Tech Note 836 Configuring an Alarm Acknowledgement Signature and Using the SignedAlarmAck() Script Function

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Introduction

SignedAlarmAck() is a script function for ArchestrA Graphics to perform an acknowledgment of one or more alarms on ArchestrA attributes that optionally require a signature depending on whether any of the indicated alarms falls within a designated priority range. If so, the user must perform an authentication of the operation to acknowledge the alarms.

Application Versions

- Wonderware InTouch® 10.5 and later
- Wonderware Application Server 3.5 and later

Before You Start

Before you complete this procedure, setup your Security in the Galaxy.

- 1. Create a new Galaxy
- 2. On the main menu, click Galaxy-> Configure-> Security.
- 3. Select Galaxy Security.
- 4. Login with the following credentials:
 - · Login Name: Administrator
 - · Password: (blank)
- 5. Repeat Step 3 and click the Users tab.
- 6. Add two users. One user is an Operator and the other is a Supervisor (Figure 1 below).

Configure the Users o	f the Galaxy	
uthorized Users available:		Change Password + X
User	Full name	
S Administrator		
S DefaultUser		
Operator	Jeff Smith	
Supervisor	Bindya Shah	
4 1		
<u>(</u>]		
 ssociated <u>B</u>oles for Operator: 		Access level
ssociated <u>R</u> oles for Operator: Role Administrator		Access level 9999
ssociated <u>R</u> oles for Operator: Role Administrator		Access level 9999 0
		Access level 9999 0
ssociated <u>R</u> oles for Operator: Role Administrator Social Default		Access level 9999 0
ssociated <u>Roles for Operator:</u> Role Administrator Sole Default		Access level 9999 0
ssociated <u>R</u> oles for Operator: Role Administrator Social Default		Access level 9999 0
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ssociated <u>R</u> oles for Operator: Role Administrator Sole		Access level 9999 0
t ssociated <u>R</u> oles forOperator: Role Administrator ✓ ▲ Default		Access level 9999 0
 ssociated <u>Roles for Operator:</u> Role Administrator ☑ ▲ Default 		Access level 9999 0
Issociated <u>Roles for Operator:</u> Role Administrator Default Default		Access level 9999 0

FIGURE 1: ADD OPERATOR AND SUPERVISOR USERS

- 7. Highlight the Operator and click Change Password.
- 8. The old password is (blank). Set a new password, for example, operator.
- 9. Highlight the Supervisor and click the Change Password button.
- 10. The old password is (blank). Set a new password, for example, supervior.
- 11. Click the Roles tab.
- 12. Click **Default** and uncheck all options (Figure 2 below).

Defea the	Security Delay of the Cal	land.
Denne the	Security Koles of the Ga	laxy
	+	×
oles available:	Access level	General permissions:
Administrator	9999	Can Start the IDE
Default	0	Importing and Exporting
		General Configuration
		System Configuration
		DeviceIntegration Objects
		E Framework Configuration
		User Configuration
		Deployment Permissions
		Graphic Management Permissions
		E SMC Permissions
		Can Start the SMC
		Can Start/Stop Engine/Matform
		Operational permissions:
		Operational permissions: Opermissions: Operational permissions: Operational permission
		Operational permissions: Opermissions: Operational permissions: Operational permission
		Operational permissions: Default Can Acknowledge Alarms Can Modify "Configure" Attributes Can Modify "Operate" Attributes Can Modify "Tune" Attributes Can Verify Writes

FIGURE 2: UNCHECK ALL DEFAULT SECURITY OPTIONS

- 13. Add the Supervisor and Operator roles with Access Levels of 9999 and 5555 respectively.
- 14. For the Supervisor Role, check all the permissions as shown in Figure 3 (below).

