Wonderware InTouch Guide

An ISO 9001:2015 Company

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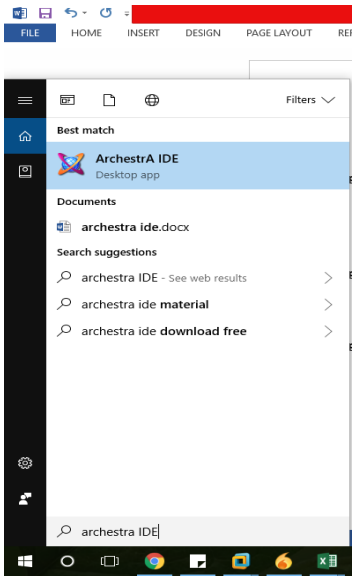
1. Module 1 Introduction

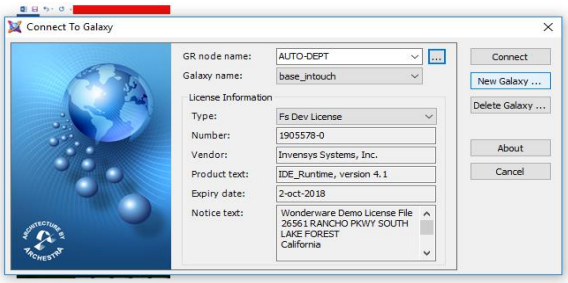
1.1 Section 1 – InTouch Overview

1.1.1 Create a Galaxy

Go to windows>Wonder ware> ArchestrA IDE.



2.Create a New Galaxy



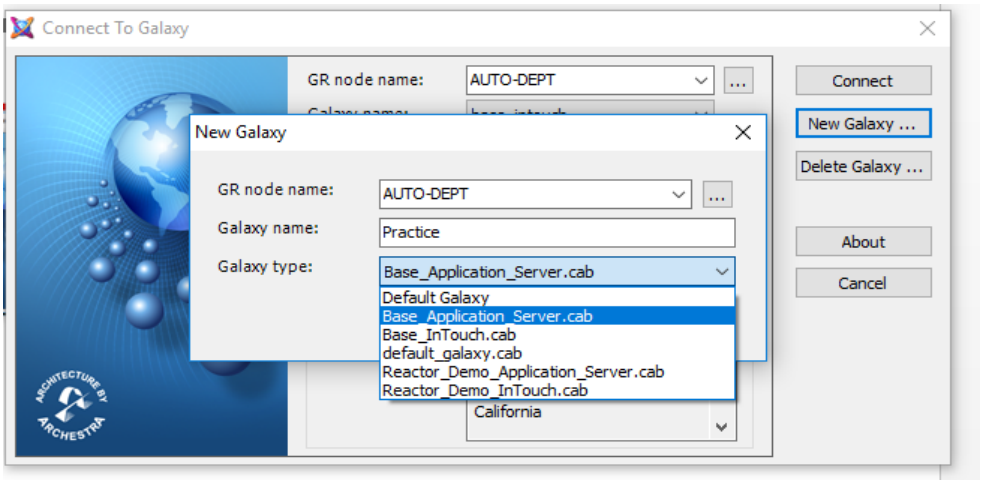
2.

3. Give a GRNode Name, Galaxy Name and give galaxy type.

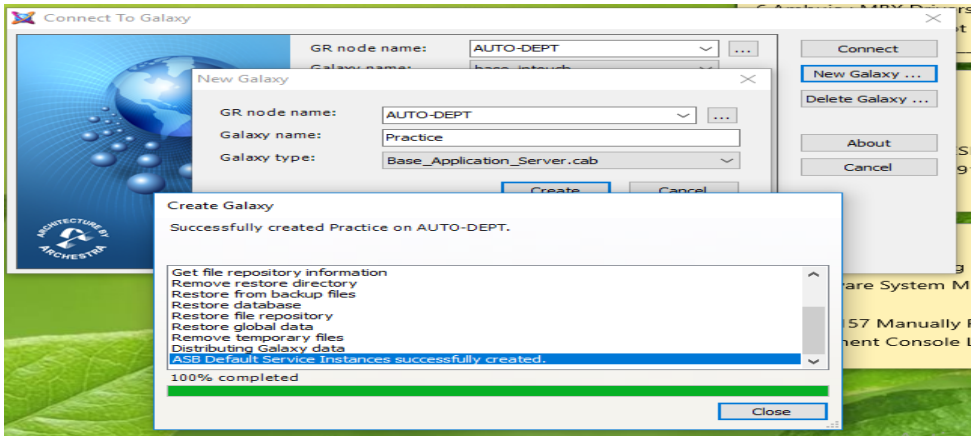
- **Base_Application_Server.cab**: When building a new System Platform or full Application Server Galaxy, this is the template that should be used. It will include all of the default templates for the System Toolset ($Area, $AppEngine, $WinPlatform, $InTouchViewApp, etc.), the Application Toolset ($UserDefined, $Boolean, etc.), and the Device Integration Toolset ($DDESuitelinkClient, $OPCClient, etc..), as well as the ArchestraAA Graphic libraries.
- **Base_InTouch.cab**: When build a Galaxy that will only be used for InTouch application development, this Galaxy type can be used. It will include all of the ArchestraAA graphic library, along with the InTouchViewApp template object. Other objects, for example $UserDefined, will not be included.
- **Reactor_Demo_Application_Server.cab**: This is an example Galaxy that has been created by Wonderware for users. This includes a set of objects to create data values, and an InTouch application to display.
- **React_Demo_InTouch.cab**: This is an example Galaxy that has been created by Wonderware, similar to the Reactor_Demo_Application_Server.cab, but this only

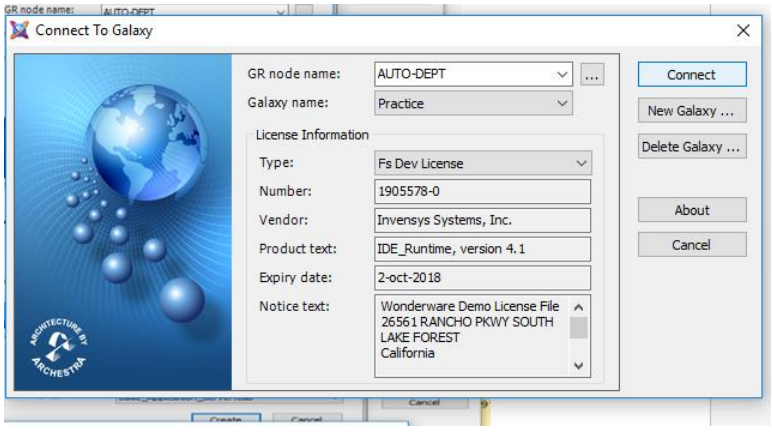
includes an InTouch application and does not make use of other Application Server templates.

- **Default Galaxy**: This option does not use a prebuilt .cab file template of a galaxy, instead it builds a new blank Galaxy database, and then imports in the base object templates manually. The final result should look the same as the Base_Application_Server.cab galaxy.



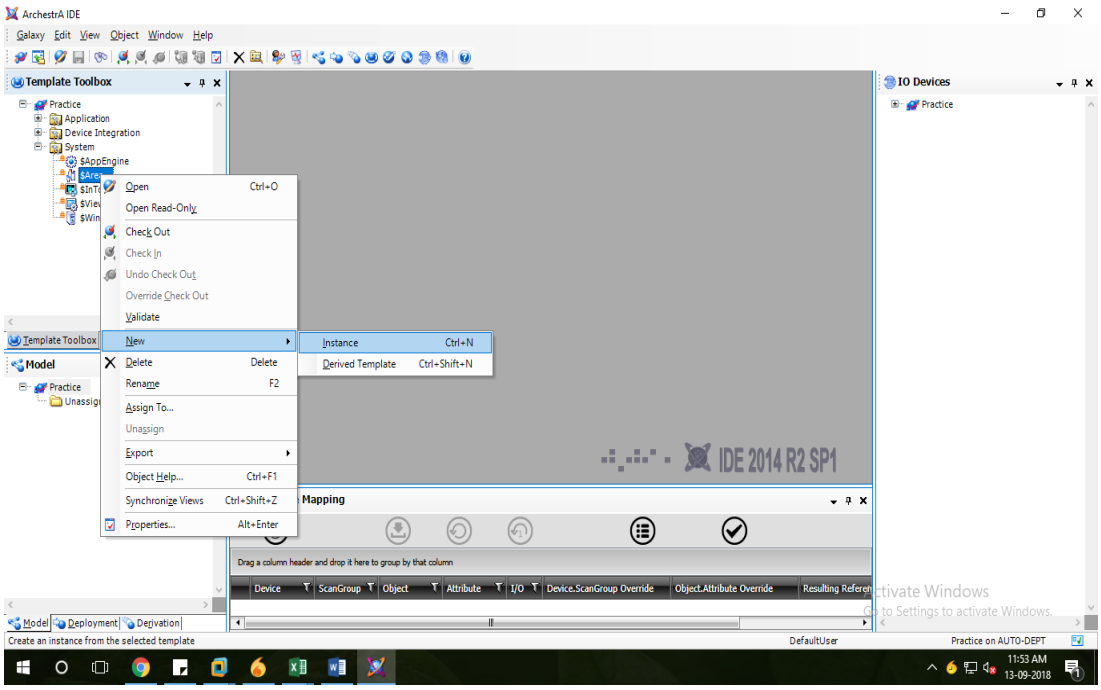
4.Create it and when application is successfully created than connect it.



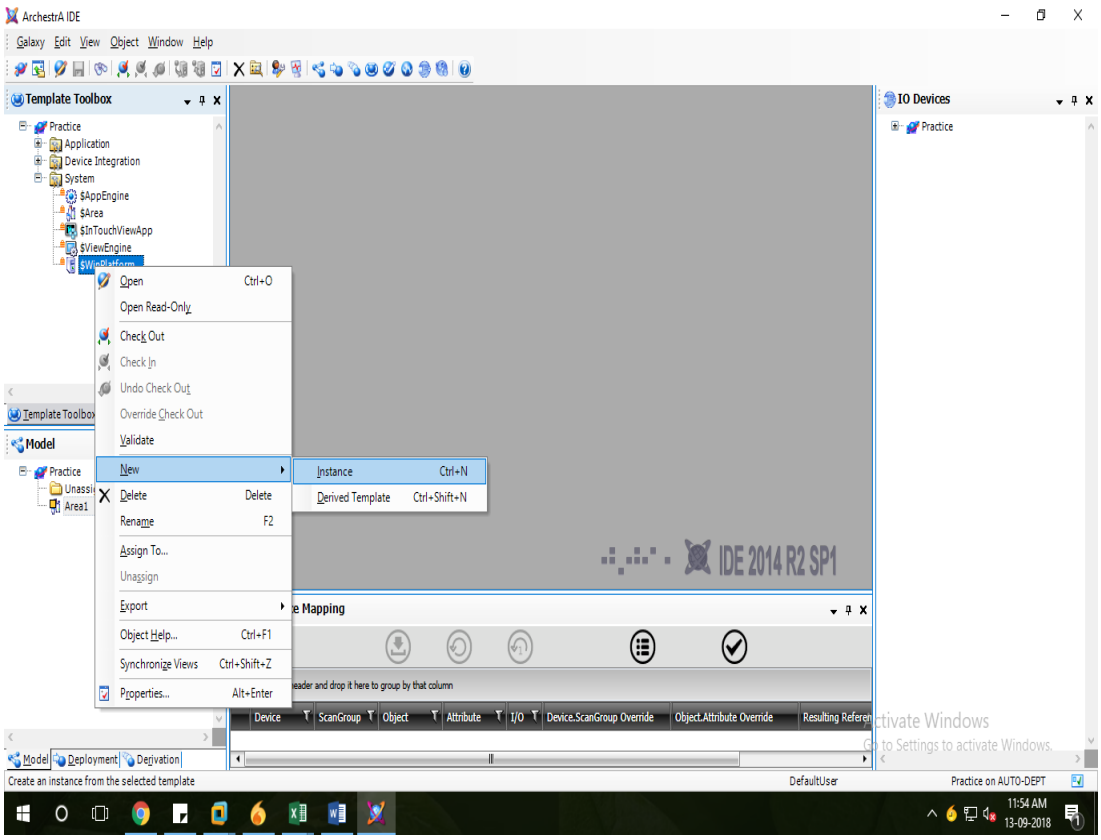


1.1.2 Create a Managed InTouch application

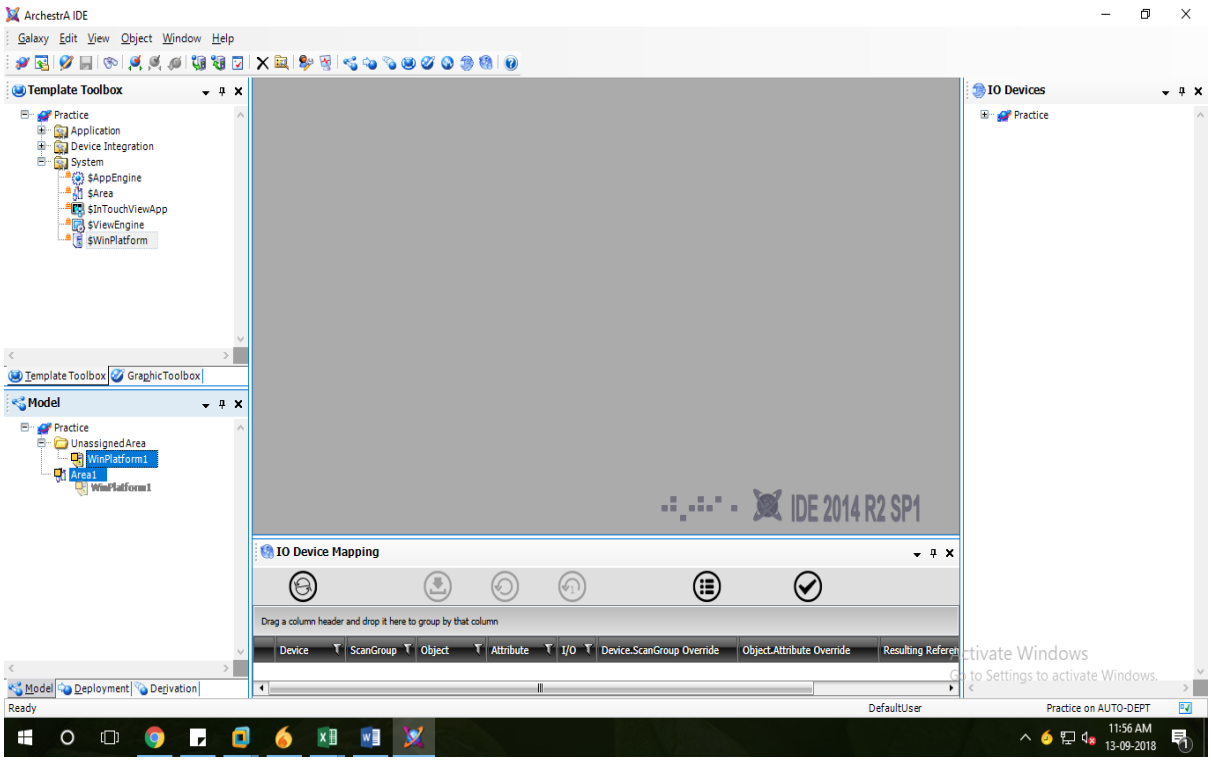
1. Connect the Galaxy & Create a instance of Area



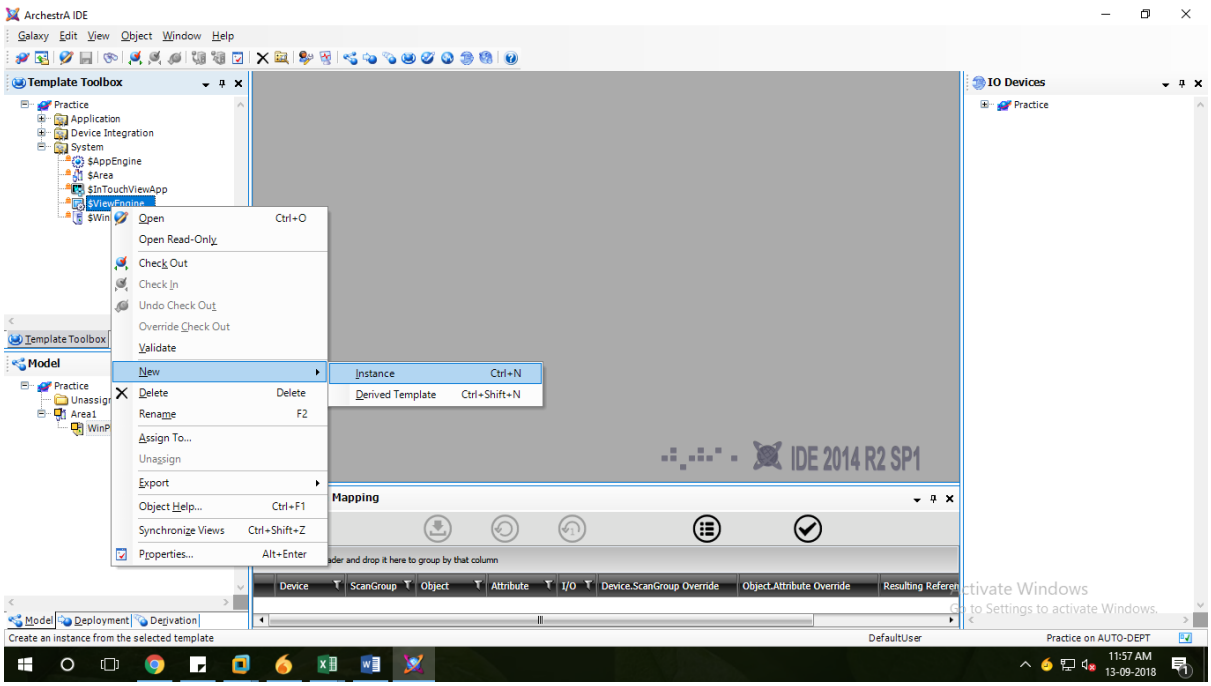
2. Create an instance of winplatform.



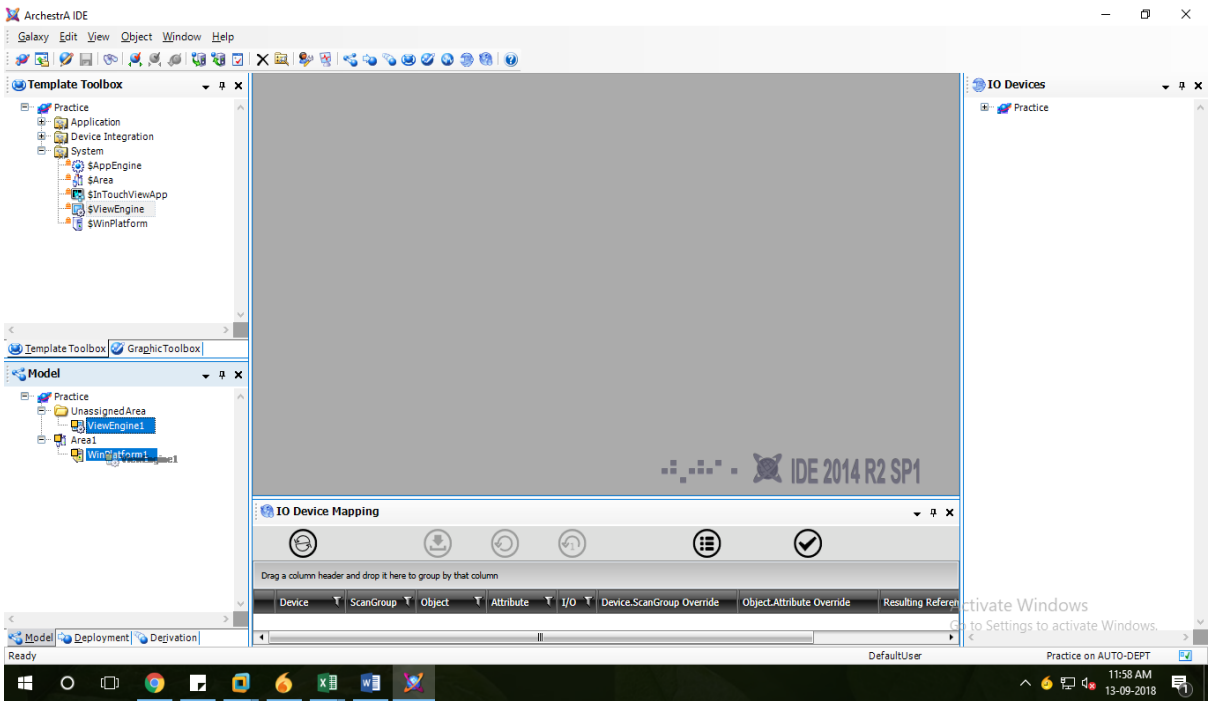
3. Put a winplatform under Area.

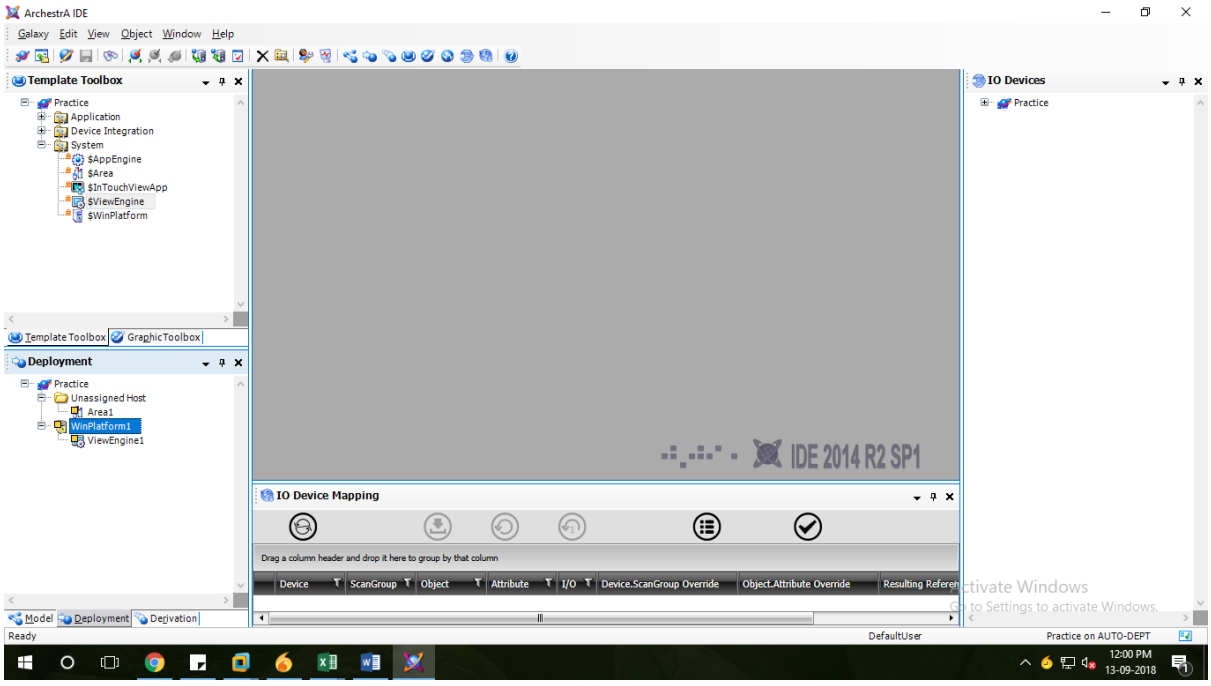


4. Create an instance of ViewEngine

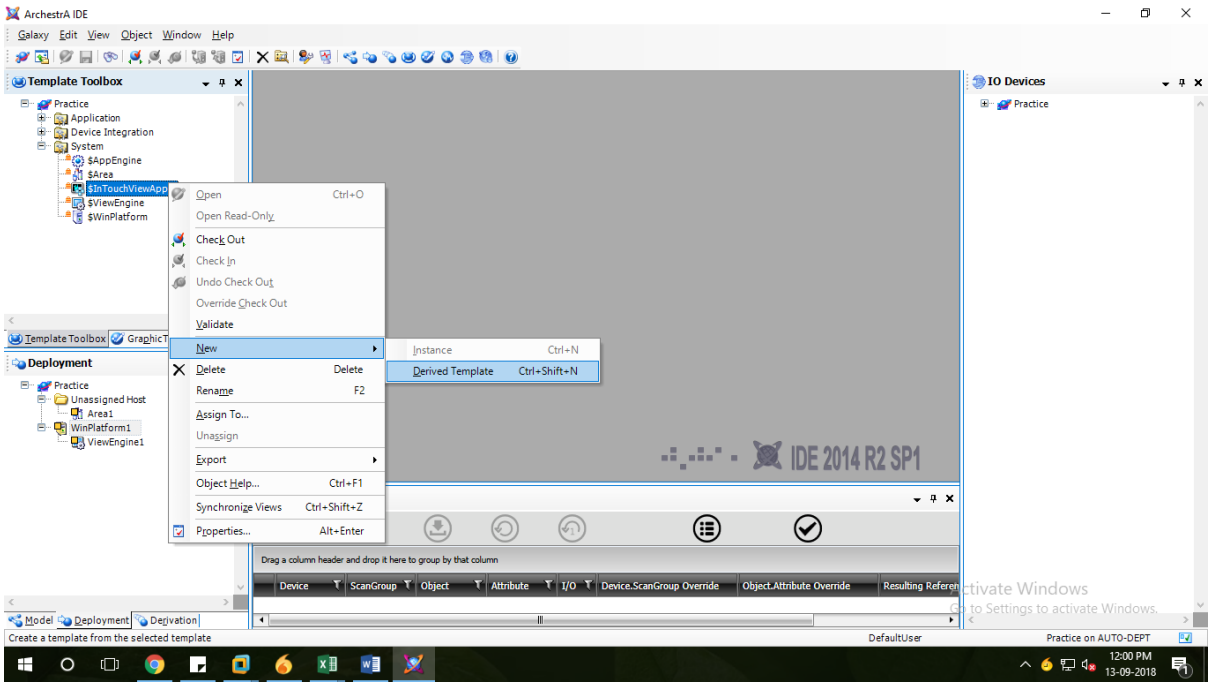


5.Put ViewEngine under the Winplatform.Which you can see in Deployment view.

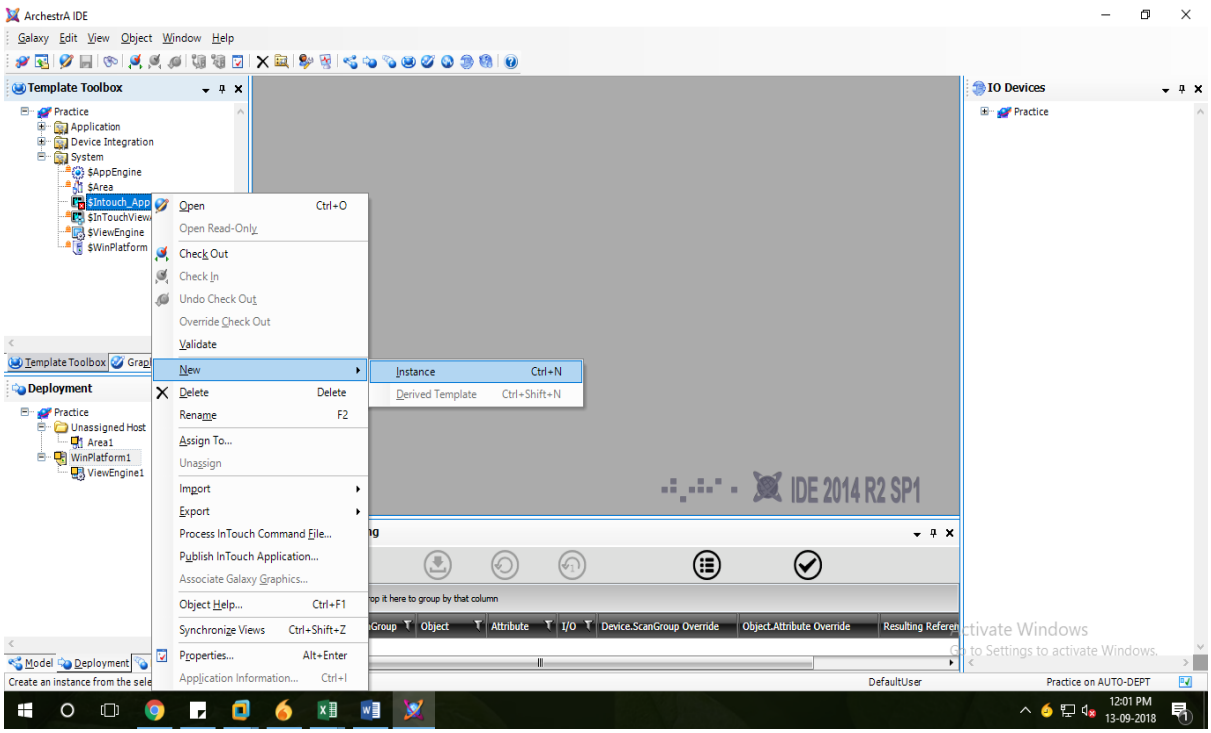




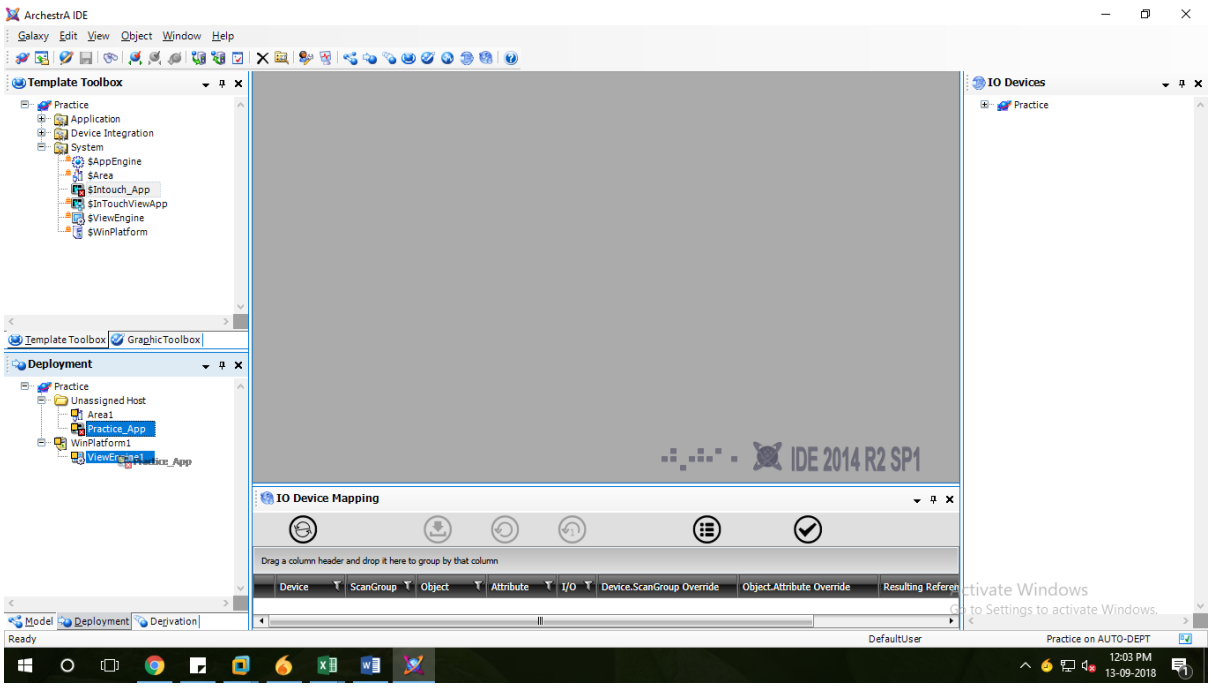
6.Create Derived Template of IntouchViewApp



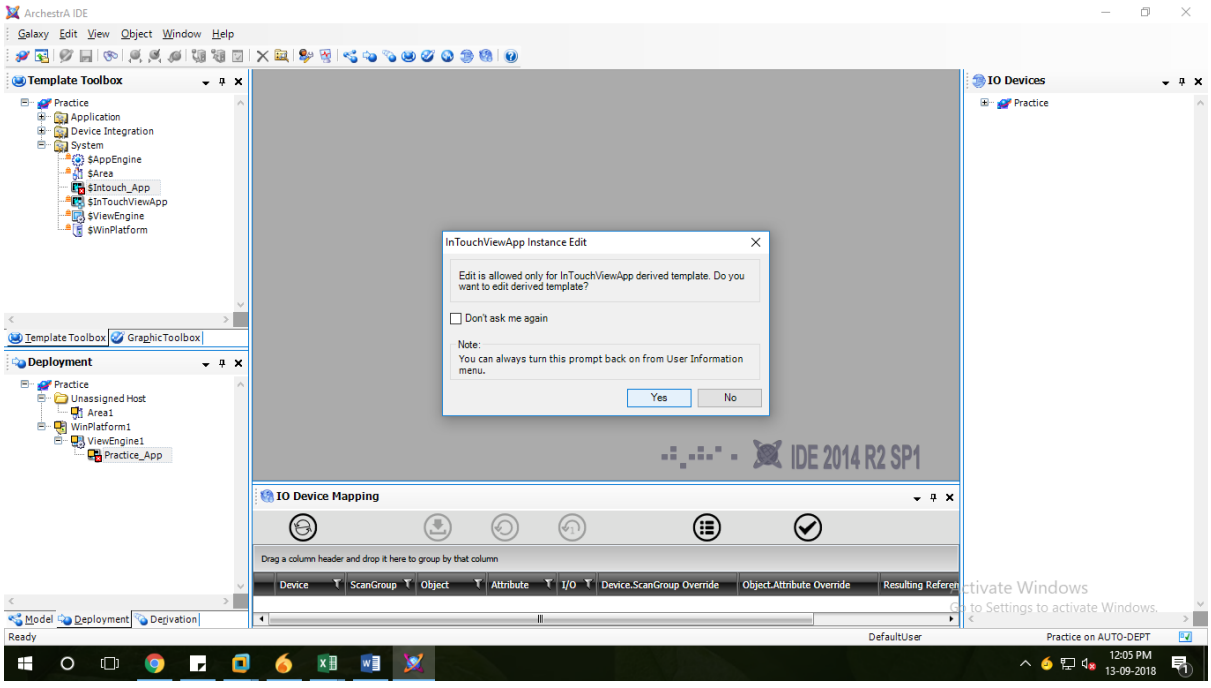
7. Create Instance of that Derived Template.



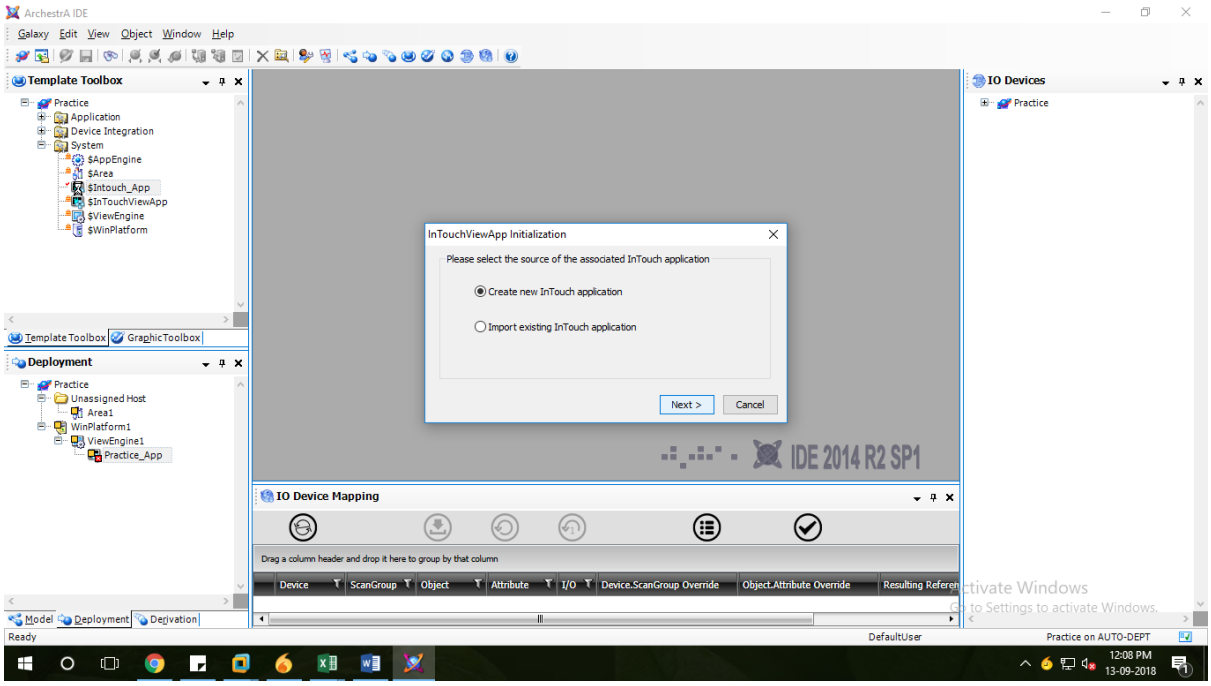
8. Put Instance of IntouchViewApp under the ViewEngine.



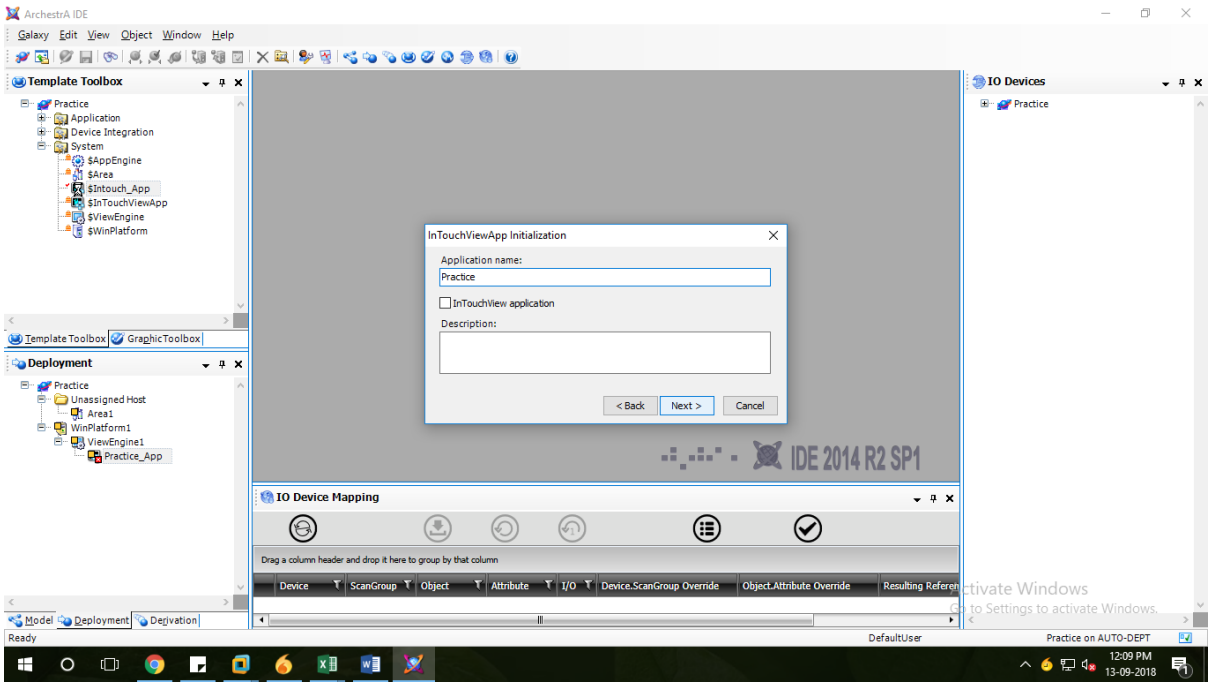
9. Double Click the IntouchViewApp Instance.& click yes in IntouchViewApp Instance Edit.



