Tech Note 641 Troubleshooting Internet Information Services (IIS) Configuration Issues for Wonderware Information Server (WIS)

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Topic#: 002405 OpsManage09 Session#: TS111 Created: November 2009

Introduction

Important!: This document and its links to the utility have been moved to the Wonderware Developers Network. You must be a Customer First Subscriber to download the utility.

One of the most common problems you can encounter with WIS is the **401 Access Denied** message. There are many possible reasons for this IIS Error. Many articles and suggestions are available from the Internet. Further, researching the correct cause is time-consuming if we dig for the cause from one SR to another.

This *Tech Note* explains using Microsoft IIS **Backup/Restore Configuration** and the Wonderware IIS Configuration Comparison Utility to quickly troubleshoot WIS issues related to IIS Settings.

Application Versions

- Wonderware Information Server 3.0 and 3.1
- Internet Information Services 6.0

This Tech Note contains the following sections:

- Creating the IIS Backup
- Troubleshooting IIS WIS Virtual Directories Using the Backup File
- Troubleshooting Using the Wonderware IIS Configuration Comparison Utility

Summary Examples

The following examples are provided for context and then used for troubleshooting.

Example 1: Factory Alarm History "Fail to retrieve data from data provider."

This error message is common (Figure 1 below).

yanderware II	IFORMATION SERVER
Customize	
Launch Pad	× alarm1
System	
 Administration Process Graphics Factory Alarms alarm1 MultiViews Custom Links Table Weaver ActiveFactory Reports 	Current History Configure

FIGURE 1: DATA PROVIDER ERROR MESSAGE

After analyzing the IIS log files, and debugging the source code, the root cause of this problem is that **one** IIS Setting was modified for some reason. By correcting the single IIS setting, the **401 Access Denied** error no longer appears in the IIS Log file and the normal Alarm History page is visible.

Example 2: WIS Launch Pad Panel is Empty



FIGURE 2: EMPTY LAUNCH PAD PANEL

After analyzing the IIS Log file, the 401 Access Denied is the root cause of the problem.

Creating the IIS Backup

You can use IIS Backup/Restore operation to diagnose/troubleshoot problems. Before you can troubleshoot the problems, you must

- Create a Backup Configuration for the machine on which you see the problem, then
- Restore the file on a different machine that is running WIS without problems.

The following information explains the Backup/Restore procedure using IIS Backup.

Backup the IIS Meta Database on the WIS Server Machine that Cannot Run WIS Portal Normally

- 1. Click Start > Run and type inetmgr, then click OK. The Internet Information Services Manager window appears.
- 2. Right-click the root Computer Name Tree node.
- 3. Click the All Tasks > Backup/Restore Configuration (Figure 3 below).



FIGURE 3: START IIS BACKUP/RESTORE CONFIGURATION

4. Click the Create Backup button (Figure 4 below).

Configuration Backup/Restore			2
Previous backups			
Backups:			
Location	Version	Date/Time	
盲 Initial Backup - created autom	1	6/27/2007 2:54:24 PM	_
Automatic Backup		6/16/2009 11:24:07 AM	
Automatic Backup		6/16/2009 11:26:09 AM	
Automatic Backup		6/16/2009 12:12:07 PM	
🚊 Automatic Backup		6/16/2009 12:21:43 PM	
Automatic Backup		6/16/2009 6:12:46 PM	_
Automatic Backup		6/16/2009 6:14:47 PM	-
Create Backup	tore	Delete	
Close	E	telp	

FIGURE 4: CREATE BACKUP

5. Type a backup name (Figure 6 below).

Configuration Back	tup X
Configuration backu	ip name:
AfterChange	
Entrypt backup	using password
Password:	••••••
Confirm password:	••••••
Г	OK Cancel

FIGURE 5: NAME BACKUP AND ENCRYPT USING PASSWORD

6. Click the Encrypt backup using password option and type/confirm your Password.

Important: If you do not check this checkbox, other IIS on a different server cannot restore the Meta database backup.

7. Click OK.

You should now find a pair of backup files that match the given name at C:\WINDOWS\system32\inetsrv\MetaBack. For this example, the files are AfterChange.MD0 and AfterChange.SC0. This extension is ".MD - .SC<number>Zero.

- 8. Request the following IIS Backup elements from the customer:
 - The two backup files. In this example AfterChange.MD0 and AfterChange.SC0.
 - The Password.

Restore IIS Meta Database on a WIS Server Machine That Can Run the WIS Portal

Note: Always backup IIS Configuration before doing any modifications.

