Troubleshooting Wonderware Information Server (WIS)

Tech Note 794

Troubleshooting Wonderware Information Server (WIS) Part Three: Workarounds for Factory Alarms Issues in Windows Server 2008

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Introduction

This troubleshooting guide is the third in a projected series.

In Windows 2008, WIS History and Current Factory Alarms will no longer work by using the same configuration steps of the Windows 2003 if WIS and InTouch are installed on the same node.

Note: The workarounds mentioned in this Tech Note have been tested for un-managed InTouch applications.

Application Versions

- WIS 4.0 and later
- · Windows 2008 Server 32 and 64-bit

Let's start by discussing the following two issues and the workarounds. Click on the following links to read details.

- No Current Factory Alarms when WIS and InTouch Viewer are on the Same Node
- No History Factory Alarms when WIS and InTouch Viewer are on the Same Node and the Alarm DB Logger Manager is Running as a Windows Service

No Current Factory Alarms when WIS and InTouch Viewer are on the Same Node

In this scenario, WIS and InTouch are running on the same node.

Recall in Windows 2003 environment, when you define a distributed alarm query in WIS Factory Alarm Manager with the local node name, you will get the current Factory Alarms which come from the local InTouch Viewer.

However, this well-known setting for the Current Factory Alarms is no longer TRUE in the Windows 2008 environment. No matter what is used for the server name, **localhost**, **local machine name** or a fully-qualified domain name or IP Address of the local computer do not work (Figure 1 below).

LocalAlarm	
Current	
History	No Alarm records
Configure	No alarm records have been found with your current alarm configuration.

FIGURE 1: NO ALARM RECORDS FOUND

Can you make Current Factory Alarms work in the Windows 2008 environment? Yes, but you need to do some extra work. This section contains a detailed procedure for the workaround.

Overview

Windows 2008 introduces the Session 0 Isolation concept. This means the operating system isolates services in Session 0 and runs applications in other sessions, so services are protected from attacks that originate in the application code.

This security mechanism impacts the WIS **Current Factory Alarms** implementation. As a result, WIS's Factory Alarm Consumer (Windows service) and InTouch Viewer (application) always stay in different sessions (0 and non-zero) and both of them launch their own instance of the Alarm Manager (AlarmMgr.exe).

		· · · · · · · · · · · · · · · · · · ·			x	
Image Name 🗠	PID	User Name	Session ID	CPU	Memory (Description
taskeng.exe	1636	SYSTEM	0	00	3,124 K	Task Scheduler Engine
taskeng.exe	4468	edwardx	2	00	1,900 K	Task Scheduler Engine
taskeng.exe	5688	LOCAL SERVICE	0	00	824 K	Task Scheduler Engine
taskmgr.exe	4704	edwardx	2	06	1,448 K	Windows Task Manager
TrustedInstaller.exe	1276	SYSTEM	_	00	1,164 K	Windows Modules Installer
view.exe	3860	edwardx	(2)	00	10,040 K	InTouch WindowViewer
view_server.exe	1212	svc.wwdevlkfccalbd	0	00	2,148 K	view_server.exe
view_server.exe	1992	svc.wwdevlkfccalbd	0	00	2,144 K	view_server.exe
alarmmgr.exe	4620	SYSTEM	0	00	2,372 K	Alarmmgr
alarmmgr.exe	5880	edwardx	2	00	2,324 K	Alarmmgr
view_server.exe	4736	svc.wwdevlkfccalbd	0	00	1,736 K	view_server.exe
vmnat.exe	3600	SYSTEM	0	00	756 K	VMware NAT Service
vmnetdhcp.exe	3836	SYSTEM Two Alarms Provider	S 0	00	696 K	VMware VMnet DHCP service
vmware-authd.exe	3184	SYSTEM belong to different	0	00	3,344 K	VMware Authorization Service
vmware-tray.exe	5776	edwardx .	2	00	644 K	VMware Tray Process
vmware-usbarbitrator.exe	3524	SYSTEM Sessions. Only session	2 0	00	992 K	VMware USB Arbitration Service
VsTskMgr.exe	2052	SYSTEM provides current alas	rms. 0	00	784 K	Task Manager
w3wp.exe	2980	NETWORK	0	00	23,652 K	IIS Worker Process
w3wp.exe	5056	NETWORK SERVICE	0	00	23,496 K	IIS Worker Process
wininit.exe	532	SYSTEM	0	00	912 K	Windows Start-Up Application
winlogon.exe	560	SYSTEM	1	00	820 K	Windows Logon Application
winlogon.exe	5948	SYSTEM	2	00	1,168 K	Windows Logon Application
wm.exe	5136	edwardx	2	00	10,936 K	InTouch WindowMaker
WmiPrvSE.exe	4504	SYSTEM	0	00	1,580 K	WMI Provider Host
WmiPrvSE.exe	5492	SYSTEM	0	00	2,144 K	WMI Provider Host
WmiPrvSE.exe	5568	SYSTEM	0	00	31,744 K	WMI Provider Host
wsstracing.exe	3316	LOCAL SERVICE	0	00	1.484 K	Windows SharePoint Services
wwsvalmsvc.exe	2872	SYSTEM	Ó	00	2.468 K	Wonderware SuiteVoyager Alarm Consumer Servic
wwsvicmgr.exe	3676	SYSTEM	-	00	2,356 K	Wonderware License Manger Service Component
WZOKPICK.EXE	4856	edwardx	2	00	656 K	WinZin Executable

