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Crystal Enterprise

Installing and troubleshooting the Active Directory Plug-in

Overview

This document explains what is required to use Active Directory Plug-in, secWinAD.dll, with Crystal Enterprise 9. This document examines how to troubleshoot potential problems and common scenarios regarding scalability and performance.

Although this document has been written for Crystal Enterprise 9, it can apply to Crystal Enterprise 8.5. Step-by-step instructions may be different between versions. Consult your product documentation.

Contents

Introduction

Read this document to understand how Crystal Enterprise 9 uses Active Directory. This will help you to avoid potential issues and to troubleshoot scenarios that you are experiencing.

Background

What is Active Directory

Crystal Enterprise 9 is capable of using Active Directory to authenticate users through its Automated Process Scheduler (APS) service. Additionally, Active Directory groups can be imported into a Crystal Enterprise system.

Active Directory is a technology included with Microsoft's Windows 2000 Server and Windows 2003 Server. Active Directory is used to manage network users, computers and resources with a lightweight directory access protocol (LDAP) database. Management and administration are centralized when using Active Directory compared with previous versions of Windows server products.

For more details on Active Directory technology, click here for related information on the Microsoft Technet site:

www.microsoft.com/technet

The Active Directory Plug-in for Crystal Enterprise 9 – secWinAD.dll – allows you to map users and groups from your Microsoft Active Directory implementation to Crystal Enterprise. If the users specify Active Directory authentication type in Crystal Enterprise, the Active Directory LDAP database will authenticate users before the Crystal APS service grants the user a session which is needed to access its resources.

Installation Considerations

Where to find the Active Directory Plug-in download

To download the Active Directory Plug-in for Crystal Enterprise 9, click the file name, ce9_adplugin_en.zip, or search for it on our support site at:

http://support.crystaldecisions.com/search

Before You Install

Before you install the Active Directory Plug-in for Crystal Enterprise 9, consider all of the following:

- You must log onto the computer as a local administrator.
- You must have installed Crystal Enterprise 9.
- You must install the plug-in on the server with the Automated Process Scheduler (APS) and the Web Component Server (WCS). If the APS and the WCS are on separate servers, you must install the plug-in on both of these servers.

- You must read CrystalAD.pdf, which is zipped with the Active Directory Plug-in download, for detailed instructions on setting up and mapping Active Directory groups.

Background

The EnterpriseFramework.dll is an essential file for the operation of the Active Directory Plug-in. The EnterpriseFramework.dll works in conjunction with secWinAD.dll and is installed with either the WCS or APS. This file must exist on the computer in order for the Active Directory Plug-in to work. By default, the file location is:

c:\Program Files\Crystal Decisions\Enterprise9\win32_x86\EnterpriseFramework.dll.

By default, the file location of secWinAD.dll is:

c:\program files\Crystal Decisions\Enterprise9\win32_x86\plugins\auth\secWinAD\secWinAD.dll.

Please note that this file must be registered successfully on install, so it is important that the account installing this have administrative privileges.

Using Crystal Reports and Crystal Analysis with Active Directory Authentication

If you are using Crystal Reports or Crystal Analysis Professional on your server with Active Directory authentication you should make sure that these are installed prior to installing the Active Directory Plug-in.

Also, the Active Directory Plug-in needs to be installed on any client computer that will be accessing the Crystal Enterprise system through Crystal Reports or Crystal Analysis Professional that is using Active Directory authentication.

During the Active Directory Plug-in installation, it writes to the registry to allow the option for Active Directory through the **Enterprise Folders** button in Crystal Reports and Crystal Analysis Professional from the **File** > **Open** dialog box.

How to troubleshoot

If you encounter problems after installing the Active Directory Plug-in for Crystal Enterprise 9, verify that all of the following conditions exist.

What to Verify

Enabling and Disabling Crystal Enterprise Services

Verify that both the APS and WCS services are installed and running on the server.

To verify that the APS is installed and running:

Go to the Crystal Configuration Manager (CCM) to see if the service is running by clicking **Start** > **Programs** > **Crystal Enterprise** > **Crystal Configuration Manager**.