Authentication Mode S	ecurity Groups Roles User	s
Define the	Security Roles of the Galaxy	
oles available:	Access level	General permissions:
Administrator	9999	Can Start the IDE
Default	0	
Operator	5555	General Configuration
Supervisor	9999	System Configuration
		DeviceIntegration Objects
		Application Configuration
		Framework Configuration
		Opployment Permissions
		Graphic Management Permissions
		Gan Start the SMC
		Can Start/Stop Engine/Platform
		Can Write to GObject Attributes using O
		Operational permissions:
		Default
		Can Acknowledge Alarms
		Can Modify "Configure" Attributes
		Can Modify "Operate" Attributes
		Can Modify "Tune" Attributes
		Can Verify Writes
d]	,	
and and a second se		

FIGURE 3: CHECK PERMISSIONS FOR SUPERVISOR

15. For the Operator role just check SMC permissions and everything under Default except for Can Verify Writes (Figure 4 below).



FIGURE 4: OPERATOR PERMISSIONS

16. Click the **Users** tab and make sure you have selected the associated role for each authorized user. For example, **Operator** is associated with the Operator role (Figure 5 below).

Configure the Users o	f the Galaxy	
uthorized Users available:		Change Password
User	Full name	
S Administrator		
B DefaultUser		
Operator	Jeff Smith	
Supervisor	Bindya Sh	ah
d]		2
 ssociated <u>R</u>oles for Operator: 		Access level
ssociated <u>R</u> oles for Operator: Role		Access level 9999
 ssociated <u>R</u>oles for Operator: Role ▲ Administrator ☑ ▲ Default 		Access level 9999 0
ssociated <u>R</u> oles for Operator: Role Administrator Default Operator		Access level 9999 0 5555
ssociated <u>Roles for Operator:</u> Role Administrator Default Operator Supervisor		Access level 9999 0 5555 9999
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FIGURE 5: ASSOCIATED USERS AND ROLES

17. Associate the **Supervisor** with the Supervisor role (Figuer 6 below).

Authentication Mode Security Groups	Roles Users	
Configure the Users of t	he Galaxy	Change Password
User	Full name	
Administrator		
S DefaultUser		
S Operator	Jeff Smith	
Supervisor	Bindya Shah	
-		
<u>• </u>		
<u>.</u>		
 ✓ Lissociated <u>R</u>oles for Supervisor: 		Accessievel
		Access level
Associated <u>R</u> oles for Supervisor: Role Role Role		Access level 9999 0
Associated <u>R</u> oles for Supervisor: Role Administrator Default Coerator		Access level 9999 0 5555
Associated <u>R</u> oles for Supervisor: Role Administrator Default Operator Supervisor		Access level 9999 0 5555 9999
		Access level 9999 0 5555 9999
		Access level 9999 0 5555 9999
Associated <u>R</u> oles for Supervisor: Role Administrator Administrator Administrator Administrator Superator Supervisor		Access level 9999 0 5555 9999
Associated <u>R</u> oles for Supervisor: Role Administrator Control Contro Control Control Control Control Control Control Control		Access level 9999 0 5555 9999
Associated <u>R</u> oles for Supervisor: Role Administrator Administrator Default Operator Supervisor		Access level 9999 0 5555 9999
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Associated <u>Roles for Supervisor</u> Role Administrator Default Operator Supervisor		Access level 9999 0 5555 9999
Associated <u>Roles for Supervisor</u> Role Administrator Administrator Coperator Supervisor		Access level 9999 0 5555 9999
Associated <u>Roles for Supervisor</u> Role Administrator Administrator Superator Supervisor		Access level 9999 0 5555 9999

FIGURE 6: ASSOCIATED SUPERVISOR USER AND ROLE

Examples

This Tech Note includes the following examples. Each section contains script samples you can copy/paste into your Objects.

- Configuring the signature requirement for alarm acknowledgement using the Embedded Alarm Client Control
- Using the SignedAlarmAck() Script Function

Configuring the signature requirement for alarm acknowledgement using the Embedded Alarm Client Control

This example shows how to configure alarm acknowledgement signature on an Embedded Alarm Client Control.

- 1. Create an ArchestrA Graphic Symbol on the Graphic toolbox (e.g. AlarmSymbol).
- 2. Embed the Alarm Client Control on the graphic editor.
- 3. Double-click the Alarm Client Control and type the alarm query as \Galaxy!Area_001.