- 1. Repeat the steps in the above backup section to backup the local machine's IIS Meta database without selecting the Encrypt option.
- 2. Copy the two backup files AfterChange.MDO and AfterChange.SCO to the WIS troubleshooting node to this directory: C:\WINDOWS\system32\inetsrv\MetaBack.
- 3. Repeat the steps for the Configuration Backup/Restore Dialog.
- 4. Highlight the AfterChange (.SC0 named file) line and click the Restore button (Figure 6 below).

L	ocation	Version	Date/Time	
1	Initial Backup - created autom	1	6/27/2007 2:54:24 PM	•
	AfterChange	0	6/11/2009 7:42:29 AM	
	Automatic Backup		6/16/2009 11:24:07 AM	
	Automatic Backup		6/16/2009 11:26:09 AM	
	Automatic Backup		6/16/2009 12:12:07 PM	
	Automatic Backup		6/16/2009 12:21:43 PM	
	Automatic Backup		6/16/2009 6:12:46 PM	-
	Greate Backup Re	store	Delete	

FIGURE 6: RESTORE CONFIGURATION FROM BACKUP

- 5. Click **Yes** when you see the subsequent message.
- 6. After several moments you are prompted for the Backup password (Figure 7 below).

ease enter gassmord to restore the metabase.	anter nacc	word to rector	a the metal	harai
	ericer Pass	Nord to restor	e che meca	Jase.

FIGURE 7: TYPE PASSWORD TO RESTORE THE METABASE

7. Type the Backup password you provided in the Backup Operation.

8. Click **OK** and acknowledge the **Success** message.

You are now ready to begin troubleshooting.

Troubleshooting IIS WIS Virtual Directories Using the Backup File

Use the IIS Window to drill down into the files in order to determine differences between the original IIS settings and any later changes.

You can compare the two nodes: One has the customer's IIS configuration, and the other has the standard WIS IIS Configuration.

The following table contains the WIS Virtual Directories you need to compare.

WIS Virtual Directory	Description
Wonderware	WIS Home Page
SVSQLProvider	Factory Alarm History
Scripts	Live Data, Current Alarm, and License
ArchestrA Reports	ArchestrA Reports
MultiViews	Web Part Manager
SDSManager	Common Data Source Manager
aaFlexLicWebService	ArchestrA License Manager
AFWeb	Active Factory Web Edition

Example 1 and 2 Assessments

Example 1: Factory Alarm History "Fail to retrieve data from data provider."

Use the table above to focus your efforts on a specific Virtual Directory. In this example, the error message is related to **SvSQLProvider** virtual directory.

After you browse the IIS Settings in **SvSQLProvider** you can determine the root cause for the failure.

Figure 8 (below) shows the difference between the user's IIS Configuration and the standard WIS IIS Configuration. The **Enable anonymous** access option must be checked in order to make SvSQLProvider Web Service work correctly.

Jse the follow	ing Windows user account for	anonymous access:
Jser name:	IUSR_BPSQ39	Browse
eassword:		
Authenticated For the following rerequired w - anon - acce Integrated Digest auth Basic authe .NET Passp	access ng authentication methods, u when: nymous access is disabled, or ss is restricted using NTFS ac Windows authentication hentication for Windows doma entication (password is sent in port authentication	ser name and passw cess control lists in servers i clear text)
Authenticated For the following are required w - anon - acce Integrated Digest auth Basic authe .NET Passp Default dom	access ng authentication methods, u hen: nymous access is disabled, or ss is restricted using NTFS ac l Windows authentication hentication for Windows doma entication (password is sent in port authentication	ser name and passw cess control lists in servers in clear text) Seject

FIGURE 8: ENABLE ANONYMOUS ACCESS SETTING

Example 2: WIS Launch Pad is Empty

When the WIS Portal URL is provided by the browser, the corresponding ASP pages retrieve the XML data from one of the WIS COM+ components and fill in the Launch Pad Tree.

- By analyzing the IIS Log file from the problem node, you can determine that the WIS Start ASP page has not been called.
- You can determine that there can be some setting(s) in IIS that block the WIS Start ASP page from being called.

Check the **Default Web Site**, the Web Site that holds the WIS Portal virtual directory. Figure 9 (below) shows the Default Web Site **Advanced Web Site Identification** Window.