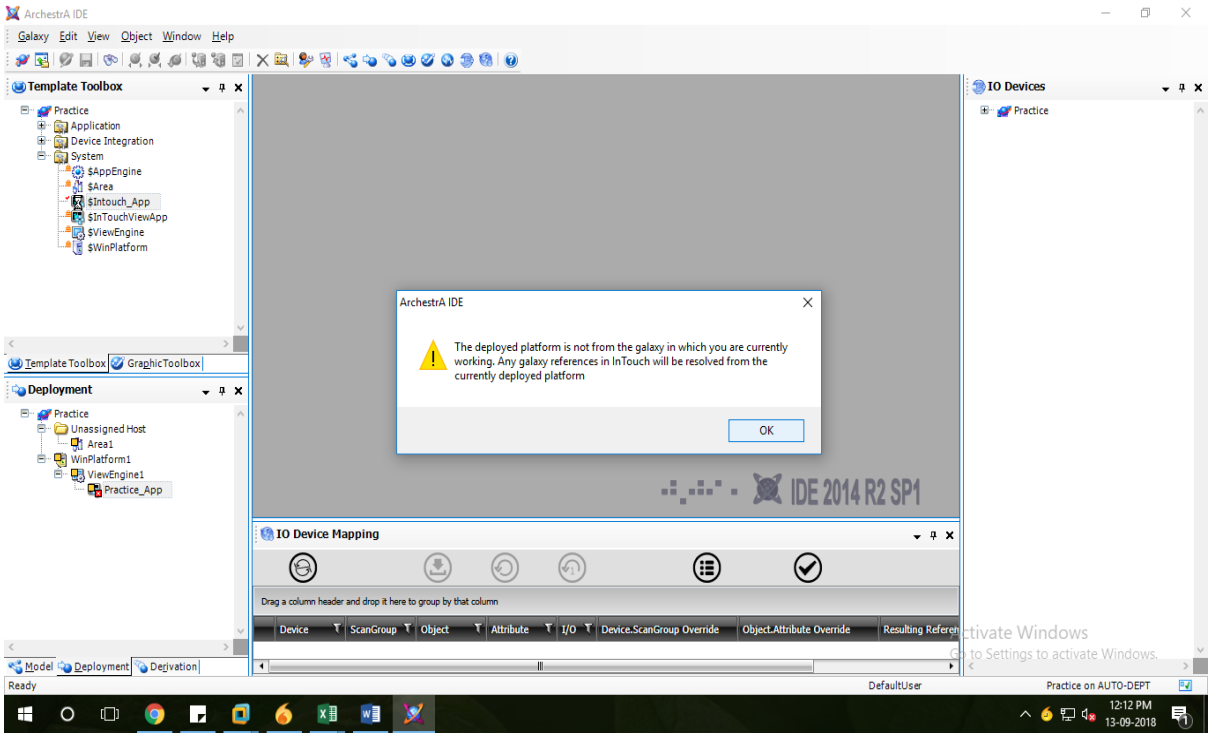
10. Create New Intouch Application.



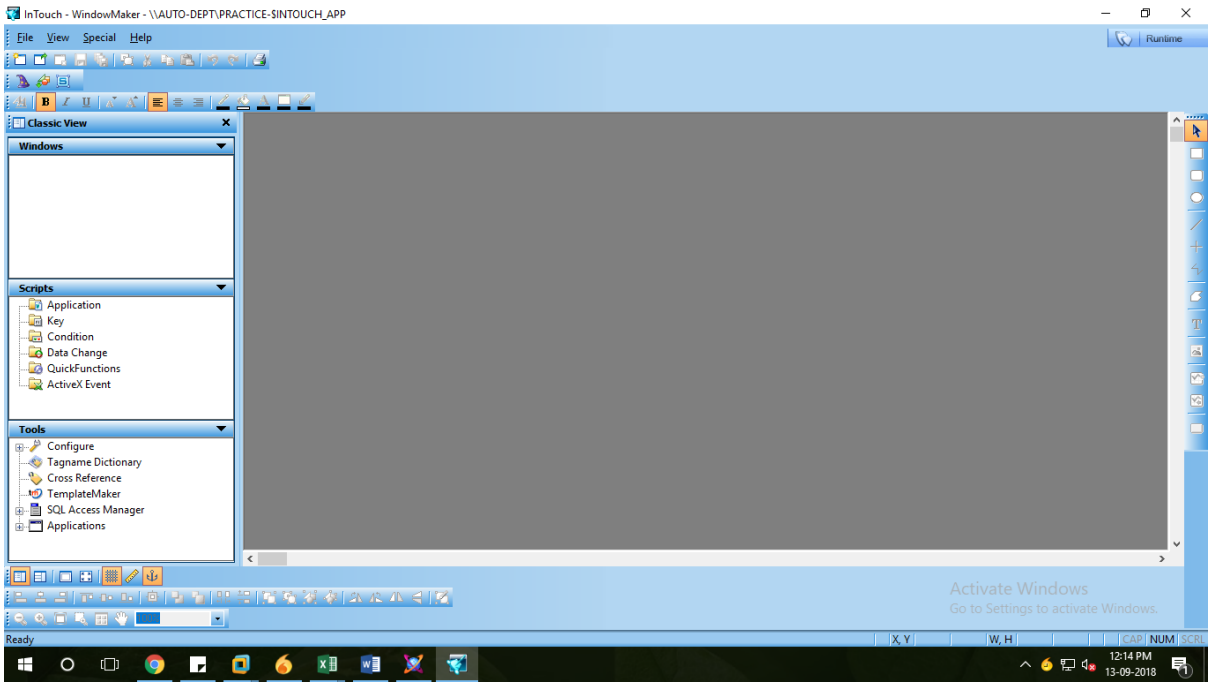
11. Give a name to that Intouch Application.



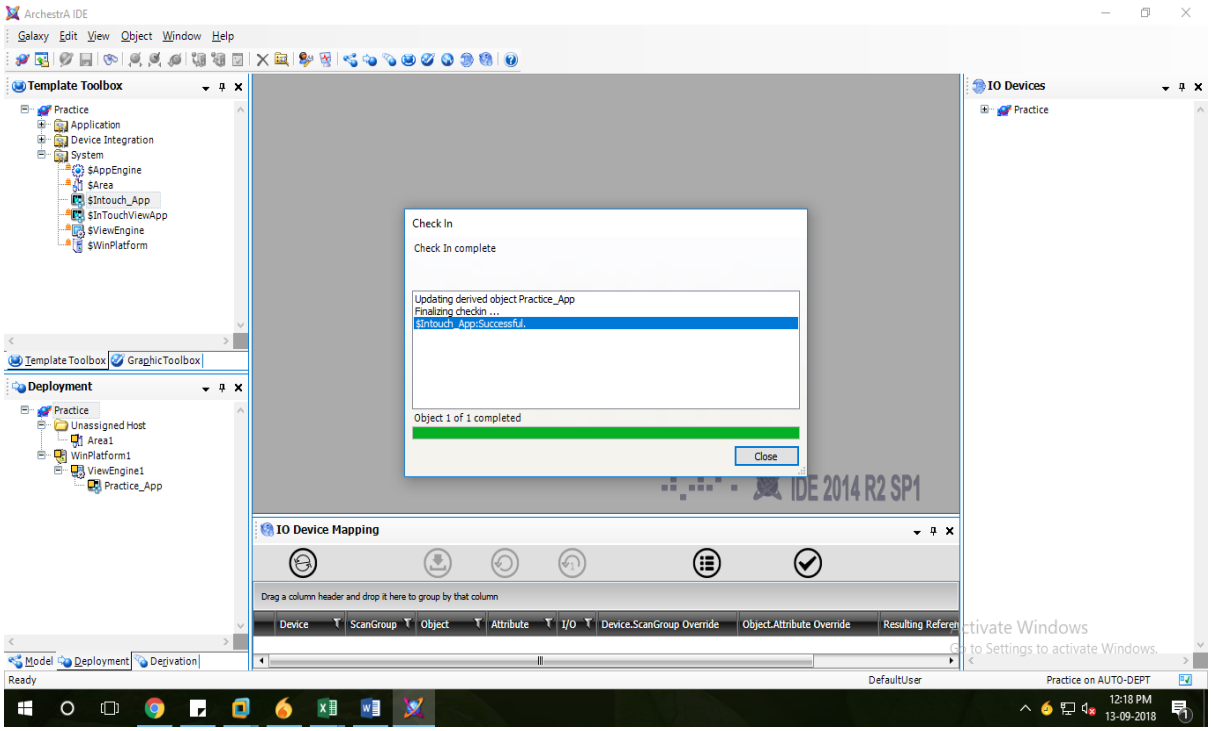
12. Ok it.



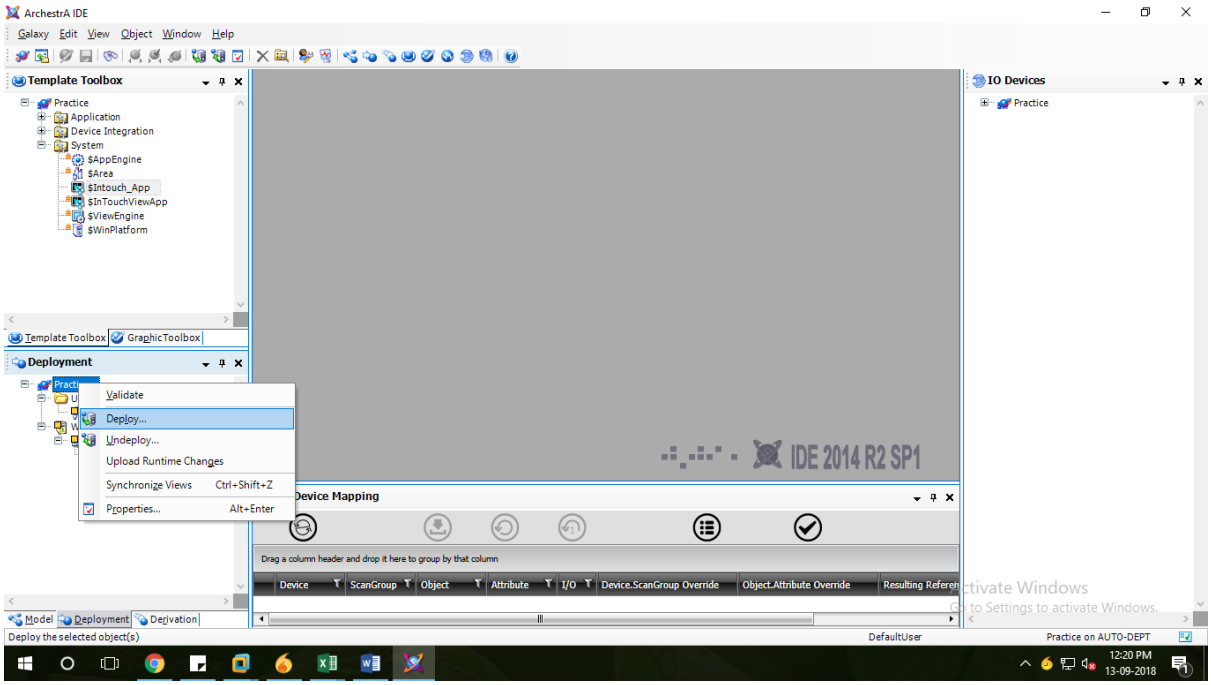
13.Intouch Window Maker window will be opened.



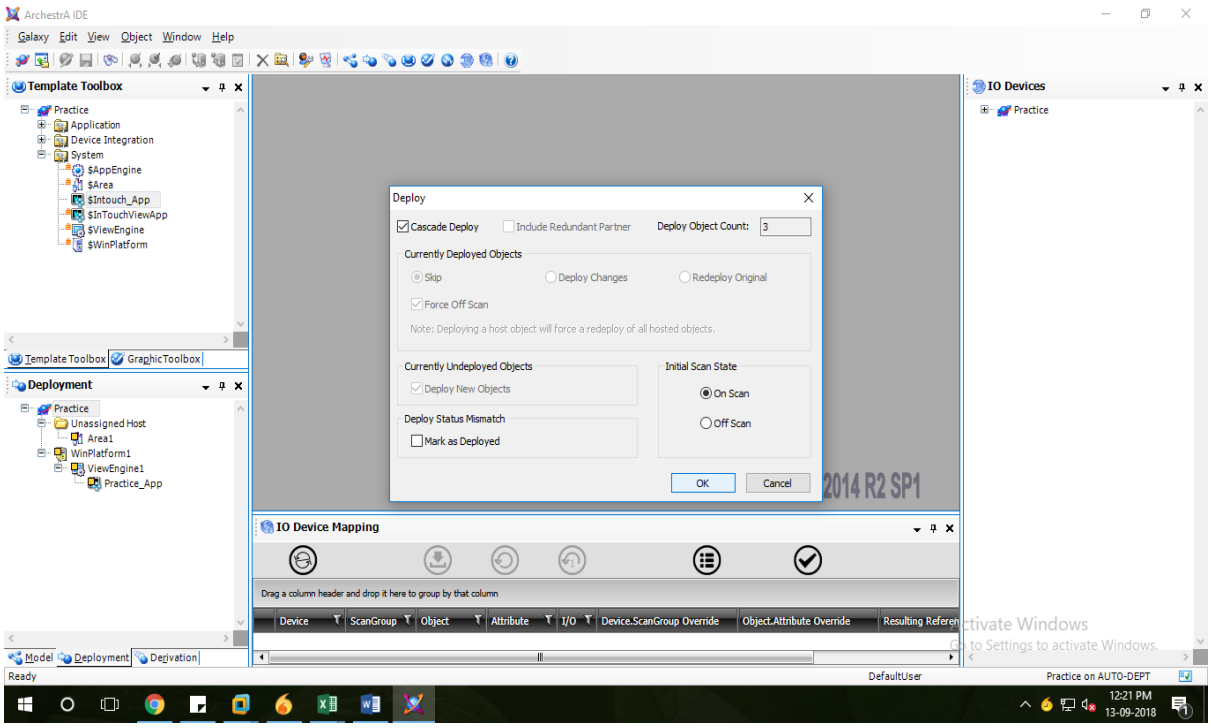
14.close it.



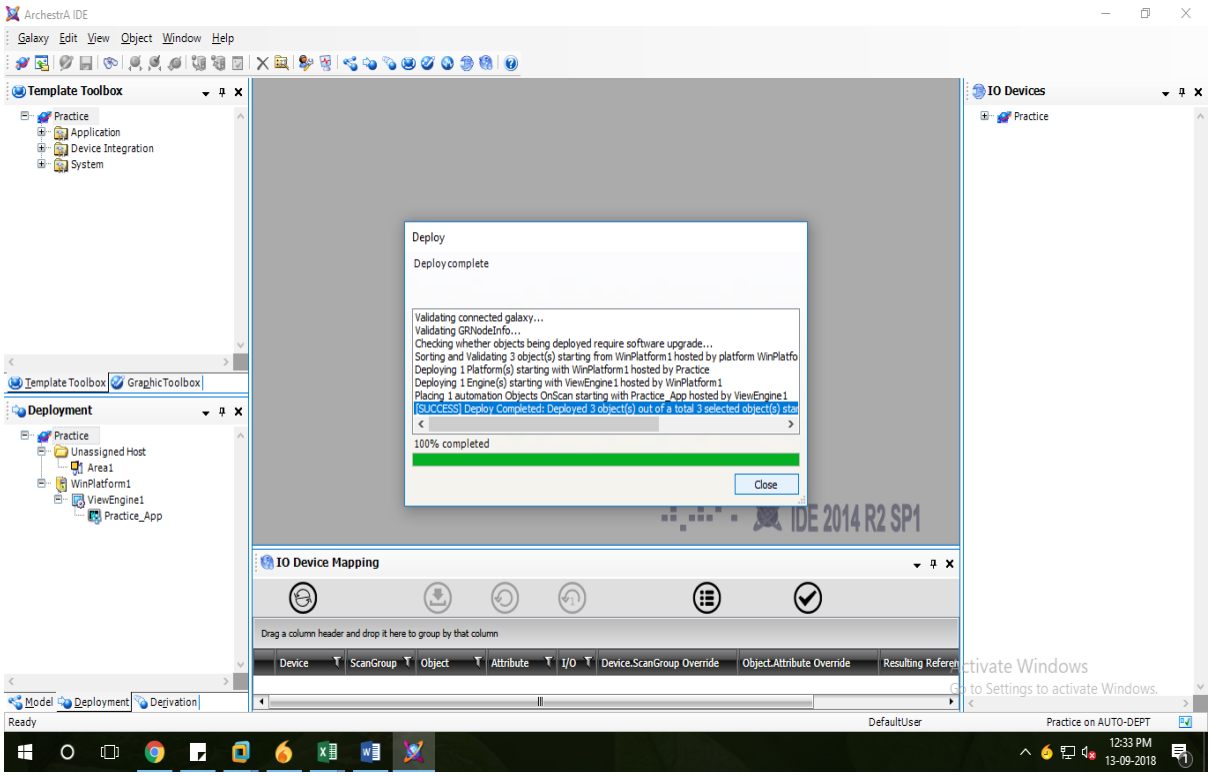
15.Deploy The Galaxy.



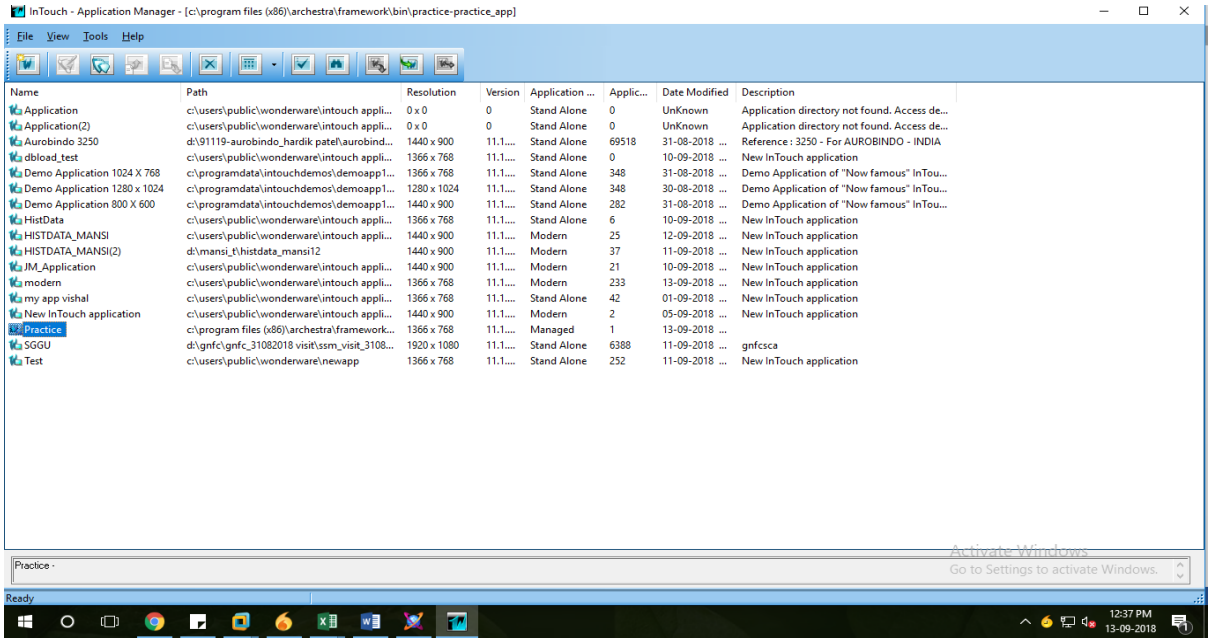
16.Cascade Deploy >ok



17.After sucessfully deploy close it.

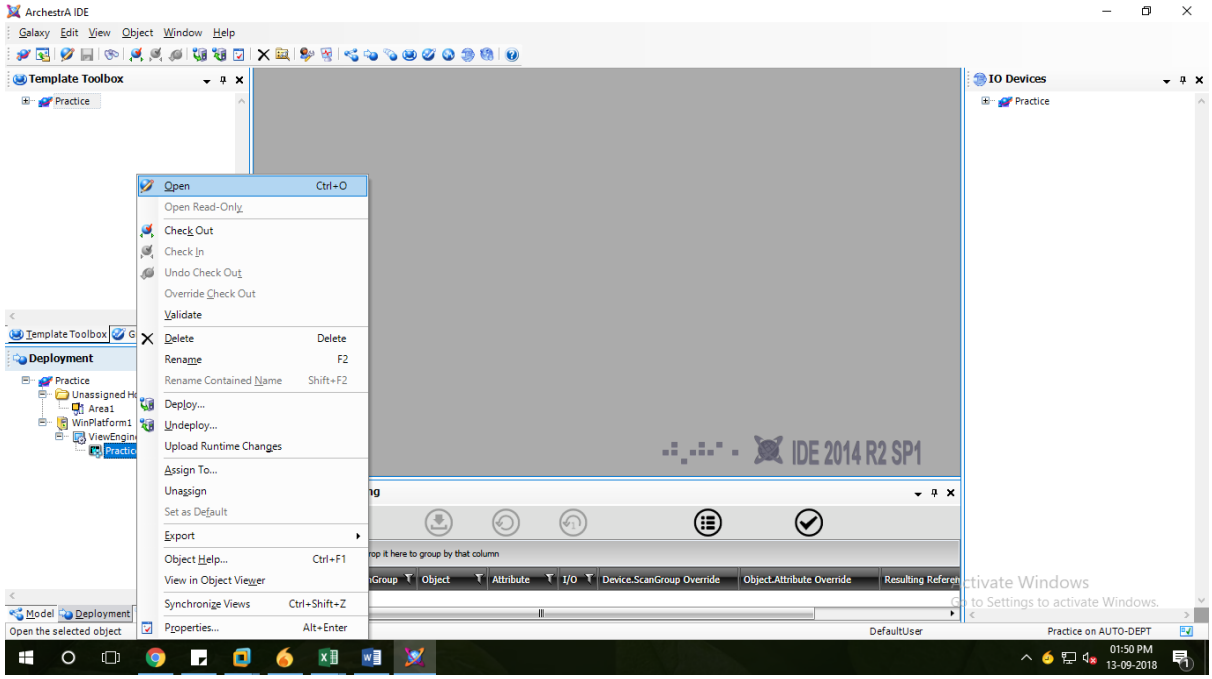


18.Open the Intouch application Manager and you will find the managed intouch application.

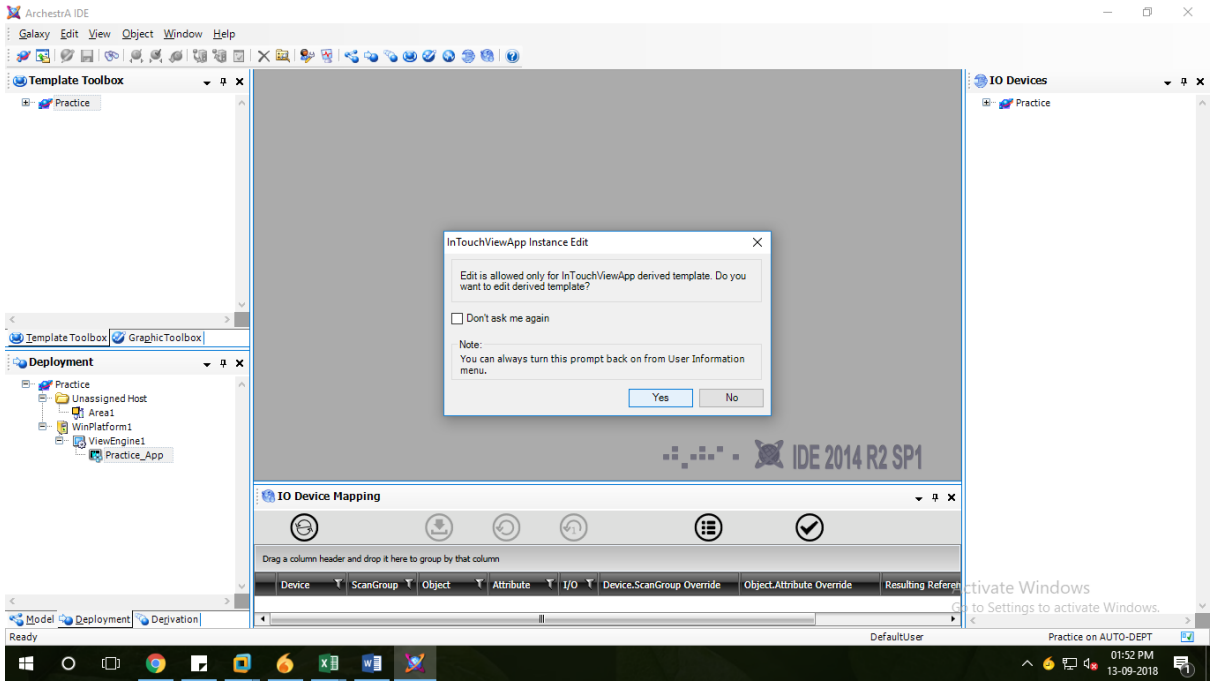


1.1.3 Edit a Managed InTouch application

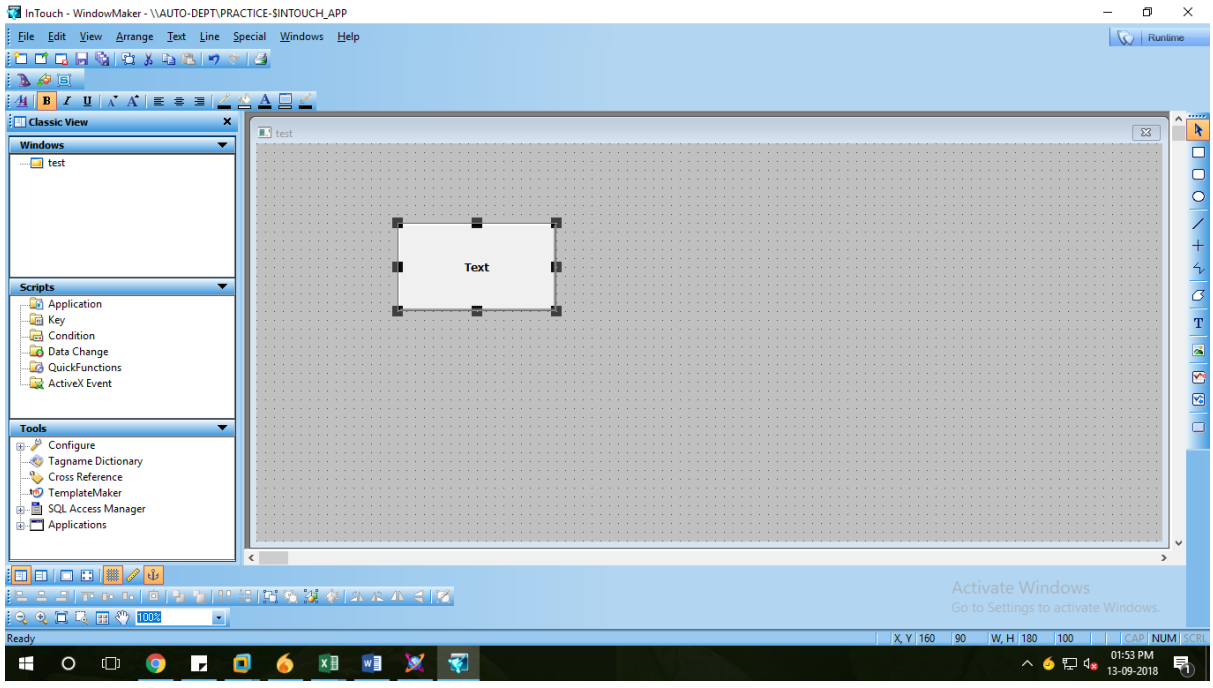
1. To edit Managed Intouch application, open the ArchestrA IDE and open the instance of IntouchView App .



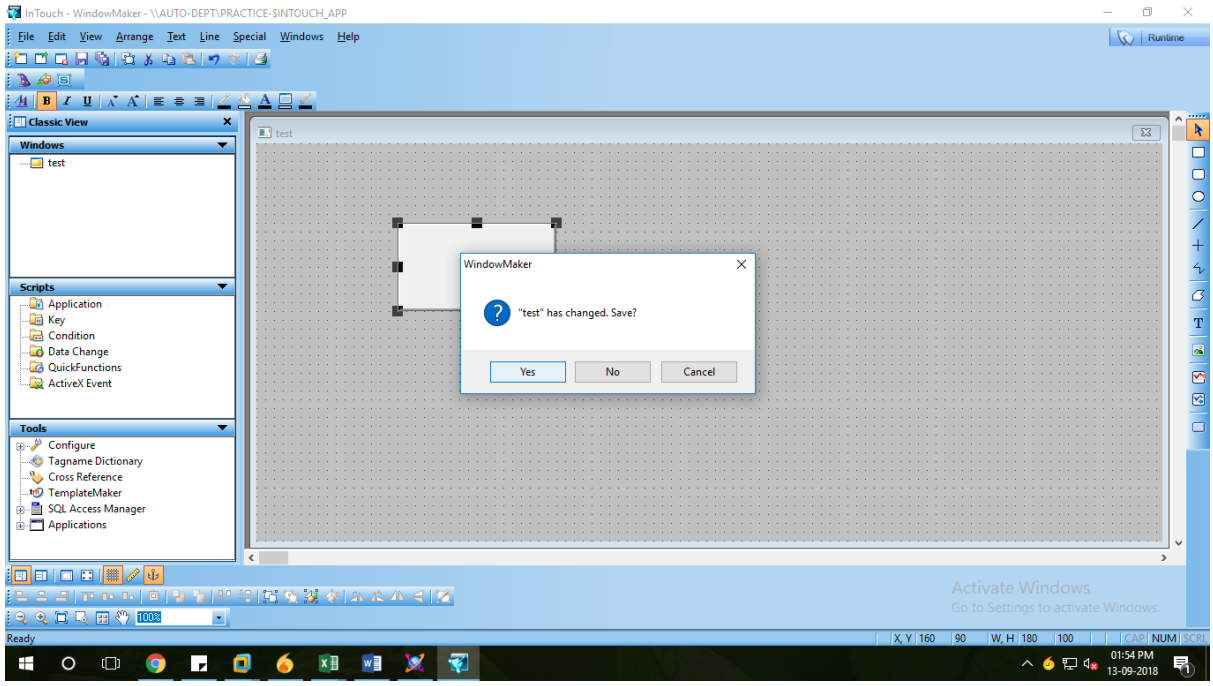
2. Allow InthouchViewApp to edit.



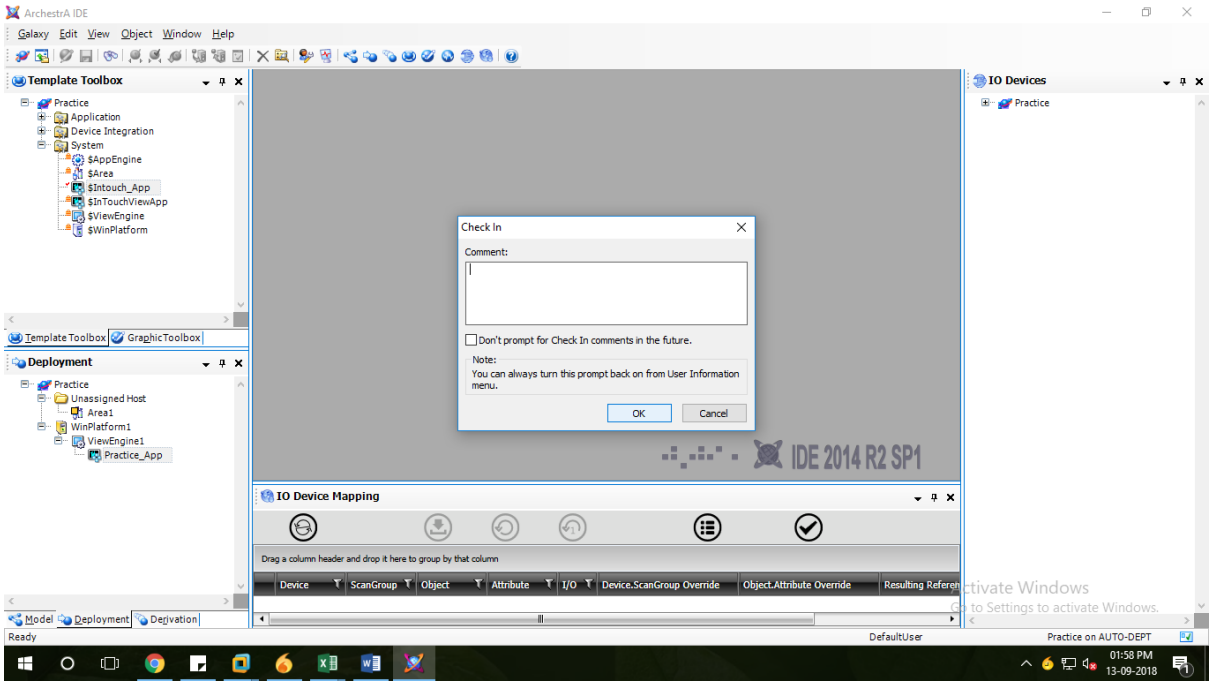
3.Make chnages in Intouch application.



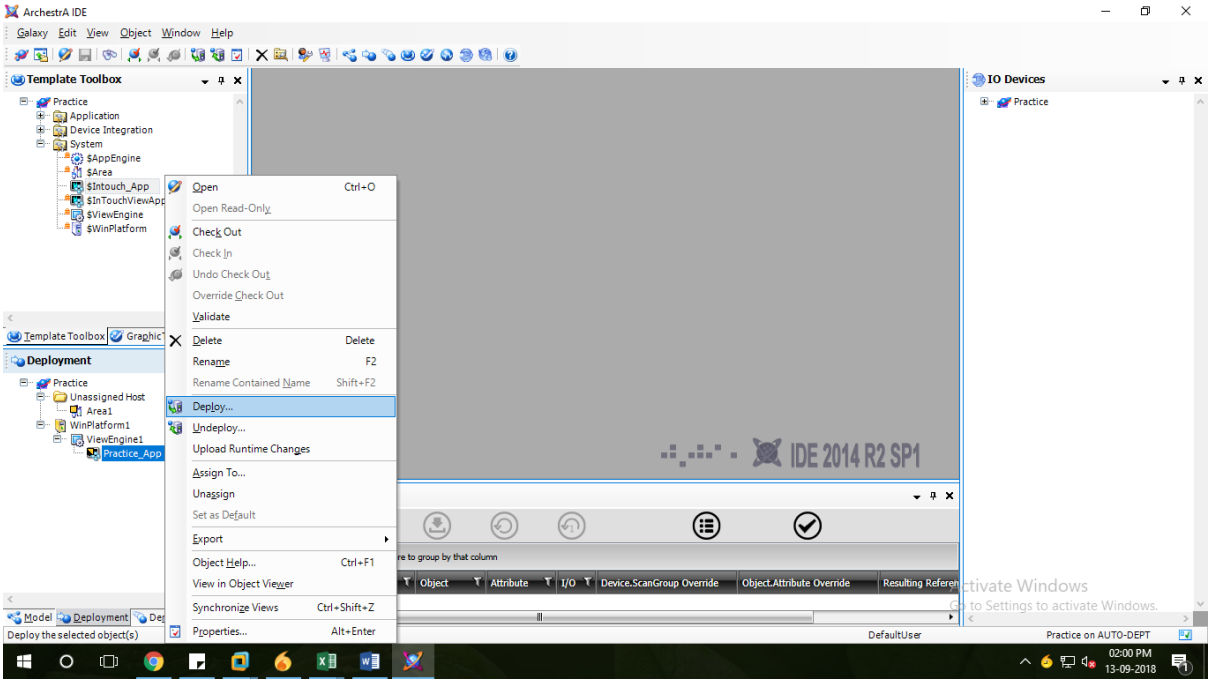
4.Save the changes of Intouch Application.



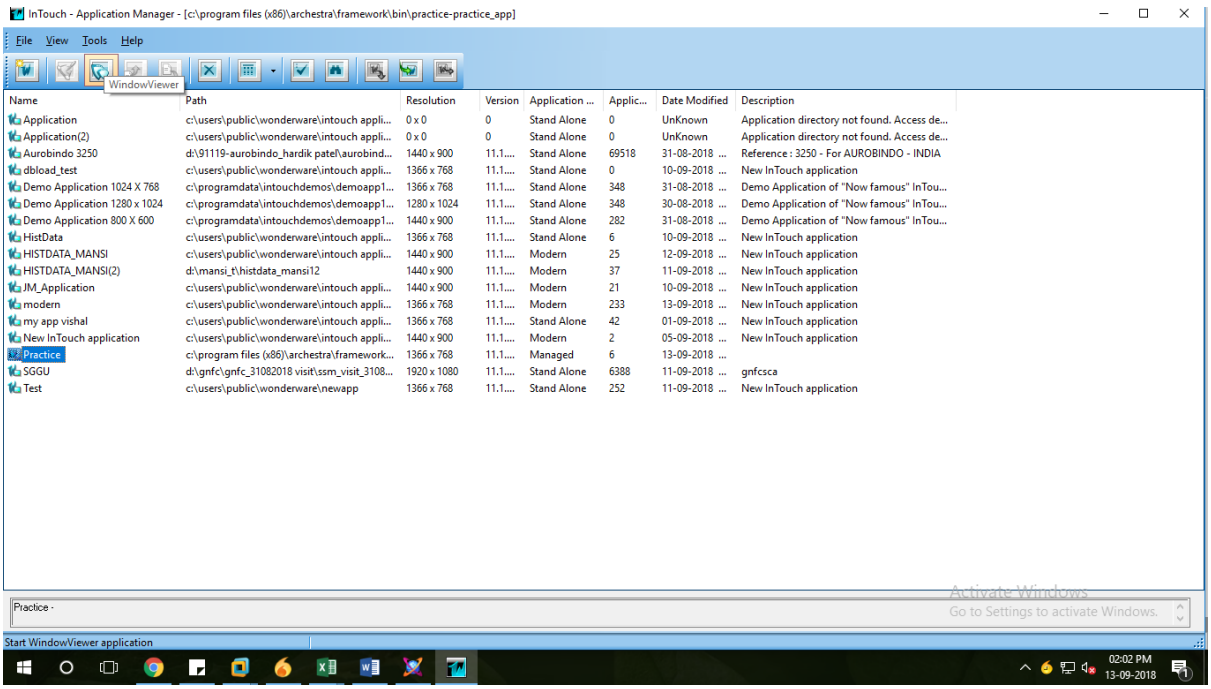
5. Allow Object to checkIn.