FIGURE 2: VIEW AND WIS ALARMS CONSUMER SERVICE ARE IN DIFFERENT SESSIONS

Workaround

Currently, the SuiteLink Name Service (slssvc.exe) does not register multiple instances of AlarmMgr with the same name. However, the real source of the Current Factory Alarms is the instance of AlarmMgr that is launched by InTouch Viewer. Your job is to determine the true source of the Current Factory Alarms in the WIS Distributed Alarm Query.

To discover the source of the Current Factory Alarms

- 1. In the WIS node, terminate the process of the InTouch Viewer if there is any. The instance alarmmgr.exe in Session 2 (Figure 2 above) will disappear.
- 2. In the WIS node, clear or insert a couple of Fast Mark Flags in the SMC Local Log Viewer (Figure 3 below). This will make the Local Log Viewer easier to read.

🌠 SMC - [ArchestrA System M	anageme	nt Conso	le (IOMLKF:	29287D)\Log ¥	'iewer\Defa	ult Group\Local]		
File Action View Help								
🗢 🔿 🔰 🖬 🙆 👘	1 7 5	r 🗛 🛱	78	3 D.				
🧭 ArchestrA System Managemer] 🗖 Start	Time: 12/3	31/1900 11:	59:59 PM	End Tir	ne: 12/31/2100 11:5	9:59 PM	
🛨 🛄 Historian	No:	Log Flag	Date	Time	Process ID	Component	Thread ID	Message
Galaxy Database Manager	1882896	Mark	9/5/2011	10:56:39 AM	7412	Log Viewer	5996	Mark
Log Viewer Log Viewer Log Local								

FIGURE 3: LOCAL MARK LOG FLAGS

3. From a remote node, use Remote Desktop Connection to log on to the WIS node.

Use Run/mstsc with another admin user for your session logon.

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Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	mstsc 💌
	OK Cancel Browse
FIGURE	4: MSTSC COMMAND WITHOUT / ADMIN OR / CONSOLE

4. Launch InTouch Viewer from the Remote session.

In SMC Log Viewer of the WIS node, you will see similar data to Figure 5 (below). The graphic is truncated for clarity.

