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edDesk Deployment Whitepaper

Effective deployment of itechne edDesk™ for Microsoft Windows Server

Prepared by the itechne team

Contents

This technical whitepaper covers the following topics:

About this whitepaper

The Technical White Paper is designed to provide in-depth information about the deployment of edDesk for Windows Server, how to configure client access to it, and how to use it for the creation and distribution of content throughout your network.

The edDesk platform

edDesk is a web application that provides tools to create and manage content for publication to multiple media, using an XML-based transformation engine to output content in different formats (including HTML, Quark, InDesign etc).

Architecture overview

edDesk for Windows Server runs on top of Windows 2000 Server. It is installed through the Windows installer as a set of application components/DLLs, with companion database tables and web directories. It uses IIS 5 as its http daemon, ASP 3 as its scripting system, and Microsoft's XML extensions for data exchange, integration and presentation. The application uses SQL Server (either SQL Server 7 or SQL Server 2000) as its relational data store.

Clients access the application over TCP/IP, and the user interface is rendered and presented through a web browser client. More advanced browser clients (such as Internet Explorer 6.0 on Windows) offer more advanced features than other combinations of browser and operating system .

Software requirements and prerequisites

Server software

The following companion software products need to be installed on the same physical system as the edDesk application:

- Microsoft Windows 2000 Server, Advanced Server or Datacenter Server
    - Microsoft Internet Information Server 5.0
    - Microsoft ASP 3.0
    - Microsoft TCP/IP protocol stack
- Microsoft Windows 2000 Service Pack 2
- Microsoft Windows 2000 Security Rollup Package SRP1 (Pre-SP3)
- Microsoft XML 3.0

The following companion software products need to be either installed on the same physical system or directly accessible on the network:

- Either:
    - Microsoft SQL Server 7.0
        - Service Pack 3

    or
    - Microsoft SQL Server 2000
        - Service Pack 2

Client software

edDesk is accessed as a Web application through a browser and does not need any special software installed on the client beyond a current version browser.

However, the choice of browser client and operating system does affect the richness of features that can be accessed through a web client, and enhanced functionaility is available on Windows and Internet Explorer.

Our recommended software for clients with heavy use of edDesk is:

- ❖ Internet Explorer 5.0, 5.5 or 6.0 with the latest service packs
- ❖ Windows 2000 or XP with latest available service packs
- ❖ Microsoft Office 2000 or later with the latest service packs

edDesk may also be used on the following platforms:

- ❖ Macintosh OS9 or OSX with Internet Explorer 5.5 and an up-to-date Java Virtual Machine
- ❖ Netscape 6 with an up-to-date Java Virtual Machine (Windows, Linux and other supported platforms)

Recommended hardware

Server hardware

We recommend the fastest machine you can afford for deploying edDesk, with substantial RAM, a fast drive system (preferably an array), and at least dual processors. The edDesk application and SQL Server in an edDesk implementation have similar load demands, with burst and peak utilisation tending to occur sequentially rather than in parallel.

You can achieve better performance by running both edDesk and SQL Server on a single very well configured high-end system than splitting them across two machines with lower or widely differing performance – i.e. it's better to have a single very powerful server than two lower powered servers or one more and one less powerful system.

While general use of the application (browsing content, editing articles, managing status) will run happily on the base requirements for Windows 2000 Server, the publishing process that transforms content to multiple formats is memory, disk and processor intensive and may be operating against large numbers of documents – potentially thousands or tens of thousands.

If bottlenecked it will impact general end-user access to the application.

While this may be managed through appropriate policies on scheduled publication to avoid impacting end-users, this is a second choice to deploying adequate hardware in the first place.

Recommended configurations

For most standard environments, we recommend the following hardware for edDesk and SQL Server regardless of whether they are deployed on the same server or separate servers:

- Processors: Multiple processors, 1Ghz or faster each
    - Multiple processors are mandatory: with at least two processors SQL Server can be tied to a processor.
- 1G or more memory (the more the better).
- Drive subsystem: SCSI RAID5. The major objective is to have database and content directories on the fastest possible drive subsystem, with the load split over multiple drives, arrays and buses. The more the load is spread the faster intensive operations like output publishing will run, and the faster general response times will be.
    - 10K RPM SCSI Ultra160 or better drives
    - Data volume on a RAID5 array. If possible SQL databases and wwwroot directories on separate RAID5 arrays if available, and in a perfect world on separate controllers.
    - Operating system/applications on separate physical drive and SCSI bus (RAID not required)
    - Paging and logs files on a separate physical drive to OS/apps and data – ideally on a separate RAID 5 controller to the data volumes if available.

