



FileNet Open Client Support of Microsoft Windows Terminal Services

Introduction

This document describes the benefits of using the FileNet Open Client in a Microsoft Windows Terminal Services environment, provides high level definitions of key technologies, provides examples of how to deploy and use the Open Client in a Microsoft Windows Terminal Services environment, and identifies the process required to optimize the performance of the Open Client Java Viewer in a Microsoft Windows Terminal Services environment.

Benefits of Using Open Client in a Microsoft Windows Terminal Services Environment

Increase Remote Network Availability

Remote access to mission-critical information is key in today's progressively mobile business environment. Increasing remote network availability and lowering bandwidth usage adds business value, improves reliability, and enables remote office workers. Whether that information is stored on Image Manager, Content Services, Report Manager, SAP, Siebel, or a homegrown application, it is made immediately available to remote workers using the Open Client installed on Microsoft Windows Terminal Services.

Reduce Desktop Management Costs

The recent trend towards creating a mobile workforce provides an increased competitive edge for many companies. However, as the workforce becomes more mobile, challenges and costs associated with managing and supporting the remote workers' desktops and applications increase. The Open Client, integrated with Microsoft Windows Terminal Services, allows an organization to meet these challenges by eliminating many of the costs associated with supporting and managing remote clients. Remote users are employees, business partners, and customers who require access to information stored in the system. Providing business partners and customers access to information poses the most significant challenge because they work in a client environment that is not controlled by IT. This challenge is eliminated when the user is accessing the Open Client via Microsoft Windows Terminal Services, since the server becomes the only environment IT must manage. IT Staff controls exactly what remote workers can access while also providing a cost-effective means to monitor progress and productivity. This reduces desktop management costs by providing a fast, easy-to-use solution that enables remote workers and a mobile sales force to instantaneously access all the tools required to do their job.

Increase Sales Force Agility

Today, increasing agility helps a mobile sales force keep their competitive edge. They must easily adapt to complex demonstration configurations and changing customer requirements. Improving network access to critical applications increases this agility. By integrating the Open Client and Microsoft Windows Terminal Services, the management of the network and application infrastructure is centralized. This allows an organization to simplify the delivery of rapidly evolving demonstration environments. Therefore, complex demonstration configurations that require access to Siebel, SAP, and homegrown applications can be managed centrally, but accessed, adjusted on the fly, and delivered remotely. The increased agility of a sales force drives savings in labor, increases productivity, and reduces overhead costs.

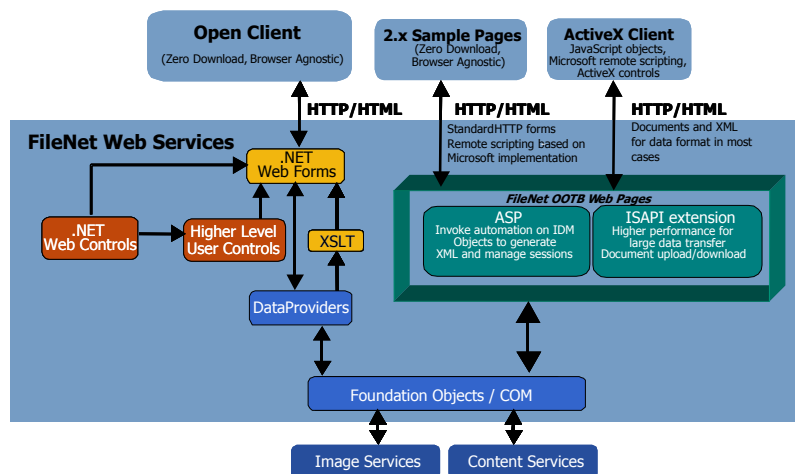
High Level Descriptions

FileNet Open Client

The FileNet Open Client is the thin client interface for FileNet's Web Services server product. It allows users to quickly locate and access content from any Web browser anywhere across the enterprise. It improves overall efficiency and provides a competitive edge through faster processes. It requires no software download and provides maximum reach into the enterprise with minimal deployment costs. The Open Client enables a user to access documents stored in the FileNet Image Manager, FileNet Content Services, or FileNet Report Manager repositories. The Open Client provides a suitable environment for deployments using Microsoft Windows Terminal Services because it installs a very small footprint and is certified against any HTML 3.2/HTTP 1.1 certified browser.

The Open Client enables a user to access documents stored in the FileNet Image Manager, FileNet Content Services, or FileNet Report Manager repositories.

The diagram below provides an architectural overview of FileNet Web Services/Open Client. The top set of boxes represents the three different web clients available with Web Services. The Open Client, shown in the top left side of the diagram, was specifically designed to support multi-user environments like Microsoft Windows Terminal Services and Citrix.



When a user runs an application on a Windows 2000-based terminal server, all of the Open Client application execution takes place on the server, and only the keyboard, mouse and display information are transmitted over the network.