💋 SMC - [ArchestrA System M	lanageme	nt Conse	ole (IOMLK	F29287D)\Log \	/iewer\Defa	ult Group\Loc	al]	
File Action View Help								
🗢 🔿 🔰 📷 🛛 🖬 🖬	1 🛛 🕈	i m (9 7 B	a 🕒				
ArchestrA System Managemer] 🗖 Start	: Time: 12)	/31/1900 11	L:59:59 PM	End Tir	ne: 12/31/2100	11:59:59 PM	
Historian	No:	Log Flag	Date	Time	Process ID	Component	Thread ID	Message
Galaxy Database Manager	1882896	Mark	9/5/2011	10:56:39 AM	7412	Log Viewer	5996	Mark
DAServer Manager	1882897	Info	9/5/2011	11:43:42 AM	4368	InTouch	8164	InTouch Application Manager Version 10.1.300 1412.0130.0268.0005
E Log Viewer	1882898	Info	9/5/2011	11:43:42 AM	4368	InTouch	8164	InTouch Application Manager Version 10.1.300 1412.0130.0268.0005
Egi Default Group	1882899	Info	9/5/2011	11:43:42 AM	4368	InTouch	8164	Wonderware SSC - Version 7,0,100,1 (3 : 1.1) (2 : 4.1) (3 : 5.0.97)
Local	1882900	Info	9/5/2011	11:43:47 AM	552	wm	7544	COMMANDFILE= not found on command line.
🖲 🛄 Fonterra	1882901	Info	9/5/2011	11:43:47 AM	552	WWHEAP	7544	WWHEAP Base Address 0x21000000 End Address 0x31000000
🛨 🏭 TestWriteBack	1882902	Info	9/5/2011	11:43:47 AM	552	WWHEAP	7544	WWHEAP Memory Range 256 MB (4096 Maps) Conserve Memory 1
Opened Log Files	1882903	Info	9/5/2011	11:43:48 AM	552	wm	7544	InTouch WindowMaker Version 10.1.300 1412.0703.0268.0018
💽 🖳 Platform Manager	1882904	Info	9/5/2011	11:43:48 AM	552	wm	7544	Wonderware SSC - Version 7,0,100,1 (3 : 1.1) (2 : 4.1) (3 : 5.0.97)
	1882905	Info	9/5/2011	11:43:48 AM	552	wm	7544	Unable to start NetDDE
	1882930	Info	9/5/2011	11:44:08 AM	8308	alarmmgr	8736	Distributed Alarm Manager - 10.1
	1882931	Info	9/5/2011	11:44:08 AM	8308	alarmmgr	8736	Copyright (c) 2009 Invensys Systems, Inc. All rights reserved.
	1882932	Info	9/5/2011	11:44:08 AM	8308	AlarmLst	8736	AlarmLst - 10.1
	1882933	Info	9/5/2011	11:44:08 AM	8308	AlarmBuf	8736	AlarmBuÉ - 19-1 Using Win92Hcop
	1882934	Info	9/5/2011	11:44:08 AM	8308	AlarmMgr	5532 <	Registering AlarmMgr with SLSSVC as "AlarmMgr10.2.149.19"
	1882935	Info	9/5/2011	11:44:08 AM	956	HTSPT	8796	HTSPT.DLL - 10.1
	1882936	Info	9/5/2011	11:44:08 AM	9968	hd	8520	InTouch Historical Data Server - 10.1.300

FIGURE 5 IMPORTANT LOG ENTRY: REGISTERING ALARMMGR

This line provides the key for WIS to get the Current Factory Alarms. It is written by the InTouch Viewer AlarmMgr.

In this example, the string AlarmMgr10.2.149.19 contains the IP address of the client machine where the remote logon user logs in from.

Now, we have two distinguishable Alarm Managers (AlarmMgr).

On the WIS node, you can use the following explicit **Distributed Alarm Query** string to tell WIS that you want to retrieve the current Factory Alarms from the AlarmMgr *process* that is launched by the InTouch Viewer.

\localhost:##.#.###\intouch!\$system

Worderwore	Wond INF	ORMATION SERV	/ER	
Customize				
Launch Pad	×	Factory Alarm Manager		
System				
Administration		Alarm	Alarm Configuration	
Application Manager		Data Provider		
User Manager			Alias *:	LocalAlarm
License Manager			Description:	
Portal Configuration			Description.	
Data Source Manager			Data Source *:	AlarmLocal
MultiView Manager			Contact Name:	
Factory Alarm Manager				Nocalhost: 10.2.149.19\intouch!\$system
Panel Manager			Distributed Alarm Query *:	
Win-XML Exporter				
Documentation				Undate Cancel
Table Weaver Manager	r .		* Required field	Cancel

FIGURE 6: NEW DISTRIBUTED ALARMMGR QUERY

Worderware Wo	FORMATION SERVER	
Customize		
Launch Pad	× Data Source Manager	
System	Use this page to modify the selected sha	ared data source. Enter the values in the text boxes and click on "Save" button to
Administration Application Manager	save the details. Modify Shared data sources	
Clicense Manager Portal Configuration Data Source Manager MultiView Manager Factory Alarm Manager Panel Manager Win-XML Exporter Documentation	Data Source Type : Data Source Name : Description : ServerName : Database : Integrated Security : User Name : Password :	Alarmia AlarmLocal Enter the Alarm Data Source description her IOMLKF29287D WWALMDB Sa
Table Weaver Manager ArchestrA Web Exporter Process Graphics Factory Alarms LocalAlarm RemoteAlarm	Default for this Data Source Type : Connection Timeout(in Sec) : Query Timeout(in Sec) : Provider :	0 0 SQLNCLI10
CurrentAlarm	Save	Cancel Test Connection