To verify that the WCS is installed, running and enabled:

1. Go to the Crystal Configuration Manager (CCM) to see if the service is running and enabled by clicking **Start** > **Programs** > **Crystal Enterprise** > **Crystal Configuration Manager**.
2. Select the **Enable/Disable Servers** icon on the toolbar. The icon has a depiction of a computer next to a checkbox.
3. Log on with your Crystal Enterprise administrator user name and password. But default, the user name is "Administrator" with no password. It is strongly recommended that you change this as soon as possible for security reasons.

Crystal Enterprise Service Accounts

Verify that the APS and WCS services are running under a domain account with local administrative rights.

To verify the local computer security policies:

1. Click **Start** > **Programs** > **Administrative Tools** > **Local Security Policy**.
2. Expand **Local Policies and User Rights Assignment** to ensure that the user has rights to:

- *Act as Part of the Operating System*
- *Log on as a Batch Job*
- *Log on Locally*

3. Add the user to these rights assignments.

NOTE	Global policies override local policies. If you are having difficulty adding rights, contact your Network Administrator for assistance.

If you are running your APS or WCS under a local system account, ensure that **Trust Computer for Delegation** check box is selected. If the service is configured to run under a local system account, the computer where the service runs must be trusted for delegation.

To configure a computer account as trusted for delegation:

1. In the Microsoft Management Console (MMC), right-click the computer object in **Active Directory Users and Computers**,.
2. Click **Properties** and then select the **General** tab.
3. Select the **Trust Computer for Delegation** check box. When you are prompted with a warning, click **OK** to accept it and click **OK** to apply the change.
4. Properties and then select the General tab. Select the Trust computer for delegation checkbox. You will be prompted with a warning, so you should click ok to accept it and click ok again to make the change.

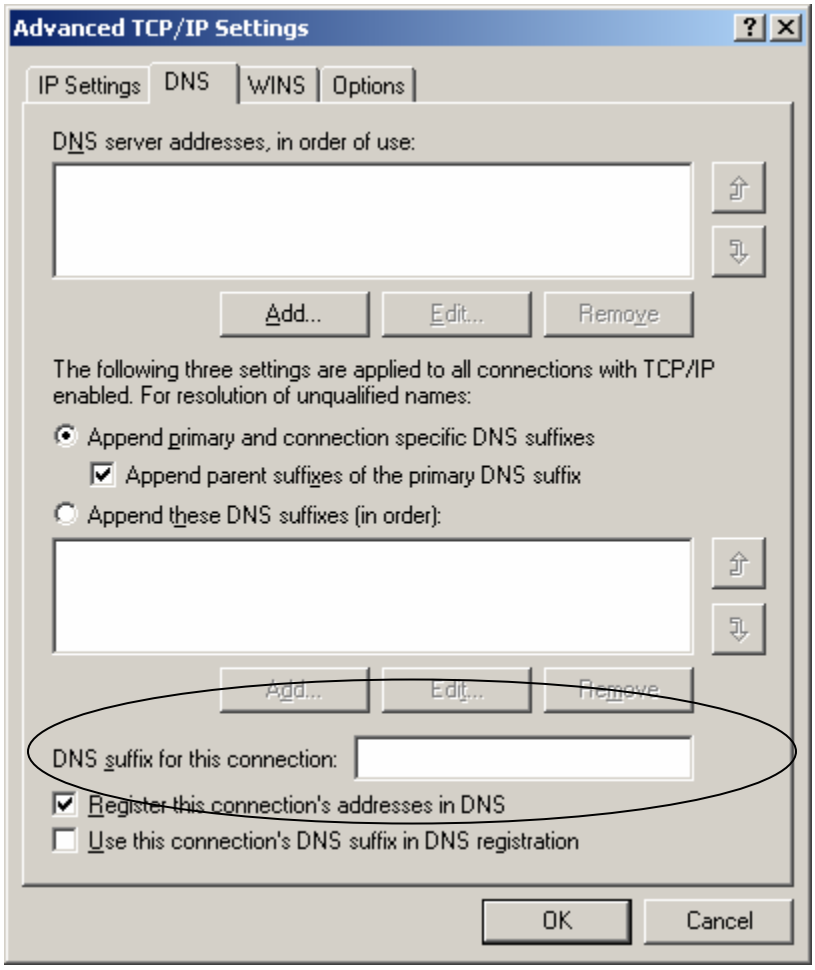
NOTE	For security reasons, it is recommended to use a domain user or service account rather than trusting a computer for delegation. This way, you can assign only the essential rights to the one domain user or service account.