🞼 Edit Animations -	English (Unite	ed States)		
Animations +		Alarm	AlarmClient1	
Configuration		C ¹		
Alarm Mode	Required	Client Mode	Current Alarms	
Colors Column Details Query Filters Time Settings Run-Time Behavior Data Binding	Required Required Required Required Required Required	Alarm Query	\Galaxy!Area_001	×
		Use Default Ack Co	mment	×
•				Cancel

FIGURE 7: ALARM CLIENT CONTROL WITH ALARM QUERY

4. In the Run-Time Behavior configuration panel, check Requires ACK Signature.

5. Type the Min Priority and Max Priority for the Alarm Acknowledgement. This example uses Min Priority of 1 and Max Priority of 2.

Animations - E	inglish (Unite + 🚬 —	d States) Run-Time Behavio	or	_□× AlarmClient1 ∠ ✓
Configuration Alarm Mode Colors Column Details Query Filters Run-Time Behavior Data Binding Event	Required Required Required Required Required Required Required	✓ Show Heading Show Grid ✓ Show Status Bar ✓ Query on Startup △ Auto Scroll to New Alarms □ Hide Errors and Warnings ✓ Allow Column Resizing □ Retain Hidden □ Auto Resume after □ sec. ○ Show Custom 'No Records' Message ✓ Row Selection Multiple ▼ Min Priority 1 Max Priority 2	 ✓ Show Context Menu ✓ Ack Selected ✓ Ack Others ► ✓ Hide Selected ✓ Hidden ✓ Sort ✓ Query Filters ✓ Freeze ✓ Statistics ✓ Requery ✓ Reset 	 Ack All Ack Visible Ack Selected Groups Ack Selected Tags Ack Selected Priorities Hide All Hide Selected Groups Hide Selected Tags Hide Selected Tags Hide Selected Priorities Unhide All
	Stonarup: Dun			OK Cancel

6. Open the IDE and create the following object instances:

- \$WinPlatform instance called \$WinPlatform_001.
- \$AppEngine instance called **\$AppEngine_001**.
- \$Area instance called \$Area_001
- \$UserDefined Object instance called **\$UDO1**.

7. Enable InTouch Alarm Provider on the \$WinPlatform_001 object (Figure 9 below).

Galaxy Edit View Object Window Help					
8 8 9 9 9 8 0 9 8 8 8 8 8 8 8 8 8 8 8 8	🖸 🗙 🚉 😻 🗑 🧠 🌤 💊 🥹 🖉				
🐸 Template Toolbox 🛛 🗸 🔻 🗙	WinPlatform_001 *				
SecuirtyApp Application	General Engine Alarms Platform History	Scheduler History	Engine History	Object Information	n So
 \$AnalogDevice \$Boolean \$DiscreteDevice 	Network address:	IOMLKF64IN	VSW		
- O \$Double - O \$FieldReference	History storeforward directory:			_ _	
- O SFloat - O SInteger	Minimum RAM: Statistics average period:	1024	MB	പ്പ	
- SEquencer - SSQLData - SString	InTouch alarm provider	1			
- 9 \$Switch	Enable InTouch alarm provider			6	
Gin Device Integration System	Register using "Galaxy_ <galax< td=""><td>y name>" instead of '</td><td>'Galaxy"</td><td><u>.</u></td><td></td></galax<>	y name>" instead of '	'Galaxy"	<u>.</u>	
SAppEngine SArea SInTouchViewApp	Alarm areas (blank for all):				

FIGURE 9: ENABLE INTOUCH ALARM PROVIDER

- 8. On the **\$UDO1** instance, configure the following:
 - UDA called AlarmTag which is an Integer data type.
 - Analog Field Attribute called Analog_001.
 - Set the Access mode to Input.
 - Input Source is UDO1.AlarmTag.
 - Click Enable limit alarms.
 - For Hi Alarm, change the priority to 1 (Figure 10 below).

eld Attributes Object Information Sc 	x Name: Analog_001 Attribute type: Analog Access mode: Input Input Data type: Integer	
Analog_001	Description:	£
	Value Value O Generate event upon change Input source: UDO1.AlarmTag Output destination differs from input source Output destination:	5 3 5 5 3 5 3
Inherited field attributes	Finable I/O scaling	۲
Name	Enable history	۲
Image: Constraint of the sector of the se	Imit alarms Limit alarms Imit alarms	* 5 5 5 5 7

FIGURE 10: UDA CONFIGURATION FOR THE \$UDO1 INSTANCE

9. Click the Graphics tab and create a new symbol called EmbeddedAlarmSymbol and then embed the AlarmSymbol that was created in step #1 above.