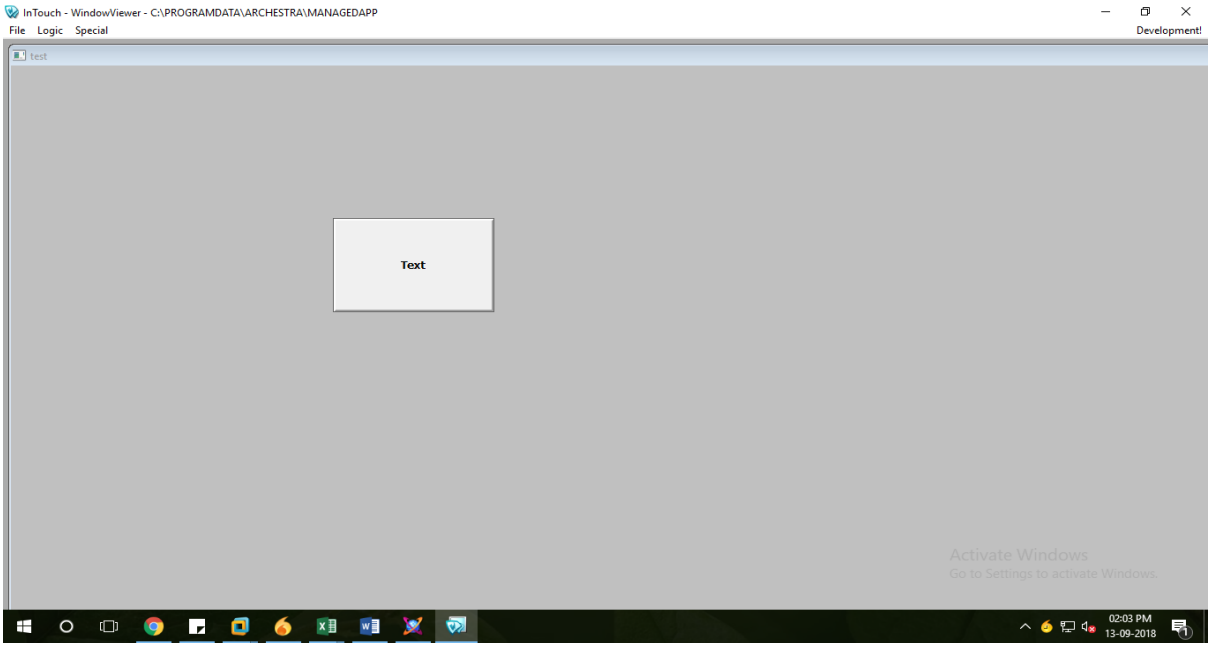
6.After successful deploy close it and deploy the Instance of IntouchViewApp again.



7. Open intouch and select the managed application and select WindowViwer.



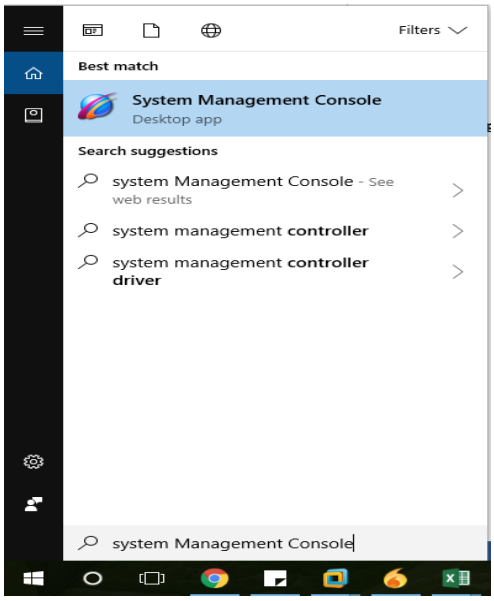
8 .You can see the edited managed application.



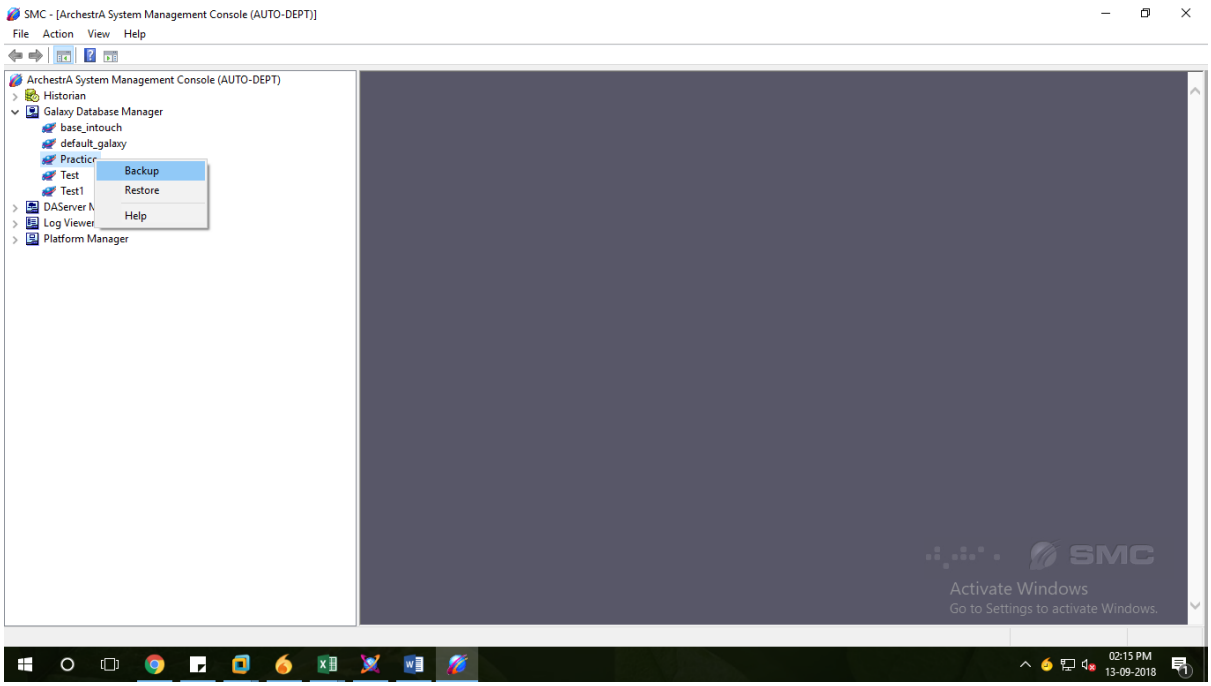
1.2 Backing Up and Restoring a Managed InTouch Application

1.2.1 Back up a Managed InTouch application

1. Open system management console.

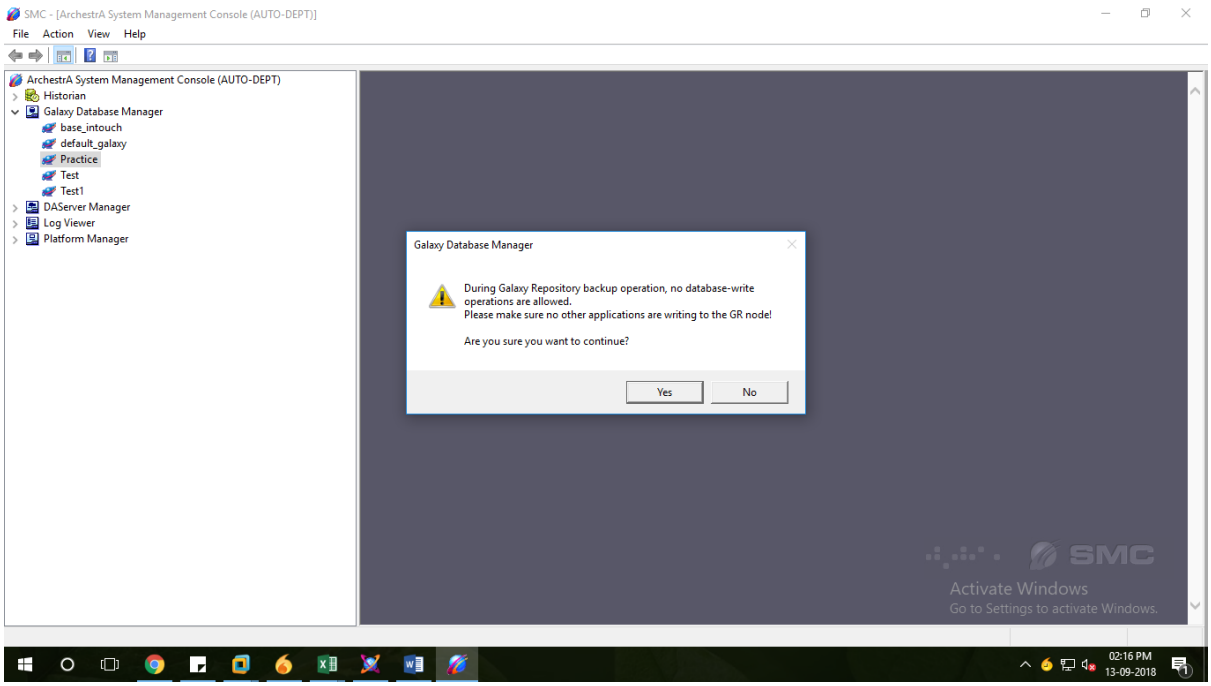


2.Go to Galaxy Databse Manager >Application Name >right click and back up.

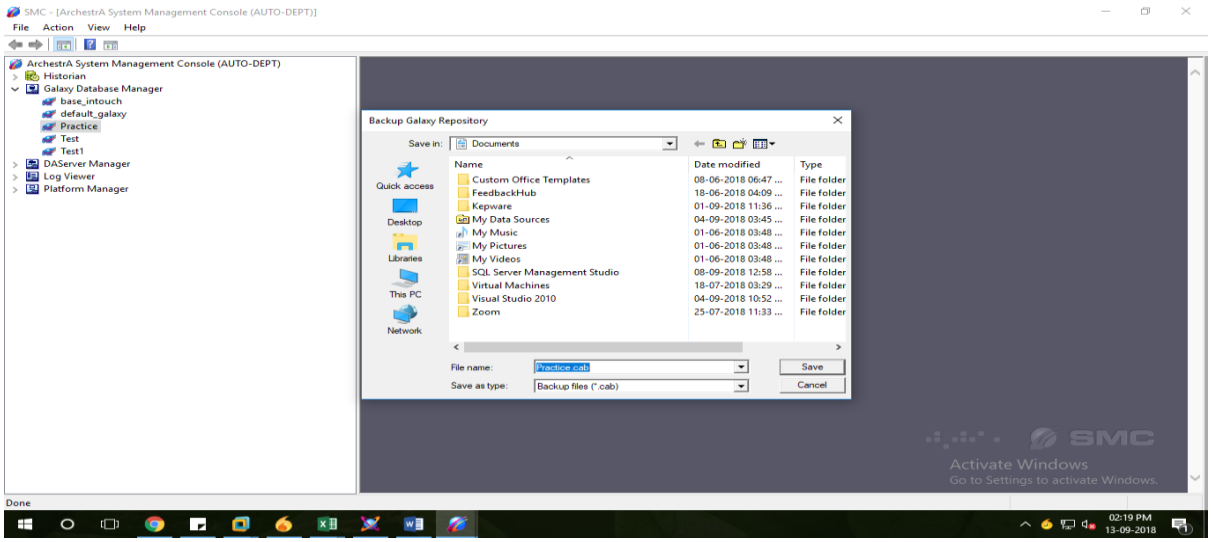


3. If you are chnaging anything in ArchestrA IDE than stop backup and select no to this popup window of Galaxy database Manager.

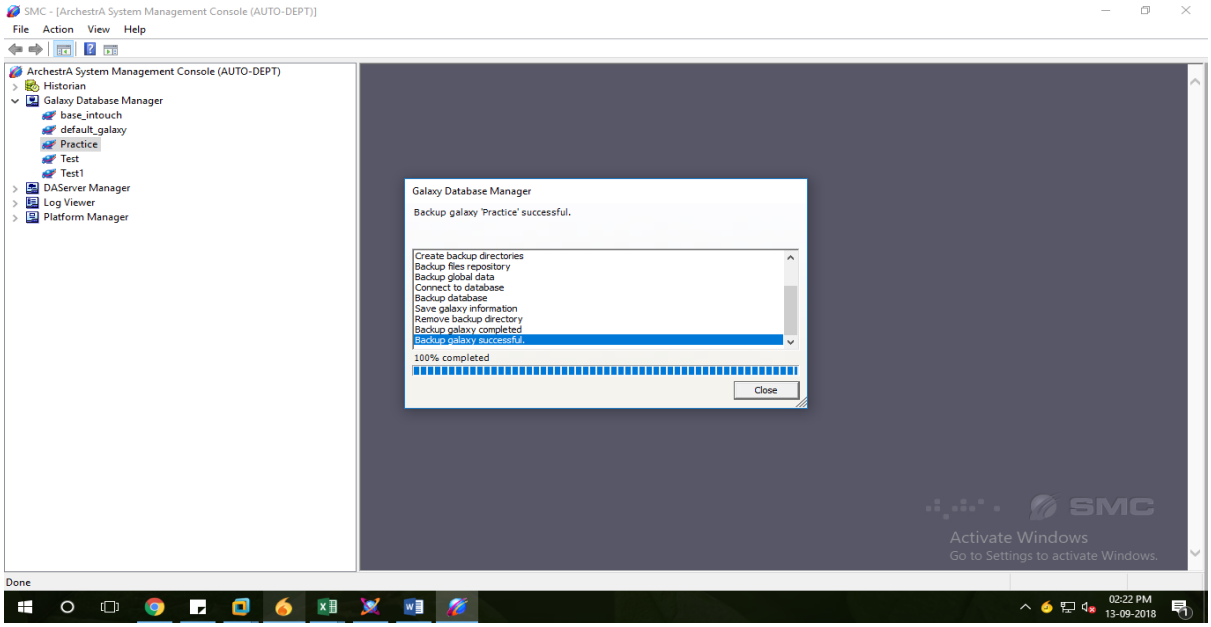
If you are not chnaging anything in Archestra IDE than select Yes to this opoup window of Galaxy Databse Manager.



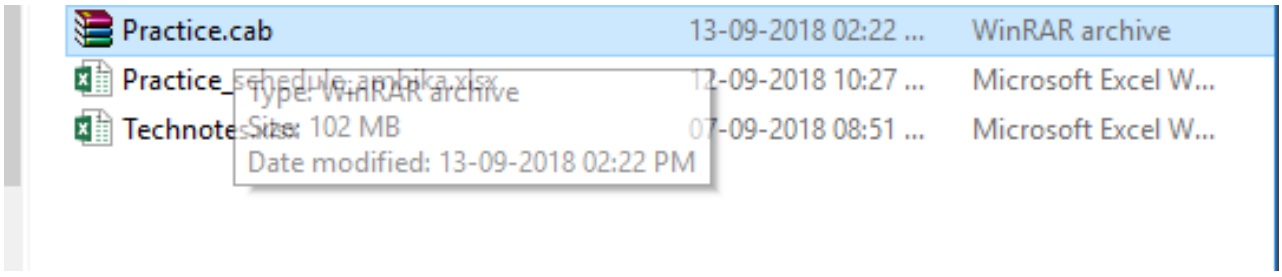
4.Select location to save the backup.(Backup of managed application will be in the form of .cab file)



5.After the successful backup close the window.

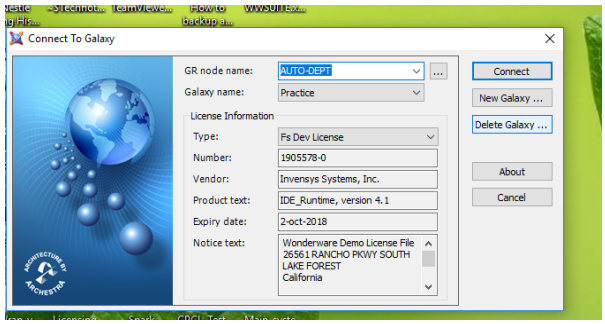


6.To verify the backup ,go to the location which you had given and check the .cab file.

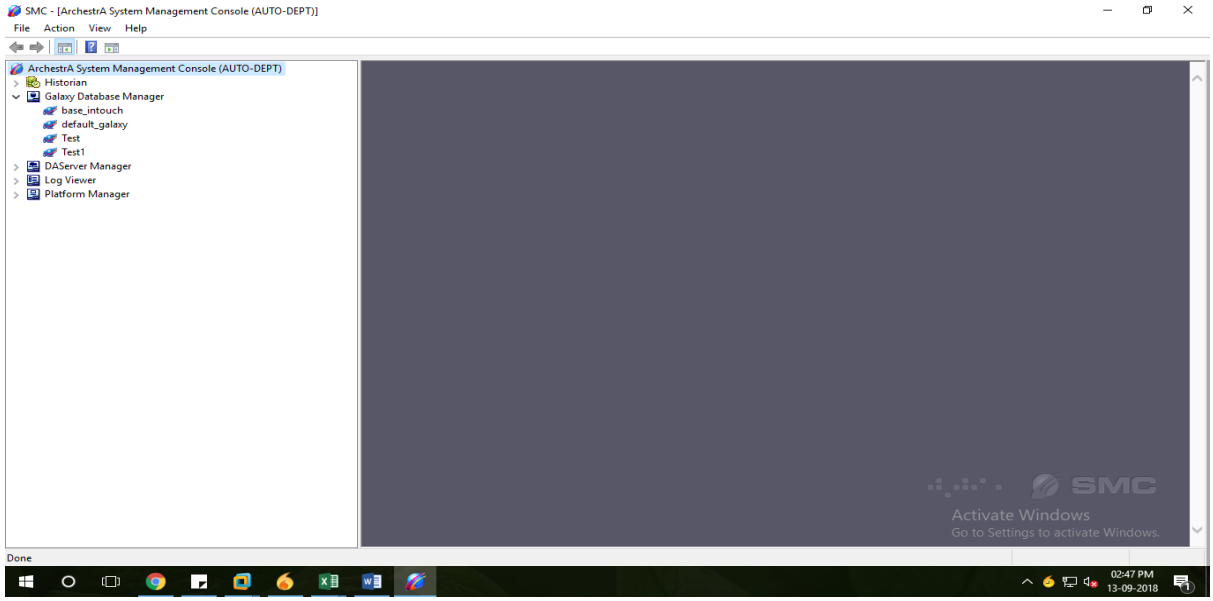


1.2.2 Restore a Managed InTouch application

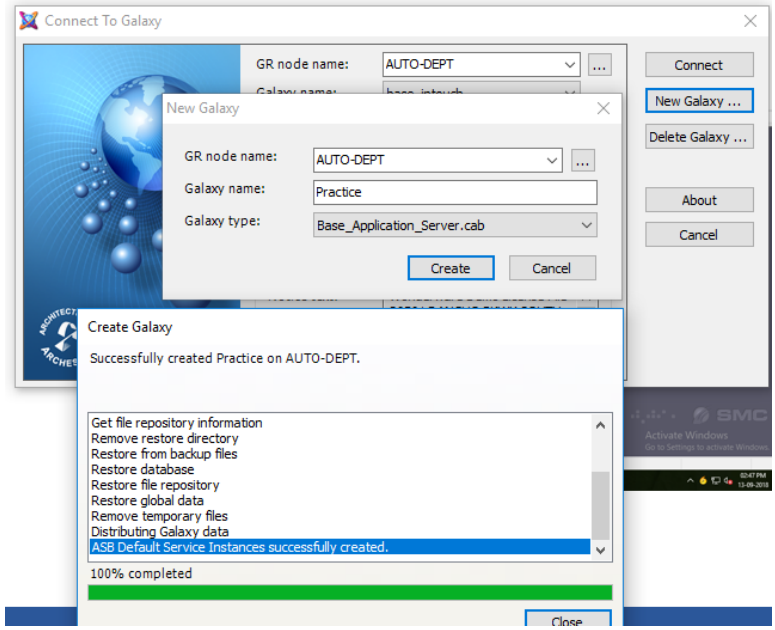
1. If you want to restore that galaxy on that same pc for trial than check the galaxy should be in un-deploy condition and then delete that galaxy.



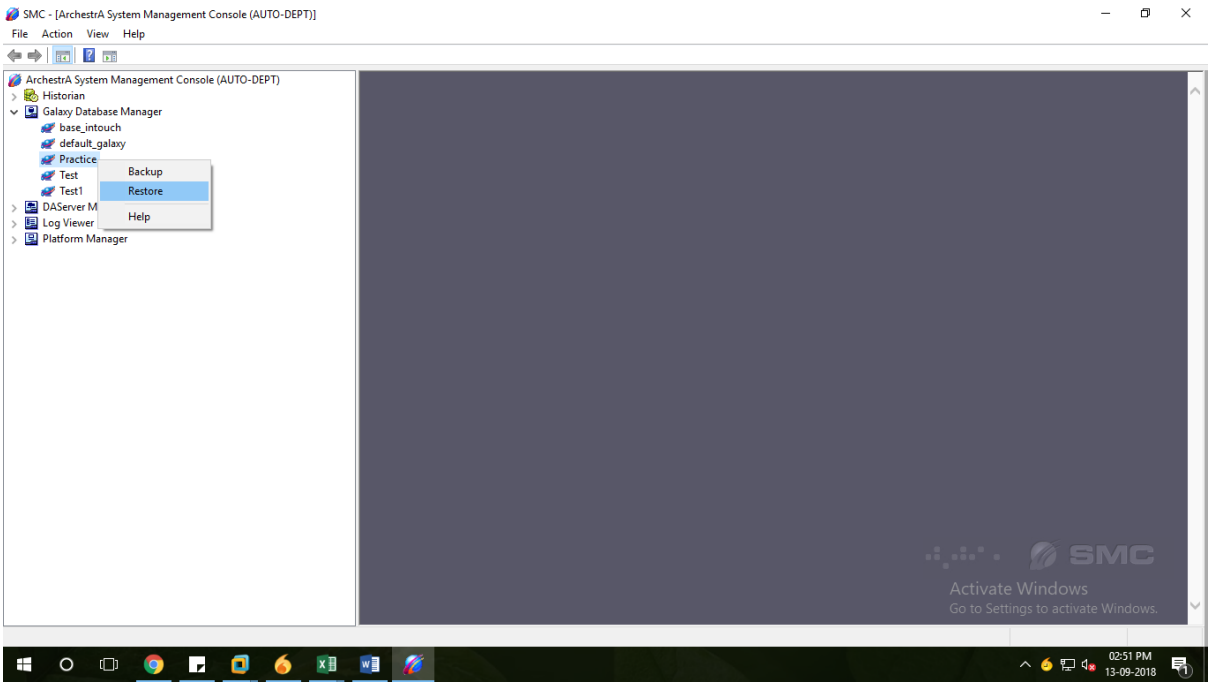
2. To verify that galaxy is clearly deleted, open the system management console and you will not able to see that galaxy.



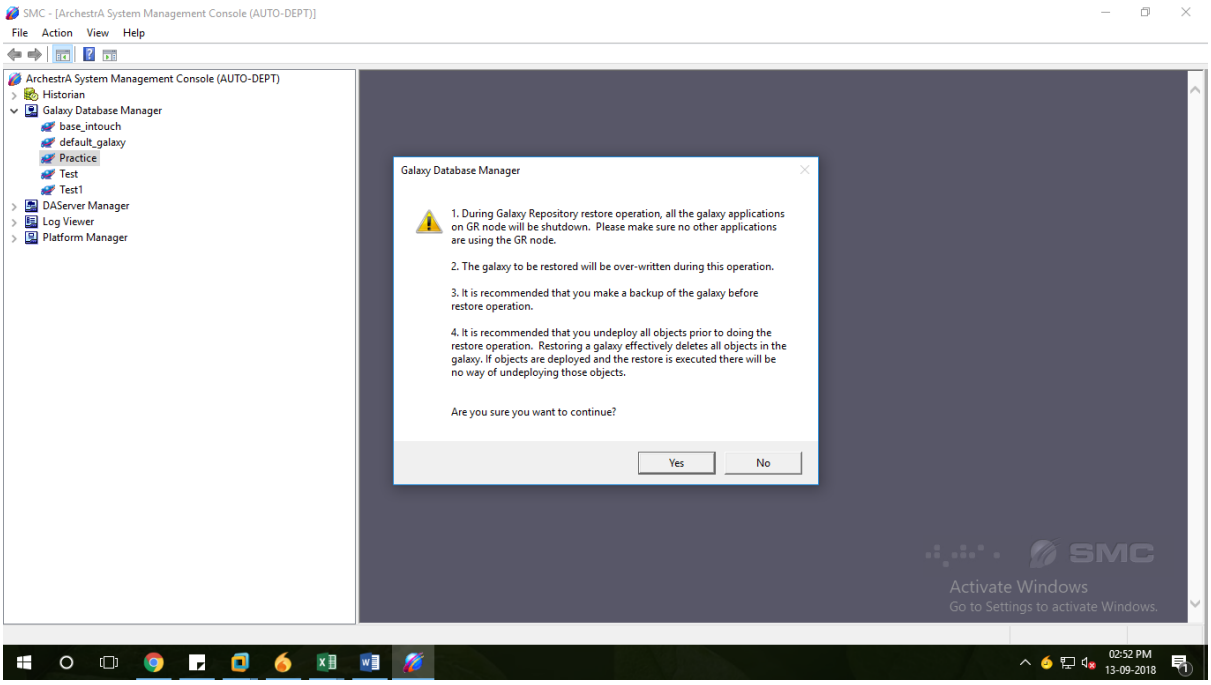
3.Create a new Galaxy with same name which was before.



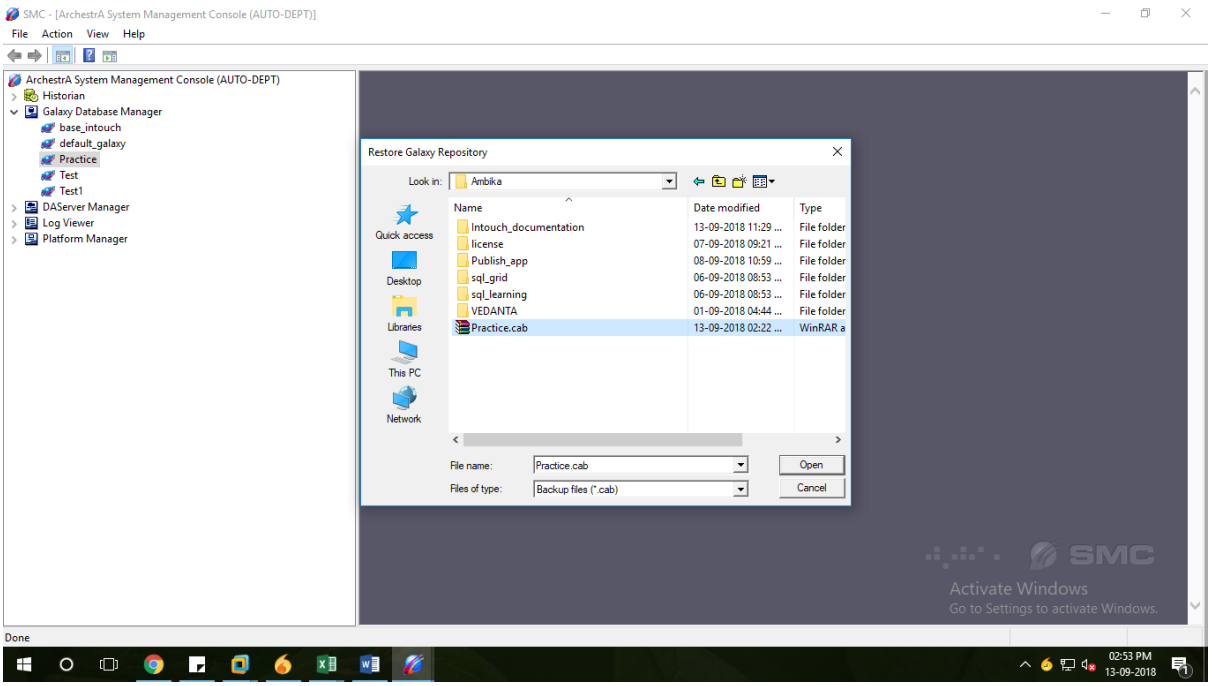
4.Open the system management console and go to galaxy database manage >galaxy_name>right click >restore.



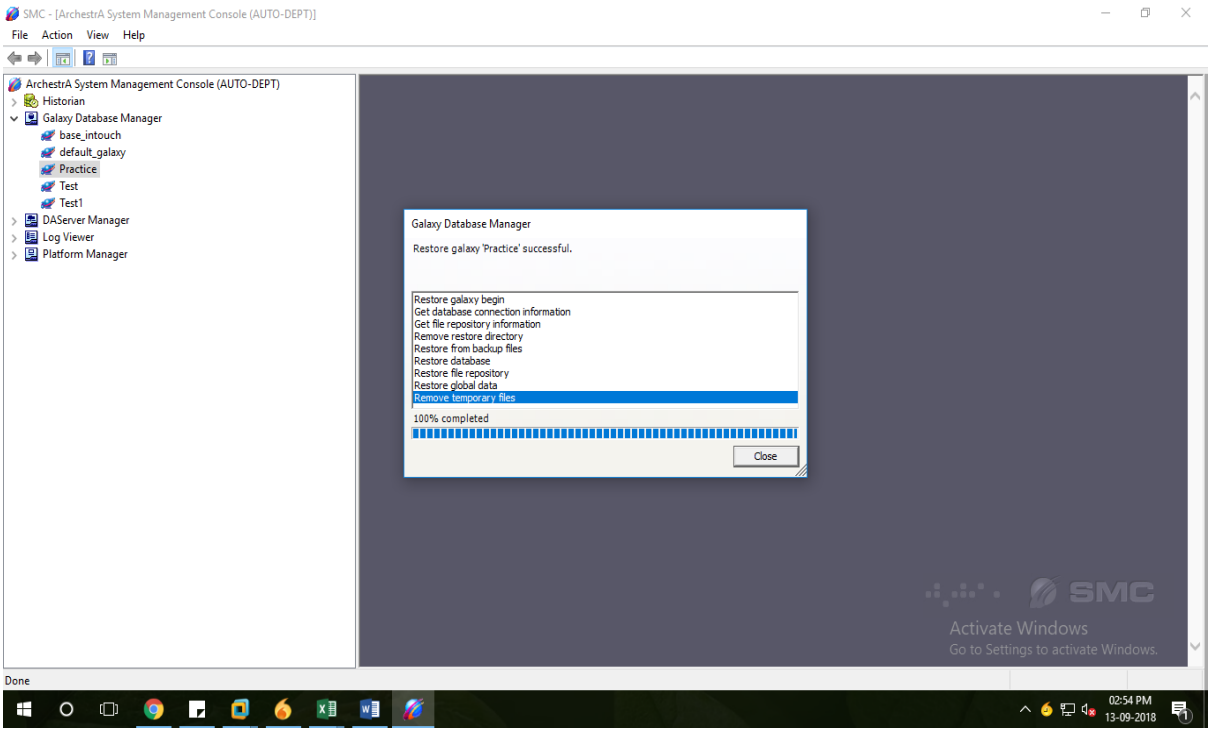
5.Allow it to restore the galaxy.



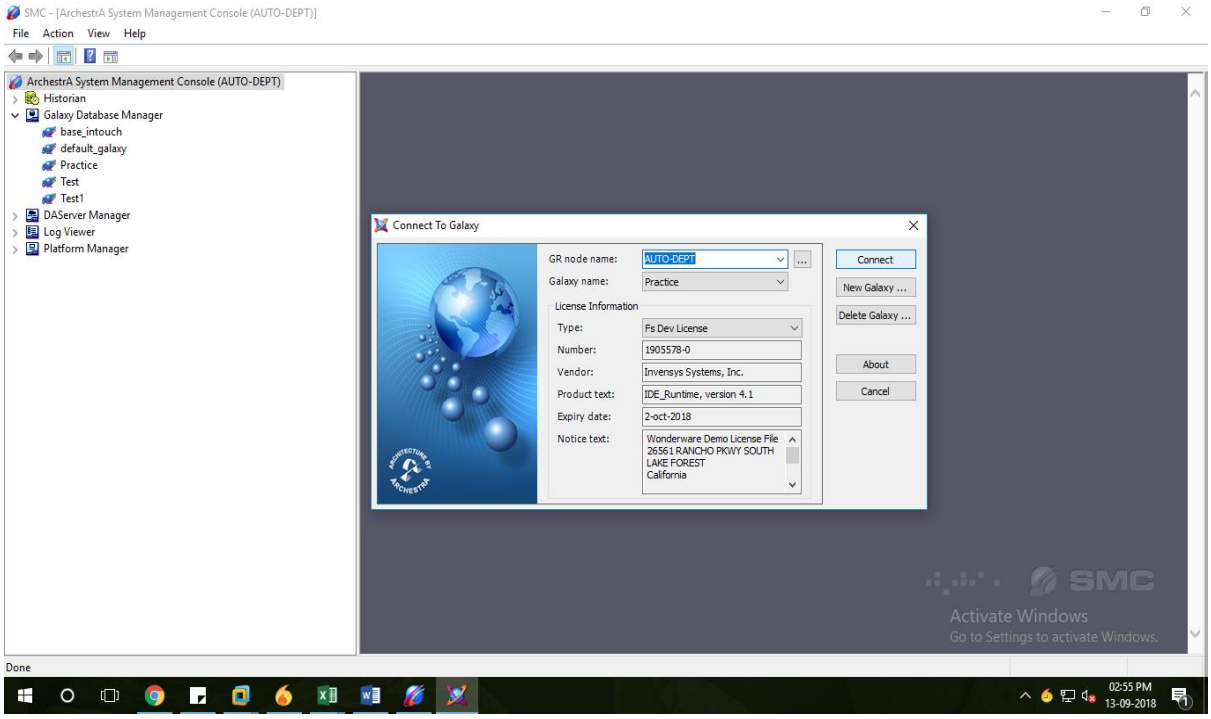
6.Select the path of galaxy and .cab file.



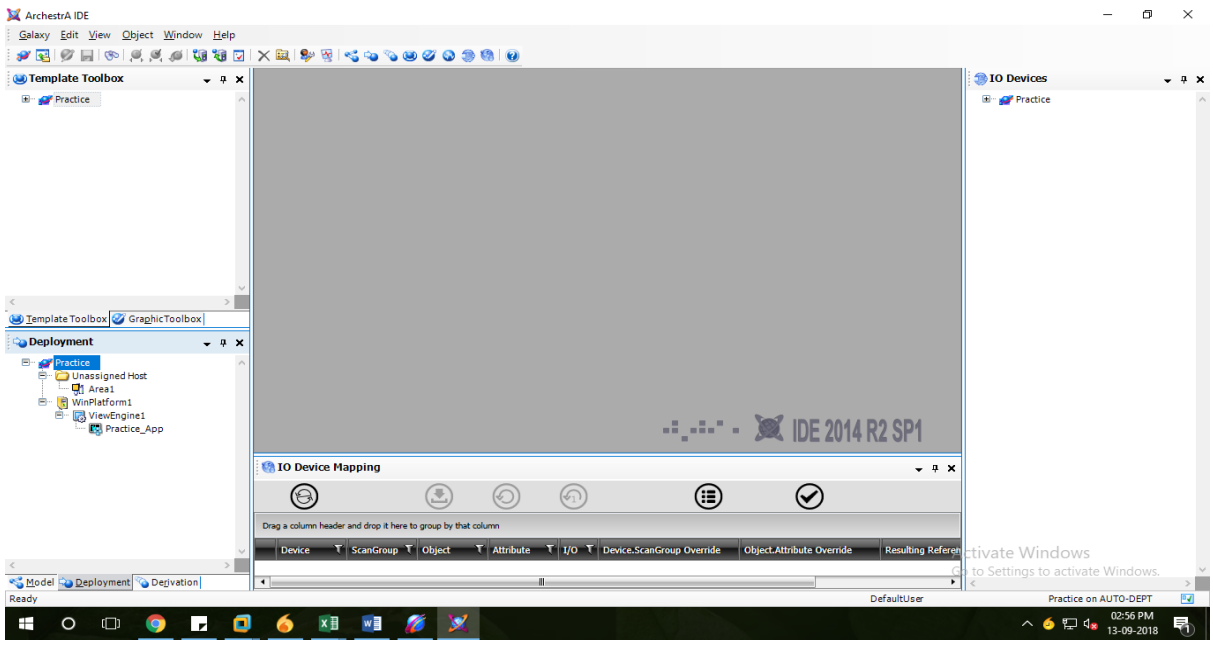
7.After successful restore close it.



8.Open ArchestrA and connect the galaxy.



9.you will find the old galaxy.



1.3 System Requirements and Licensing

1.3.1 Hardware Requirements

1. CPU Cores, RAM, Storage, Network speed

	CPU Cores (Minimum)	RAM(GB)	Storage (GB)	Network (MBPS)
Small Installation (1 - 25K I/O per Node)	≥2	≥4	≥30	≥100
Medium Installation (25k - 50k I/O per Node)	≥4	≥8	≥500	≥1000
Large Installation (More than 50k I/O per Node)	≥8	≥16	≥1000	≥1000

Above values are Minimum amount of storage needed to provide sufficient capacity for 1 week @ max frequency.

2. Screen Resolution

1280 x 1024 [Recommend] as the minimum display resolution for engineering tools such as the Integrated Development Environment (IDE).

1.3.2 Software Requirements

1. Operating System

	OS
Small Installation (1 - 25K I/O per Node)	WIN 7 SP 1 or Greater 2008 R2 SP 1 or Greater(Server)
Medium Installation (25k - 50k I/O per Node)	WIN 7 SP 1 or Greater 2008 R2 SP 1 or Greater(server) (WIN 8.1 NOT SUPPORTED)
Large Installation (More than 50k I/O per Node)	2008 R2 SP 1 or Greater(Server)

2. .NET Version

Versions of .NET (other than 4.x versions) can coexist, but all .NET code, including QuickScript.net scripts, run under .NET 4.5.1.

.NET 3.5 is installed only because the supported SQL Server versions require it.