DNS Suffix

Verify that the Domain Name System (DNS) suffix is properly set to the Crystal Enterprise server computer. For detailed instructions, refer to our knowledge base article c2013161 on our support site at:

http://support.crystaldecisions.com/search

Figure 1: DNS Suffix



Multihomed Computers

Verify that the current computer is listed at the top of the binding order in the Advanced Settings dialog box.

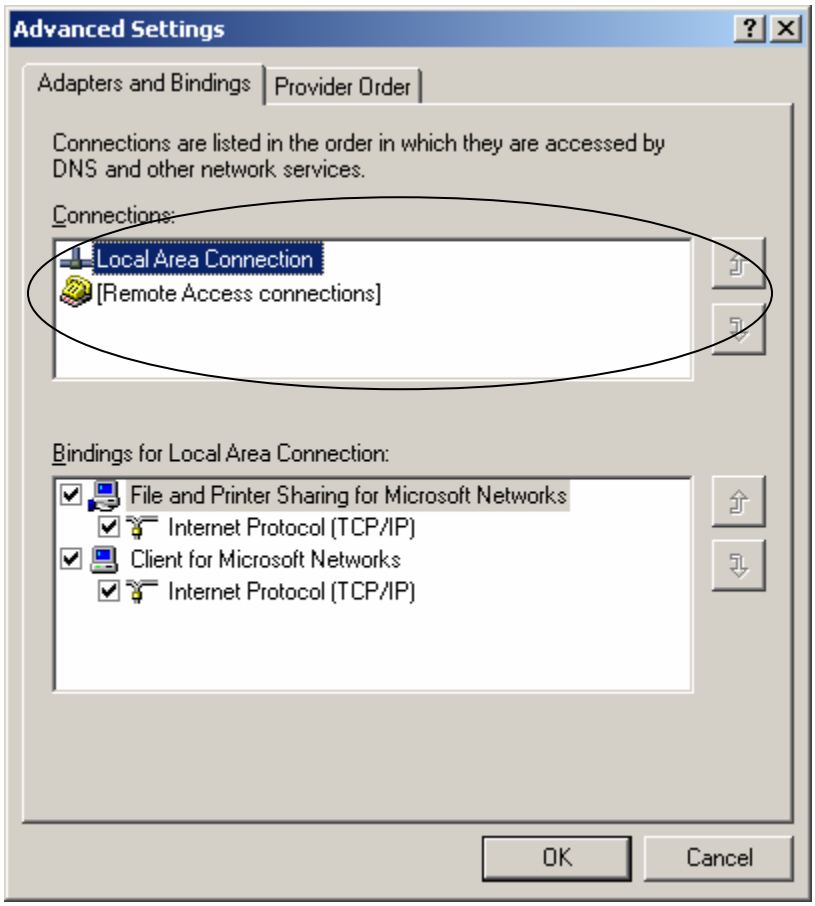
If you are using a multihomed computer (more than one NIC card is installed) with Crystal Enterprise, be aware that this could cause issues if the current computer is not listed at the top of the binding order dialog box.

Verify that the current computer is listed at the top of the binding order in the Advanced Settings dialog box.

For detailed instructions on using multihomed computers and changing the binding order, refer to the knowledge base article c2010587 on our support site at:

http://support.crystaldecisions.com/search

Figure 2: Binding list



Command Line Utilities

Determine if network routers or subnets are experiencing network problems or determine what group policies have been applied to that account by using command line utilities such as: **`pathping`** and **`gpresult`**.

Pathping:

From www.microsoft.com, click here for more information on how to use **pathping**.

> "This command line utility provides information about network latency and network loss at intermediate hops between a source and destination. **Pathping** sends multiple echo request messages to each router between a source and destination over a period of time and then computes results based on the packets returned from each router.
>
> Because **pathping** displays the degree of packet loss at any given router or link, you can determine which routers or subnets might be having network problems."

Gpresult:

From www.microsoft.com, click here for more information on how to use **gpresult**.

"This command line utility displays Group Policy settings and Resultant Set of Policy (RSOP) for a user or a computer."

Group Policies

Verify how Group Policy Objects are filtering down to a site, domain or organizational unit.

