the server-side direct rendering and the advanced image compression capabilities

• Reduce the number of IT infrastructures in the organization, and possibly reduce the number of application servers through the consolidation of computing power

• Minimize administrative overhead as only one Exceed Connection Server or Cluster is needed, rather than establishing a server or cluster in each branch office and consuming resources of multiple administrators

• Reduce the complexity of application access by providing a single point of entry: one application center; one entry point for every user

• Improve user productivity by offering the ability to suspend-and-resume Exceed onDemand sessions

• Safeguard work-in-progress through the built-in crash-and-resume feature

• Enable project collaboration with desktop sharing and session-shadowing feature

• Centralize control of application access and license usage
Summary

There is one simple but fundamental rule that serves as the design guide for all scenarios described above: the Rule of Proximity. One of the strengths of the OpenText Remote X application delivery platform is the highly compressible and ultra-high performance Thin X Protocol (TXP). Results from an in-house analysis has shown that the amount of network traffic generated by Exceed onDemand is less than 1 percent that of a traditional X server. TXP is one of the main reasons why Exceed onDemand has such exceptional performance over limited bandwidth connections, which is commonly associated with increased geographical distance. TXP can effectively eliminate geographical barriers.

However, TXP can only be used to reduce network traffic between client PCs and Exceed Connection Servers; the communication between the Server and X applications is still handled by the traditional X11 protocol, which performs well only in a local area network environments.

Because of the dependence of the X11 protocol, and the protocol's lackluster performance over any network connection other than LAN, it is imperative that when considering the placement of the Exceed Connection Server, you must ensure that the network connection between the application server and the Exceed Connection Server is both high-speed and low-latency. In other words, Exceed Connection Server and the application server must be in close network proximity in order to maximize the efficiency of the solution.

As demonstrated in each scenario, Exceed Connection Server is strategically positioned closely to the application servers, whereas Exceed onDemand Client users can be anywhere in the world.

For more information on the power of Exceed onDemand, please visit us at connectivity.opentext.com.
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