3. SQL Server Requirement

	SQL Version
Small Installation (1 - 25K I/O per Node)	2008 R2 SP 1 or Greater(Express) 2008 SP 3 or Greater (Standard)
Medium Installation (25k - 50k I/O per Node)	2008 R2 SP 1 or Greater(Express) 2008 SP 3 or Greater (Standard)
Large Installation (More than 50k I/O per Node)	2008 R2 Greater (Standard)

4. Anti-virus Exclusions

Add the following folders of 32-bit operating systems to your antivirus scan exclusion list:

- C:\ProgramData\ArchestrA\
- C:\Program Files\ArchestrA\
- C:\Program Files\Common Files\ArchestrA\
- C:\Program Files\FactorySuite\ (The FactorySuite folder may not exist in newer installations)
- C:\Program Files\Wonderware\
- C:\InSQL\Data\
- C:\Users\All Users\Applications
- C:\Historian\Data

Add the following folders of 64-bit operating systems to your antivirus scan exclusion list:

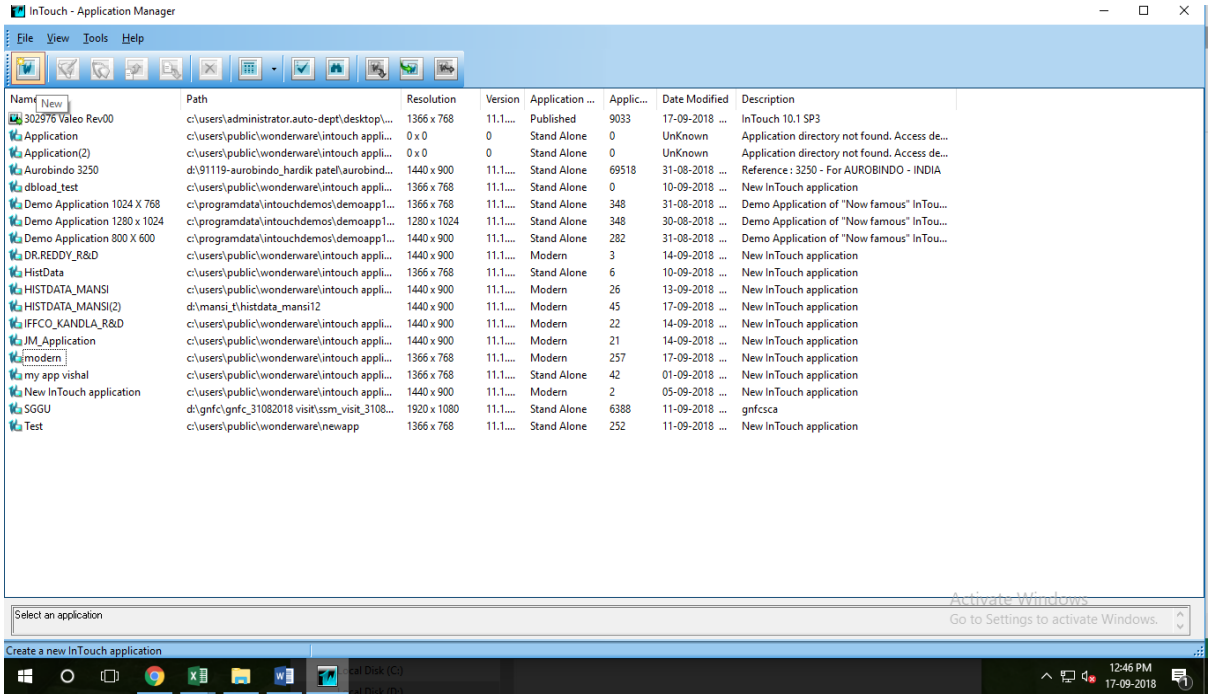
- C:\ProgramData\ArchestrA\
- C:\Program Files (x86)\ArchestrA\
- C:\Program Files (x86)\Common Files\ArchestrA\
- C:\Program Files (x86)\FactorySuite\ (The FactorySuite directory may not exist in newer installations)
- C:\Program Files (x86)\Wonderware\
- C:\Users\Public\Wonderware\
- C:\Historian\Data

2.WindowMaker and WindowViewer

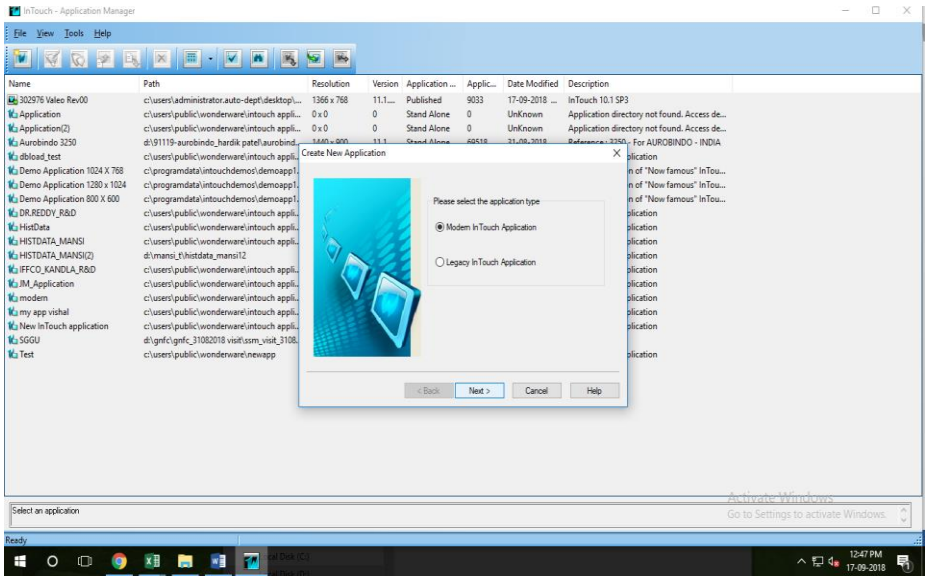
2.1 Section 1 – Using WindowMaker

2.1.1The WindowMaker Interface

1. Open InTouch Application Manager. And select new.



2. Select which type of application you want to make.



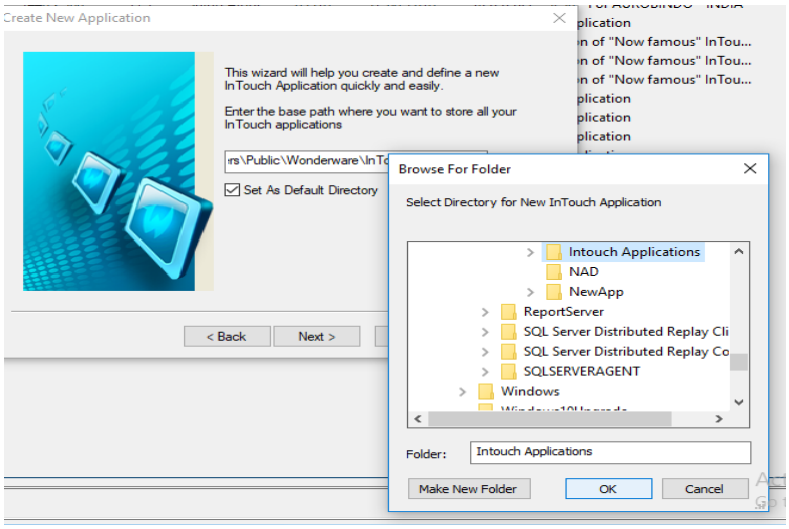
Difference between stand alone ,Published, Managed application.

	Stand-Alone InTouch	Managed InTouch	Published InTouch
Create Application	WindowMaker started from Application Manager	Archestra IDE Create a new application	Not possible

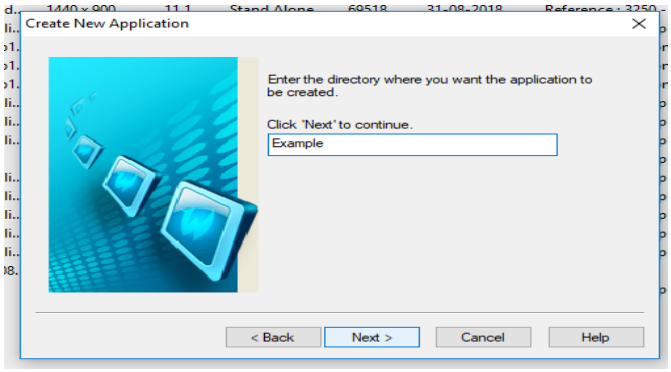
		Import Stand-Alone applications Import SmartSymbols	
Edit Application	WindowMaker started from Application Manager	WindowMaker started from IDE	WindowMaker started from the Application Manager
Delete Application	Delete folder and remove from Application Manager	Delete InTouchViewApp template	Delete folder and remove from Application Manager
Support of Archestra Symbols	No	Yes for all operations	Yes, but only for viewing, not for creating and editing
Support of DB Dump and DB Load	Yes, function within	Yes, function within the IDE	Yes, function within Application Manager
Editing applications in original resolution requires conversion	Yes	No	Yes
Management of Distributed Applications	Network Application Development (NAD)	Archestra IDE	Network Application Development (NAD)
Configuring how new InTouch application versions are accepted	Configured in (Network Application Development)	Configured in WindowMaker	Configured in Application Manager (Network Application Development)
Use Fast-Switch to test application	Yes	Yes	Yes
Use tag value and tag	Yes	Yes, also requires configuration	Yes

parameter retention		of the local working directory	

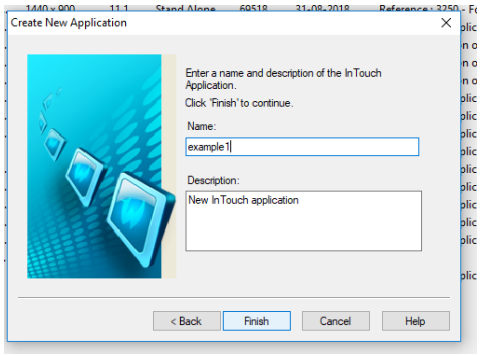
2. Show the path for application and select next.



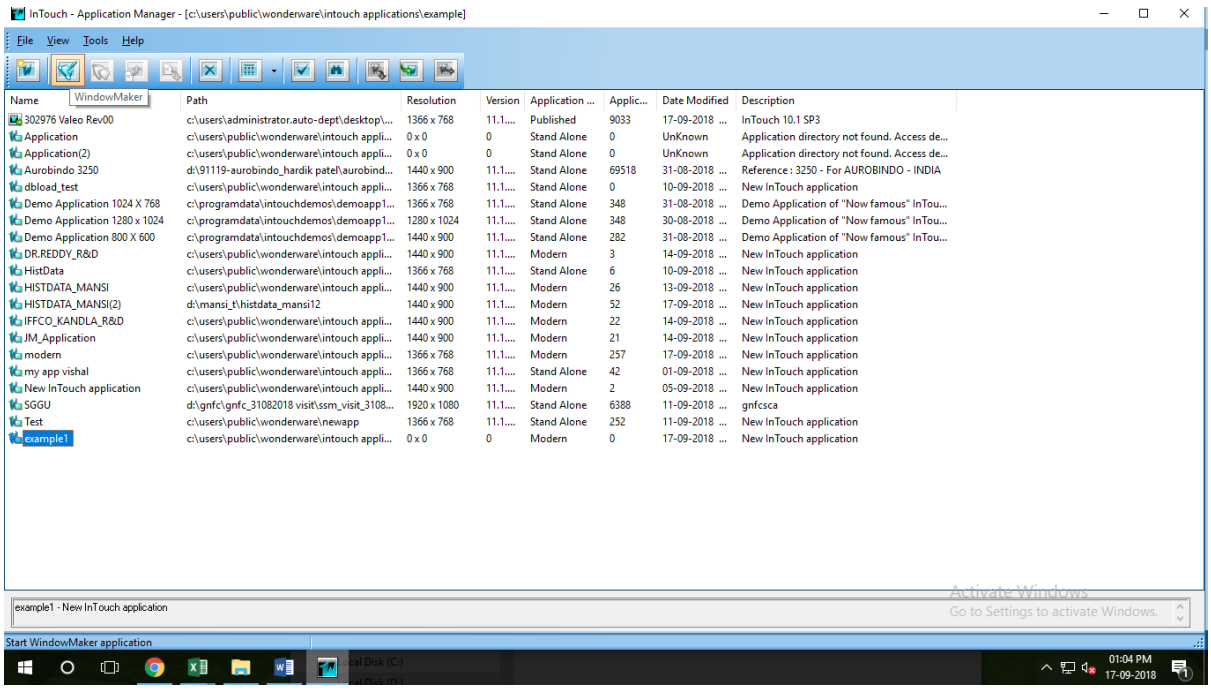
3.Give directory name to application and select next.



4. Give application name and select finish .It will create a new application.

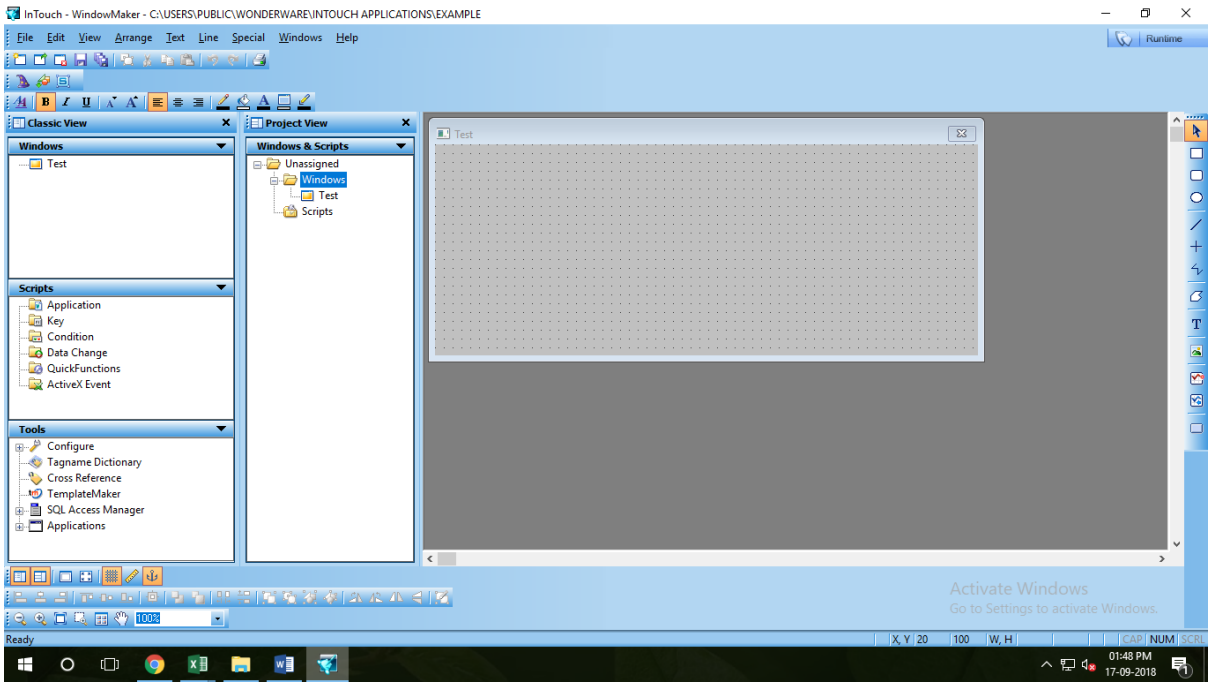


5. Select new application and select WindowMaker.



2.1.2 Classic and Project Views

1. Open the Intouch application in WindowMaker. These views give you access to all application windows, scripts, configuration menus, the Tagname Dictionary, and wizards.



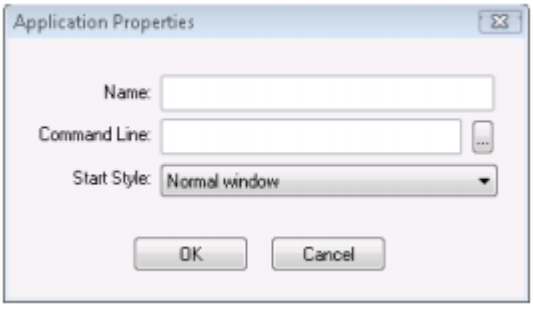
2.1.3 **Navigating WindowMaker** (Navigating in the Application Explorer)

3. You can expand or collapse the folders in either of the Application Explorer toolbars.
4. The Applications view shows other installed applications.
5. To expand or collapse the Application Explorer folders
    - Double-click a folder or icon to expand and show the group members.

- Double-click on a member to open that member.

2.1.4 Adding Applications to WindowMaker

1 In the Tools pane of the Classic view, right-click Applications, and then click New. The Application Properties window appears.

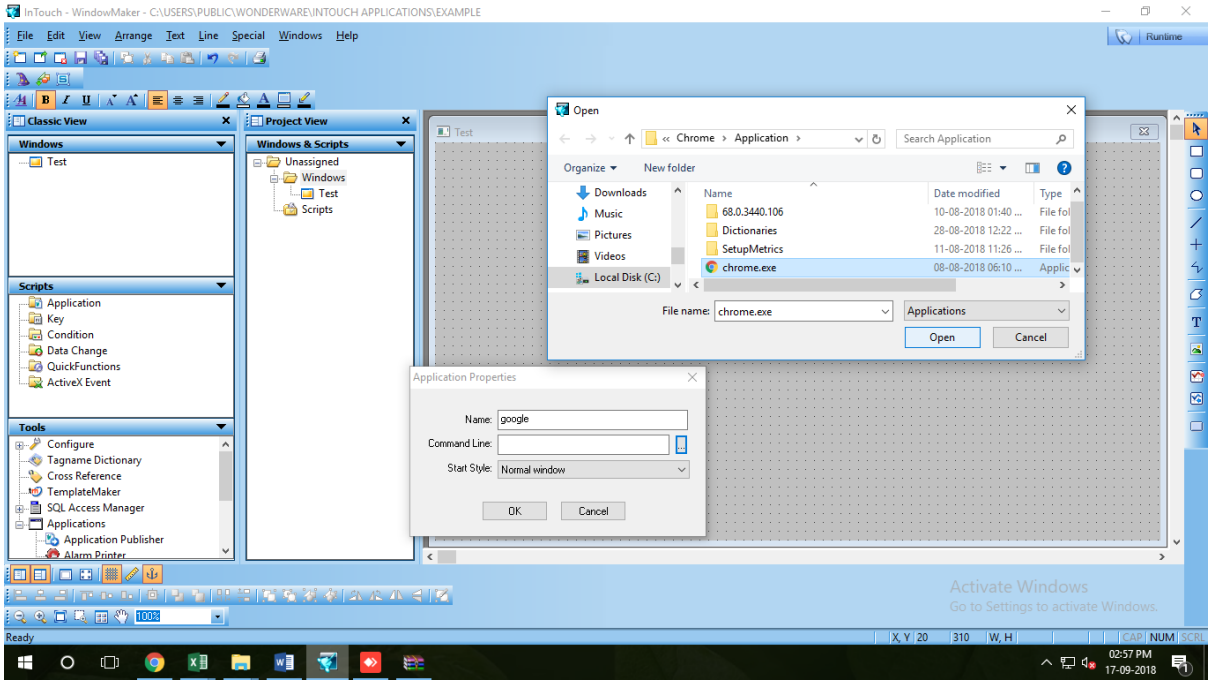


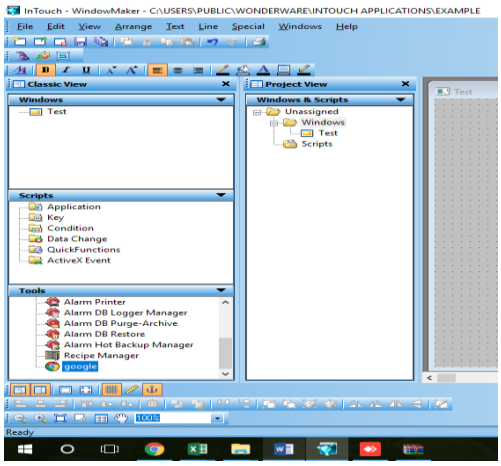
2 In the Name box, type the name of the application.

3 In the Command Line box, enter the full path for the application. Click the ellipsis button to browse for the application. You can add command line parameters for the application in the Command Line box.

4 In the Start Style list, click how you want the application to appear when it starts up.

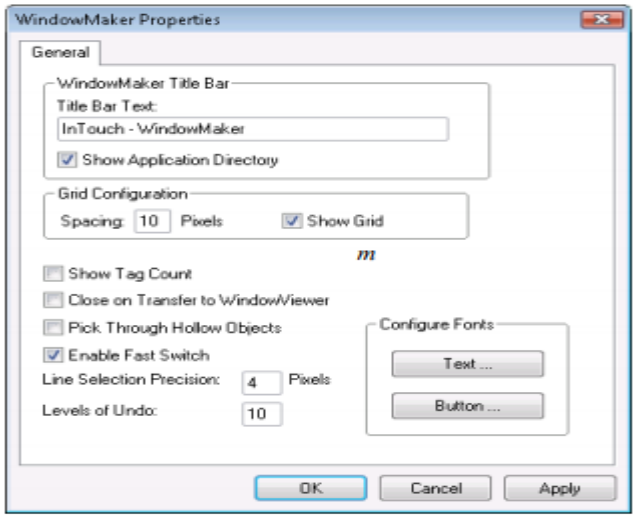
5 Click OK. The application is added to the Application Explorer under Applications. You can now run the application at any time from WindowMaker.





2.1.5 Setting WindowMaker Properties

1. On the Special menu, point to Configure and then click WindowMaker. The WindowMaker Properties dialog box appears



2. In the WindowMaker Title Bar area, configure the appearance of the title bar. Do any of the following:
   • In the Title Bar Text box, type the text to appear in the title bar during design time.
   • Select the Show Application Directory check box to include the path to the application folder in the title bar.
3. In the Grid Configuration area, configure the background grid. Do any of the following
   • In the Spacing box, type the number of pixels between the grids coordinates.
   • Select the Show Grid check box to show the grid.
4. Configure miscellaneous window properties. Do any of the following:
   • Select the Show Tag Count check box to show the number of tagnames in your Tagname Dictionary in the menu bar. If you have a lot of tags, showing the tag count can impact the Tagname Dictionary performance. This is useful if you are creating an application with a limited Tagname Dictionary size. The tagname count does not include remote tagname references or system tags. Click Update Use Counts on the Special menu to find out your remote tagname reference usage.
   • Select the Close on Transfer to WindowViewer check box to close WindowMaker automatically when you start WindowViewer. The purpose of this option is to conserve limited memory. If memory is not an issue and you are moving often between WindowViewer and WindowMaker,

do not select this option. When you select Close on Transfer to WindowViewer, the reciprocal command, Close WindowViewer, on the General Properties tab in the WindowViewer Properties dialog box is also selected.

• Select the Pick through Hollow Objects check box to select objects that are behind hollow objects. This enables you to select an object within a frame without having to send the frame to the background.

• Select the Enable Fast Switch check box to use the "fast switch" to toggle between WindowMaker and WindowViewer. The fast switch is the word Runtime that appears in the upper right corner of WindowMaker. In WindowViewer, it is the word Development. When you use the fast switch, WindowMaker automatically saves all changes made to all open windows before switching to WindowViewer.

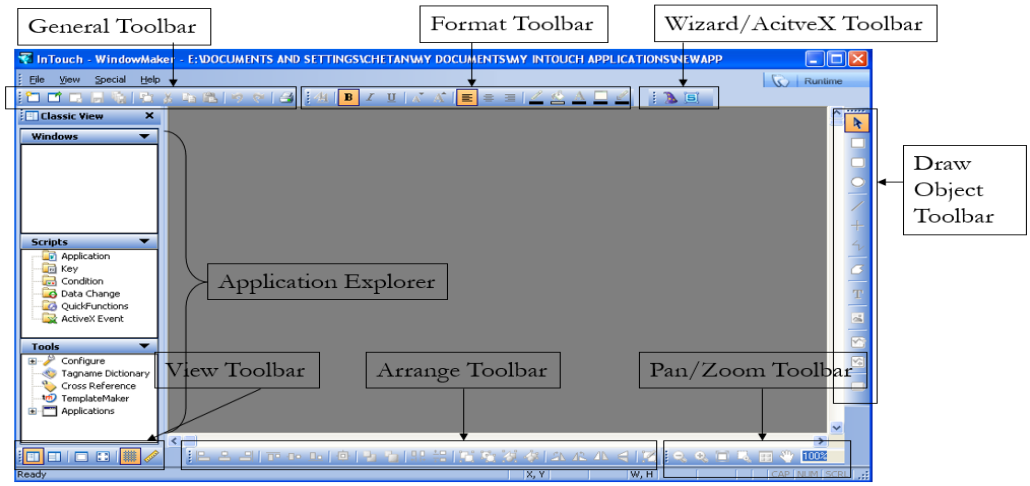
• In the Line Selection Precision box, type the number of pixels your cursor can be away from a line and still be able to select it. In most cases, the default setting of 4 works well

• In the Levels of Undo box, type the number of Undo and Redo levels to maintain. You can have up to 25 levels. If you type zero, the undo/redo function is turned off. One level represents one action. The Undo and Redo stacks are empty when you create a new window or open an existing window. Both stacks are emptied when you close a window.

5. In the Configure Fonts area, click either Text or Button to set the default text font or button font. Select the font default, and then click OK. You can override these defaults in any window by using the Font toolbar.
6. Click OK.
7. Restart WindowMaker to apply any changes you made.

2.1.6 WindowMaker Toolbars

Types of toolbar.



1. To manage toolbar, go to view and check toolbar which are required by you.

2.2 Using WindowViewer

2.2.1 Window Viewer functionality and overview

Window Viewer is the runtime environment used to display the graphic windows created in WindowMaker.

We use WindowViewer to run your InTouch applications.

Window Viewer executes InTouch scripts and QuickScripts.

It can performs historical data logging and reporting, processes alarm logging and reporting.

We can use the InTouch Web Client to view ArchestrA graphics in any HTML5 supported web browser. These applications run in WindowViewer, but the Application Server provides most of the HMI functionality Applications that are designed specifically for use in an ArchestrA Application Server environment are called InTouchView applications.

It can launch tag viewer to see real-time values of tags and validate data quality.

It can be used to log on/ logoff and configuring users changing passwords and changing languages.

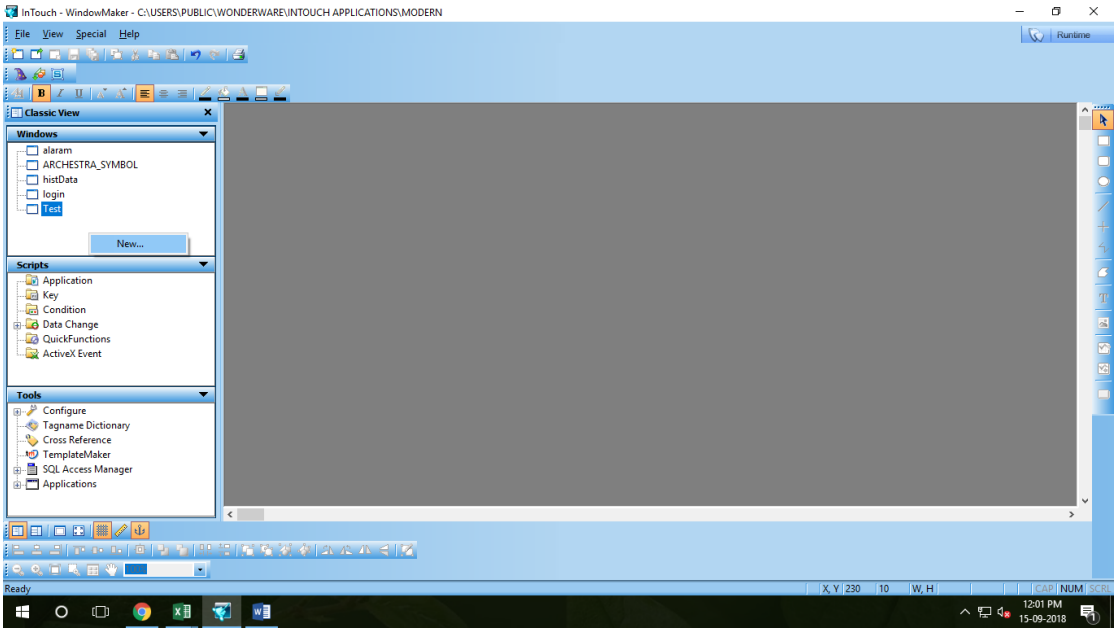
It can be used to Start and stop historical logging.

It can be reinitialize i/o connections.

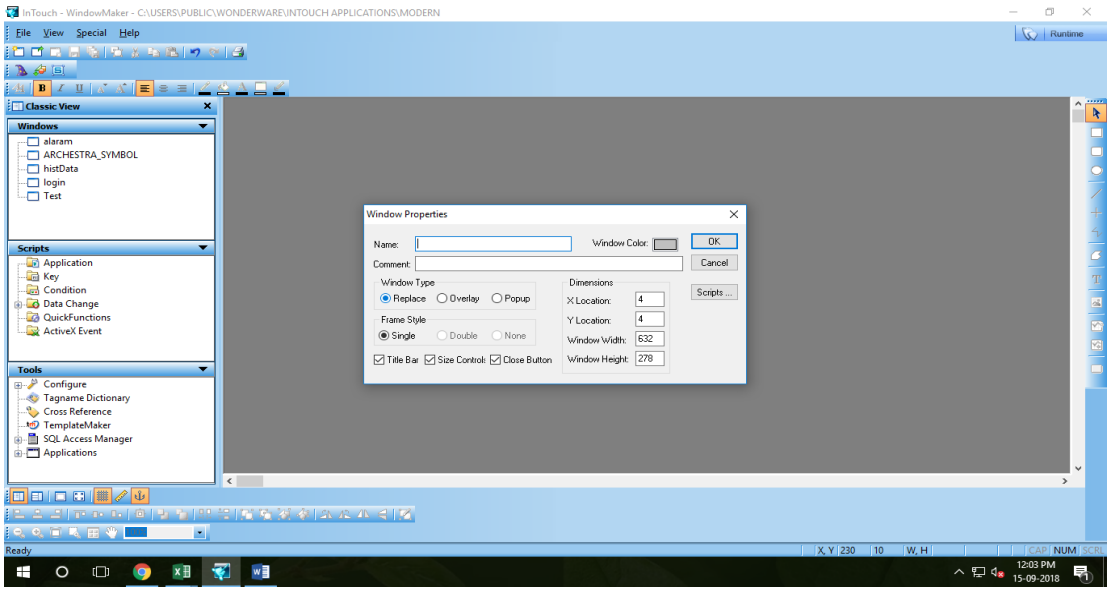
2.3 Window Properties and Behaviours

2.3.1 Window Type

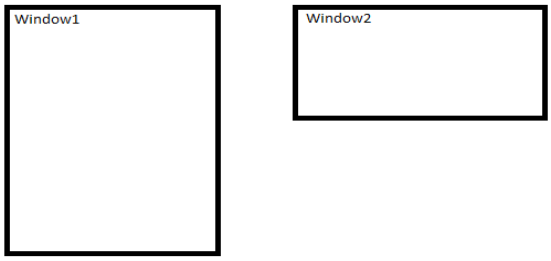
1. Open Intouch application in window maker& right click on classic view>windows, it will show you option of New to create a new window.



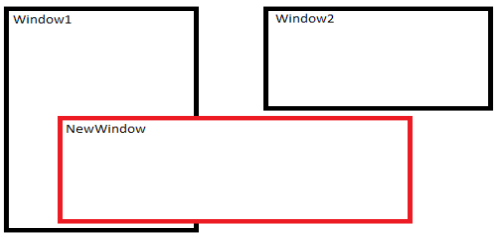
2. It will open the window properties.and you can observe there are 3 types of window.



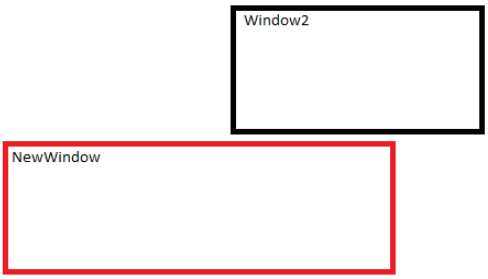
Replace - This is the default type for new Windows. When a Window with the Replace type is displayed, it will appear on screen and automatically close any windows which it overlaps.For example:At Runtime two Windows are currently shown in WindowViewer, Window1 and Window2.



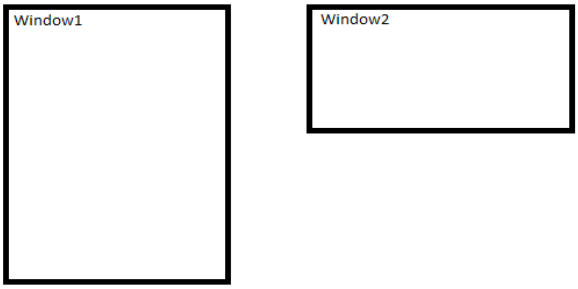
The user then clicks a button to open a third Window called NewWindow, which has been configured as Replace type.



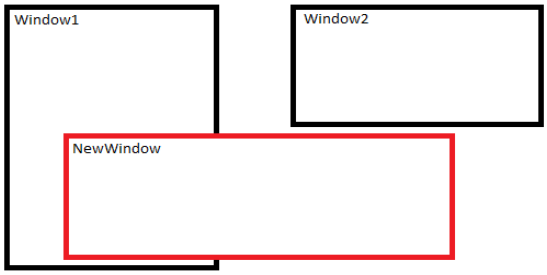
New Window now overlaps Window1, which will cause it to automatically close. Window2 is not overlapped by New Window and will remain open.



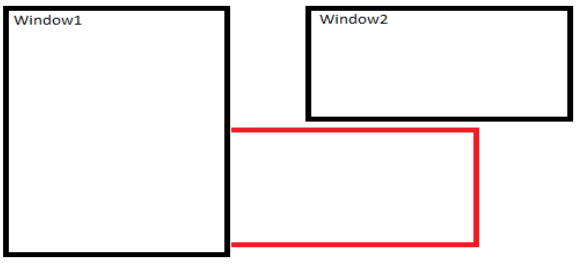
Overlay - This is the most basic Window type, and with it when a new Window is displayed on the screen with Overlay type, it will overlap the existing Windows on the screen, but will not close them. For example:At Runtime two Windows are currently shown in WindowViewer, Window1 and Window2.



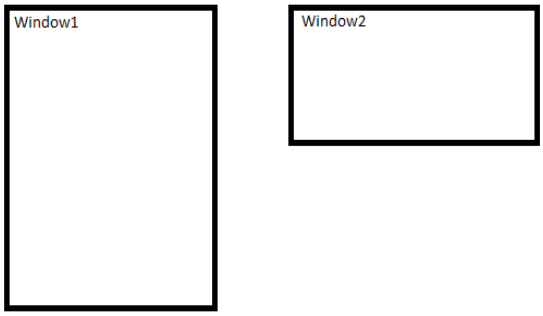
The user then clicks a button to open a third Window called NewWindow, which has been configured as Overlay type. The NewWindow will be displayed, and will overlap those windows opened previously.



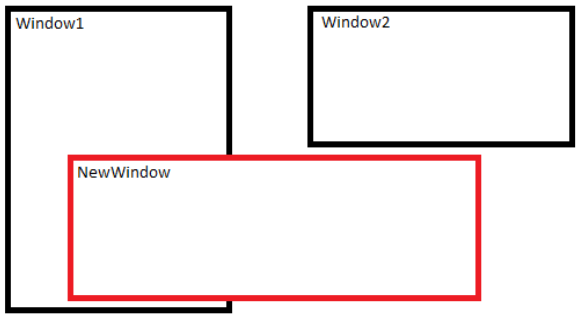
If you were to click on Window1, it would then overlap NewWindow.



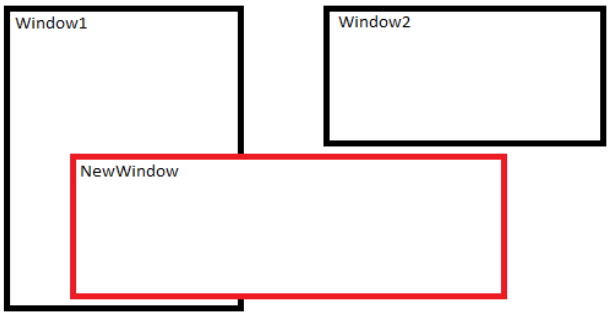
Popup - The last Window type is Popup, which behaves similar to the Overlay type, but will always be the top most window, until it is closed. This type of window is useful for Windows we don't want the operator to accidentally open and forget to close, such as one allowing you to change setpoints.For example: At Runtime two Windows are currently shown in Window Viewer, Window1 and Window2.



The user then clicks a button to open a third Window called New Window, which has been configured as Popup type. The New Window will be displayed, and will overlap those windows opened previously.

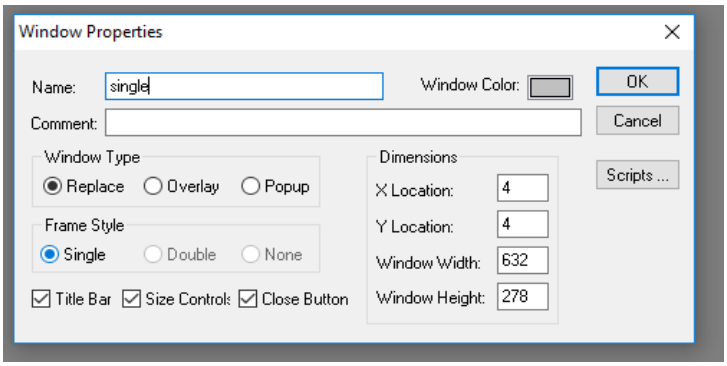


If you were to click on Window1, you could interact with it, but NewWindow will remain on top until it is closed.

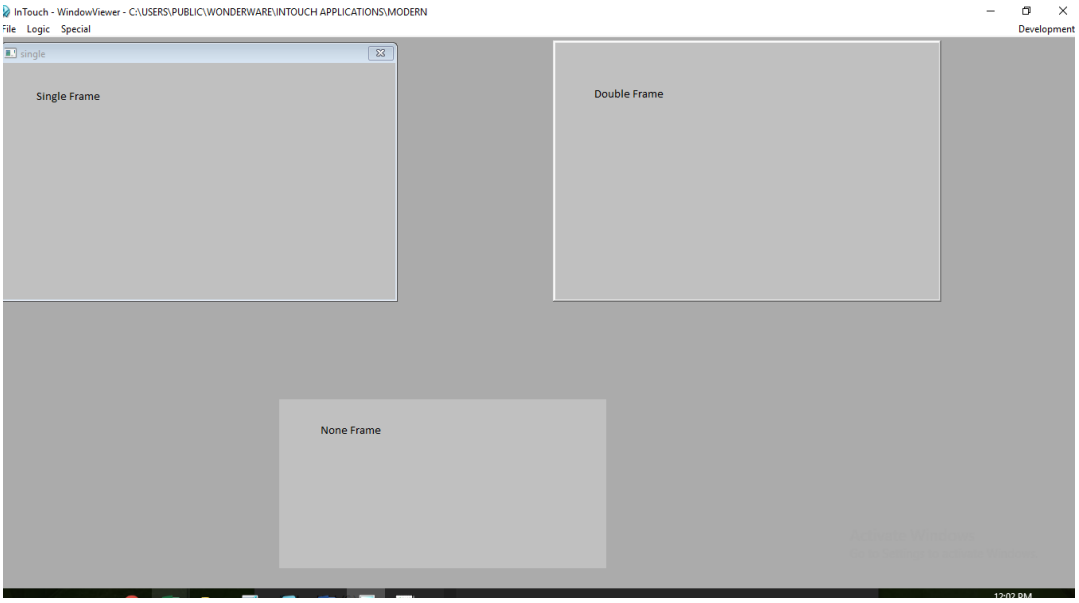


2.3.2 Frame Style

1. In the Frame Style area, configure the border around the window. Open Intouch application and create a new wondow.



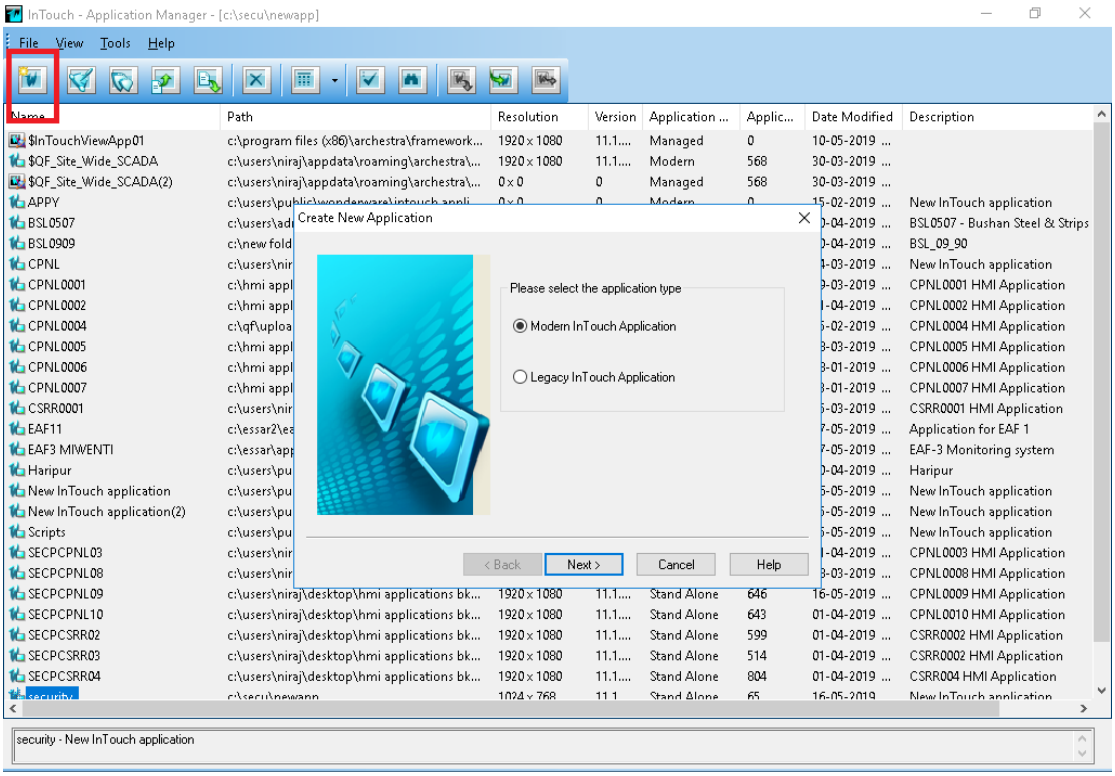
2. Click Single for a single, one-dimensional border.
3. Click double for a three-dimensional bordered window.
4. Click none for a window with no border.