Sample drive configurations

- A typical configuration would be:
  - SCSI bus 0: Two physical drives:
    - Drive 0: Operating system and applications (4G drive)
    - Drive 1: Paging file and logs (9G drive)
  - Array Controller:
    - 3 x 9G drives in an array for 18G logical volume
- A typical high-performance configuration would be:
  - Array Controller 0:
    - Array 0: 3 x 4G drives
      - Logical Volume 0: Operating systems and applications
      - Logical Volume 1: Paging files and logs
    - Array 1: 3 x 9G drives
      - Logical Volume 0: IIS webroot and data directories
  - Array Controller 1:
    - Array 0: 3 x 9G drives
      - Logical Volume 0: SQL database directories

Client hardware

Although edDesk has base requirements that are the same as the browser and operating system used to access it, for optimal performance and stability we recommend the following hardware for heavy or regular users of edDesk, especially those on Windows also using the Microsoft Office integration features:

Windows-platform:

- Processor: Pentium III 500MHz or better
- Memory: 192M or more
- Disk: 1G free space

Macintosh-platform:

- Processor: G3 500MHz or better
- Memory: 256M or more
- Disk: 1G free space

Network design

There are many ways edDesk can be configured for access by internal and external networks and appropriately firewalled.

There are three key considerations in any network topology involving edDesk:

1) Access to the Windows/IIS/ASP server on which edDesk is running: edDesk requires access on port 80 or over port 443 for secure access over SSL. This means edDesk is easily accessed through proxy servers, and can be firewalled simply.

2) Location of the SQL Server: If SQL Server is running on the same machine as edDesk, it is critical that this server is located in a DMZ, and that access to non-Web server ports – particularly SQL and Microsoft Networking - is blocked on the firewall. If SQL Server is running on a separate server, it can be located on a physically separate network, or the connection may be tunnelled from the DMZ to a further-from-edge network through a second firewall with only access from DMZ IP addresses enabled.

3) Connections between the edDesk server and the Web server hosting the Websites to be published from it. EdDesk can post to a hosting or staging server or group of servers via FTP or via a UNC path. A UNC path is faster and safer, so long as both machines are behind a firewall in a DMZ, or connect to each other via a second secure network.

We recommend that the edDesk server always be deployed behind a client's firewall, and that to start with only access on Ports 80 and 443 is enabled from the firewall, and SQL and Microsoft Networking ports enabled only within the DMZ, or that at least each machine (edDesk, SQL and Web Servers) be connected over a separate private network for file and database connectivity.

Restricting UNC/file and database connections to a private network in addition to placing these machines in a DMZ both improves security and ensures optimal performance.

Two example networks are illustrated in the following sections.