10. Create a new derived InTouchViewApp called SecurityApp.

11. Create an InTouch Window and call it Win1.

12. Embed the AlarmSymbol on the InTouch Window.

13. Embed the SliderBasic from the ArchestrA Symbol Library (Figure 11 below).



14. Double-click the SliderBasic control and add Galaxy: UDO1.AlarmTag for the Custom Property's Default Value (Figure 12 blow).

🗸 Edit Custom Propertie	es		_D_×
Custom Prope	erties + 🖛	Value	SliderBasic1
Name A Max Min Value WriteOnRelease Status This property is overridden attribute was ''. The prop reference to 'Galaxy:UDO 1	Default Value 100.0 0.0 Galaxy:UDO1.Ala False A. The original value of the perty is configured as a .AlarmTag'.	Data Iype Float Default Value Image: Calaxy UDO1 Alarm Text Visibility Image: Public (Property calify on Private (Property is Description Description Value of slider.	In be seen when symbol is embedded) a hidden when symbol is embedded)
8			OK Cancel

FIGURE 12: CUSTOM PROPERTY DEFAULT FOR SLIDERBASIC

- 15. Click OK and on the main menu, click Special-> Security.
- 16. Click ArchestrA for the Security Type.
- 17. Deploy all the objects. (WinPlatform_001, AppEngine_001, Area_001, UD01)
- 18. Switch to Runtime mode.
- 19. Click Special-> Security-> Log on.
- 20. Login as Supervisor with password supervisor.
- 21. Use the Slider to reach a value where it is in Hi Alarm. This example shows a value of 85 and the Priority is 1 for that Hi Alarm.

TimeLCT A	State	Туре	Class	Priority	Name	Group	Node
3/7/2012 9:4	UNACK	LoLo	VALUE	500	UDO1.Analog	Area_001	IOMLK
3/7/2012 9:4	UNACK	Lo	VALUE	500	UDO1.Analog	Area_001	IOMLK
3/7/2012 9:5	UNACK	HiHi	VALUE	500	UDO1.Analog	Area_001	IOMLK
3/7/2012 10:	UNACK	Hi	VALUE	1	UD01.Analog	Area_001	IOMLK
∢ Ø 🗄 🕴 Displa	ying 1 to 4 of 4 alar	ms Default 100	1% Complete Pacif	ic Time (US <u>_</u> Cana	da)		1
		100 - 90 - 80 - 70 - 50 - 40 -	ļ				
		30 -					

FIGURE 13: SLIDER GENERATING A P1 ALARM

22. Right-click on the Hi Alarm to Acknowledge it. The Ack Alarm popup appears. Type any comments and provide the username\password (Figure 14 below).

_
cel

FIGURE 14: ACK ALARM REQUIREMENT

The Embedded Alarm Client control displays your comment after Acking the alarm (Figure 15 below).





Using the SignedAlarmAck() Script Function

This example shows how to use SignedAlarmAck() script function.

- 1. Create an ArchestrA Graphic Symbol on the Graphic toolbox (e.g. AlarmSymbol).
- 2. Embed the Alarm Client Control on the graphic editor.
- 3. Double-click the Alarm Client Control and type the alarm query as \Galaxy!Area_001 (Figure 16 below).

