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Introduction

This Tech Note outlines using FSGateway to transfer data between two different ArchestrA Galaxies.

Application Versions

- Industrial Application Server 2.1 and later
- Wonderware Application Server 3.1
- FSGateway 1.5 SP1

Configuration Details

In order to transfer data between two Galaxies, FSGateway must be used as a protocol converter. FSGateway ArchestrA configuration objects utilize the Message Exchange (MX) protocol to communicate to ArchestrA objects within the Galaxy that the Platform on that same node is a member of. FSGateway can then act as a SuiteLink® server to a remote galaxy's DDESuiteLinkClient object (Figure 1 below).



Galaxy B Configuration

1. Create an Object and an Attribute.

Galaxy **B** is hosted on **Node 2**, and named **ts-test02** in this example. The galaxy contains a deployed User Defined Object named **Node2_UDO** with a User Defined Attribute named **Tag1** (Figure 2 below).

Node2_UD0			
Field Attributes Object Information Scripts	; UDAs Extension	ons Graphics	
+ ×	UDA name:	Tag1	
UDAs:			
Name	Data type:	Integer	•
Tagi	Category:	User writeable	
	_ Value		
	This is an ar	ray	
	Number of e	elements:	
	0		- A (0)
	1-		

FIGURE 2: NODE 2 USER DEFINED OBJECT AND ATTRIBUTE

FSGateway must be installed locally to the node where a Platform from this Galaxy is deployed. In this case, we will install FSGateway on the GR Node (Node 2).

FSGateway should be configured with an ArchestrA and ArchestrAGroup object using the default configuration options (Figure 3 below). In the case where ArchestrA security is enabled, the login information must be entered.

2. Save your changes and activate FSGateway.

💋 SMC - [ArchestrA System Management Console (TS-TEST02)	\DAServer Manager\Default Group\Local\ArchestrA.FSGateway.1\Configuration\AA\AA
Eile Action View Help	
⇔ → 🖻 📧 🗙 🔮 💷	
ArchestrA System Management Console (TS-TEST02)	Node Type: ArchestrAGroup Delimiter: AAGrp Parameters Device Items Device Group Name: AA_AAGrp ArchestrA Item ID Prefix:

FIGURE 3: NODE 2 FSGATEWAY CONFIGURATION

Galaxy A Configuration

1. Create an Object and Attribute.

Galaxy **A** is hosted on Node 1, named **ts-test01** in this example. The galaxy contains a deployed User Defined Object named **Node1_UDO** with a User Defined Attribute named **Tag1** (Figure 4 below).

Node1_UD0		
Field Attributes Object Information S	Scripts UDAs Extensi	ons Graphics
+	X UDA name:	Tag1
UDAs:		
Name Tag1	Data type:	Integer
	Category:	User writeable
	Value	
	This is an ar	rray
	Number of e	elements:
	0	60
	- 1	

FIGURE 4: NODE 1 USER DEFINED OBJECT AND ATTRIBUTE

Galaxy A also contains a deployed DDESuiteLinkClient object directed to FSGateway running on Node 2 (Figure 5 below).

i topic object mor	Indian Scripts Gores Extension		
erver node:	ts-test02		£ ()
erver name:	fsgateway		£ 0
Detect connection alarm			6
Priority:			62
ommunication protocol:	SuiteLink	•	പ്
DDE login			
🔽 Use ArchestrA user			£
Domain name:			6
User:			6
Password:			പ്
acoppact cocuritur			ব

FIGURE 5: NODE 1 DDESUITELINKCLIENT OBJECT CONNECTING TO NODE 2

2. The DDESuiteLinkClient object has a Topic configured to match the Device Group Name on the ArchestrAGroup object of FSGateway on Node 2 (Figure 6 below).

SG_Node2	
General Topic Object Information Scripts UDAs E	extensions Graphics
Available topics:	
Topic	Scan Mode
aa_aagrp	ActiveOnDemand
1	
Associated attributes for aa_aagrp:	

FIGURE 6: NODE 1 DDESUITELINKCLIENT OBJECT TOPIC CONFIGURATION

3. Node1_UDO.Tag1 is extended to FSG_Node2.aa_aagrp.Node2_UDO.Tag1 (DDESuiteLinkObject.Topic.SourceObject.Attribute).

Lun Labore			. 1		Eutor	cione	le tul
ield Attributes Object Info	ormation	Scrip	ots U	DAs	Exter	ISIONS	Graphics
							Attribute name: Tag1
Extendable Attributes:	1	🗌 Sh	iow ex	tensio	n attrit	outes	✓ InputOutput extension
Name	IO	I	0	A	Н	В	Source: FSG_Node2.aa_aagrp.Node2_UDO.Tag1
🗄 AlarmInhibit							
① AlarmMode							
() AlarmModeCmd							Destination:
ConfigVersion							
🗄 InAlarm							Input extension
🗄 ScanState							Source:
🗄 ScanStateCmd		1				. Common	
🗐 Tagi	X	1					
							Destination:

FIGURE 7: NODE1_UDO.TAG1 EXTENSION

Run-Time

Once everything is deployed, any change to Node1_UDO.Tag1 will be passed to Node2_UDO.Tag1 and vice versa (Figure 8 below).

🎕 ts-test01 - ts-test01 - Remote Desktop						
💋 Object Viewer						
Eile Edit View Options Help	な ts-test02 - ts-test02 - Remote Desktop					
🐁 🏹 🏘 🗹 🚽 🛛 Attribute Reference:	💋 Object Viewer					
E-& Fact35 Attribute Name	Eile Edit View Options Help					
GR_001[TS-TEST01] AlarmInhibit	🔰 🗞 🚮 🛋 🛒 🛃 🛛 Attribute Reference	:	•			
AppEngine_001 AlarmMode	🖃 🚀 test	Attribute Name A	Value			
Node1_UDO [Noc Area	WinPlatform_001[TS-TEST02]	AlarmInhibit	false			
FSG_Node2 [FSG_No ContainedName	E-A AppEngine_003	AlarmMode AlarmModeCmd	Enable Enable			
Container	- O Node2_UDO [Node2_UDC	Area	Area_003			
ExecutionRelatedObjec ExecutionRelativeOrde		Contigversion ContainedName	2			
HierarchicalName		Container Susseting Delete d'Object				
InAlarm		ExecutionRelativeOrder	None			
ScanState		HierarchicalName	Node2_UDO			
ScanStateCmd SecurityGroup		InAlarm	false			
ShortDesc		ScanState ScanStateCod	true			
Tag1.InputSource		SecurityGroup	Default			
Tag1.OutputDest		ShortDesc Taol	The UserDefined (
Tag1.WriteStatus		Tagname	Node2_UDO			
Tag1.WriteValue		1				
		1				
		1				
AttributeReference Value		1				
	1	1				
		1				
	AttributeReference	Value Quality	Status			
	Node2_UDO.Tag1	25 C0:Good	Ok			

FIGURE 8: VALUES LINKED BETWEEN GALAXIES

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