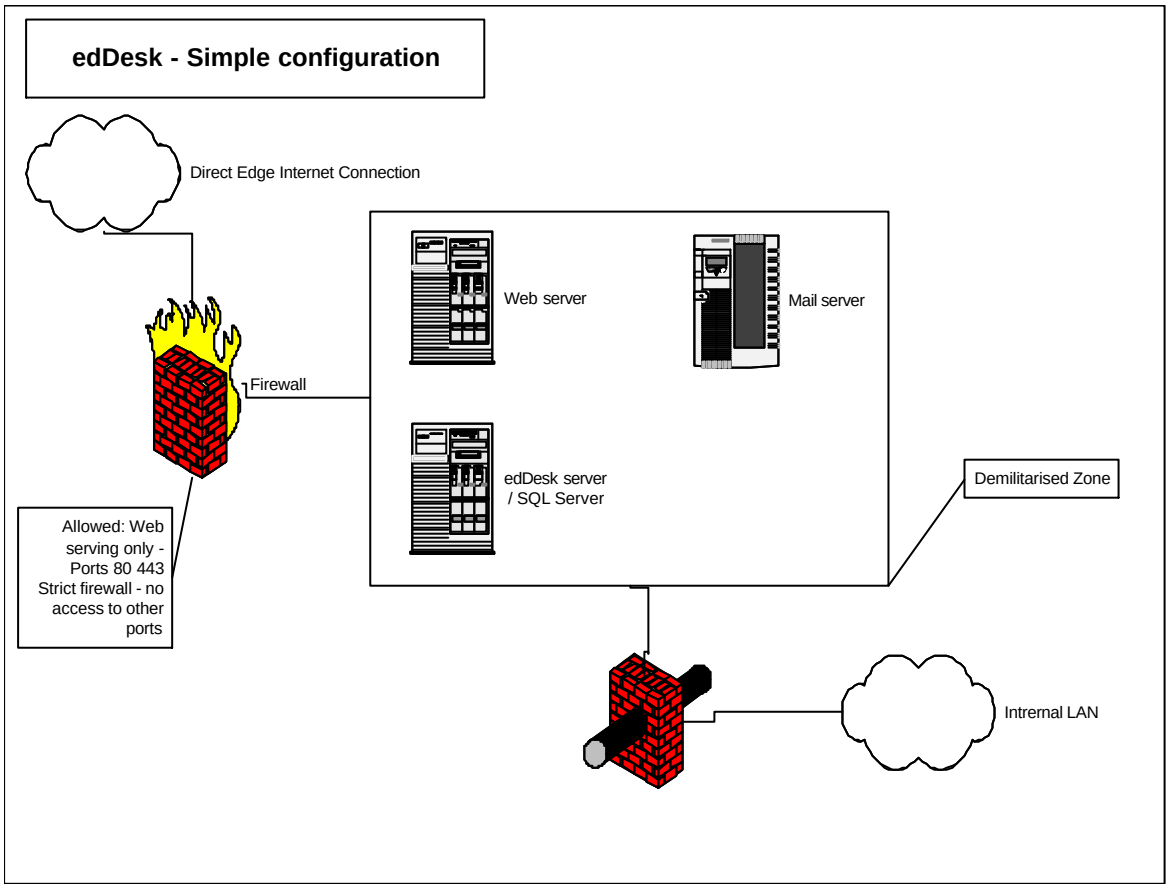
Simple single edDesk server and Web servers in a DMZ

In this configuration, edDesk and SQL Server are running on a single physical system, and the Web sites produced from edDesk are on a separate Web hosting server.

Both these machines – along with any other key servers such as mail – are located behind a firewall in a demilitarised zone. Access from the outside world is restricted to Ports 80 and 443 (and other ports on a strict case by case and network to network basis).

Microsoft network connections (UNC paths) and database connections (SQL) are enabled within this network only, or, even better, are carried over a second private network for performance and security reasons.

Access to the internal LAN can be added if required through a second firewall.