Edit Animations - I	English (Unite	ed States)		
Animations	+	Alarm	Mode	AlarmClient1
2			1 of 8	× ×
Configuration		Client Mode		
Alarm Mode	Required		Current Alarms	
Colors Column Details Query Filters Time Settings Run-Time Behavior	Required Required Required Required Required Required	Alarm <u>Q</u> uery	\Galaxy!Area_001	A
		Use Default Ac <u>k</u> Co	omment	¥ 4 ¥
•				OK Cancel

FIGURE 16: ALARM QUERY

- 4. Create the following object instances:
 - \$WinPlatform instance called \$WinPlatform_001
 - \$AppEngine instance called **\$AppEngine_001**
 - \$Area instance called \$Area_001
 - \$UserDefined Object instance called **\$UDO1**
- 5. Enable InTouch Alarm Provider on the \$WinPlatform_001 (Figure 17 below).

🕺 ArchestrA IDE							
Galaxy Edit View Object Window Help ♥ 🛃 💯 📕 🎨 🖉 🦪 🖓 🖏		a I 🤧 1	a <		00		
🥶 Template Toolbox 🗸 🗣 🗙	🕃 wi	inPlatfo	rm_00	1*			
E- SecuirtyApp	General	Engine	Alarms	Platform History	Scheduler History	Engine History	Object Inform
SanalogDevice Solean Solean	Netw	ork addre	55:		IOMLKF64IN	VSW	
- • \$Double	Histo	ory storef	orward d	lirectory:			6
 SFieldReference SFloat 	Minin	num RAM:			1024	МВ	പ്
- Sinteger - Sequencer	Statis	stics avera	geperio	od:	10000	ms	a 🔍
- SQLData	InTe	ouch alarn	n provid	er£			
- Switch	R	Enable In	nTouch a	larm provider			5
 \$UserDefined Device Integration 	Register using "Galaxy_ <galaxy name="">" instead of "Galaxy"</galaxy>				പ്പ		
System SAppEngine - (1) SArea - (1) SArea - (1) SArea - (1) Sarea		Alarm ar	eas (bla	nk for all):			

FIGURE 17: ENABLE INTOUCH ALARM PROVIDER ON THE \$WINPLATFORM INSTANCE

- 6. On the **\$UDO1** instance, configure the following:
 - UDA called AlarmTag which is an Integer data type.
 - Analog Field Attribute called Analog_001
 - Access mode is Input.
 - Input Source is UDO1.AlarmTag
 - Enable limit alarms
 - HiHi Alarm Alarm priority is 1

n + +	Name: Analog_001 Attribute type: Analog	1
Field attributes:	Access mode: Input 💌 Data type: Integer 💌	1
Name	Buffered	
Analog_001	Description:] °
	Value	1.00
	Generate event upon change	6
	1/0 23 Input source: LIDO1 AlarmTad	6
	Output destination differs from input source	5
	Output destination:	1 83 (
	Enable I/O scaling	*
nherited field attributes: Name	Enable history	۲
	Enable limit alarms	۲

FIGURE 18: UDA CONFIGURATION FOR THE \$UDO1 INSTANCE

7. Open the Alarm Symbol in Graphic Editor and add a Button called SignedAlarmAck().

8. Add the following SignedAlarmAck() script function on an Action script animation link where the trigger is On Left Click/Key Down.

Dim Result as Integer; Result = SignedAlarmAck("UD01.Analog_001.HiHi", True, 1, 5, "Acked by script", False "Acknowledge Alarms by Scripting", "Acknowledge HIHI Alarms");

This script example disables the Alarm Comment field (non-editable) provides a Title Bar caption.

💑 Edit Animations - Englis	sh (United States)		
Animations	+	Action Scripts	Button1
Interaction			۲
Action Scripts	Enabled 💌	Key Equivalent Ctri Shift Key None 💌 scripts used:	1
		Irigger type: On Left Click/Key Down Every:	ms
		too 4	
		Result = SignedAlarmAck("UDO1.Analog_001.HiHi", True, 1, 5, "Acked by script", False	, "Acknowld
			<u>)</u>
0		une: 1 Col: 1	913 A.
(6)		ОК	Cancel

FIGURE 19: ACTION SCRIPT EXAMPLE

9. Click the Graphics tab on the \$UDO1 and create a new symbol called EmbeddedAlarmSymbol and embed the AlarmSymbol that was created on step # 1 above.