For more details on how to find the sites, domains and organizational units to which a Group Policy object is linked, click here to refer to the related information on the Microsoft Technet site at www.microsoft.com/technet.

Security Groups vs. Distribution Groups

Verify that you are using the correct group type.

The Crystal Enterprise Active Directory Plug-in – secWinad.dll – searches only for the Active Directory Security Groups. Distribution Groups are only used with email applications to send to collections of users.

For more details on Security Groups versus Distribution Groups, click here for related information on the Microsoft Technet site at www.microsoft.com/technet.

Single Sign-on (SSO)

If you are using the Single Sign-on feature of Crystal Enterprise with Active Directory, modify the IIS authentication option for your web site to remove the Anonymous User.

Steps to Remove Anonymous User:

1. Open the **Internet Services Manager** by clicking **Start** > **Programs** > **Administrative Tools** > **Internet Services Manager**.
2. Right-click the web site where the Crystal Viewer and CrystalReportViewers virtual directories are located.
3. Click **Properties** > **Directory Security** > **Edit**. Unselect the **Anonymous User** check box and select the option for **Integrated Windows Authentication**.
4. Stop the WCS service, click the **Configuration** tab and select the option to use **Active Directory** authentication.

To use Active Directroy as your default authentication option with ePortfolio, you must alter the Crystal Server Page(CSP) code of that application.. Change the "defaultaut" variable in the Logon.csp file as follows:

defaultaut = "secEnterprise" to defaultaut = "secWinAD".

This CSP file is located at:

c:\Program Files\Crystal Decisions\Web Content\Enterprise9\ePortfolio\en\logon.csp

Common Considerations

Scalability

For detailed information on scalability testing with Crystal Enterprise, refer to the technical brief, ce_scalability_testing.pdf on our support site at:

http://support.crystaldecisions.com/search

Performance

When logging into Crystal Enterprise is slower than expected, the graphing of mapped groups can affect the performance of Crystal Enterprise.

Graphing of Mapped Groups within Crystal Enterprise

Mapped groups are kept in a graph. This graph is held in a cache for 15 minutes from the time it has been built, after this the graph is deleted and regenerated. If the graph is currently in memory the login should be quick. When the graph has either expired or does not exist in memory, the first user to logon triggers the update of the graph. Alternatively, clicking the update button in the Active Direcotry Tab in the Authentication section of the Crystal Management Console will manually update the graph.

If group membership changes in Active Directory, the changes will not be reflected either until the current graph expires and is recreated or until the update button is pressed from the Active Directory Tab in the Crystal Management Console.

There is a registry key that can be either changed or disabled for the above mentioned graph. If the key exists already it will be set at 900000 milliseconds which is equal to 15 minutes. Please note that there is no hot fix or update necessary to use this key.

If the key does not exist, it can be added at:

HKLM/Software/Crystal Decisions/<version number>/Enterprise/Auth Plugins/secWinAD/

Name: GraphTimeOut

Value: <string type>

To disable this graph functionality set the key to zero (0) and the Active Directory plug-in will use an alternative method of calculating a user's parents.

It would only be advantageous to disable the graph if it has been determined that the time to build the graph takes significantly longer than the alternate method of calculating a user's parents. If both methods are found to take a significant amount of time, it may be advantageous to set the timeout for a longer period and update the graph manually.

Note that the time to build the graph in the Crystal Enterprise system is linearly proportional to the total number of groups mapped into the system. On the otherhand the time required to calculate a user's parents is done on a user by

user basis and can be rather unpredictable. For example, if a user belongs to many Active Directory groups, it may take a very long time regardless of whether the groups are mapped into Crystal Enterprise or not.

Microsoft recommends that organizations deploying Active Directory have a global catalog server in each domain to speed up the processing of user logons and resource requests. The speed of authentication through Crystal Enterprise's Active Directory plug-in will be related to this recommendation.

Updates to the Active Directory Plug-in

When there are updates to secWinAD.dll included in a Hot Fix, refer to the detailed instructions included in the technical brief, Hot_Fix_Application_Guide.pdf, on our support site at:

http://support.crystaldecisions.com/search

Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

Self-serve Support:

http://support.crystaldecisions.com/

Email Support:

http://support.crystaldecisions.com/support/answers.asp

Telephone Support:

http://www.crystaldecisions.com/contact/support.asp