FIGURE 7: ALARMLOCAL DEFINITION

4. Restart the WIS Alarm Consumer Service (Figure 8 below).

WMI Performance Adapter	Provides p		manual	Local	System
Wonderware Historian Configuration	Manages c		Manual	Local	System
Wonderware Historian DataAcquisition	Acquires d		Manual	Local	System
Wonderware Historian EventSystem	Detects us		Manual	Local	System
Wonderware Historian Indexing	Manages in		Manual	Local	System
Wonderware Historian IOServer	Exposes liv		Manual	Local	System
Wonderware Historian ManualStorage	Processes I		Manu	Start	stem
Wonderware Historian MDASServer	Manages cl		Manu	Stop	stem
Wonderware Historian Replication	Replicates		Manu	Pause	stem
Wonderware Historian Retrieval	Manages d		Manu	Renume	stem
Wonderware Historian SCM	Tracks runt	Started	Autor	Restart	stem
Wonderware Historian Storage	Processes		Manu		stem
Wonderware Historian SystemDriver	Generates		Manu	All Tasks	stem
Wonderware License Manager		Started	Autor	Refresh	stem
Wonderware NetDDE Helper			Manu		stem
Wonderware RunTime DB Handler		Started	Autor	Properties	stem
Wonderware SuiteLink		Started	Autor	Help	stem
🔍 🍓 Wonderware SuiteVoyager Alarm Consumer 🌙		Started	Manuar	LUCA	system
Workstation	Creates an	Started	Automat	ic Local	Service
When there and a third and					

FIGURE 8: RESTART THE WONDERWARE SUITEVOYAGER ALARM CONSUMER SERVICE

Now, the current Factory Alarms are showing

Wanderware.	Wond	ORMATIC	DN SEF	RVER								
Customize												💮 Home 🥐
Launch Pad	×	LocalAlarm										
System												
Administration		Current	Default Vi	ew								
Application Manager		History	Color Legend	1		Acknowledged		Un	acknowledged			Unackreturned
User Manager		Configure	Date 7	Time	Group	Name	State	Туре	Value	Priority	Limit	Operator
License Manager			9/5/2011	12:29:59 PM	Reactor	ReactTemp	UNACK_ALM	HI	179.9	1	100	None
Portal Configuration			9/5/2011	12:29:58 PM	Reactor	ReactLevel	UNACK_RTN	HI	1775	1	1800	None
Data Source Manager			9/5/2011	12:28:59 PM	Reactor	ProdLevel	UNACK_RTN	HI	6981	1	7000	None

FIGURE 9: CURRENT FACTORY ALARM

Note: You must re-start WIS Alarm Consumer service whenever you make changes in the WIS Factory Alarm Manager.

No History Factory Alarms when WIS and InTouch Viewer are on the Same Node and the Alarm DB Logger Manager is Running as a Windows Service

Overview

In InTouch 10.1 SP 3 Patch 01, Alarm DB Logger Manager can run as a Windows service. When this is the case, WIS cannot obtain the History Factory Alarms if you don't apply the workaround in this section (Figure 10 below).

NewLocalAlarm	
Current History Configure	No Alarm records No alarm records have been found with your current alarm configuration.

FIGURE 10: NO HISTORY ALARMS

Workaround

The workaround for this scenario is to use the same procedure to retrieve the AlarmMgr10.2.149.19 process address/source, then to include the IP address in the Alarm DB Logger Manager settings. See the previous section for details about capturing the process' IP address.

To Assign the IP Address into Alarm DB Logger Manager's Alarm Query

- 1. Click Start > All Programs > Alarm DB Logger Manager.
- 2. Click Settings, then Next.
- 3. Include the IP address in the Alarm DB Logger Alarm Query (Figure 11 below).

(doily blocdills			
Alarm State	All	Erom Priority	1
Query Type	Historical	<u>I</u> o Priority	999
-			

FIGURE 11: ASSIGN THE IP ADDRESS TO THE ALARM QUERY STRING

2. Click Next.

3. Ensure the Running Logger As option is set to Windows Service. This will start Alarm DB Logger Manager as windows service.