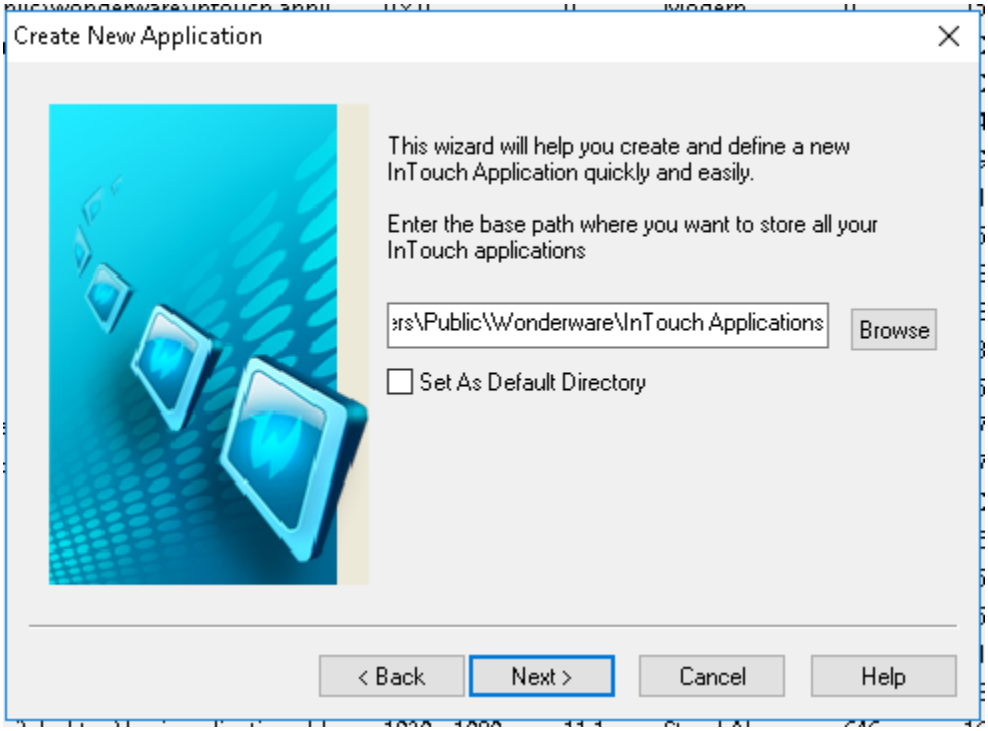
2.4 Data Content Portal

2.4.1 Design an InTouch application and Create application navigation

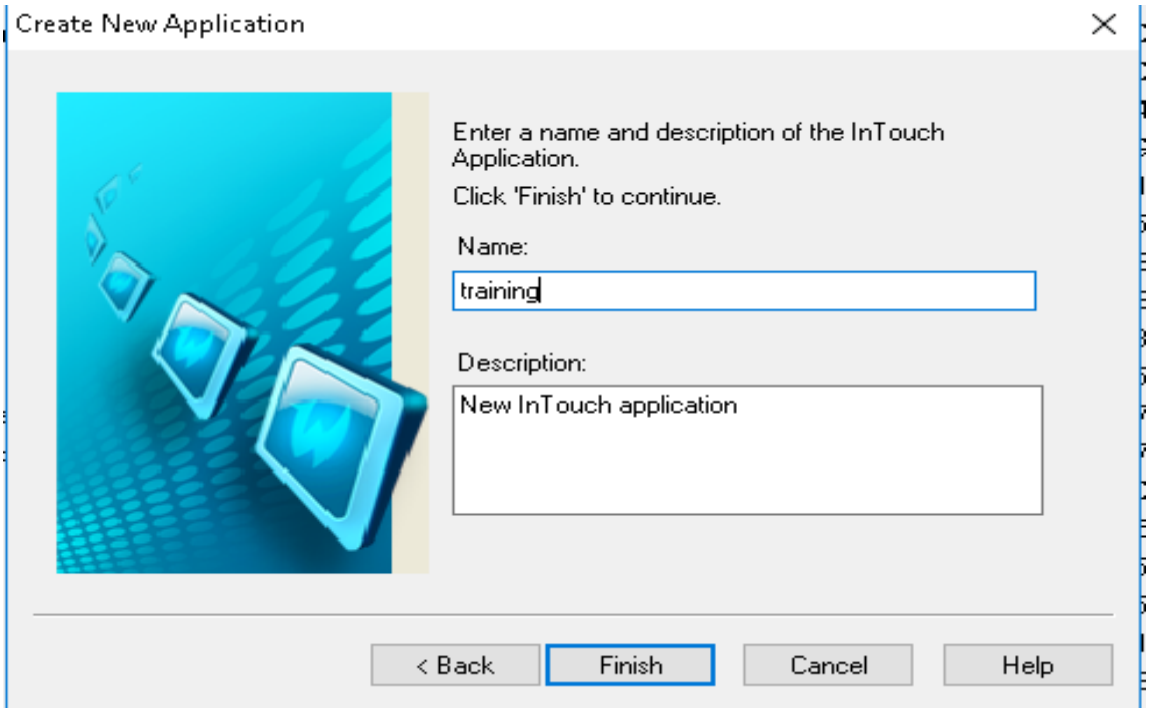
1. First click on file new.



2. Here select application type and click next, In modern application ArchestrA graphics are available but in modern it is not available.



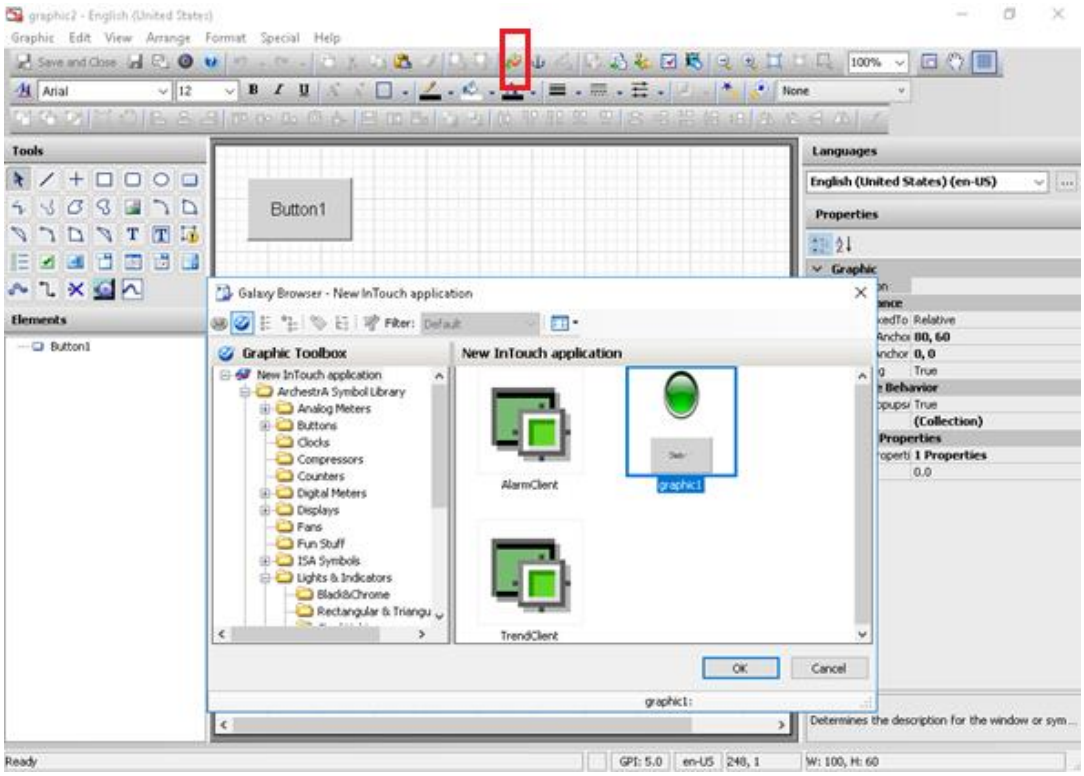
3.Browse the application path where we want to save it and click next.



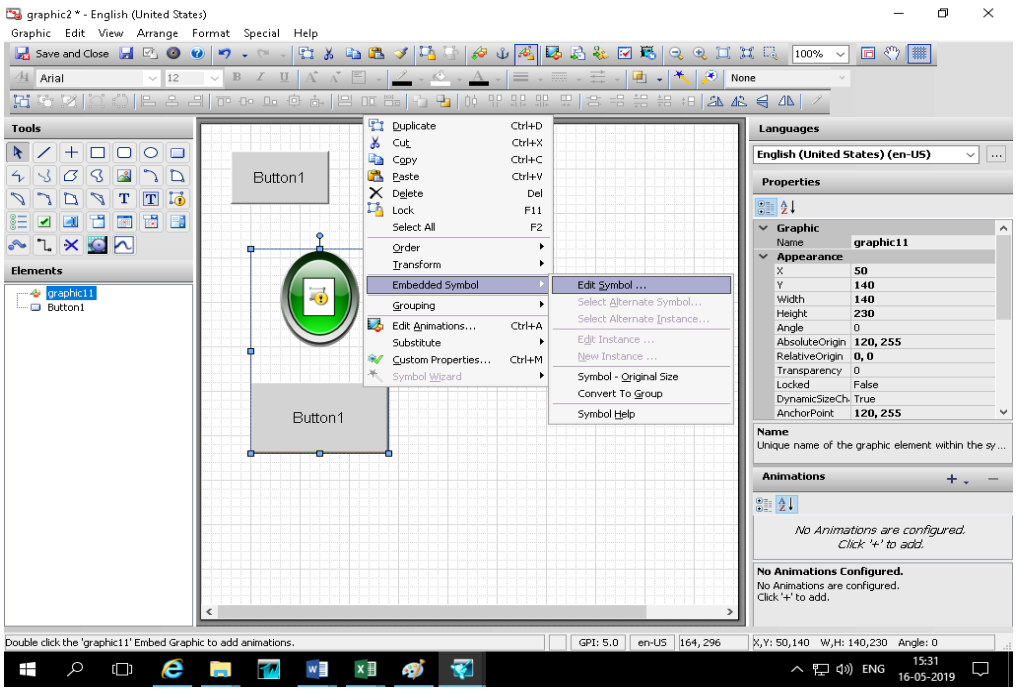
4. Write dictionary name then press next and then write application name and comment and press finish.

2.4.2 Embed ArchestrA graphics

1. In ArchestrA graphics open embed graphic dictionary and select other ArchestrA graphics.

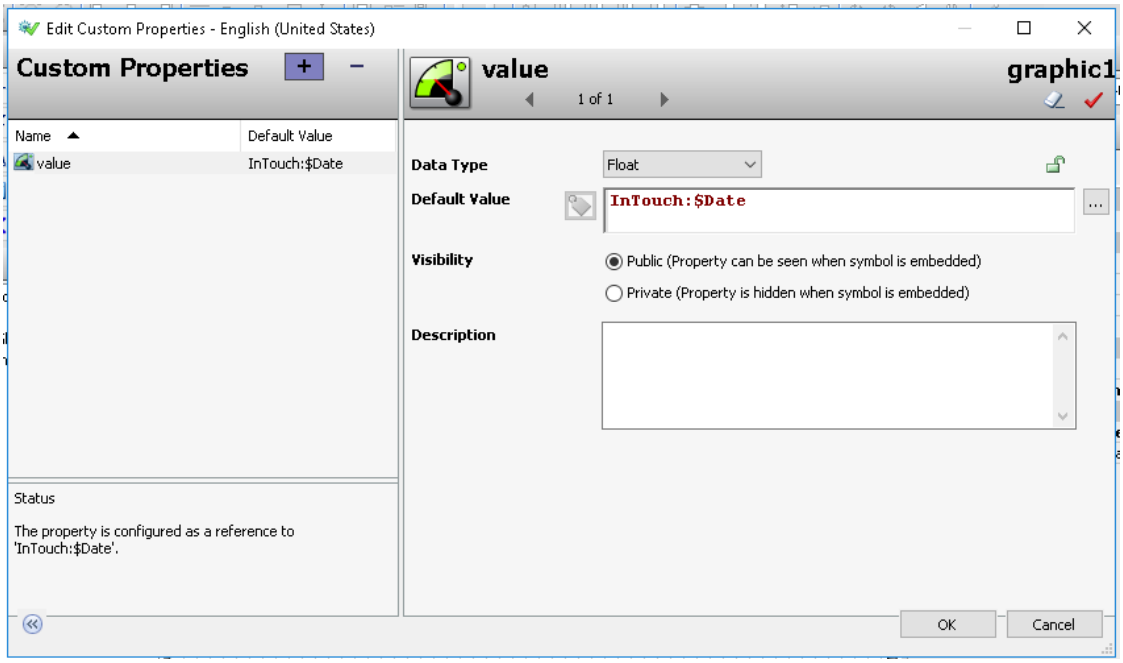


2. Thus we make Embed ArchestrA graphics to edit this go to embedded symbol>edit symbol ,which open that graphic for editing.

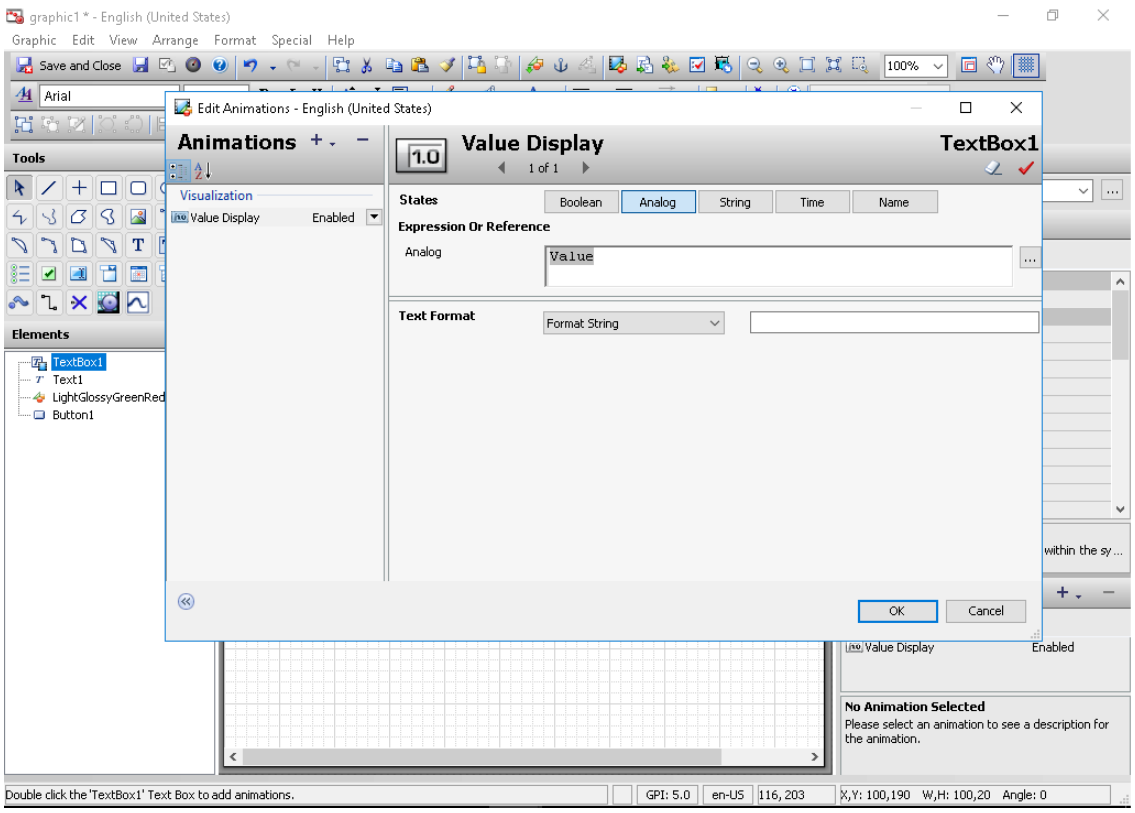


2.4.3 Link behaviour between graphics using a tag

1. Open custom properties of that ArchestrA graphic, and in value take any InTouch tag.



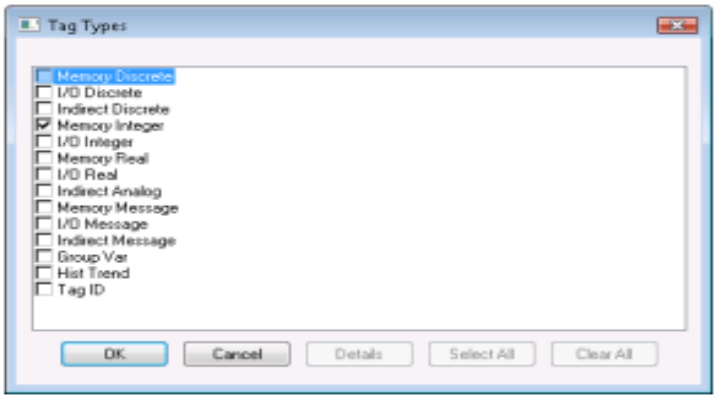
2. Now take one tax box and add animation link for display the InTouch tag which assign to value.



2.5 Tagname Dictionary and Data Sources

2.5.1 Memory Tags

1. Memory tags define internal system constants and variables within InTouch applications.
2. Select from the four types of memory tags, based upon the process data associated with the tag.



- Memory Discrete: Memory discrete tags are associated with the state properties of a process component. The values assigned to memory discrete tags are two possible Boolean states such as: 0 or 1, False or true, on or off, High or low.
- Memory Integer (Analog): You can assign memory integer tags 32-bit signed-integers between -2,147,483,648 and 2,147,483,647.
- Memory Real (Analog) : You can assign memory real tags floating decimal point numbers between -3.4 x 1038 and 3.4 x 1038. All floating point calculations are performed with 64-bit resolution, but the results are stored as 32-bit decimal numbers.
- Memory Message: You can assign memory message tags text strings up to 131 single-byte characters in length.

2.5.2 I/O Tags

1. I/O tags read or write InTouch application data to or from an external source. External data includes input and output from programmable controllers, process computers, and network nodes. I/O tag data values are remotely accessed through the following protocols:
    - Microsoft Dynamic Data Exchange (DDE)
    - Wonderware SuiteLink
2. When the value of an I/O tag changes in run-time memory, the InTouch HMI updates the remote application. Conversely, I/O tag values in InTouch are updated whenever the values of corresponding data items change in a remote application.
3. The InTouch HMI provides four types of I/O tags based upon the process data associated with the tag. These four types of I/O tags are similar to memory tag types.
    - I/O Discrete: I/O discrete tags are associated with component process properties whose values are represented by two possible states such as: 0 or 1, False or true, on or off, High or low.
    - I/O Integer (Analog): I/O integer tags can be assigned 32-bit signed-integers between -2,147,483,648 and 2,147,483,647.
    - I/O Real (Analog): I/O real tags can be assigned floating decimal point numbers between -3.4 x 1038 and 3.4 x1038. All I/O real tag floating point calculations are performed with 64-bit resolution, but the results are stored as 32-bit numbers.
    - I/O Message: I/O message tags can be assigned text strings up to a maximum of 131 single-byte characters.

2.5.3 $System Tags

1. Using system tags provides system-related information and standard functions like date and time for InTouch scripting. System tags are part of all applications.
2. System tags are identified by a dollar sign ($) as the first character of a tag's name in the Tagname Dictionary. System tags cannot be deleted. You can only change the comment associated with a system tag.
3.

$AccessLevel	Read-only integer tag that specifies the access level associated with the currently logged-on operator. This information can be used in animation links or scripts to control the operator's access to specific InTouch functions.
$ApplicationChanged	Read-only discrete tag that indicates whether the master application has changed in a NAD environment.
$ApplicationVersion	Read-only real tag that specifies the current version number of the application running in WindowViewer.
$ChangePassword	Discrete write-only tag that shows the Change Password dialog box when set to 1.
$ConfigureUsers	Write-only discrete tag that shows the generic Configure Users dialog box to edit the security user name list.

$Date	Read-only integer tag that shows the whole number of days that have passed since January 1, 1970.
$DateString	Read-only message tag that shows the date in the same format specified from the Windows Regional and Language Options dialog box.
$DateTime	Read-only real tag that shows the fractional number of days that have passed since January 1, 1970.
$Day	Read-only integer tag that shows the current day of the month (1-31).
$False	Discrete read-only tag that returns a FALSE value within an expression. The $False system tag is used to replace any instance of obsolete system tags when updating applications from earlier versions of InTouch to the current version.
$HistoricalLogging	Read/write discrete tag used to start and stop historical logging while an InTouch application is running.
$Hour	Read-only integer tag that shows the current hour as a value from 0 to 23.
$InactivityTimeout	Read-only discrete tag that indicates the user inactivity period has elapsed. When set to 1, the inactivity period has elapsed and the user is automatically logged off from WindowViewer.
$InactivityWarning	Read-only discrete tag that indicates the inactivity warning period has elapsed. The value of $InactivityWarning can be used to issue an inactivity warning to an operator.
$Language	Read/write integer tag that specifies the language ID of the language shown in an InTouch application.
$LogicRunning	Read/write discrete tag that can be used to start and stop an application script.
$Minute	Read-only integer tag that shows the current minute (0-59).
$Month	Read-only integer tag that shows the number of the current month (1-12).
$Msec	Read-only integer tag that shows the current millisecond (0-999).
$NewAlarm	Read/write discrete tag that indicates when a new local alarm has occurred.
$ObjHor	Read-only integer tag that shows the horizontal pixel location of the center of a selected object on the screen.

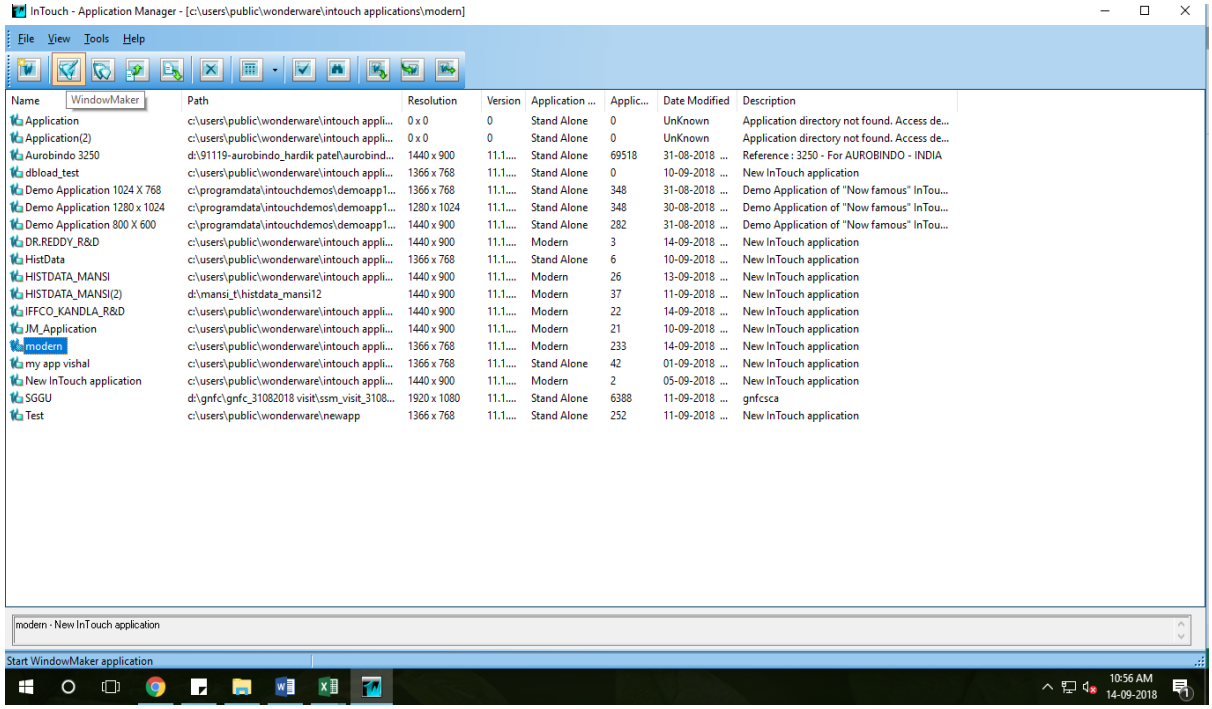
$ObjVer	Read-only integer tag that shows the vertical pixel location of the center of a selected object on the screen.
$Operator	Read-only message tag that shows the name of the operator logged on to an InTouch application.
$OperatorDomain	Read-only message tag that contains the domain or machine name specified at log on when the application is secured with operating system-based security.
$OperatorDomainEntered	Write-only message tag assigned the domain of the operator for a logon attempt to an InTouch application. The logon attempt does not start until you assign a value to the $PasswordEntered system tag.
$OperatorEntered	Read/write message tag assigned the user account name of an operator for a logon attempt to an InTouch application. The logon attempt does not start until you assign a value to the $PasswordEntered system tag.
$OperatorName	Read-only message tag that shows the full name of the operator if operating system-based or ArchestrA® authentication is used.
$PasswordEntered	Write-only message tag assigned the password of an operator for a logon attempt to an InTouch application. When you write a value to this tag, a logon attempt is started using the values of the $OperatorDomainEntered, $OperatorEntered, and $PasswordEntered system tags.
$Second	Read-only integer tag that shows the current second (0-59).
$StartDdeConversations	Read/write discrete tag used to start uninitiated conversations during run time.
$System	Read-only tag that identifies the root alarm group.
$Time	Read-only integer tag that shows the elapsed time in milliseconds since midnight of the current day.
$TimeString	Read-only message tag that shows the current time in the same format specified from the Windows Regional and Language Options dialog box.
$VerifiedUserName	Read-only message tag that contains either a verified user's full name or null.

$Year	Read-only integer tag that shows the current year as a four-digit number.

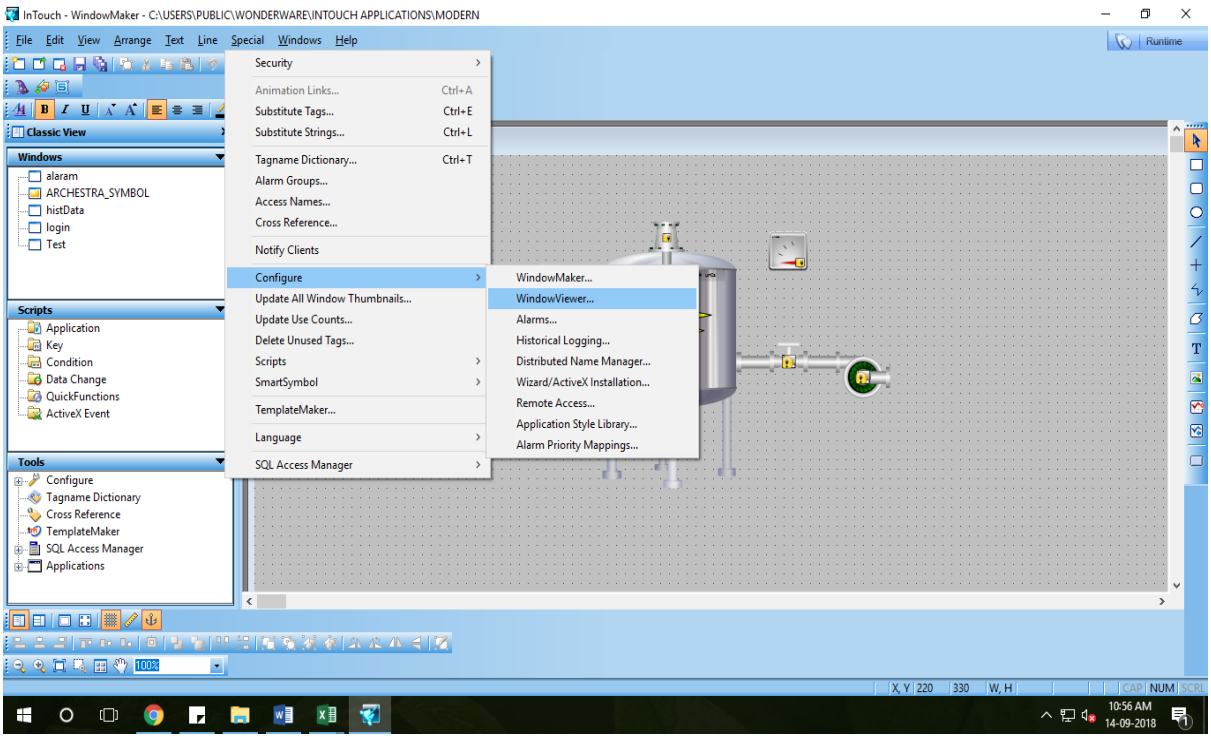
2.6 Section 6 – Tag Viewer, Creating and Monitoring Tags

2.6.1 Enabling Tag Viewer

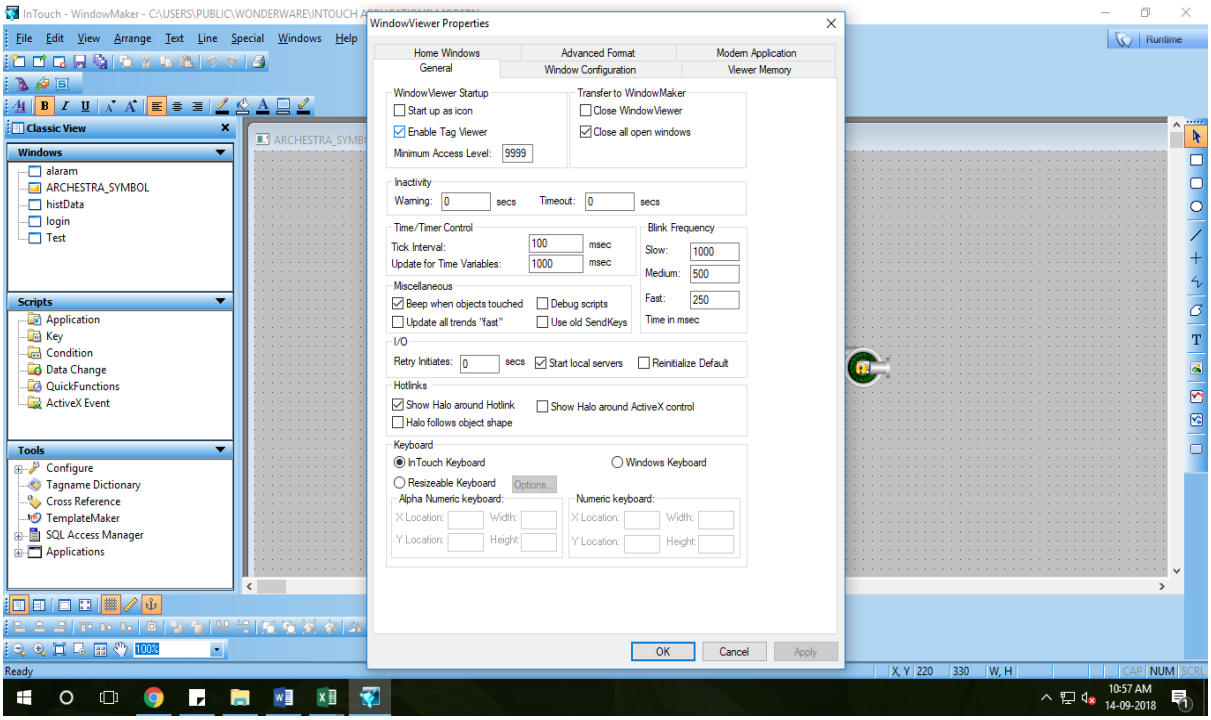
1. Open the New intouch application WindowMaker.



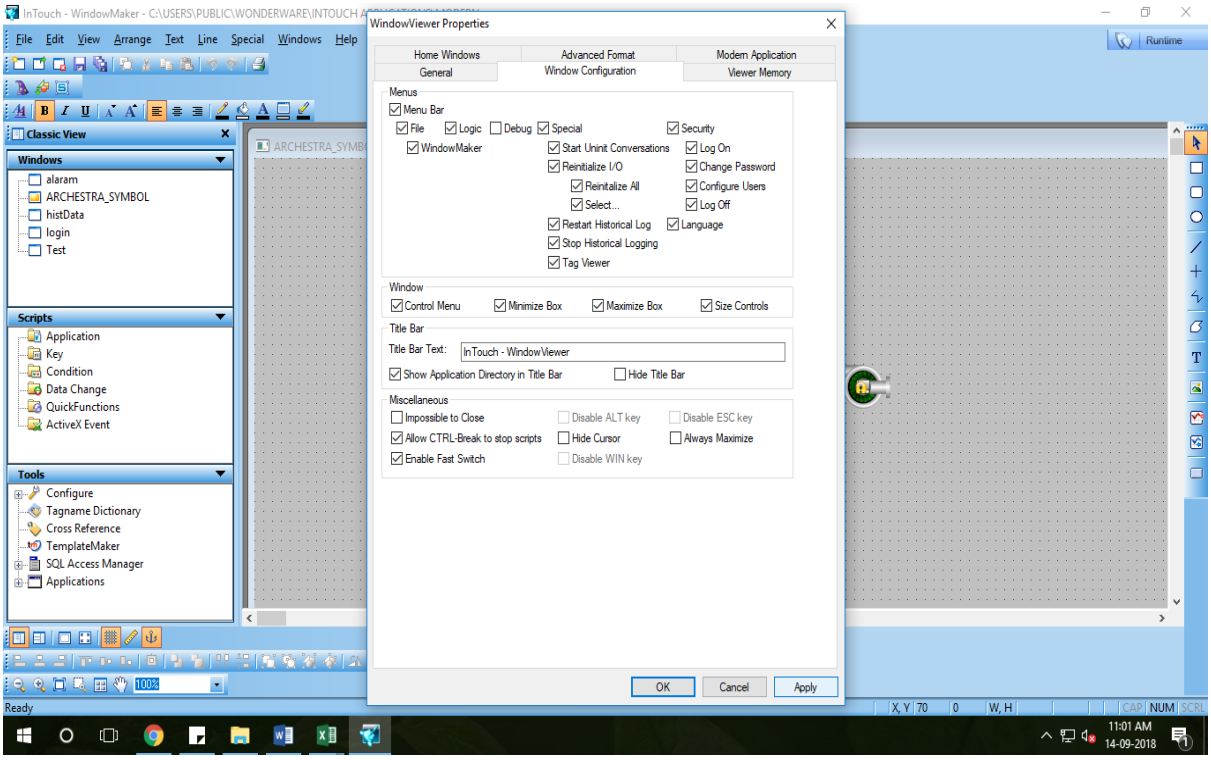
2. Go to Special> Configure>Window Viewer



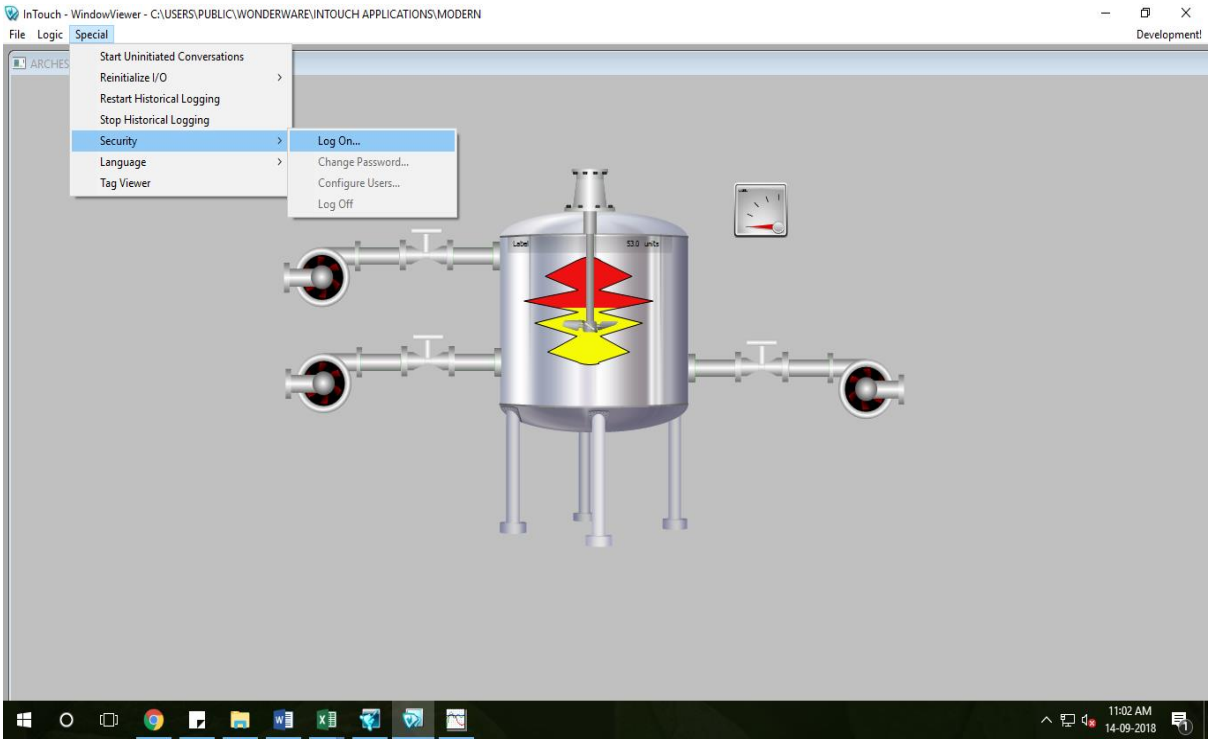
3. Enable Tag Viewer in General Window viewer start-up. And minimum Access Level: 9999.