Microsoft Windows Terminal Services

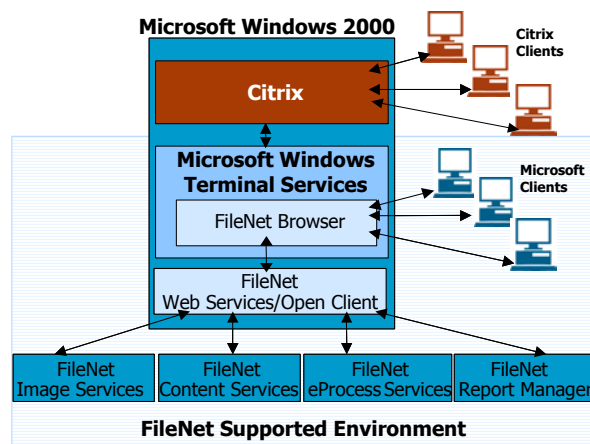
Microsoft Windows Terminal Services delivers the Windows 2000 desktop, as well as the latest Windows-based applications, including FileNet Open Client, to virtually any desktop computing device, including those that cannot run Windows. This lets more people in an organization take advantage of the resources provided by a distributed computing environment. Terminal Services can also be used to remotely administer a Windows 2000-based server.

When a user runs an application on a Windows 2000-based terminal server, all of the Open Client application execution takes place on the server, and only the keyboard, mouse and display information are transmitted over the network. Each user sees only their individual session, which is managed transparently by the server operating system and is independent of any other client session.

Unlike the traditional client/server environment, when Terminal Services are enabled in Windows 2000 Server, all the Open Client application processing occurs on the server. The Terminal Services client performs no local processing of applications, it just displays the application output. The Terminal Services technology transmits only the application presentation—the graphical user interface (GUI)—to the client. Each user logs on and perceives his or her session only, which is transparently managed by the server operating system and is independent from any other client session.

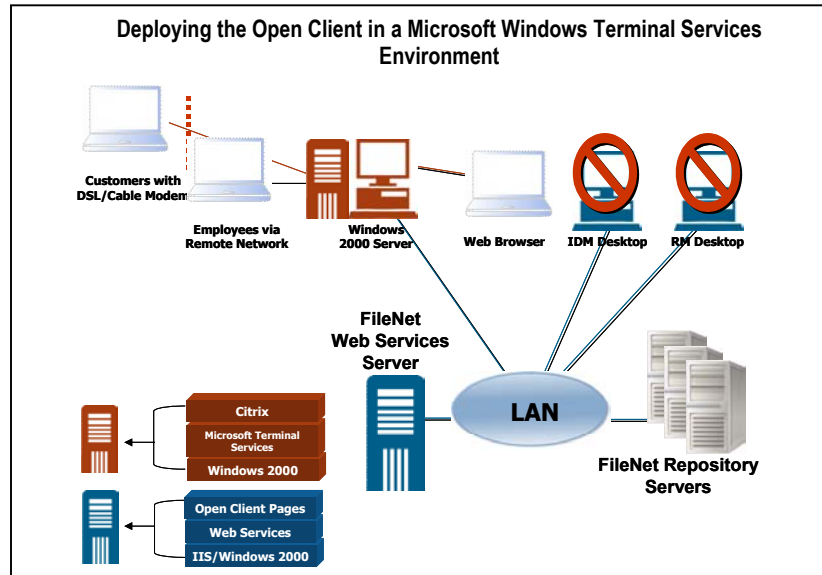
Citrix Metaframe Integration with Microsoft Windows Terminal Services

Citrix Metaframe is a client add-on to Microsoft Windows Terminal Services and is manufactured by Citrix Systems, Inc. Microsoft Windows Terminal Services on Windows 2000 is the infrastructure required for client products such as Citrix Metaframe to interact with Windows 2000 Server applications. Citrix Metaframe does not interact directly with any FileNet software; it interacts with Microsoft Windows Terminal Services, which in turn interacts with FileNet software. FileNet has not tested or sought certification with Citrix, and therefore cannot provide support for Citrix Metaframe. However, as show in the diagram below, Citrix Metaframe can interface with the same version of Microsoft Windows Terminal Services utilized by the Open Client.



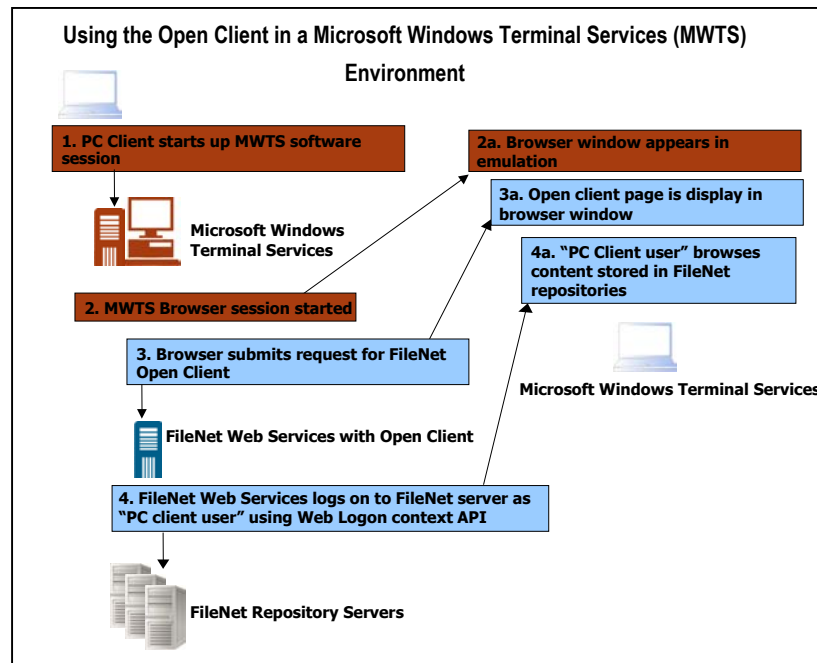
Deploying and Using the FileNet Open Client with Microsoft Windows Terminal Services