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-	- Remained agent As	- Minnellanaarii
	Hunning Logger As	Miscellaneous
_	Windows Service	✓ Log Events
	C Normal application	
	Performance Tuning	
	100	

FIGURE 12: ENSURE WONDERWARE ALARM LOGGER SERVICE RUNS AS WINDOWS SERVICE

- 4. Click Finish.
- 5. Include the IP Address in the WIS Distributed Alarm Query.

Alarm	Alarm Configuration		
Data Provider	Alias *: Description: Data Source *: Contact Name: Distributed Alarm Quer	NewLocalAlarm AlarmLocal Vicalhost:10.2.1	↓ 149,19\intouchi\$system
	* Required field	Update	Cancel

FIGURE 13: NEW QUERY WITH IP ADDRESS

6. Confirm you can see the History Factory Alarms (Figure 14 below).

Image:	Wonderware - Windows Internet Ex	plorer												
File Edit Wew Pavortes Tools Help Wonderware (New Counting) Wonderware (New Counting) Customize Administration Administration Administration Administration Date // Time Date // Default View (License Manager) Default View (Configuration) Date // Default View (Default View) Administration Date // Default View (Default View) Administration Date // Default View (Default View) Acknowledged Date // Default View (Default View) Acknowledged Date // Default View (Default 9/2/18 PM Bactor Reacting) Match // New Configuration Date // Different Paid Date // Different Paid User Manager Date // Different Paid Date // Different Paid Date // Different Paid Date // Different Paid Date // Different Paid Reacting Paid Paid Paid Paid Paid Paid Paid Paid	S Vinderw	vare/useng/main/defa	- Q	* × 🎯 Wonderw	lare	× 30	alhost							
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Cutands Paid X NewLocalAlarm System Current Default View Administration Application Manager Default View User Manager Default View District Time Group Name State Priority Linit Operator Comments District State Time Group Name State Priority Linit Operator Comments District State Time Group Name State Priority Linit Operator Comments District Time Group Name Rescore Rescore State Viewel Name Rescore temp Multiview Manager 9/5/2011 9:02:08 PM Rescore Rescore Rescore tewel Name State 1 100 Name Rescore lewel 9/5/2011 9:01:45 PM Rescore Rescore Rescore Rescore lewel Nack_AIM Name Name Rescore lewel 1 100 Nam	Wordenies Won	FORMATIC	ON SERV	ER										
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System Opfinizity allon	Launch Pad ×	NewLocalAlar												
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Poilain Collinguistion 9/2/2011 9/02/08 PM 85/stm Steaklarm SYST DN 995 DFF None NewAlarm Data Source Manager 9/2/2011 9/02/08 PM Reactor Reactor Reactor Not CK_ALM H 1850 1 1500 None Reactor level Pactory Alarm Manager 9/2/2011 9/01/45 PM Reactor Reactor SVST 0/F 995 0/A None Reactor level Panel Manager 9/2/2011 9/01/45 PM Reactor Reactor SVST 0/F 995 0/A None Reactor level VM:N-ML Exporter 9/2/2011 9/01/45 PM Reactor Reactor Reactor Reactor None Reactor level Documentation 9/2/2011 9/01/26 PM Reactor Reactor Reactor Reactor level NoACK_ALM H1 127.9 1 100 None Reactor level 9/2/2011 9/01/26 PM Reactor Reactor Reactor Reactured NAACK_ALM	Restal Configuration		9/5/2011	9:02:18 PM	Reactor	ReactTemp	UNACK_ALM	HI	101	1	100	None	Reactor tem	1.p
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FIGURE 14: HISTORY FACTORY ALARMS FROM ALARM DB LOGGER MANAGER (RUNNING AS WINDOWS SERVICE)

Note: If you still don't see the History Factory Alarms after completing the workarounds, contact Wonderware Technical Support for further troubleshooting.

Conclusion

Microsoft Windows 2008 (and Vista and Windows 7.0) includes the Session O Isolation mechanism, which causes WIS Factory Alarms to work incorrectly in some scenarios. Using the workaround procedure in this Tech Note, you should be able to restore the alarms to WIS.

References

- Tech Note 786 Troubleshooting Wonderware Information Server (WIS) Part One: HTTP Error 500
- Tech Note 790 Troubleshooting Wonderware Information Server (WIS) Part Two: Factory Alarms

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