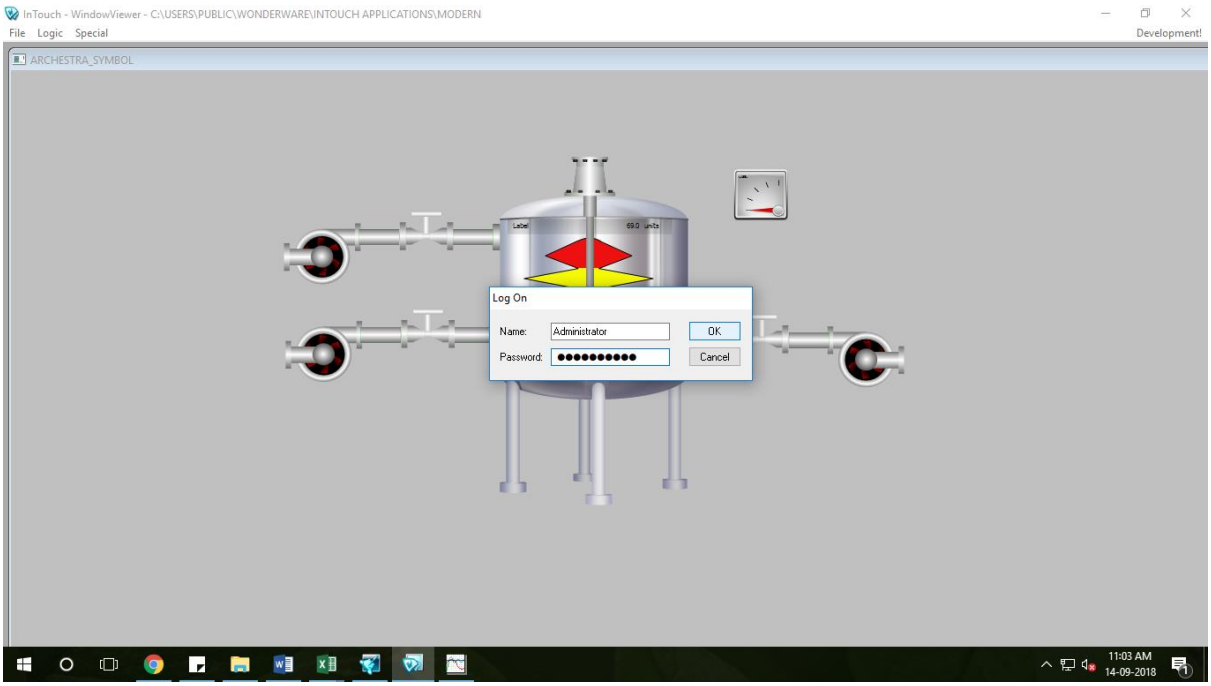
4.Select the Tag Viewer in Window Configuration Menus. Than select apply and ok.



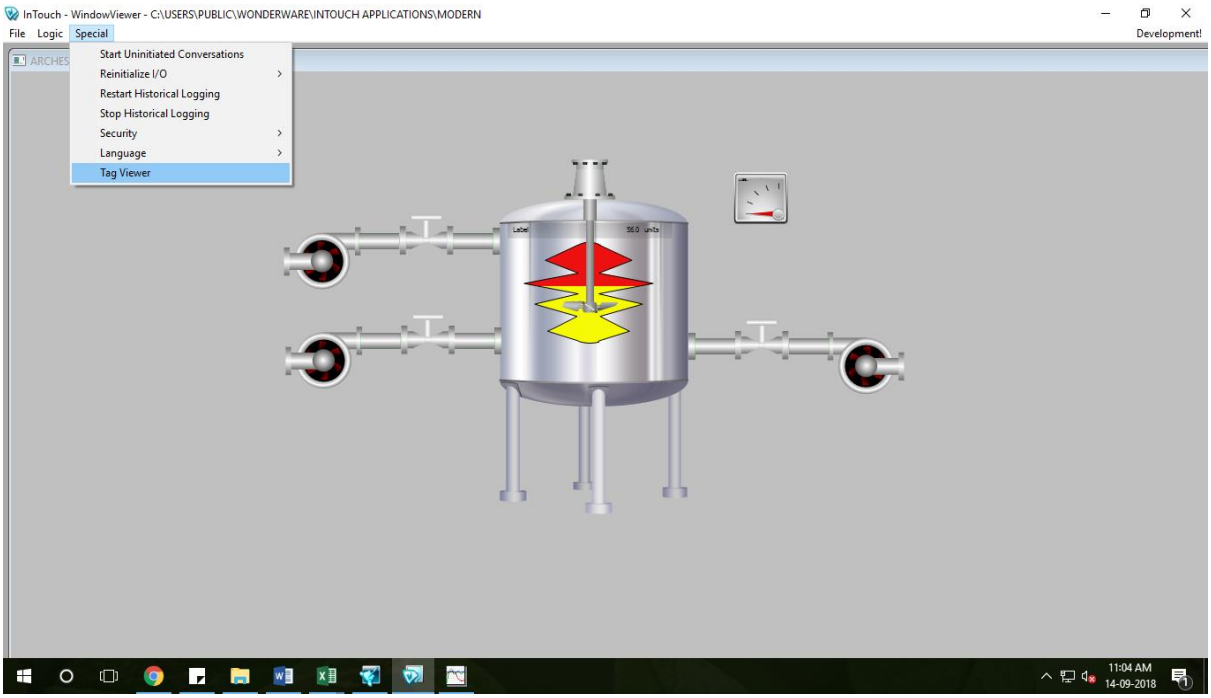
5. Go to Runtime. and go to specail >security>Log On



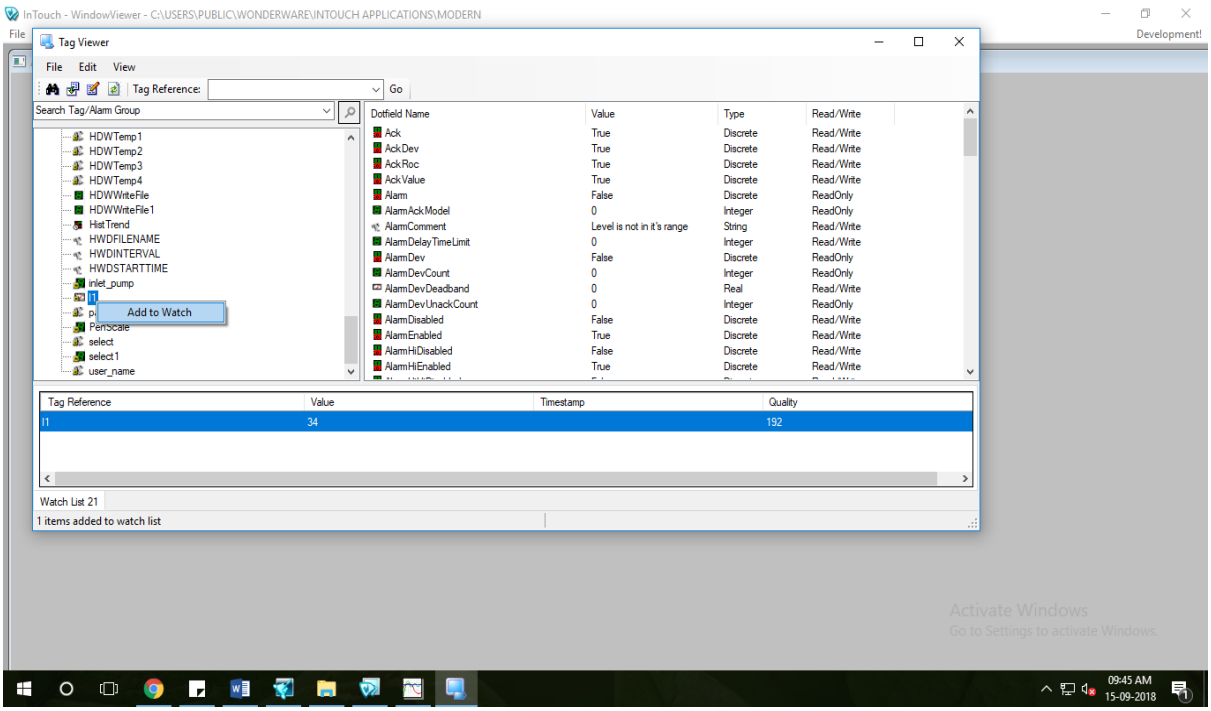
6. Name: Administrator
   Password: Wonderware & select ok.



7. Now go to Special > Tag viewer.

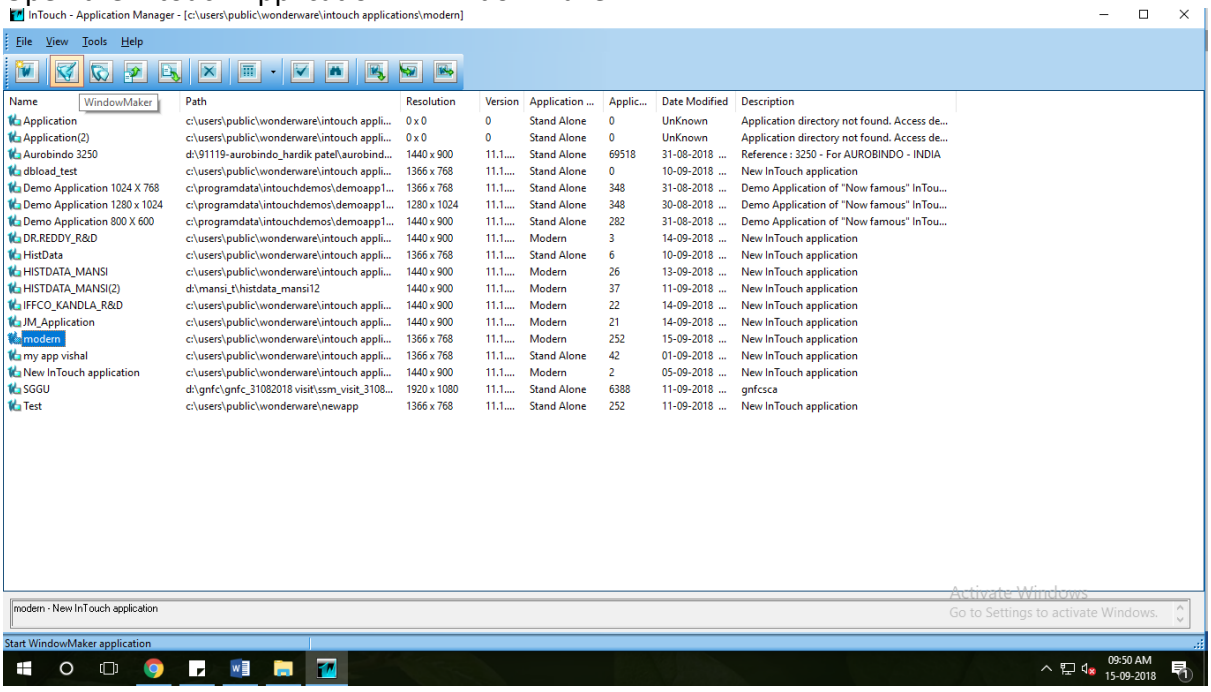


8. Select a Tag and right click Add to watch window.

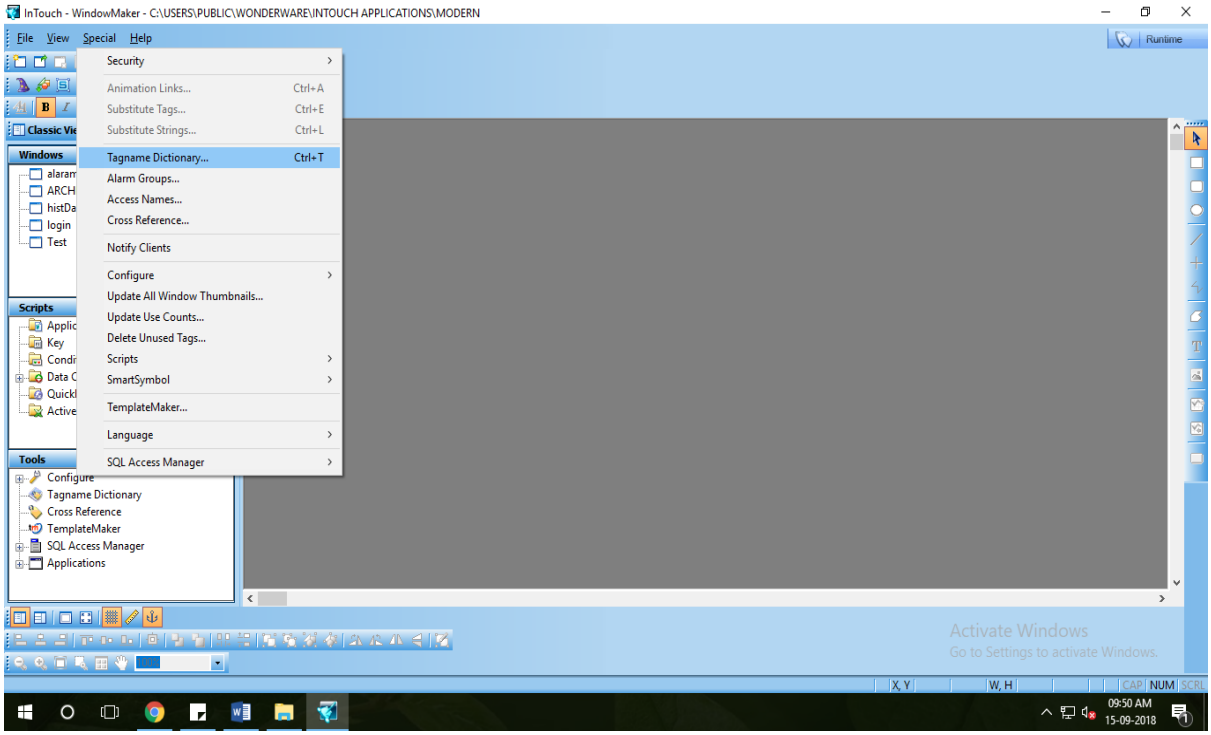


2.6.2 Create tags

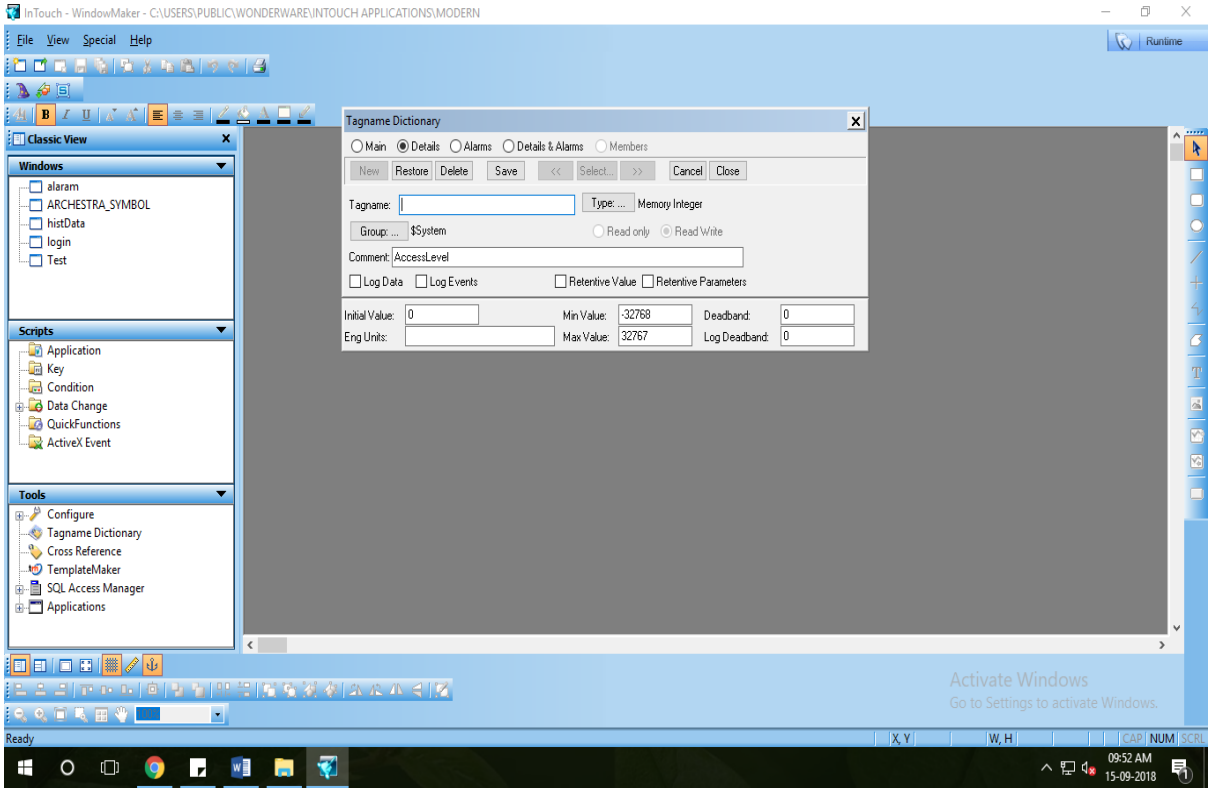
1. Open the Intouch Application in WindowMaker.



2. Go to Special >Tag name Dictionary else Press Ctrl+T.



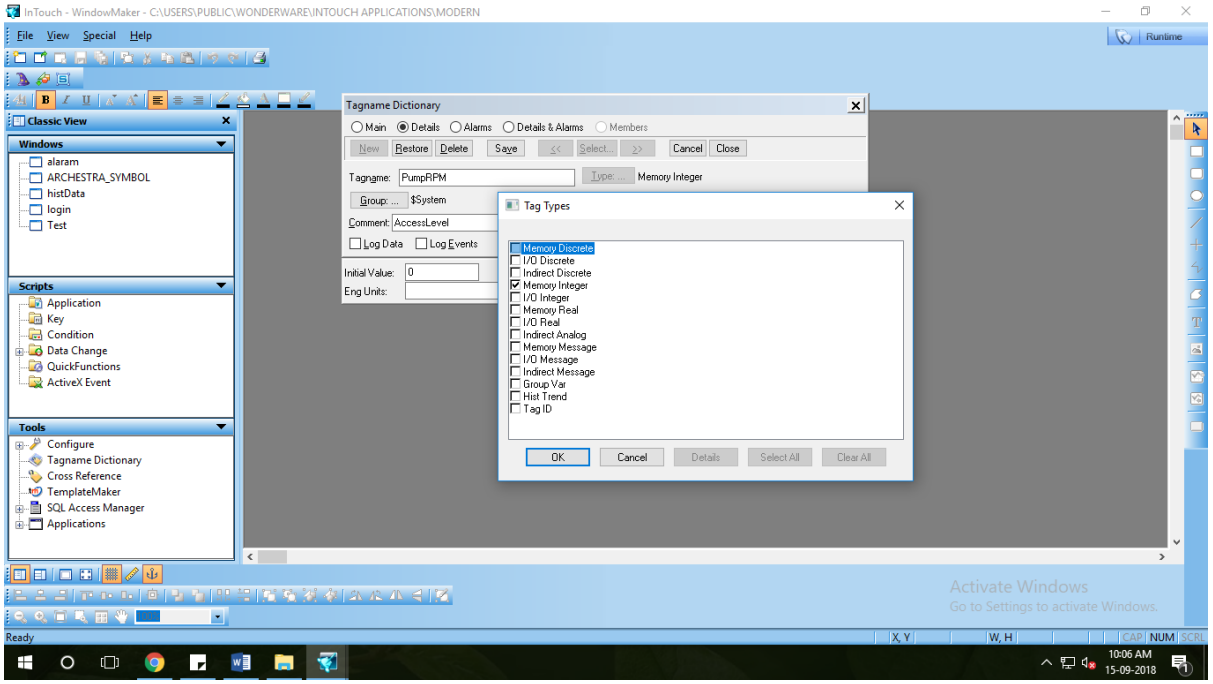
3. Select New it will allow you to create a new Tag.



3. Give a Name to Tag and select its Type.
   Notes on Naming convention:

- The multiple character wildcard is the asterisk (*). For example, “Asyn*” searches for all tag names beginning with the characters “Asyn”.

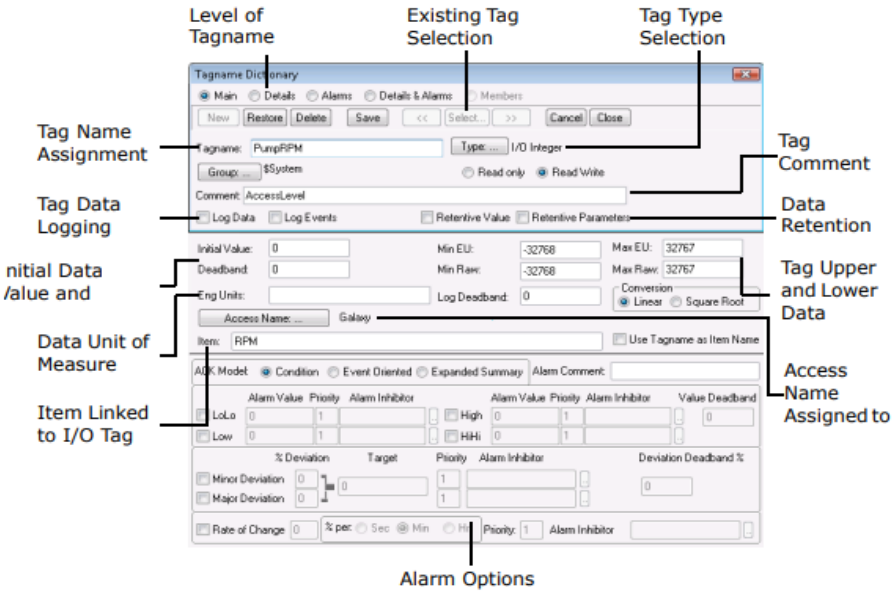
- The single character wildcard is the question mark (?). For example, the “Tag?” filter searches for all four-character tagnames that begin with “Tag”. The “Tag*” filter searches for all tagnames that begin with “Tag”.
- Any sequence of valid tagname characters, together with the two wildcard characters, is acceptable in a filter. Valid tagname characters are: A-Z, a-z, 0-9,!, @, -, #, $, %, _ and &.



Note on types of Tags:

- Memory tags define internal system constants and variables within InTouch applications. Memory tags can also act as calculated variables that are accessed by other programs
- I/O tags read or write InTouch application data to or from an external source like an I/O Server. External data includes input and output from programmable controllers, process computers, and network nodes
- Indirect tags serve as pointers to other tags. When you equate an indirect tag to another source tag, the indirect tag acts as if it is the source tag.
- A Hits Trend tag references data shown in InTouch historical trend graphs.
- Tag ID tags are assigned to a specific trend pen or change the tag assigned to a trend pen.

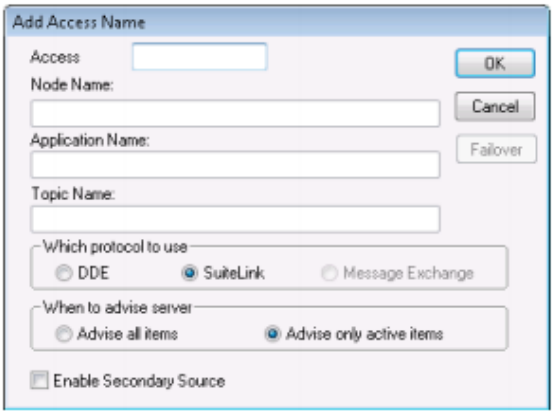
4. Tag name Dictionary dialog box with all options to define the properties of an I/O tag.



5. After Giving all properties select save.

2.6.3 Access I/O data

1. On the Special menu, click Access Names. The Access Names dialog box appears.
2. Click Add. The Add Access Name dialog box appears.



2. Set the properties of the Add Access Name dialog box. Do the following:

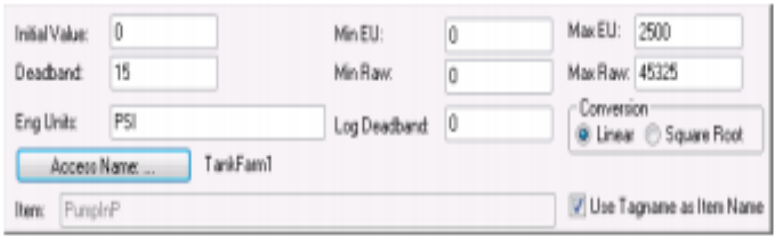
Access	Name that identifies this Access Name.
Node Name	Node name of the computer running the I/O Server program.
Application Name	Name of the I/O Server program running on the node. For example, DASMTEthernet identifies a Wonderware Mitsubishi Ethernet DAServer application name. For more information about the application names associated with Wonderware DAServers, refer to the Wonderware DAServer documentation.
Topic Name	Label assigned to the I/O Server Device Group.

3. Select the communication protocol to communicate with the I/O Server.

5. Select the option to poll information stored on the server.
   Note:
   Advise all items: Polls for all data whether or not it is in visible windows, alarmed, logged, trended, or used in a script. Selecting this option affects performance, so its use is not recommended.
   Advise only active items: Polls for data shown in visible windows and data that is alarmed, logged, trended, or used in any script.

6. Select ok.

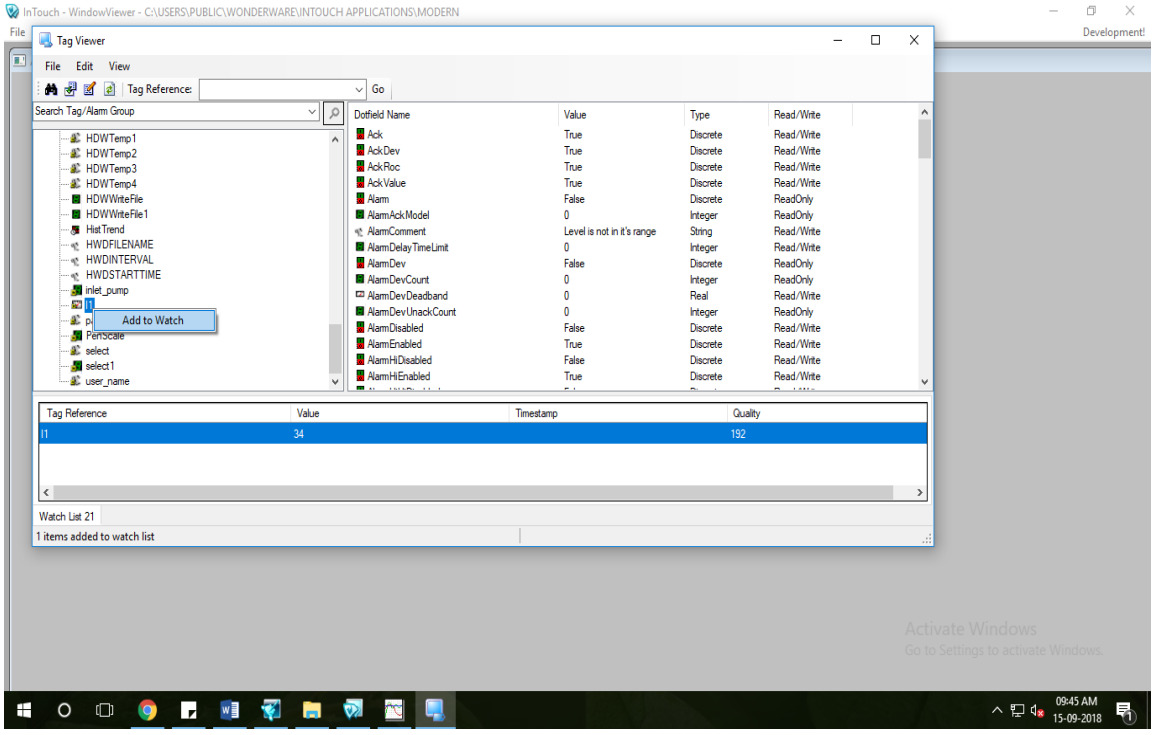
7. Assign an I/O tag type to the tag from the Tag Types dialog box. The detail portion of the Tagname Dictionary dialog box appears.



8. Click Access Name to define or select the Access Name assigned to the tag.
9. Add an Access Name or accept the default.
10. To read and write data to and from a process data point in the server program, type the Item Name in the Item box.

2.6.4 Use Tag Viewer to monitor tags

1. Enable Tag viewer.
2. Select Tag and Add to watch window.



2.6.5 Validate data quality

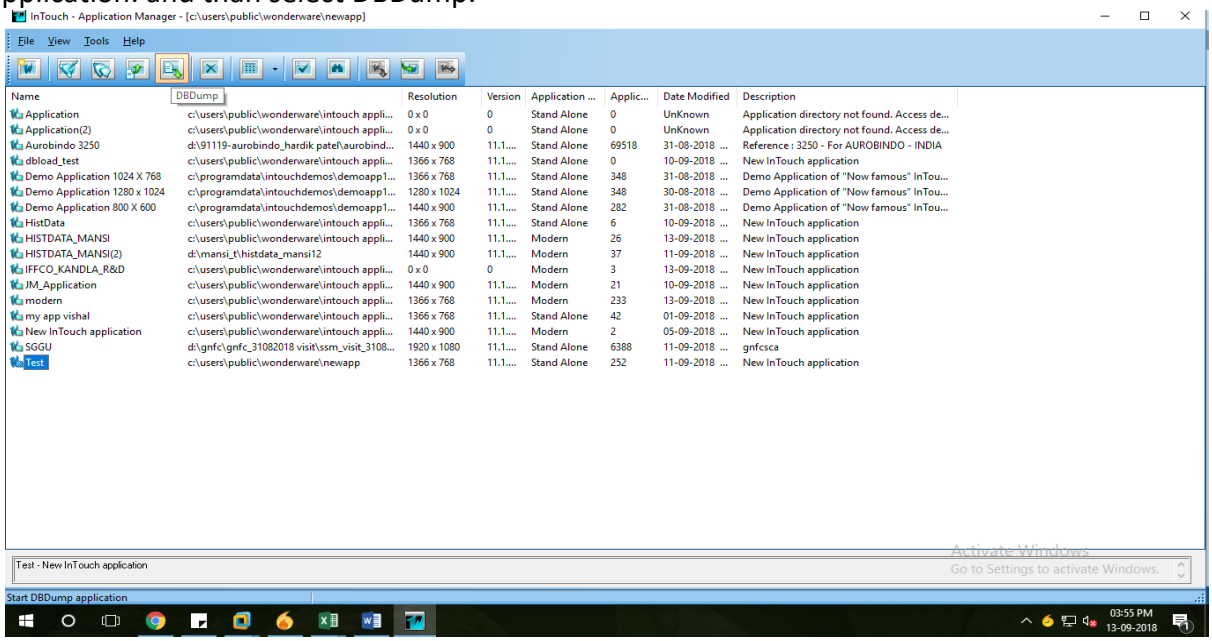
1. Enable Tag viewer.
2. Add tag to watch window.
3. See the quality of Tag Reference.

Quality States	Decimal Value
Good	192
Clamped High	86
Clamped Low	85
Cannot Convert	64
Communications Failed	24
Cannot Access Point	4

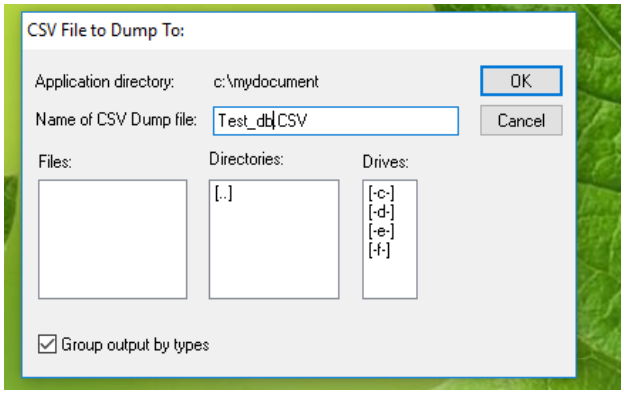
2.7 Large-Scale Tag Manipulation

2.7.1 Create a .CSV dump file using DB Dump

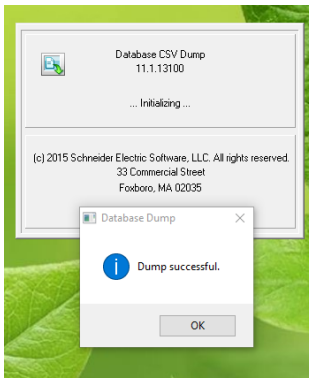
1 .Open Intouch Application Manager. Select the application of which tag you want to load in other application. and than select DBDump.



2.select the path where you want to store the csv(comma separated value) file.

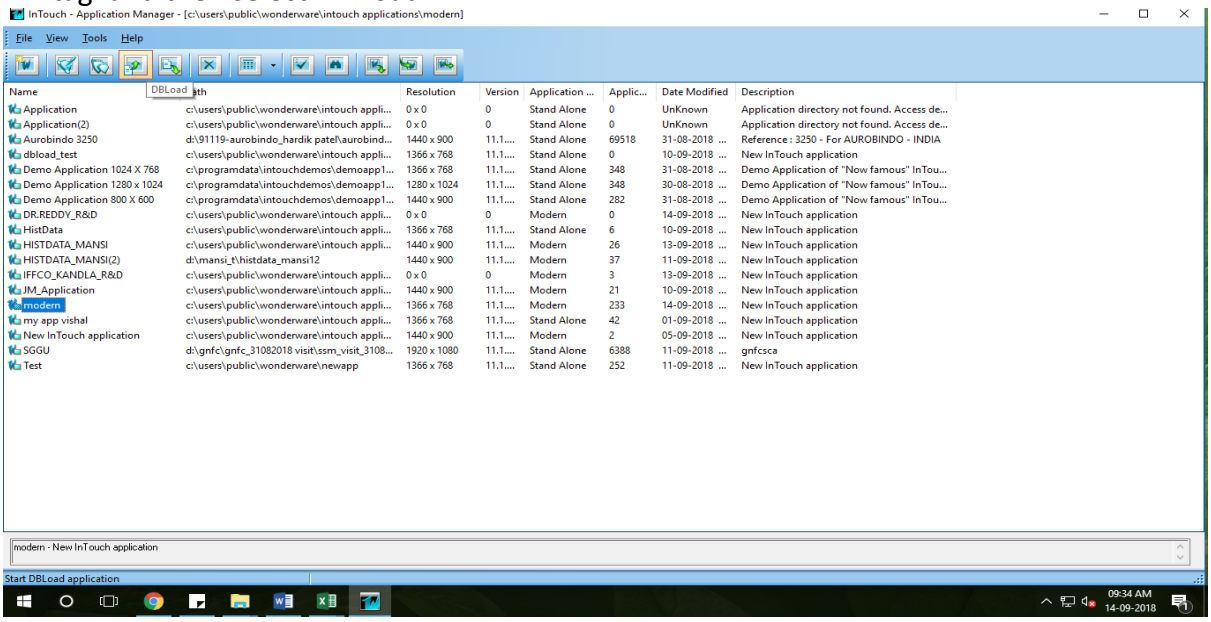


3. than it will show you successful DBDump window.

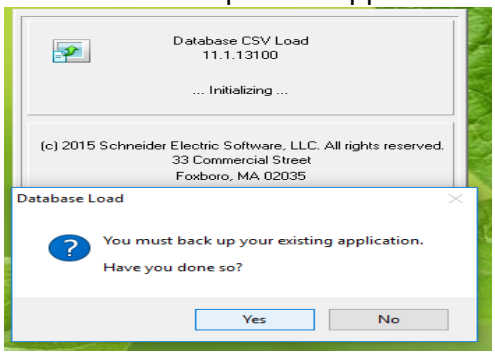


2.7.2 Load a .CSV file with DB Load

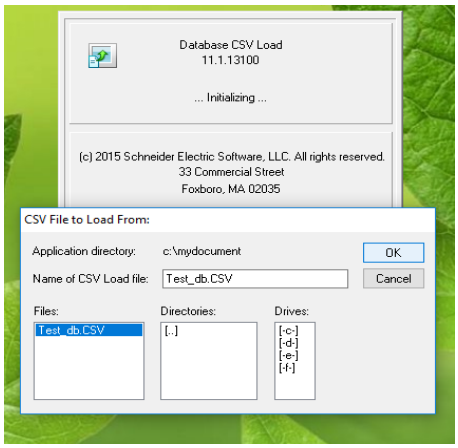
1. Now, Open Intouch Application Manager. Select the application in which you want to load tag. and then select DB Load.



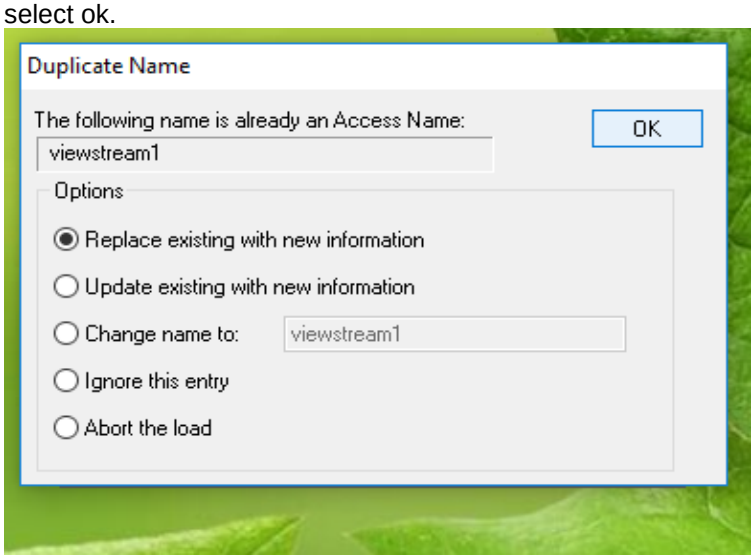
2.Take the backup of the application and choose yes in popup window of Database Load.



3.Select the path where the csv file is saved.