The following diagram depicts a typical deployment for Microsoft Windows Terminal Services and the FileNet Open Client. Please note that traditional FileNet desktop deployments are not recommended and not supported through a Windows Terminal Services session because of the complexity of configuring such an environment. In fact, in some use cases, custom code would be required to support such an environment.



As depicted by the light blue laptop icons connected to the Microsoft Windows Terminal Services server, users directly on the corporate LAN, remote users on the WAN, or even users external to the company connecting through a firewall under lower bandwidth network facilities would access the Open Client by launching a browser in a Microsoft Windows Terminal Services session running on the Windows 2000 server. Users would connect to the appropriate URL to gain access to FileNet Web Services server where the Open Client has been deployed. It is important that the FileNet Web Services server have the appropriate patches as defined on the CSS web site for the Open Client to function properly. In addition, the server running Microsoft Windows Terminal Services should have the appropriate browser support needed for the Open Client.

After the user has connected to the Open Client, the following diagram depicts how the out-of-the-box (OOTB) behavior would occur.



The boxes in red illustrate activity that occurs on the Microsoft Windows Terminal Services server. The boxes in blue illustrate activity that is generated from typical OOTB usage of the Open Client irrespective of whether it has been deployed through a Microsoft Windows Terminal Services session.

Open Client Java Viewer Optimization

For Microsoft Windows Terminal Services, FileNet only supports the use of the lightweight Java Viewer. To optimize this viewer for Microsoft Windows Terminal Services deployment, the following lines of code must be added to the FnOpenClient project and recompiled. These changes are required for the Java Viewer image and annotation cache to operate successfully.

To optimize the Open Client Java Viewer, the following procedure must be followed:

In the second JavaScript block of the **fnjavaview.aspx** page, add the following Java script:

```
document.write('< param name="CachePath" value="<%=getCachePath()%>">');
```

In the FnJavaView class of the **fnjavaview.aspx.vb** file, you will need to add the following procedure. Please note that the aCachePath string value can contain a directory path of the administrator's choosing. The current user's login name will be concatenated to the end of this directory path, giving it a unique value for each user that logs into the system.

```
' Public Function getCachePath()
```

By integrating the FileNet Open Client with Microsoft Windows Terminal Services, organizations can increase remote network availability, reduce desktop management costs, and increase sales force agility.

' Purpose: Gets a cache path name to use as the alternate Java Viewer cache path.

Note the following:

A forward slash must be used for directory separators.

The ' cachePath parameter is only recognized on Windows platforms.

' Parameters: None

' Throws: None

Public Function getCachePath() As String

Dim aCachePath As String

```
aCachePath = "c:/CACHE_DIRECTORY_STRUCTURE_OF_CHOICE_HERE" +  
getUserId()
```

Return aCachePath

End Function

Summary

By integrating the FileNet Open Client with Microsoft Windows Terminal Services, organizations can increase remote network availability, reduce desktop management costs, and increase sales force agility. With this integration, limiting factors like network bandwidth, modem speed, and the user's desktop environment are no longer an issue. Network bandwidth and modem speed is not a limiting factor because the document/application remains on the server, and only the document/application display and the user input are transmitted between the server and the client. The desktop environment is no longer a limiting factor for IT because no matter what operating system or browser the client is using, only the server must be managed. Therefore, by integrating the FileNet Open Client with Microsoft Windows Terminal Services, a company's employees, business partners, and customers can access information from any desktop anywhere in the world.

About FileNet

FileNet Corporation (NASDAQ: FILE) helps organizations make better decisions by managing the content and processes that drive their business. FileNet's ECM solutions allow customers to build and sustain competitive advantage by managing content throughout their organization, automating and streamlining their business processes, and providing the full-spectrum of connectivity needed to simplify their critical and everyday decision making.

Since our founding in 1982, more than 3,900 organizations, including 80 of the Fortune 100, have come to depend on FileNet solutions for help in managing their mission-critical content and processes.

Headquartered in Costa Mesa, California, FileNet markets its innovative solutions in more than 90 countries through its own global sales, professional services and support organizations, as well as through its ValueNet® Partner network of system integrators, value-added resellers, and application developers.

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