Normally, you should only see the top line without the Host header value in the list. This setting could be the reason for the empty WIS Launch Pad.

address	TCP	port Host head	er value
Default	80	wis.chenier	e.com
Default	80	yhdc-apwis	010
	Add	Remove	Edit
na SSI Idanhi	ties for this We	o site	
NG SIJA ING IN		63665	
idress			SSL port
ddress			SSL port
ddress			SSL port
address			SSL port
address			SSL port
address	Add	Remove	Edit
iddress .	Add	Remove	Edjt

FIGURE 9: DIFFERING HOST HEADER VALUES

Microsoft KB Q3081163 states:

"Do not assign a host header name to the default Web site. Many programs expect the default Web site to use an IP address of (All Unassigned), TCP Port 80, and no host header name."

After you correct the settings in this dialog box, you will see the WIS Launch Pad populated correctly, without any other changes.

Summary

By analyzing the two cases, you can see that IIS Configuration Backup plays an important role in WIS Portal troubleshooting.

This approach is valuable because you do not need to change any other IIS setting(s) in the production WIS Portal machine during troubleshooting.

However, this approach needs you to browse and compare the IIS settings manually.

Troubleshooting Using the Wonderware IIS Configuration Comparison Utility

Wonderware Technical Support provides a Utility that can help you find the differences between the "bad" IIS configuration and the WIS standard IIS configuration much more quickly. **Download the Utility here**.

Use the Utility to:

• See the various WIS Standard IIS Configurations, such as WIS 3.0 and WIS 3.1.

- Compare your customer's IIS configuration with its WIS standard counterpart and see the difference side by side.
- Filter the view in order to see the difference on WIS, Active Factory or on all settings.

We can use the Utility to analyze Case 1 and Case 2.

Case 1: Factory Alarm History "Fail to retrieve data from data provider."

Use the Utility to browse the configuration backup file and compare it with the WIS standard configuration backup.

Figure 10 (below) shows the comparison.

- The green color indicates all the standard WIS IIS folders.
- The orange color shows the setting differences.
- The second column contains customer settings.
- The third column contains Wonderware standard settings.
- The red circle shows the difference in the IIS folder SvSQLProvider. It matches the analysis we did in the previous section.

r IIS Backup Browse.	Vonderware IIS Back	up Use Build-In WIS 3.0 Full Configure Backup
how Differences		
Information Server	C Active Factory C All Differences Search	/LM/W3SVC/1/R00T/_layouts/SuiteVoyagerMultiView
S Node Name	User IIS Properties	Wonderware IIS Properties
approot	/LM/W3SVC/1/Root/Scripts	/LM/w/3SVC/1/Root/Scripts
- 🗔 authflags	AuthNTLM	AuthNTLM
accessflags	AccessExecute AccessRead AccessScript	AccessExecute AccessRead AccessScript
- 🗔 defaultdoc	default.asp	default.asp
- 🗔 appfriendlyname	Default Application	Default Application
- a path	C:\Inetpub\Scripts\	C:\Inetpub\Scripts\
dirbrowseflags	DirBrowseShowDate DirBrowseShowTime DirBrowseShowSize DirBrowse	Sh DirBrowseShowDate DirBrowseShowTime DirBrowseShowSize DirBrowseSh
S IIsWebDirectory		
Location	/LM/W3SVC/1/R00T/Scripts/FSWebSvr	/LM/W3SVC/1/R00T/Scripts/FSWebSvr
IIsWebDirectory		
Location	/LM/W3SVC/1/R00T/SuiteVoyagerMultiView	/LM/W3SVC/1/R00T/SuiteVoyagerMultiView
appfriendlyname	SuiteVoyagerMultiView	SuiteVovagerMultiView
appisolated	2	2
foorgas	/LM/W3SVC/1/Root/SuiteVovagerMultiView	/LM/W3SVC/1/Root/SuiteVovagerMultiView
IIsWebVirtualDir		
- Location	/LM/W3SVC/1/R00T/SvSQLProvider	/LM/W3SVC/1/R00T/SvSQLProvider
appoolid	SVAppPool	SVAppPool
- approot	/LM/W3SVC/1/Root/SvSQLProvider	/LM/W3SVC/17Roon/SvSQLProvider
- 🖬 authflags 🧹	AuthNTLM	AuthAnonymous AuthNTLM
accessflags	AccessBead AccessScript	AccessRead AccessSeriet
appfriendlyname	SvSQLProvider	SvSQLProvider
uncpassword	49634462500000000000000000000000000000000000	11. 49634462500000006000004000000e004e0505799a30138dea30138dea30
Goath	C:\Inetpub\www.root\Wonderware\DHFrameWork\	C:\Inetpub\www.root\Wonderware\DHFrame\Work\
dirbrowseflags	DirBrowseShowDate DirBrowseShowTime DirBrowseShowSize DirBrowse	Sh. DirBrowseShowDate DirBrowseShowTime DirBrowseShowSize DirBrowseSh
IIsWebFile		
Location	/LM/W3SVC/1/ROOT/SvSQLProvider/sqlprovider.wsdl	/LM/W3SVC/1/R00T/SvSQLProvider/salprovider.wsdl
IIsWebVirtualDir		
Location	/I MAJ/3SVC /1 /ROOT AJ/ondetware	/I M AU/3SVIC /I /ROOT Au/onderware