10. Create a new derived InTouchViewApp called SecurityApp.

- 11. Create an InTouch Window call it Win1.
- 12. Embed the AlarmSymbol on the InTouch Window.
- 13. Embed the SliderBasic from the ArchestrA Symbol Library (Figure 20 below):



FIGURE 20: SLIDER AND BUTTON

14. Double-click the SliderBasic and add Galaxy: UDO1. AlarmTag for the Custom Property's Default Value (Figure 21 below).

🗸 Edit Custom Properti	es		<u>×</u>
Custom Prope	erties + 🖛	Value	SliderBasic1
Name A Max Max Wine Value WriteOnRelease	Default Value 100.0 0.0 Galaxy:UD01.Ala False n. The original value of the perty is configured as a 1.AlarmTag'.	Data Iype Float Default Value Selexy(UD01.AtamTed) Visibility © Public (Property can be see © Private (Property is hidden) Description Value of slider.	en when symbol is embedded) when symbol is embedded)
(())			OK Cancel

FIGURE 21: SIGNEDALARM DEFAULT VALUE

- 15. On the main menu, click **Special-> Security**.
- 16. Security Type is ArchestrA.
- 17. Deploy all the objects (WinPlatform_001, AppEngine_001, Area_001, UDO1).
- 18. Switch to Runtime.
- 19. Click Special-> Security-> Log on.
- 20. Login as Supervisor and provide the supervisor password.
- 21. Use the Slider to reach a value where it is in HiHi Alarm. This example shows value of 96 and the Priority is 1 for that HiHi Alarm.

TimeLCT 🗠	State	Туре	Class	Priority	AlarmComment	
3/9/2012 11:	UNACK	LoLo	VALUE	500		
/9/2012 11:	UNACK	Lo	VALUE	500		
3/9/2012 1:4	UNACK	HiHi	VALUE	1		
3/9/2012 1:4	UNACK	Hi	VALUE	500		
Dicola	ving 1 to 4 of 4 alar	me Dafault 10	0% Complete Dacif	Time (IS Canada)		
	ying 1 to 1 to 1 to 1		o ro complete i rota	ie finie (00 journou)		
		1				
SignedA	larmAck()					
					90 80 70	
					60	
					40	
					30-	
					10	

FIGURE 22: P1 ALARM USING THE SLIDER

22. Click the SignedAlarmAck() button. In this example, notice that you see the Acknowldge Alarm by Scripting dialog box where you cannot edit the alarm comment. It requires a signature to acknowledge the HiHi alarm.

Acknowledge	HIHI Alarms	
Comment A	Username Password Domain	Supervisor ArchestzA OK Cancel

FIGURE 23: ACK BY SCRIPTING

The comment contained in the script appears on the Embedded Alarm Client Control Display (Figure 24 below).



Return values indicate success or failure status.

- A non-zero value indicates type of failure.
- For more help on the different return values, refer to the Scripting.pdf/page 57 for Wonderware Application Server 3.5.

Note: A return value of zero does not indicate if the alarms are acknowledged, only that the function wrote to the AckMsg attributes. The alarms may not be acknowledged due to insufficient permission or because the alarms have already been acknowledged.

SignedAlarmAck() Scripting Recommendations

• SignedAlarmAck() and Alarm Configuration

You can use the SignedAlarmAck() function only in ArchestrA client scripts.

• SignedAlarmAck() with OnShow and OnHide Scripts

Do not use the **SignedAlarmAck()** function with **OnShow** and **OnHide** scripts. This can cause issues with window functionality, including the window title bar, windows losing correct focus, and windows opening on top of one another.

SignedAlarmAck() with While True Scripts

Do not use the **SignedAlarmAck()** function in a **While True** script type. A signed alarm acknowledgement requires user interaction. If you want to use a While True type script, it must be set to an execution time of 30-seconds or longer to allow the user to enter the required information.

Note: The SignedWrite() function is supported only for client scripting and not for object scripting

B. Shah

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