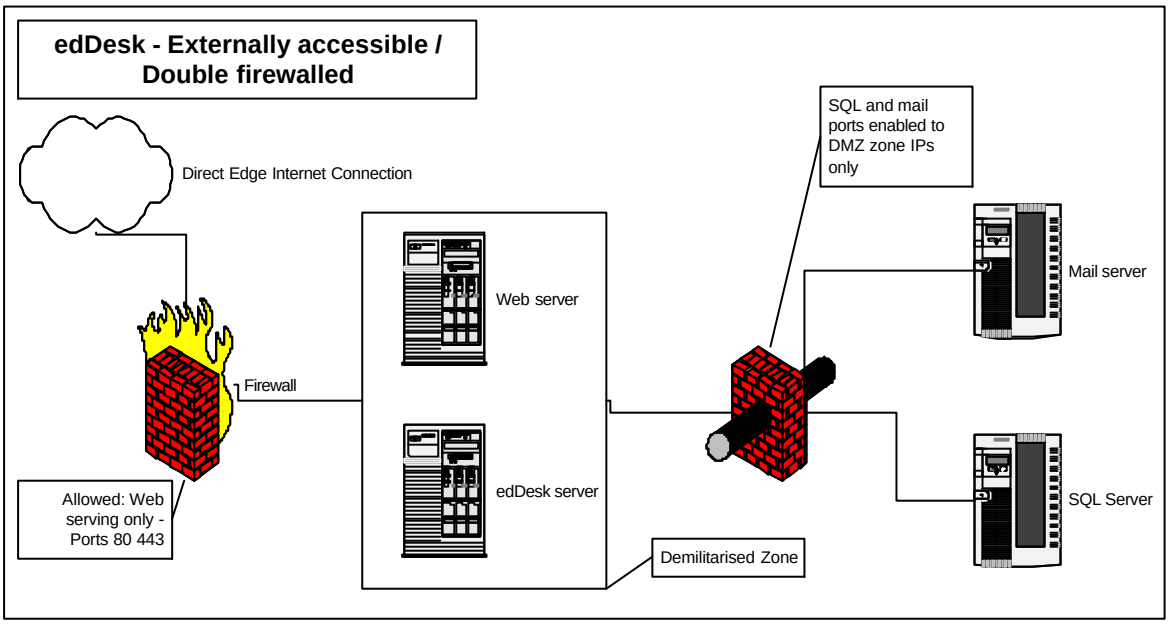


Two tier configuration

In this configuration, the edDesk and Web hosting servers sit in a demilitarised zone behind a firewall as in the first sample, but SQL Server is located on a separate server behind a second firewall one level further removed from the Internet edge connection. The internal LAN is then connected to through a third firewall, with inbound and outbound network restrictions.

Where the SQL Server and the edDesk application are running on separate physical machines, there is the potential for firewalling with filtering enabled to impact performance. So ideally the database connections should be on a private network with minimal traffic, and for high-load sites this should be over a gigabit Ethernet connection with the fastest possible firewalling system.

An example based on this configuration is illustrated below.



Setting up itechne edDesk

The following installation notes step through the stages involved in any edDesk installation in detail.

These are based on a single server installation, although the basic steps are applicable to any setup.

edDesk Installation Notes

1. SQL Server

1.1. Load SQL Enterprise Manager (Programs/Microsoft SQL Server 7.0/Enterprise Manager).

1.1.1. Log in as administrator if requested.

1.2. Expand list and locate Databases.

1.2.1. Right-click/New Database. Name:edDesk. Click OK (using all defaults).

1.3. Under Security, create a login:

1.3.1. Name: dbEdDesk

1.3.2. Use SQL Server Authentification, password: eddeskuser

1.3.3. Default database: edDesk

1.3.4. No server roles.

1.3.5. Grant access to database edDesk.

1.4. Select Tools/SQL Sever Query Analyzer

1.5. Change database dropdown to select to edDesk.

1.6. Use menu File/Open to load edDeskCreate.sql from the INSTALL/1 SQL folder.

1.7. Use menu Query/Execute to run the query.

1.8. Use menu File/Exit to close the Query Analyzer.

1.9. Use menu Console/Exit to close all SQL Server Enterprise Manager.

2. Web Site

2.1. Run IIS (Start/Settings/Control Panel/Administrative Tools/Internet Services Manager)

2.2. Expand all & right-click on Default Web Site.

2.3. Select New/Server Extensions Web. Click Next.

2.4. Directory name: eddesk

2.5. Title: edDesk. Click Next.

2.6. Use same administrator as parent web. Click Next.

2.7. Using Windows Explorer, right-click on the edDesk folder from INSTALL/2 EDDESK WEB/EDDESK, AND SELECT COPY. Then locate c:\inetpub\wwwroot, right-click on it and select Paste. Click 'Yes to all' to overwrite the existing edDesk folder.

3. Components

3.1. Right-click on INSTALL/3 COMPONENTS/EDDESK and Install.

(If Explorer is showing full file extensions edDesk.MSI & edDesk.MSI.cab, choose edDesk.MSI).

4. Microsoft XML

4.1. If IE6+ is not installed, run INSTALL/4 XML/MSXML3.EXE.

5. edDesk

5.1. Using Internet Explorer, browse to //localhost/eddesk/main

5.2. Login as "Administrator", no password, and use the Admin/Users menu to set up the first actual administrator user (make sure user Role is Administrator)

5.3. Close the browser, re-open, browse to //localhost/eddesk/main & log in again as the new user to create a publication using Admin/Publications.