4. Because of default mode is ASK ,It will ask you which action you want to take with duplicate Name and select ok.



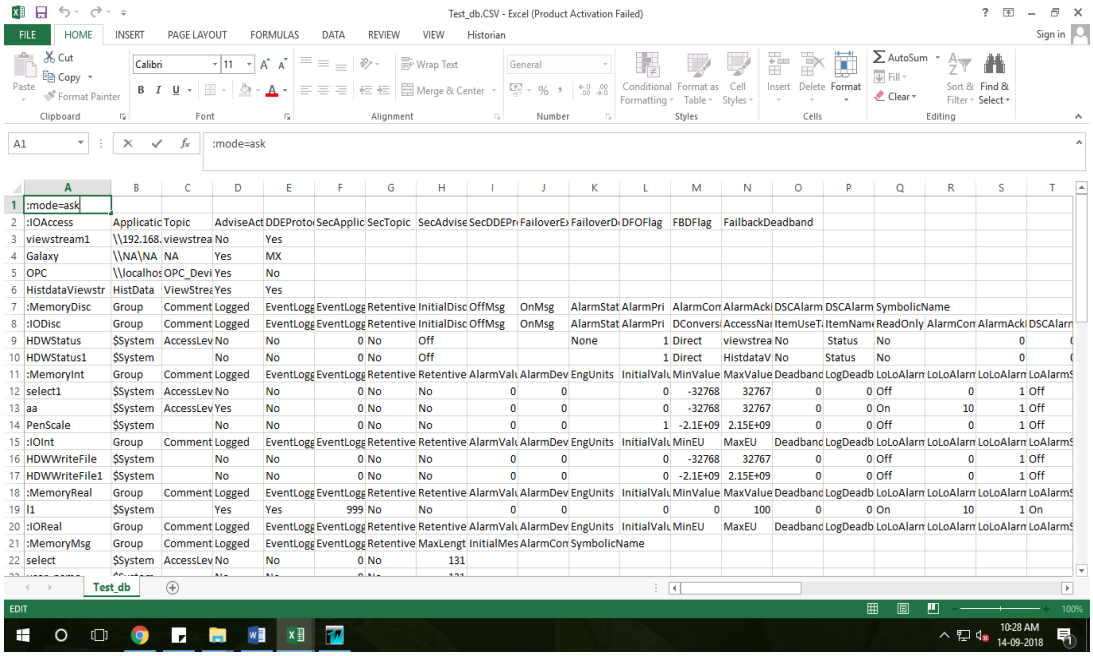
2.7.3 Types of Mode

- MODE=REPLACE
  If a duplicate tag is encountered, the DBLoad utility deletes the existing tag in the Tagname Dictionary and replaces it with the tag from the import file with the same name.
- MODE=UPDATE
  If a duplicate tag is encountered, the DBLoad utility overwrites the existing tag definition in the Tagname Dictionary only with data explicitly specified from the import file. All other data associated with the tag remains unchanged in the Tagname Dictionary.
- MODE=ASK
  DBLoad stops when a duplicate tag is encountered while loading the Tagname Dictionary. The Duplicate Name dialog box appears and shows a list of options to handle duplicate tags. This is the default import mode.
- MODE=IGNORE
  The DBLoad import utility ignores the duplicate tag and continues processing the remaining records of the import file.
- MODE=TERMINATE
  The DBLoad import operation stops when a duplicate tag is encountered.
- MODE=TEST
  DBLoad scans the import file for errors and does not attempt to load tag definitions into the

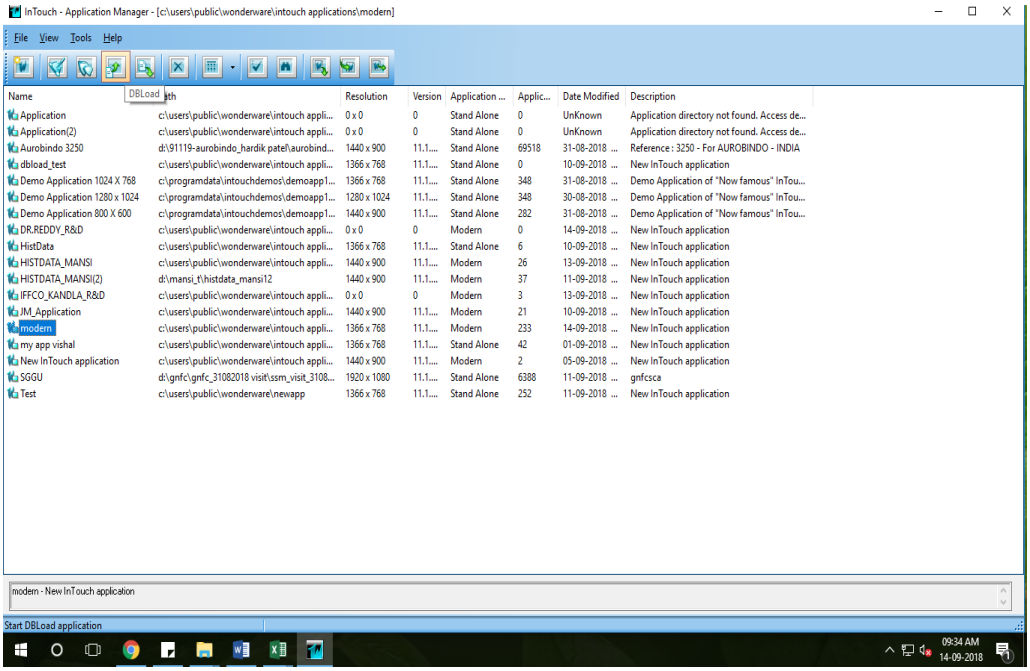
Tagname Dictionary. DBLoad generates a report that identifies any format errors by line number and location in the import file

2.7.4 Mode=Ask(Note: It will ask you the action for every single duplicate Tag)

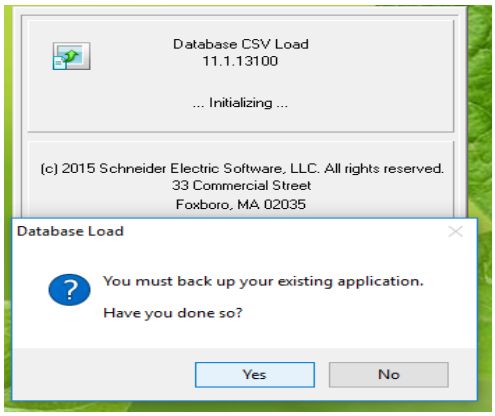
1. Open Intouch Application Manager. Select the application of which tag you want to load in other application. and than select DBdump.This will create a csv file as above steps.open the csv file.
   Make Mode=ask in A1 cell & save it.



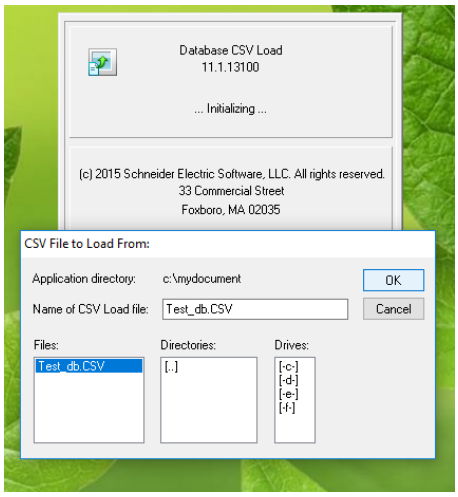
2. Now ,Open Intouch Application Manager. Select the application in which you want to load tag. and than select DBLoad.



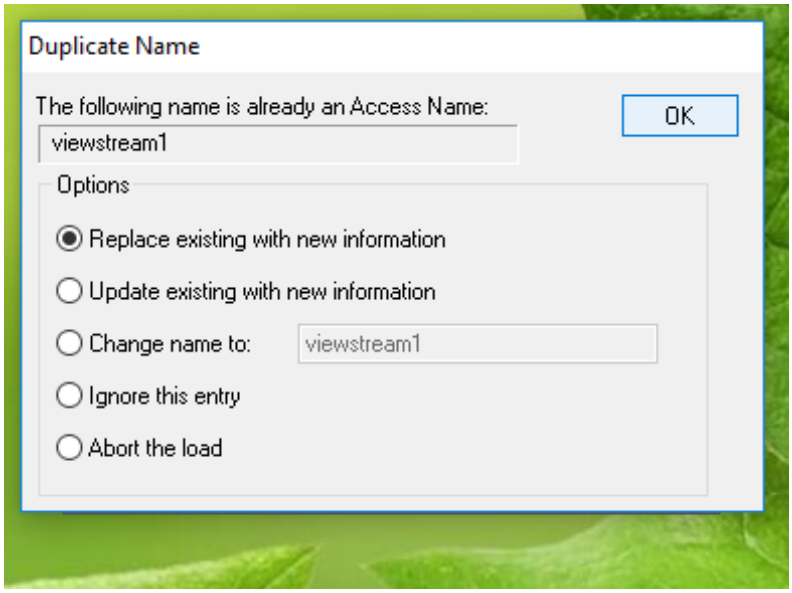
3.Take the backup of the application and choose yes in popup window of Database Load.



4.Select the path where the csv file is saved.

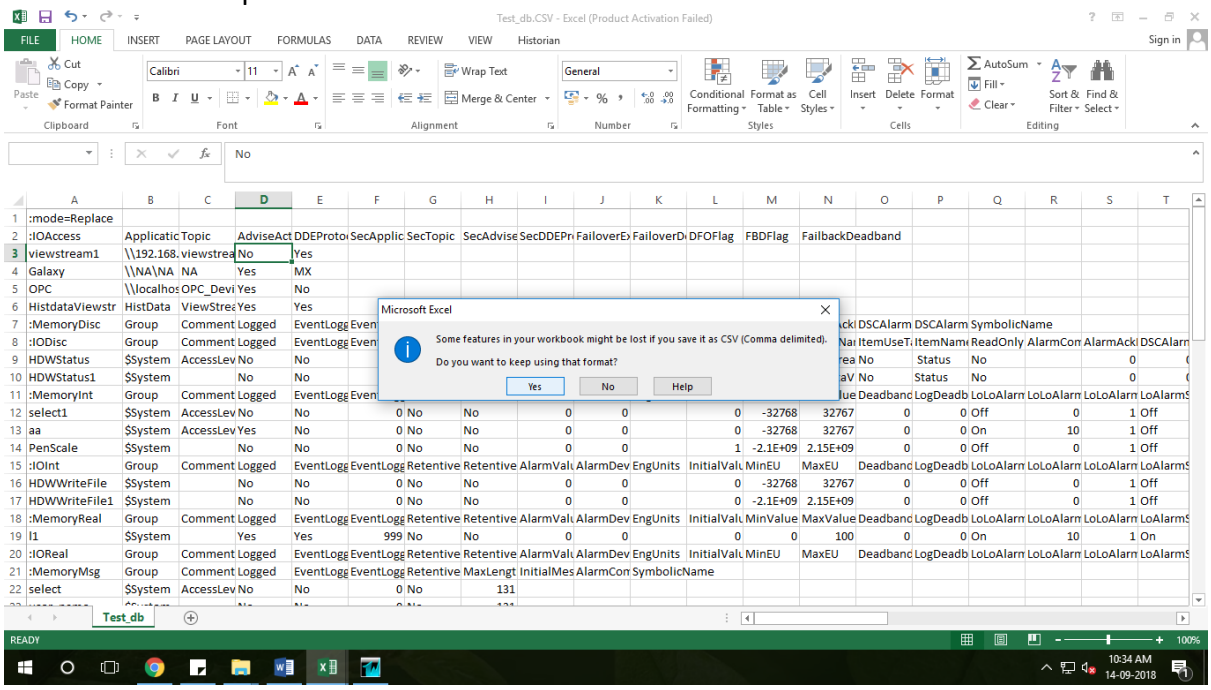


5.Because of default mode is ASK ,It will ask you which action you want to take with duplicate Name and select ok.

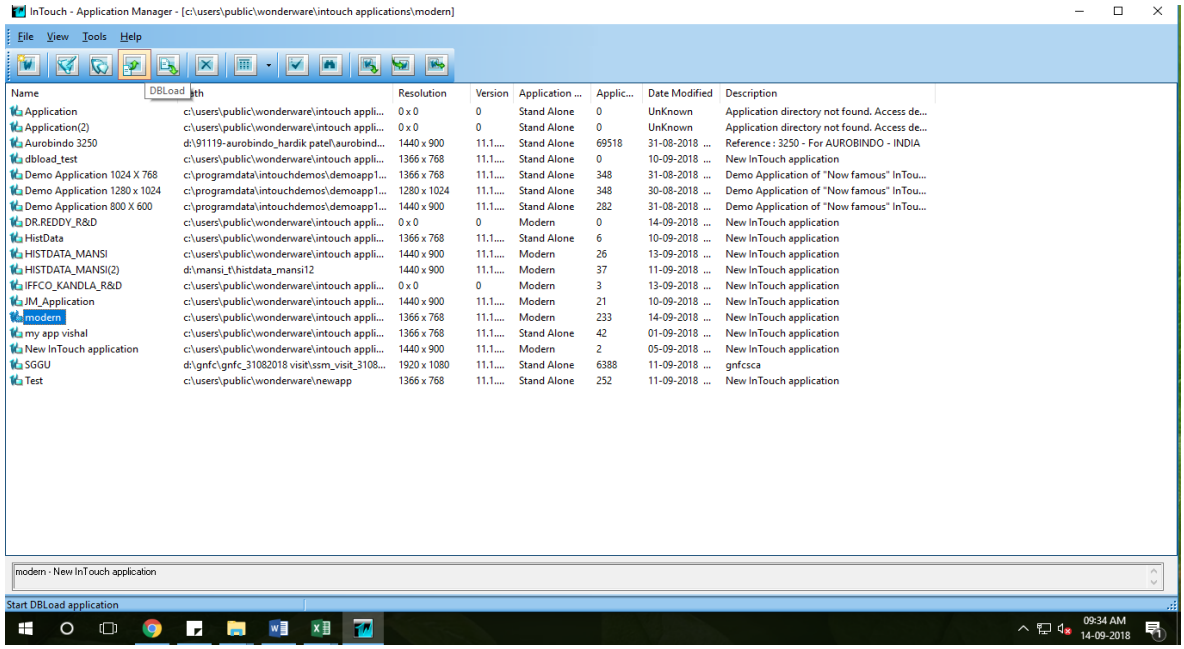


2.7.5 MODE=REPLACE(Note: It will delete old Tags and replace with new Tag)

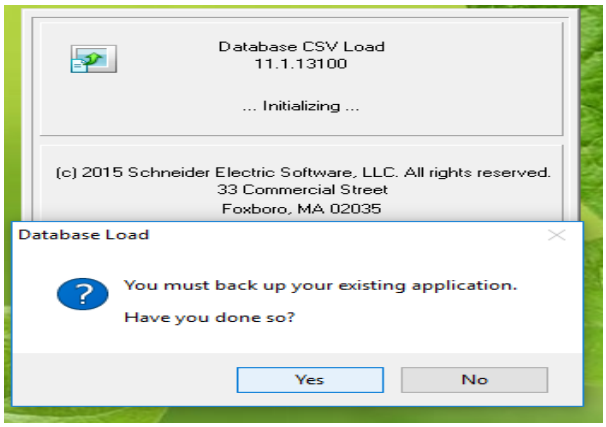
1. Open Intouch Application Manager. Select the application of which tag you want to load in other application. and than select DBdump.This will create a csv file as above steps.open the csv file.
   Make Mode=Replace in A1 cell & save it.



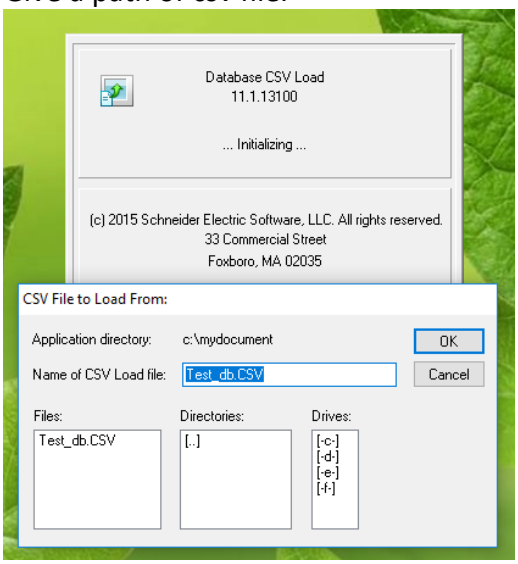
2. Now ,Open Intouch Application Manager. Select the application in which you want to load tag. and than select DBLoad.



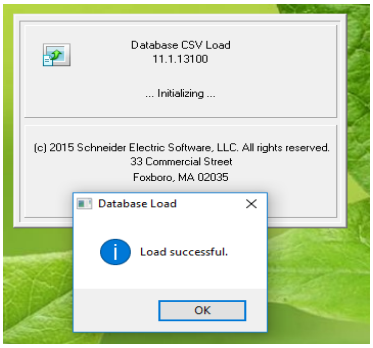
3.Take the back up of old application and than select yes in databse load.



3. Give a path of csv file.

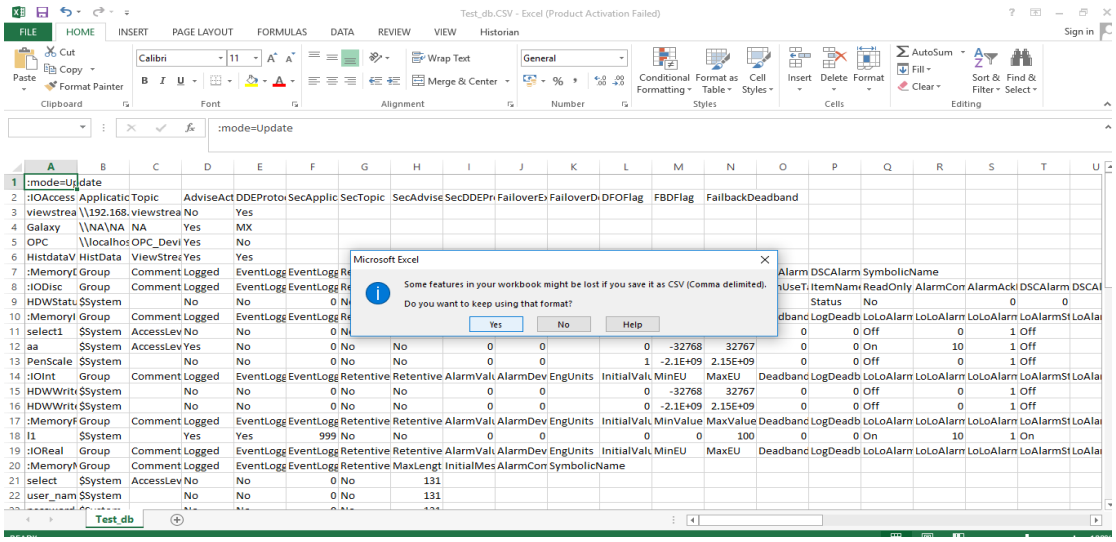


4. After selecting ok ,it will show you the message of successful.

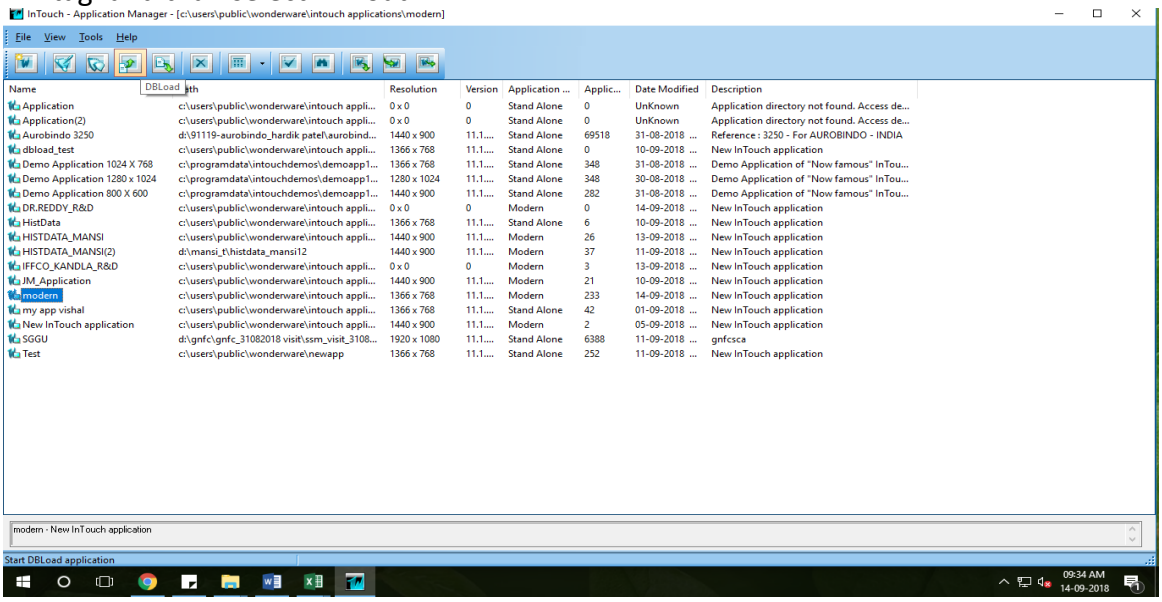


2.7.6 MODE=UPDATE (Note: It will add the new tag and change duplicate Tag)

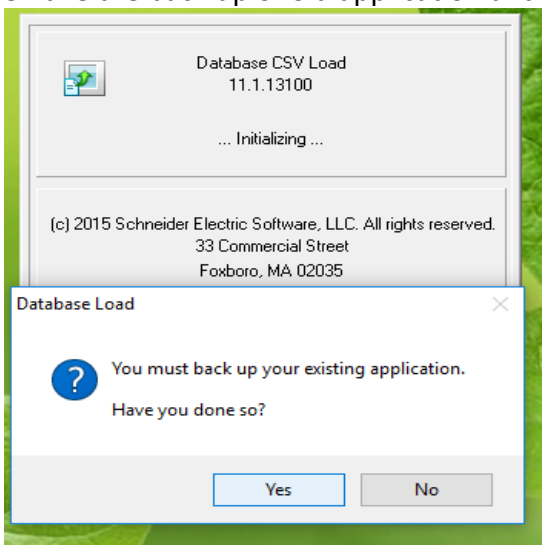
1. Open Intouch Application Manager. Select the application of which tag you want to load in other application. and than select DBdump.This will create a csv file as above steps.open the csv file.
   Make Mode=Replace in A1 cell & save it.



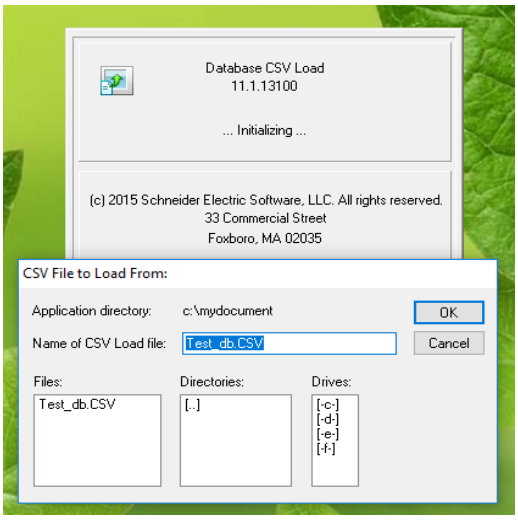
2. Now ,Open Intouch Application Manager. Select the application in which you want to load tag. and than select DBLoad.



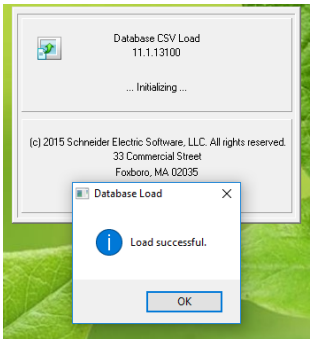
3.Take the back up of old application and than select yes in databse load.



4.Give a path of csv file.

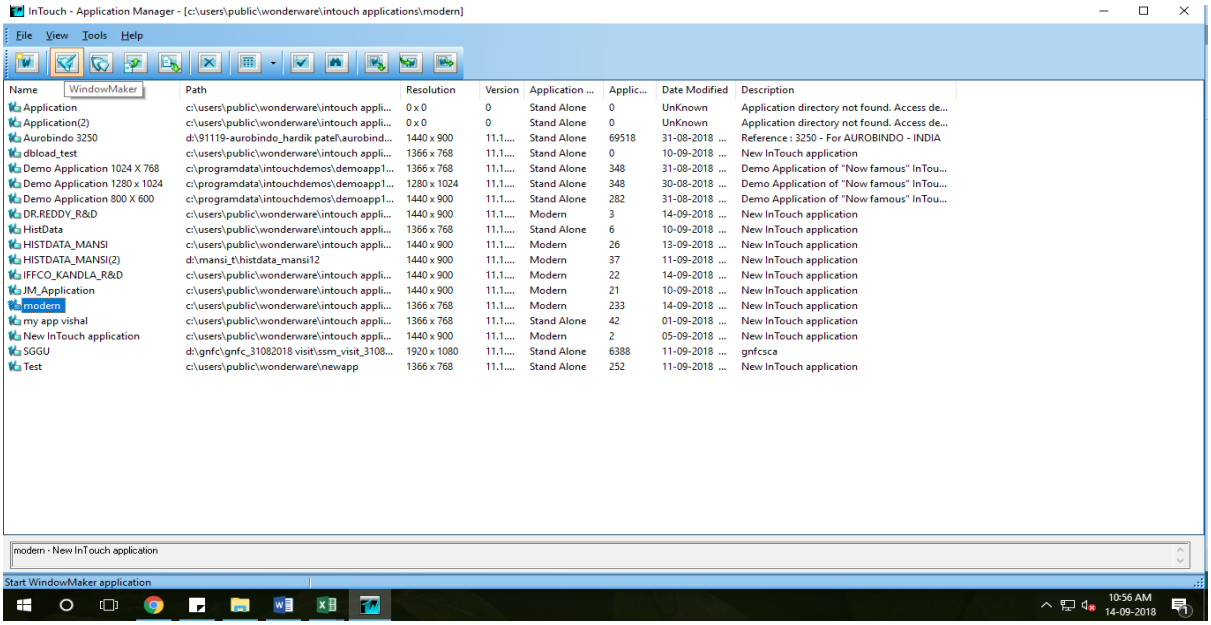


5.After selecting ok ,it will show you the message of successful.

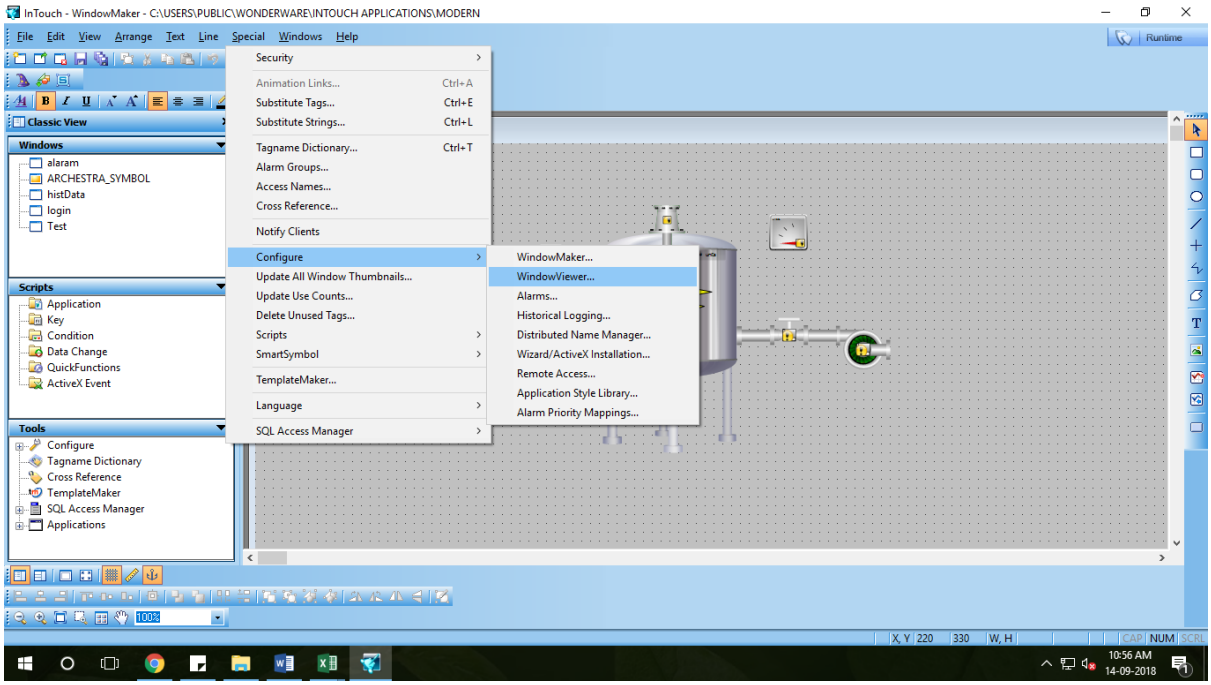


2.7.7 Add a new watch window to Tag Viewer

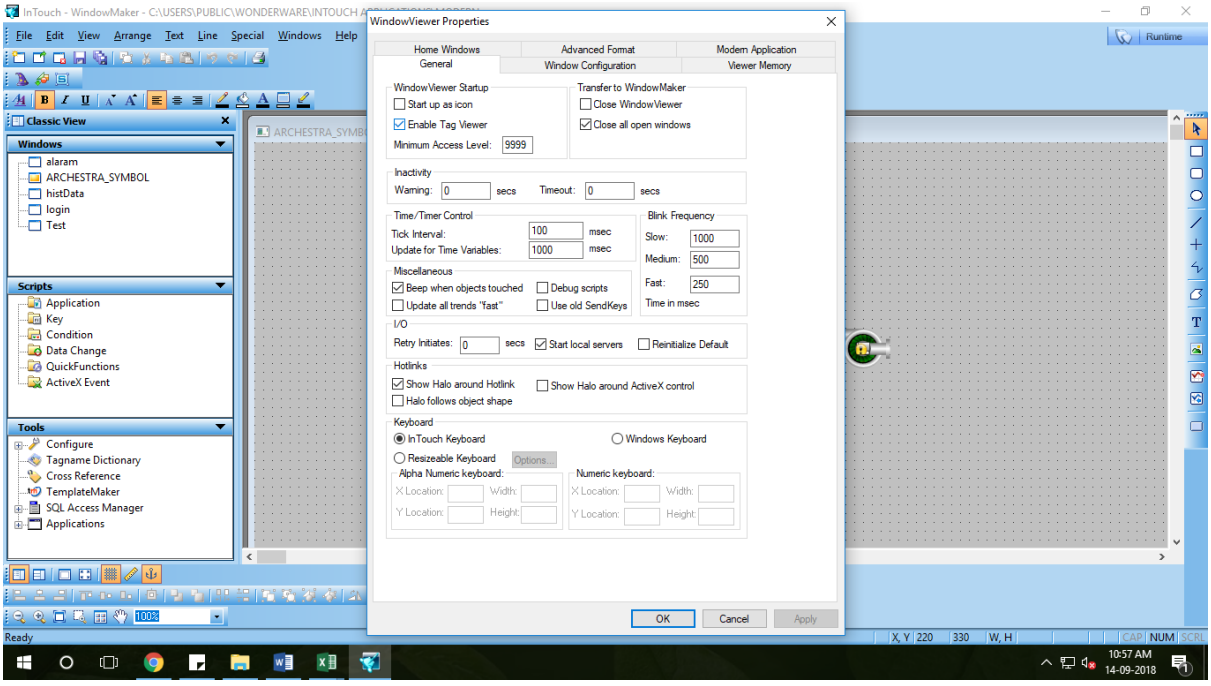
5. Open the New intouch application WindowMaker.



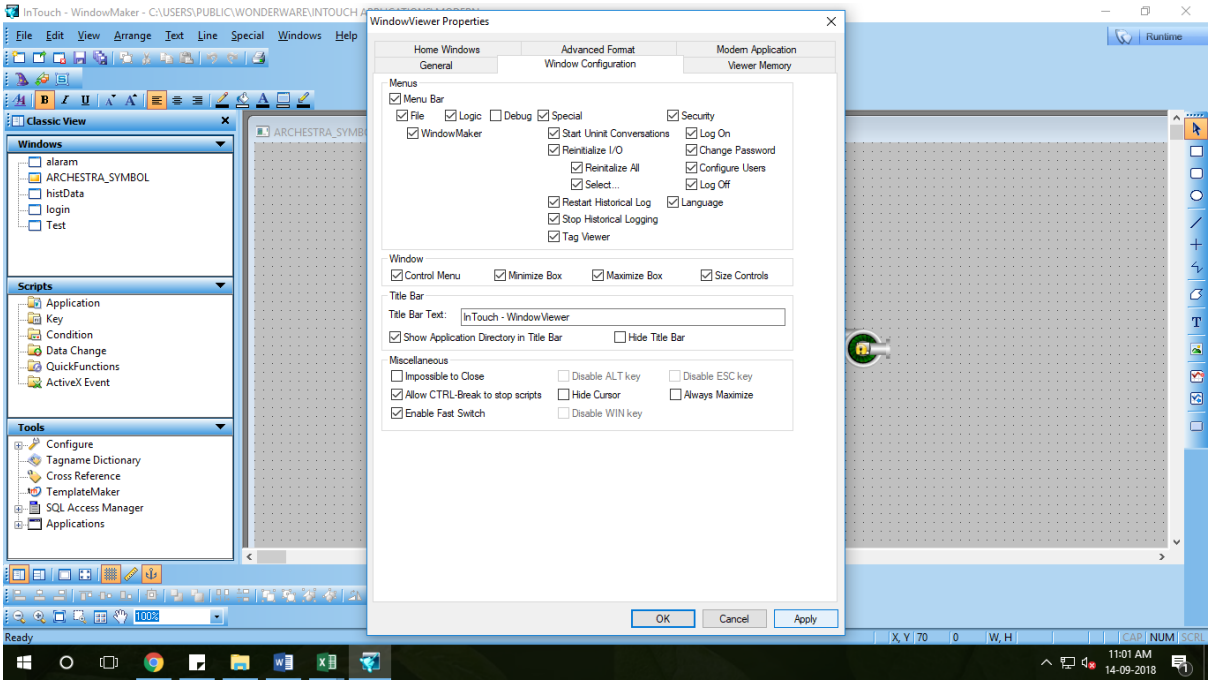
6. Go to Special> Configure>WindowViwer



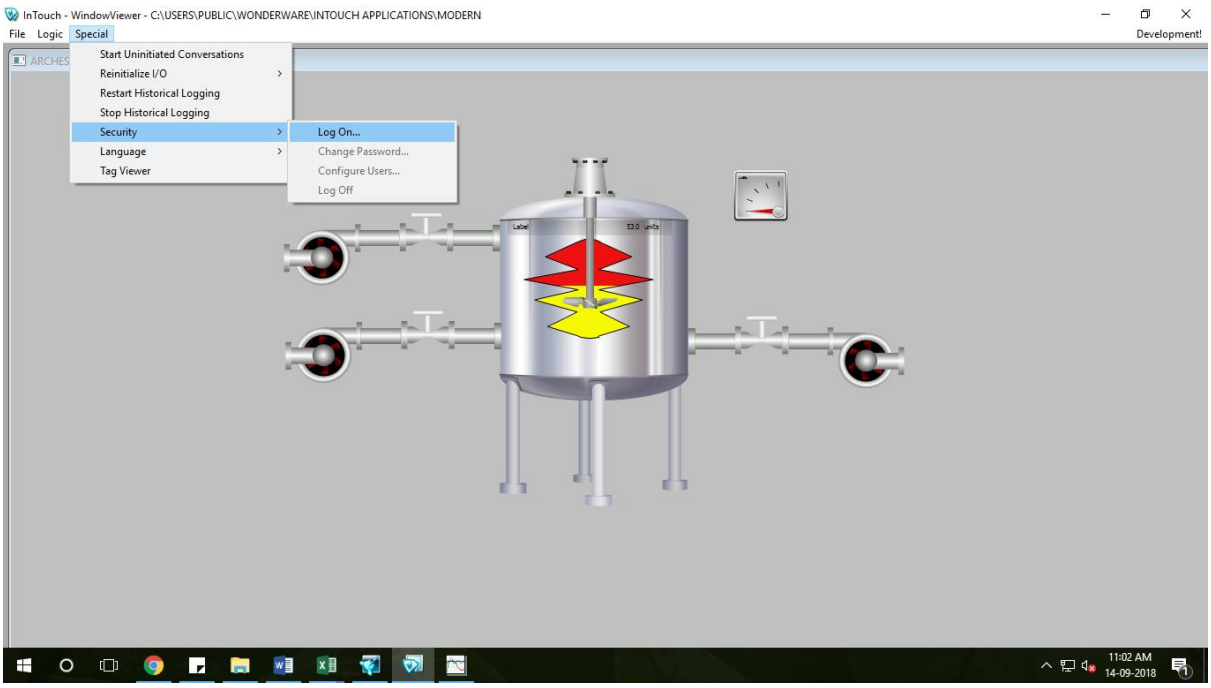
3. Enable Tag Viewer in General WindowViewer start-up. And minimum Access Level: 9999.



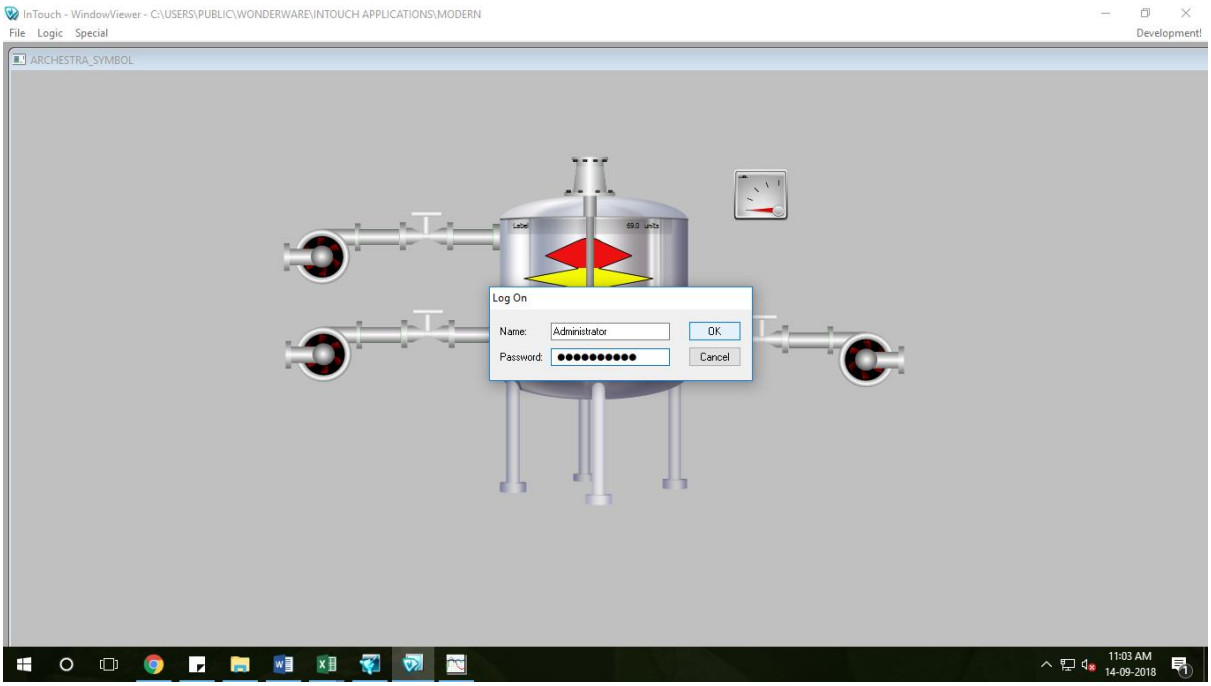
4.Select the Tag Viwer in Window Configuration Menus. Than select apply and ok.