FIGURE 10: WONDERWARE IIS COMPARISON UTILITY: DIFFS IN SVSQLPROVIDER ROOT DIRECTORIES

Case 2: WIS Launch Pad is Empty

Figure 11 (below) shows the comparison. The **All Differences** filter option is selected so there is no Green color highlighted in the comparison pane. The red circle shows the difference in the Default Web Site.

er IIS Backup Browse	Vonderware IIS Backup	Jse Build-In WIS 3.0 Full Configure Backup
Show Differences		
C Information Server	Active Factory All Differences Search	/LM/W3SVC/1/RODT/_layouts/SuiteVoyagerMultiView
IS Node Name	User IIS Properties	Wonderware IIS Properties
a ⊡IIsWebServer		
- Location	/LM/W3SVC/1	/LM/w3SVC/1
serversize		1
- 🛃 logpluginclsid	{FF160663-DE82-11CF-BC0A-00AA006111E0}	{FF160663-DE82-11CF-BC0A-00AA006111E0}
defaultdoc	Default.htm,Default.asp,index.htm,iisstart.htm	Default.htm,Default.asp,index.htm,iisstart.htm
servercomment	Default Web Site	Default Web Site
erverautostart	TRUE	TRUE
- 🖬 serverbindings 🛛 🤇	:80:wis.cheniere.com 100:vhdc-apwis01p	:80:
ntauthenticationproviders	NTEM	NTEM
🛛 🔄 IIsWebVirtualDir		
- Location	/LM/w3sVC/1/R00T	/LM/w/3SVC/1/ROOT
httpcustomheaders	MicrosoftSharePointTeamServices: 6.0.2.6568000X-Powered-By: ASP.NET	MicrosoftSharePointTeamServices: 6.0.2.65680000X-Powered-By: ASP.NET
appoolid	StsAppPool1	StsAppPool1
foorque approve	/LM/w3SVC/1/ROOT	/LM/w3SVC/1/ROOT
- 🗔 authflags	AuthNTLM	AuthNTLM
- 🖬 accessflags	AccessRead AccessScript	AccessRead AccessScript
defaultdoc	default.aspx,Default.htm,Default.asp,index.htm,iisstart.htm	default.aspx,Default.htm,Default.asp,index.htm,iisstart.htm
- 🗔 appfriendlyname	Default Application	Default Application
uncpassword	49634462500000000000000000000000000000000000	49634462500000000600000040000005654ab7aeb429d0110109d0110109d0
- 🗔 accesssslflags	0	0
, path	c:\inetpub\www.root	c:\inetpub\www.root
httpexpires	D,2592000	D,2592000
🗟 🔄 IIsWebVirtualDir		
Location	/LM/W3SVC/1/ROOT/ layouts	/LM/w/3SVC/1/RODT/ layouts
appoolid	StsAppPool1	StsAppPool1
approot	/LM/w3svc/1/Root/ layouts	/LM/w3svc/1/Root/_layouts
accessflags	AccessExecute AccessRead AccessScript	AccessExecute AccessRead AccessScript
	1/ Invento	1/ Jaunute

FIGURE 11: ALL DIFFERENCES FOR COMPARISON

Summary

WIS Troubleshooting involves many technical areas, such as Web implementation, Windows security, IIS Configuration and settings, Sharepoint Services, Report Services, SQL Server etc. The problems in IIS Configuration settings are often the root causes for many of the technical areas reported in Service Requests. This document provides an efficient approach to help you locate and repair the root cause of possible WIS problem more quickly.

Additionally, this approach does not require changing the production WIS's IIS Configuration settings during the procedure. There is no impact on the WIS Portal during the troubleshooting procedure.

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Tech Notes are published occasionally by Wonderware Technical Support. Publisher: Invensys Systems, Inc., 26561 Rancho Parkway South, Lake Forest, CA 92630. There is also technical information on our software products at Wonderware Technical Support.

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