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Introduction

The GRAccess Toolkit enables automating activities that engineers normally perform manually using the Industrial Application Server Integrated Development Environment (IDE).

This Tech Note describes configuring UDA Array and assigning values to UDA Array programmatically using a C# application.

For this *Tech Note*, a template called **\$UDArrayTest** has been created. It is derived from the **\$UserDefined** template.

The Following tasks are done programmatically in the newly created **\$UDArrayTest** template object.

- 1. Configure the UDA Array
- 2. Modify the Value of Only the 3rd Element of the Array

Application Versions

To execute the GRAccess code snippet that is described in this document, you will need the following :

- Visual Studio 2005, C#
- Industrial Application Server 3.0 and later
- GRAccess 3.0

Before executing the code snippet in item#1, the ArchestrA IDE configuration looks like following:

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FIGURE 1: UDA FOR \$UDARRAYTEST OBJECT

Configure the UDA Array

Configure the UDAarray with 5 integers, and assign values to each element of the array.

Code Snippet in C#

Declarations:

```
ICommandResult CR;
ITemplate UDATest;
MxValue MXVal = new MxValueClass();
MxValue MXValArray = new MxValueClass();
```

Code Snippet:

```
//Checkout the Template Object
UDATest.CheckOut();
UDATest.AddUDA('UDAarray'', MxDataType.MxInteger,
MxAttributeCategory.MxCategoryWriteable_USC_Lockable,
   MxSecurityClassification.MxSecurityFreeAccess, true, 5);
CR = UDATest.CommandResult;
if (!CR.Successful)
   MessageBox.Show("Adding UDA UDAarray to $UDArrayTest failed:"
    + CR.Text + " : "
      + CR.CustomMessage);
   UDATest.CheckIn("");
∫
else
   UDATest.Save();
   //Assign Values to all 5 elements of Array
   MXVal.PutInteger(9991);
   MXValArray.PutElement(1,MXVal);
   MXVal.PutInteger(9992);
   MXValArray.PutElement(2,MXVal);
   MXVal.PutInteger(9993);
   MXValArray.PutElement(3,MXVal);
   MXVal.PutInteger(9994);
   MXValArray.PutElement(4,MXVal);
   MXVal.PutInteger(9995);
   MXValArray.PutElement(5,MXVal);
UDATest.ConfigurableAttributes["UDAarray"].SetValue(MXValArray);
   UDATest.Save();
   UDATest.CheckIn("");
```

Notice that there is no datatype set specifically for the array in the above snippet. The array gets the datatype of the very first element set. In this example, **MXVal.PutInteger(9991)**; determines that the array will be of **Integer** type.

Figure 2 (below) shows the ArchestrA IDE after executing the above code snippet.

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FIGURE 2: UDAARRAY MODIFICATIONS

Modify the Value of Only the 3rd Element of the Array

Code snippet in C#

Declarations:

```
ICommandResult CR;
ITemplate UDATest;
MxValue MXVal = new MxValueClass();
MxValue MXValArray = new MxValueClass();
```

Code Snippet:

Figure 3 (below) shows the ArchestrA IDE after executing the above code snippet.

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FIGURE 3: IDE AFTER RUNNING THE CODE

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