5.4. If running on the same server & uploading images or running Word, make //localhost/eddesk a trusted site, & use Custom Level to enable ActiveX Controls Not Marked As Safe.

edDesk Uninstall Notes

1. SQL Server

1.1. Load SQL Enterprise Manager (Programs/Microsoft SQL Server 7.0/Enterprise Manager).

1.1.1. Log in as administrator if requested.

1.2. Expand list and locate Databases.

1.2.1. Right-click on edDesk and select Delete.

1.2.2. You are asked 'Are you sure?' – click Yes.

1.3. Expand Security/Logins. Delete dbEdDesk.

1.4. Close SQL Server.

2. Web Site

2.1. Run IIS (Start/Settings/Control Panel/Administrative Tools /Internet Services Manager)

2.2. Expand Default Web Site.

2.3. Right-click edDesk and select Delete.

3. Components

3.1. Use Control Panel/Add Remove Programs to remove edDesk.

Connecting clients

Clients access edDesk using a Web browser over standard http connections occur over TCP/IP port 80 (or port 443 for SSL access).

As a result, configuring client access is relatively straight-forward. Access can be tunnelled through a proxy server or firewalling easily. And providing access between internal networks, or to external users over the Internet is really a policy rather than a technical issue.

Typically, the URI provided to access edDesk can be:

1) Emailed around to users

2) Deployed as a home page or Favourites or toolbar items through the Internet Explorer Administration Kit

3) Linked from an intranet page.

The access provided for address will normally be in the form:

http://[hostname]/eddesk/[clientinstance]

edDesk is what is regularly termed a “zero administration client”. While there are some security settings on the client that will increase the level of functionality by allowing deeper interaction with the client PC, upgrades, new versions and patches are all applied at the server without the need for any installation of software needing to be installed on the individual clients.

Configuring clients for enhanced security access

The local client’s security settings impact the ability to use some of the components that come with Internet Explorer, or executing java code used for Netscape and Macintosh access.

In order to take advantage of integrated Word editing or do bulk-uploading of attachments, each client therefore needs to make edDesk a Trusted Site for Internet Explorer.

This is so that some ActiveX controls can run, and these are usually disabled by default. Please note that edDesk does not use any custom components, but it does use some Microsoft components that come with Internet Explorer 5, and these components must be enabled, otherwise edDesk will not run, or you will be continually asked by the browser to allow the ActiveX controls to run.

These are a couple of steps involved:

Step 1: Make edDesk a Trusted Site

To do this, double-click on the icon at the bottom-right of Interent Explorer. It may say "Internet" or "Local Intranet". (Or use the menu Tools/Internet Options/Security).

Then click on the Trusted Sites icon, and then click on the Sites button.

On the Trusted Sites popup window, clear the "Require Server Verification (https:)" checkbox.

Then type in http://[hostname] and click Add. Then click OK. Do the same for https://[hostname] if required.

Step 2: Allow ActiveX controls to run without prompting

While still on the Security window, with Trusted Sites selected, click the "Custom Level" button.

Under the section "ActiveX controls and plugins" is an option for "Initialize and script ActiveX controls not marked as safe".

Choose the Enable option for this, then click OK.

Then click OK to close the security window.

Step 3: Log back in to edDesk

Now log into edDesk again from the start.

Maintenance and backup

Like any website, database or application, an edDesk server should have regular administration and maintenance performed including:

1) Backup: In addition to regular full system backups, certain key data should be backed up to offline storage regularly and stored safely, including:

    a. The edDesk web directories – backup the inetpub directories daily

    b. SQL databases: The internal SQL database backup utility should be used to backup the edDesk database to a file system directory, and this directory should be backed up daily.

    c. The Internet Services Manager configuration should be backed up whenever significant changes are made

2) Staying up-to-date with security patches and service packs: Particularly the hotfixes from Microsoft for Windows 2000 Server and SQL Server. itechne will notify you regularly of any critical edDesk updates.

3) General server health monitoring: The same general monitoring practices should be followed for managing an edDesk server as for any other Microsoft-based Web or database server. Information and resources on effectively maintaining Windows servers is available on http://microsoft.com/technet