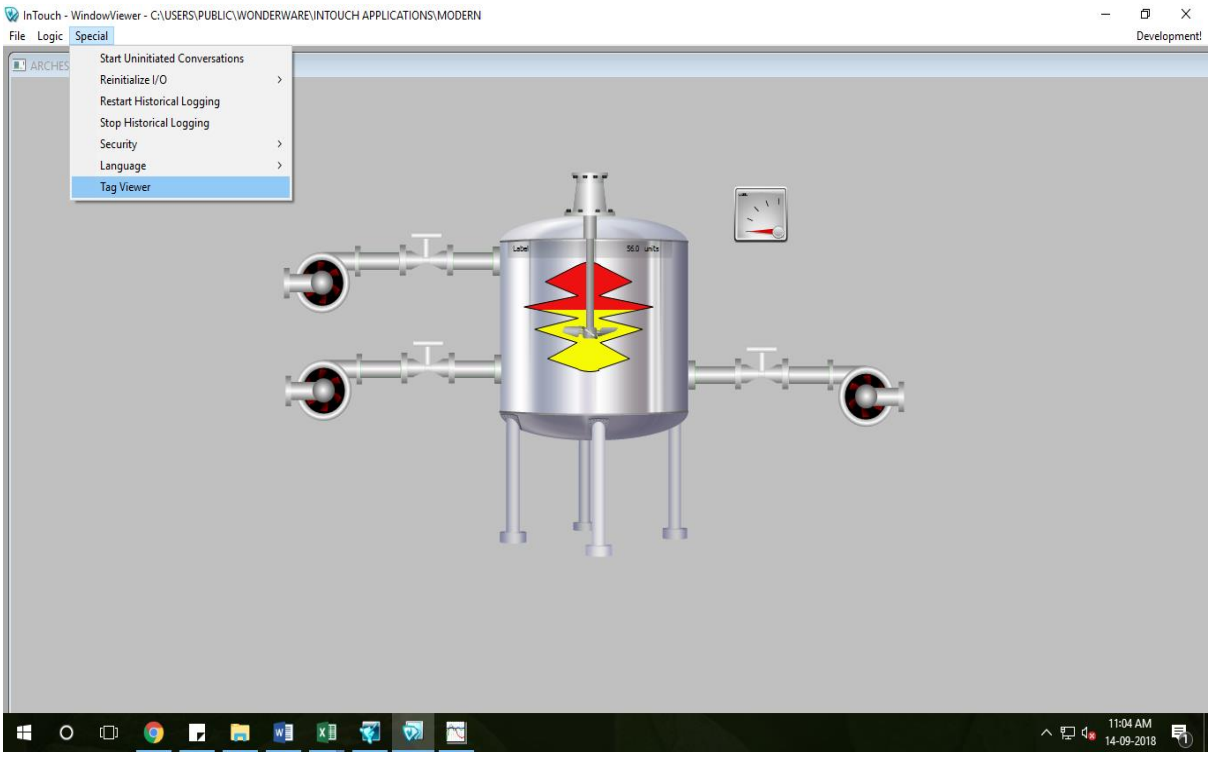
5.Go to Runtime . and go to specail >security>Log On



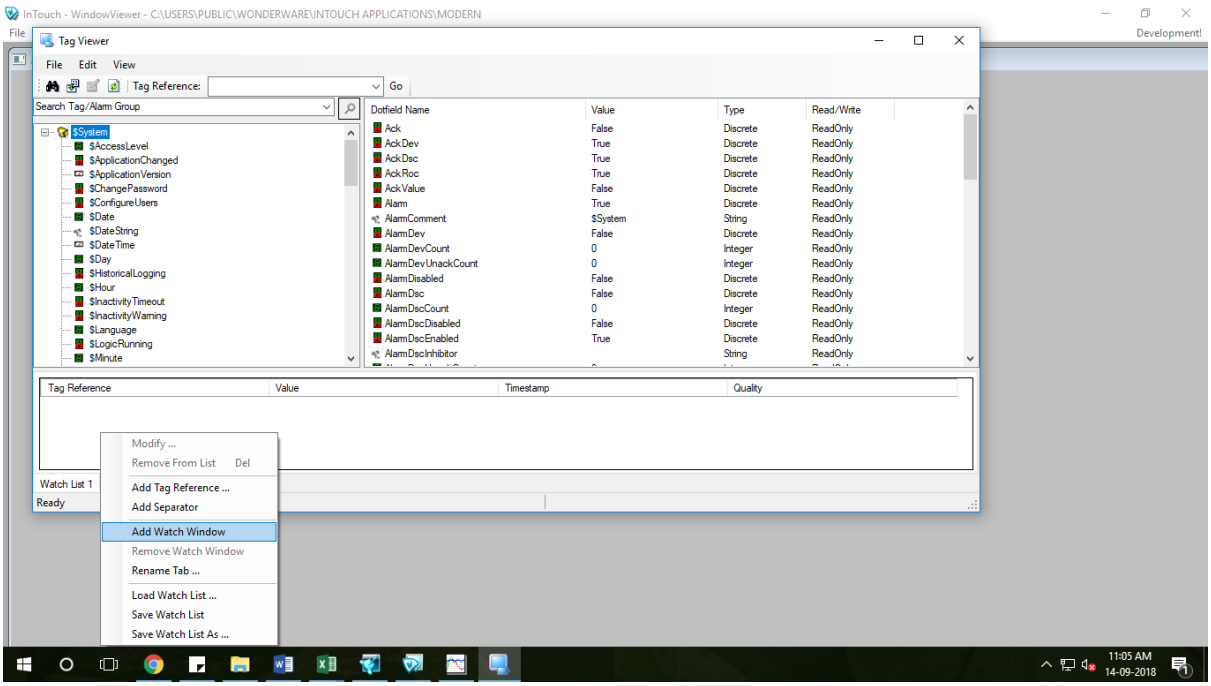
5. Name: Administrator
   Password:Wonderware & select ok.



6. Now go to Special > Tag viwer.



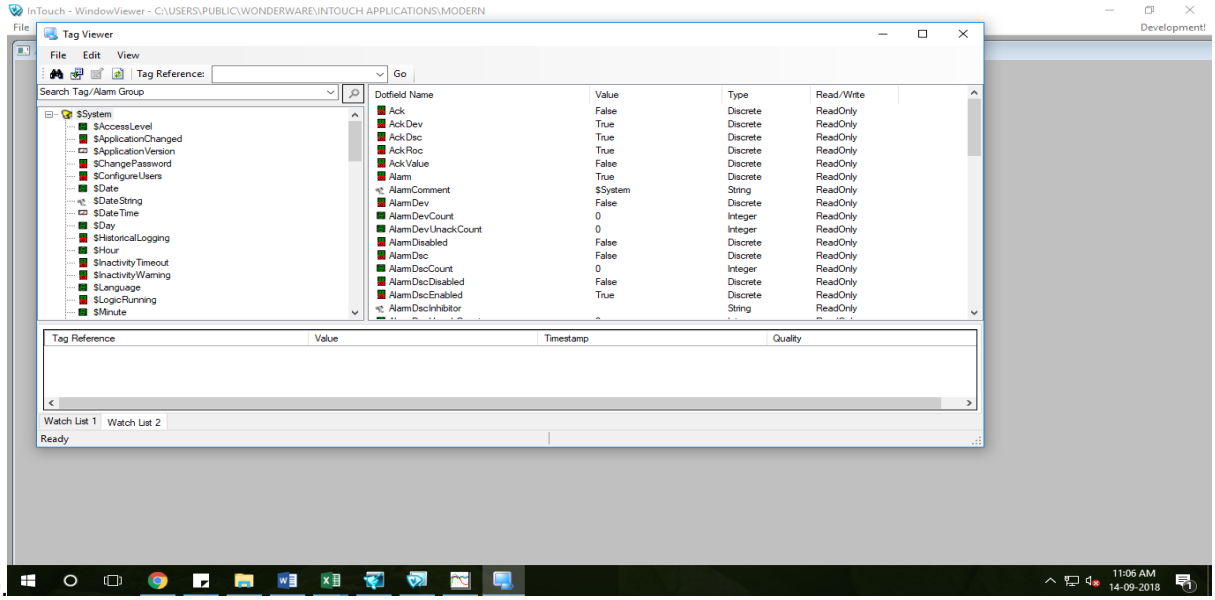
7. It will Launch Tag viwer . Now right click on watch window and select Add new watch window.



8.It will launch a new watch window.

The maximum number of references(Tag) that can be added to watch window is 2000.

The maximum number of watch windows is 50.

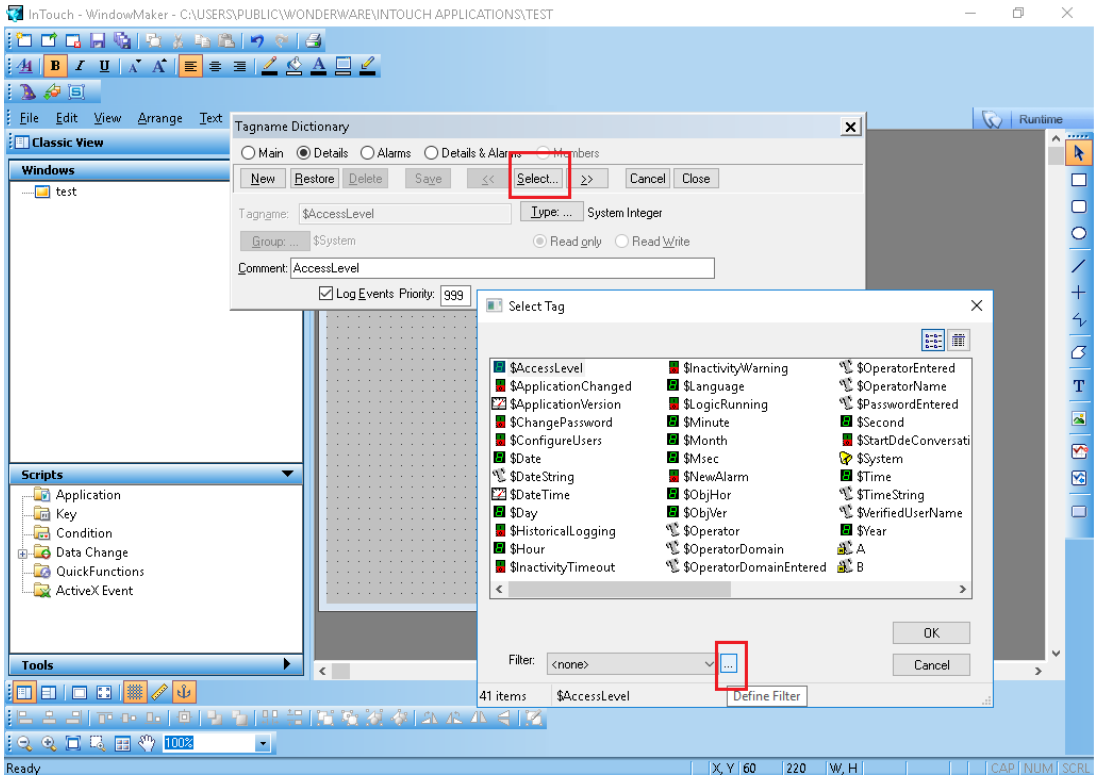


is 50.

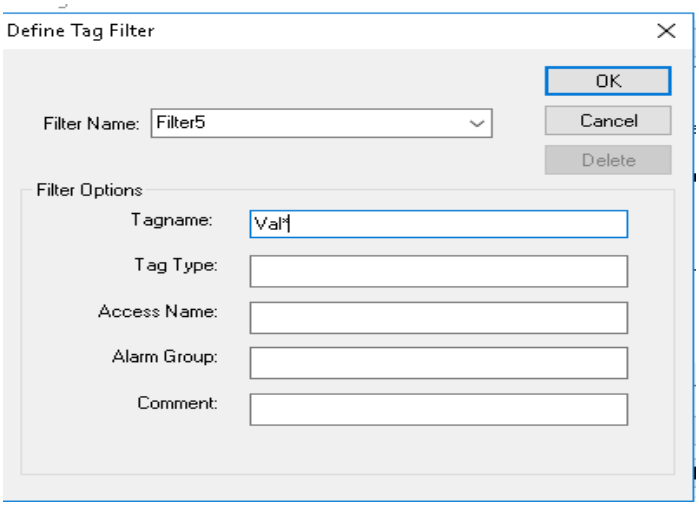
2.8 Finding and Deleting Tags

2.8.1 Tag Filter

1. Open the InTouch Application .Open tag name dictionary in that go to select and click on define filter for filter the tag.

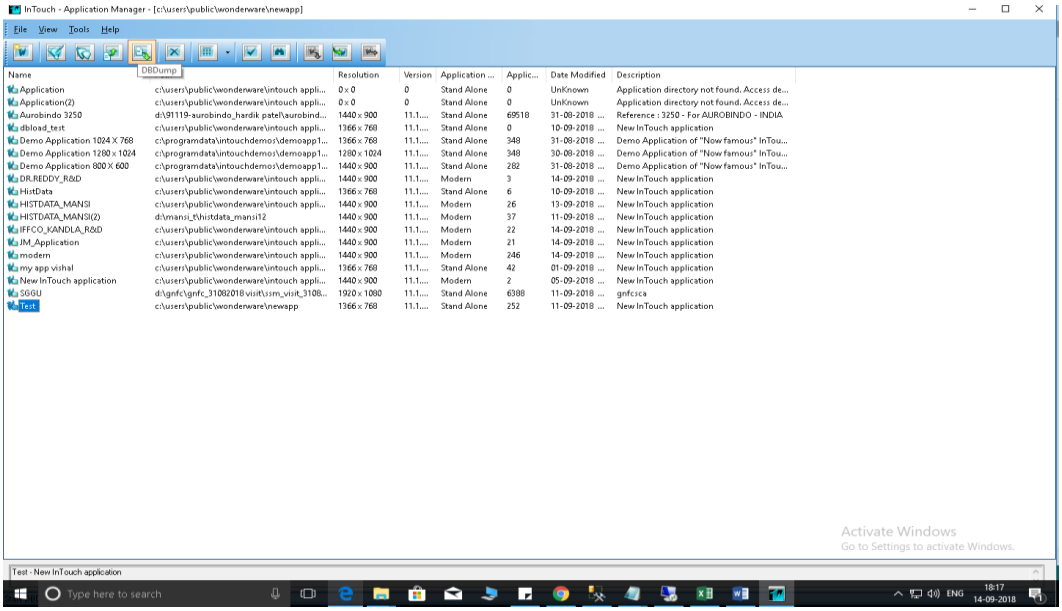


2. Nowone tag filter window is open here in find option fill the detail of tag which we want to filter and click ok.

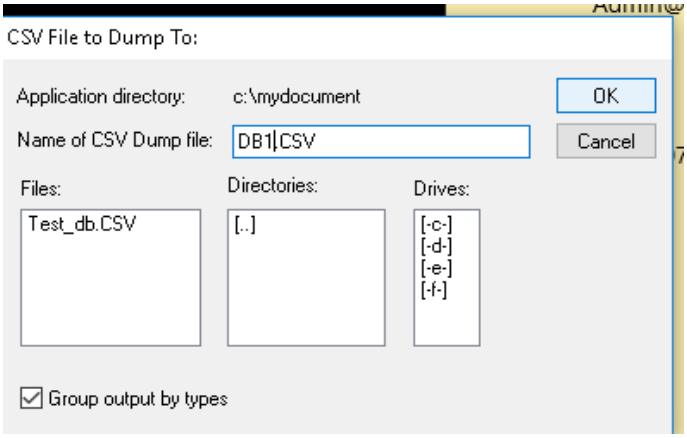


2.8.2 Printing the Tagname Dictionary

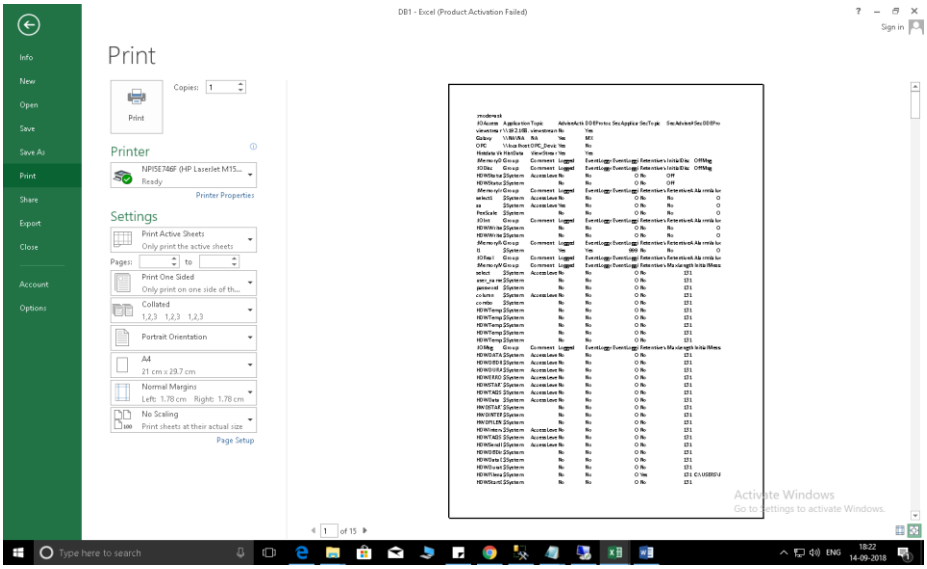
1.Open Intouch application manager and select the application and select DBDump.



2.Show the path where you want to store csv file.

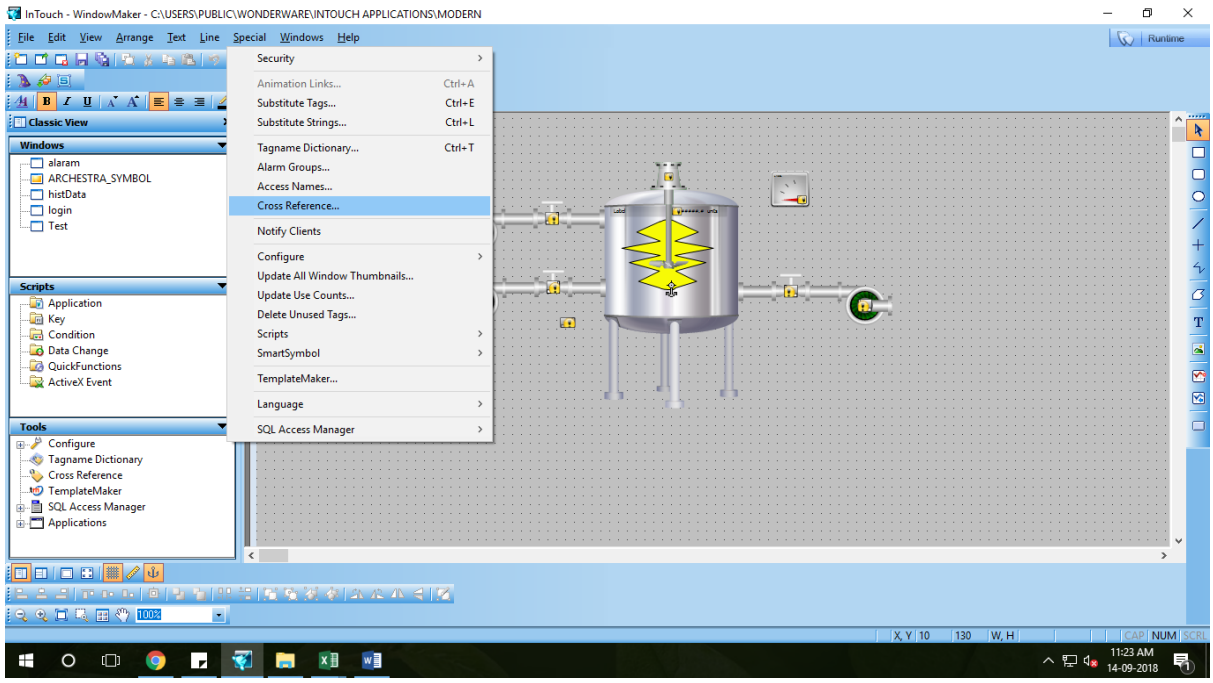


3.Open the csv file and select a print option.

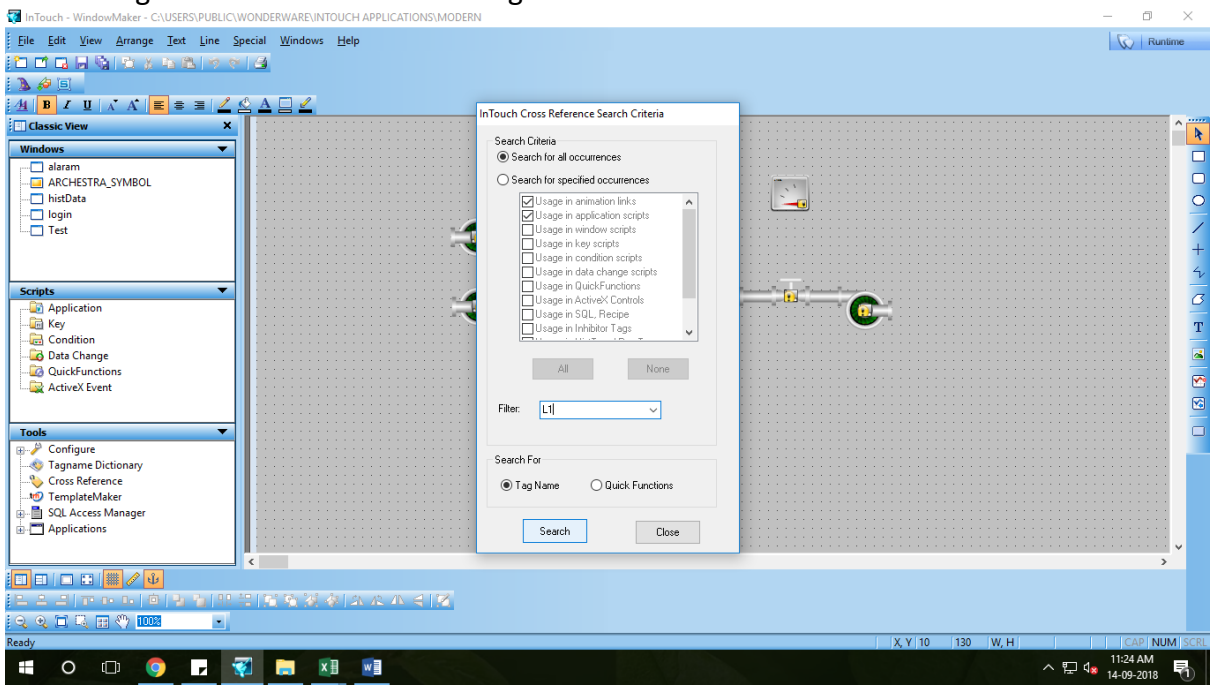


2.8.3 InTouch Cross Reference Utility

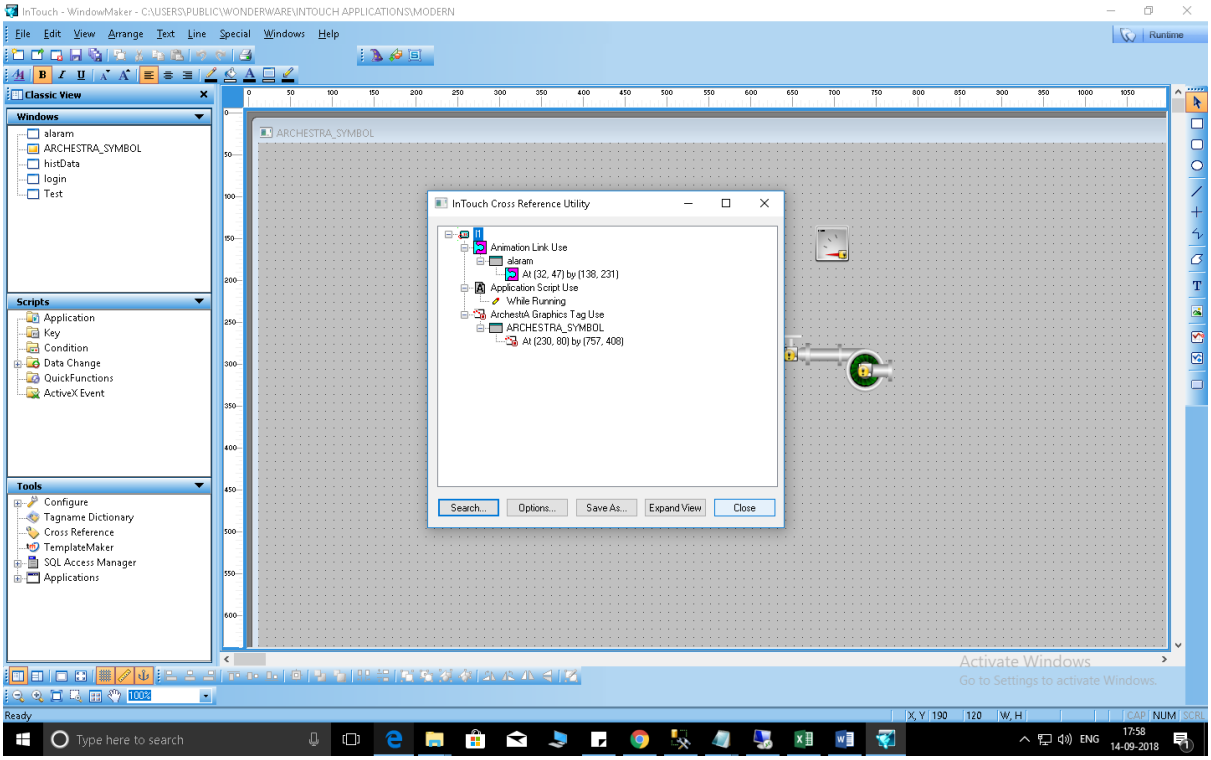
1. Open the Intouch Application .Go to Special.



2. Window of Intouch Cross Reference Search Criteria.
   Select Search For all occurrences.
   Write a tag name in filter And select tag name and select search.

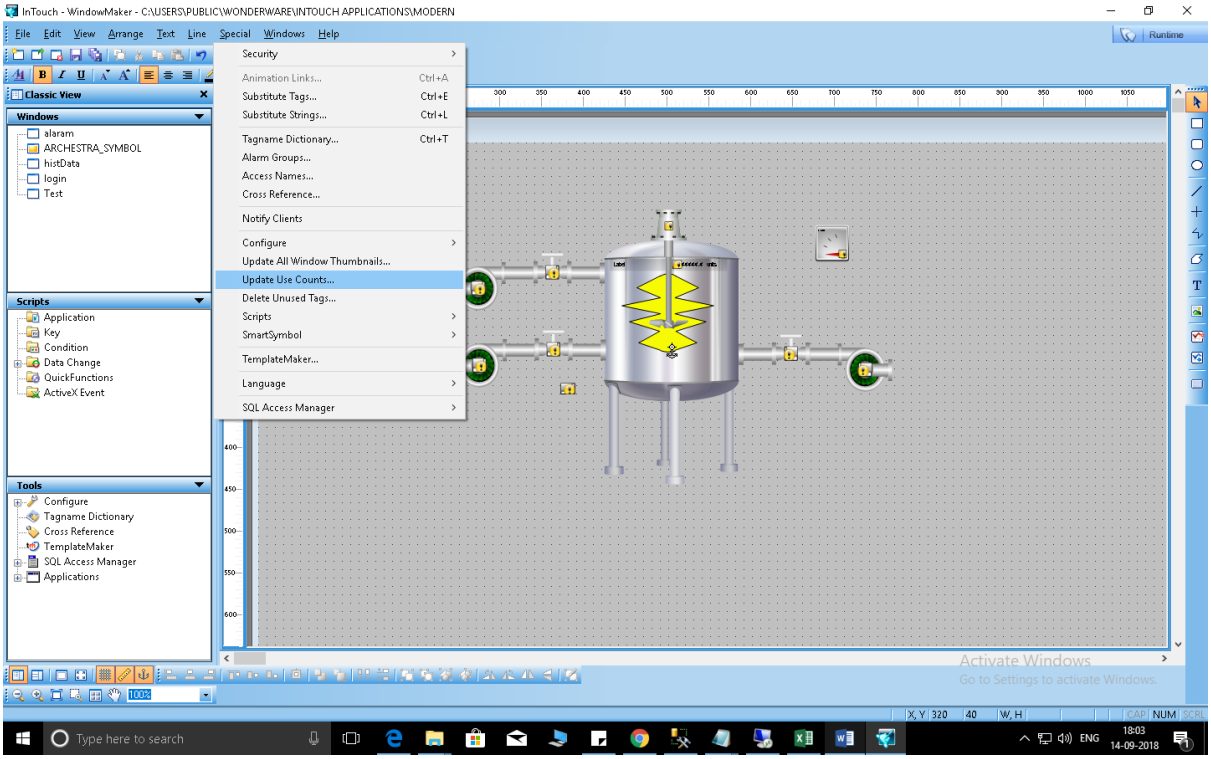


3. You will find the places where you that Tag is related.

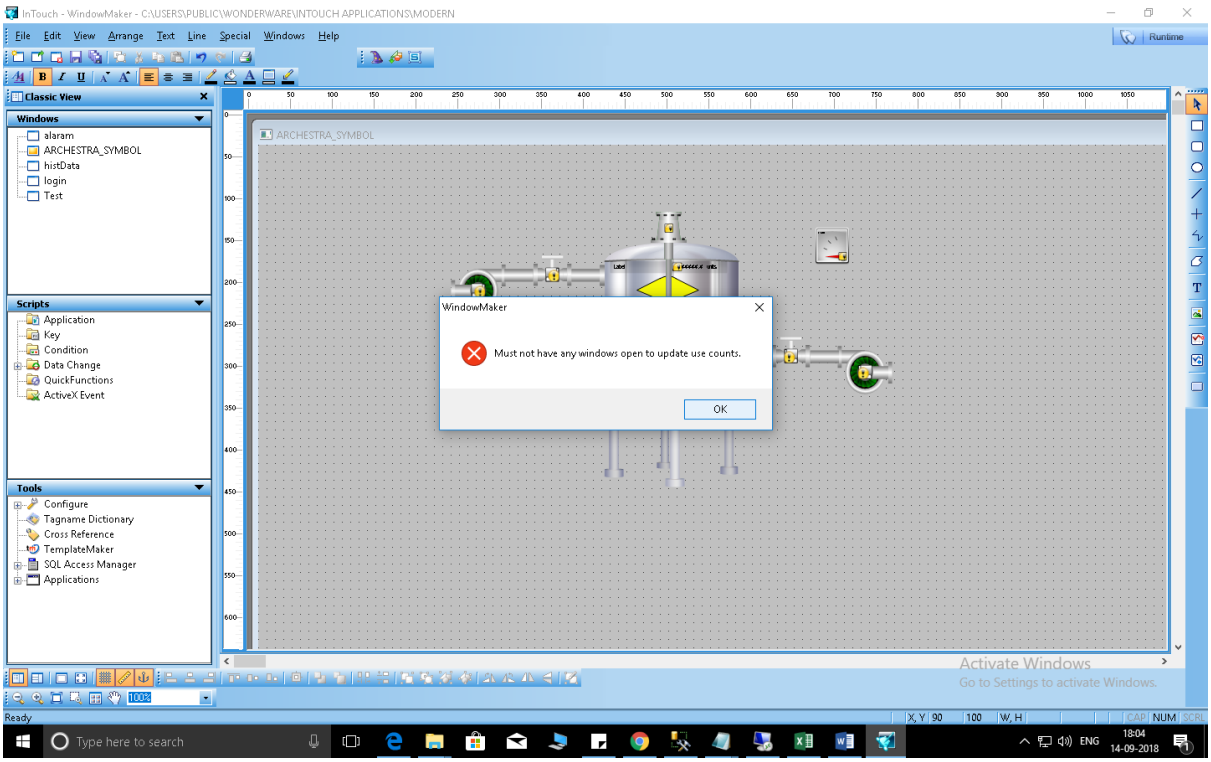


2.8.4 Use Counts and Unused Tagnames

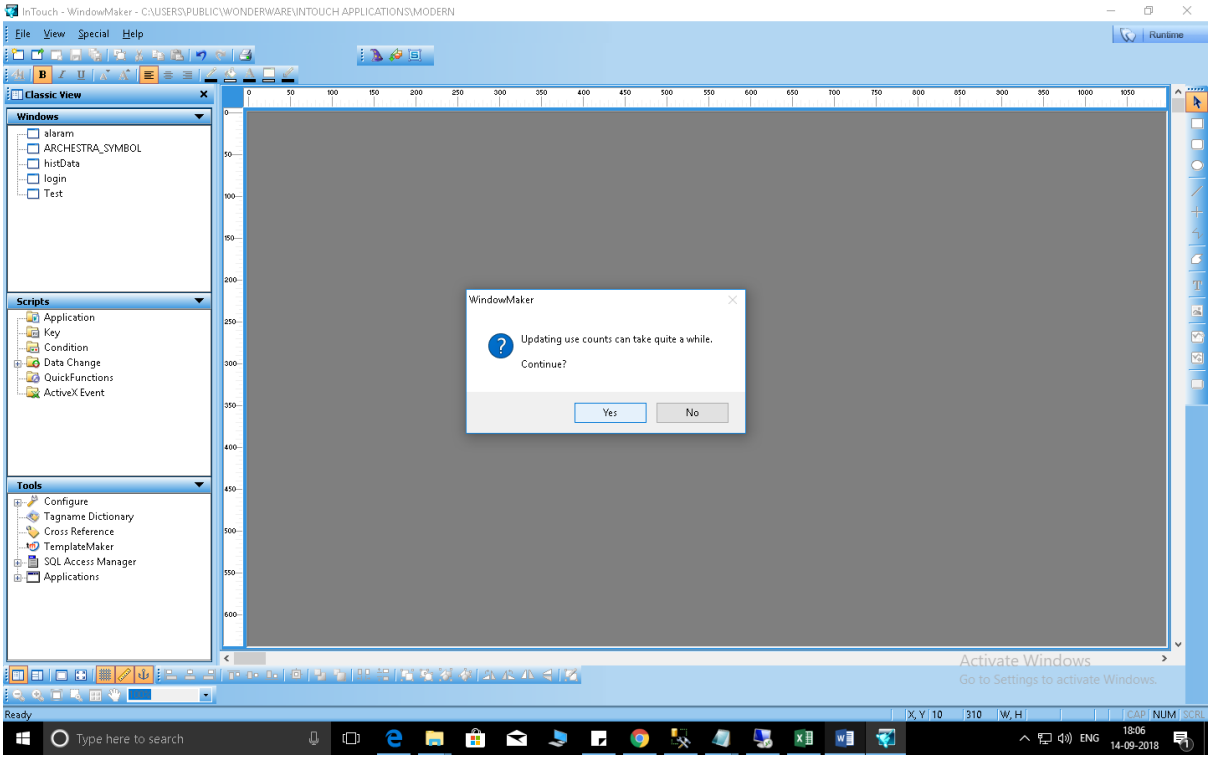
1. To the the use counts go to special >update use count



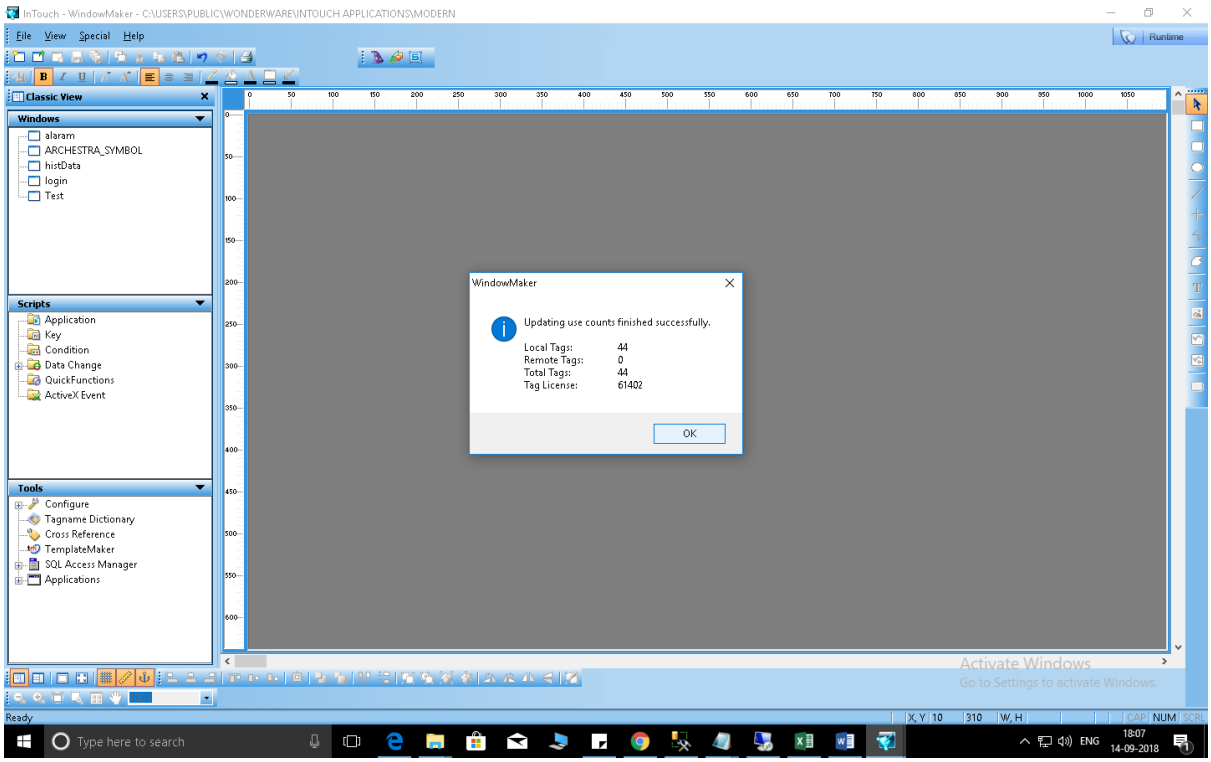
2.If any window is open it will show you error to close the window.



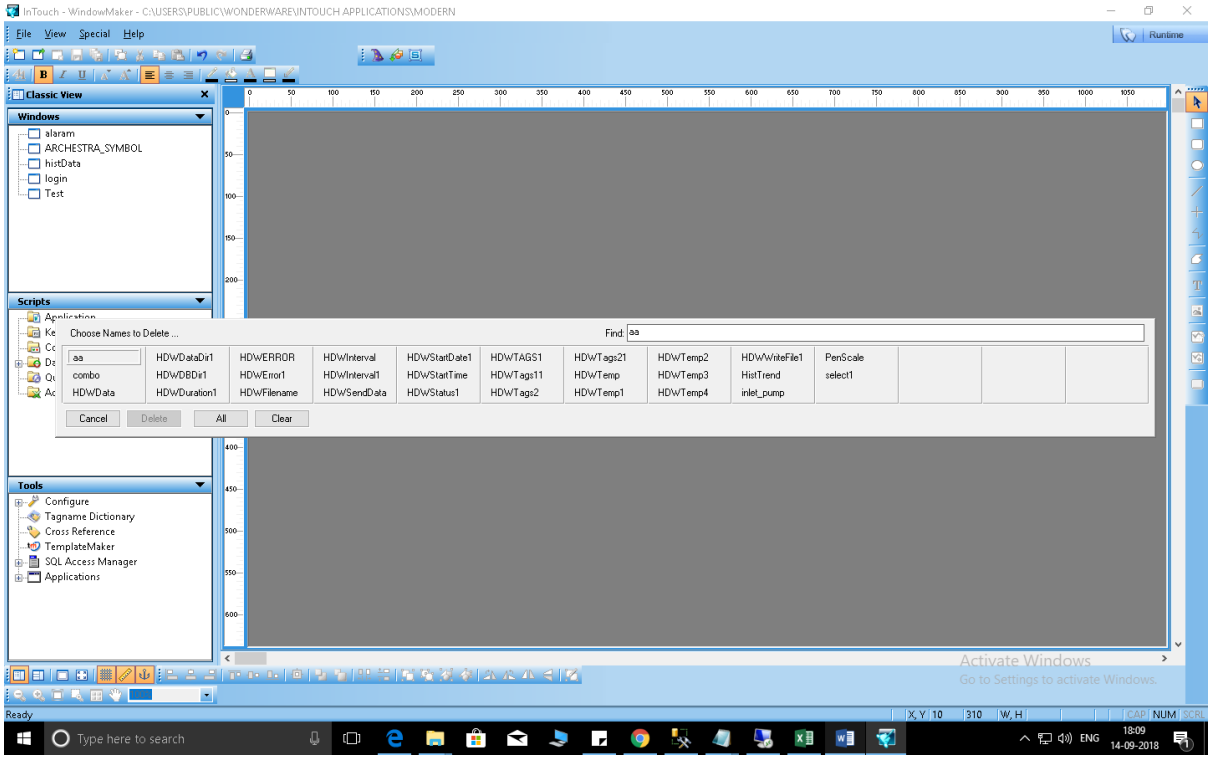
3.Now go to special >update use count. And allow it to continue.



4.It will show you updated use counts of tag.

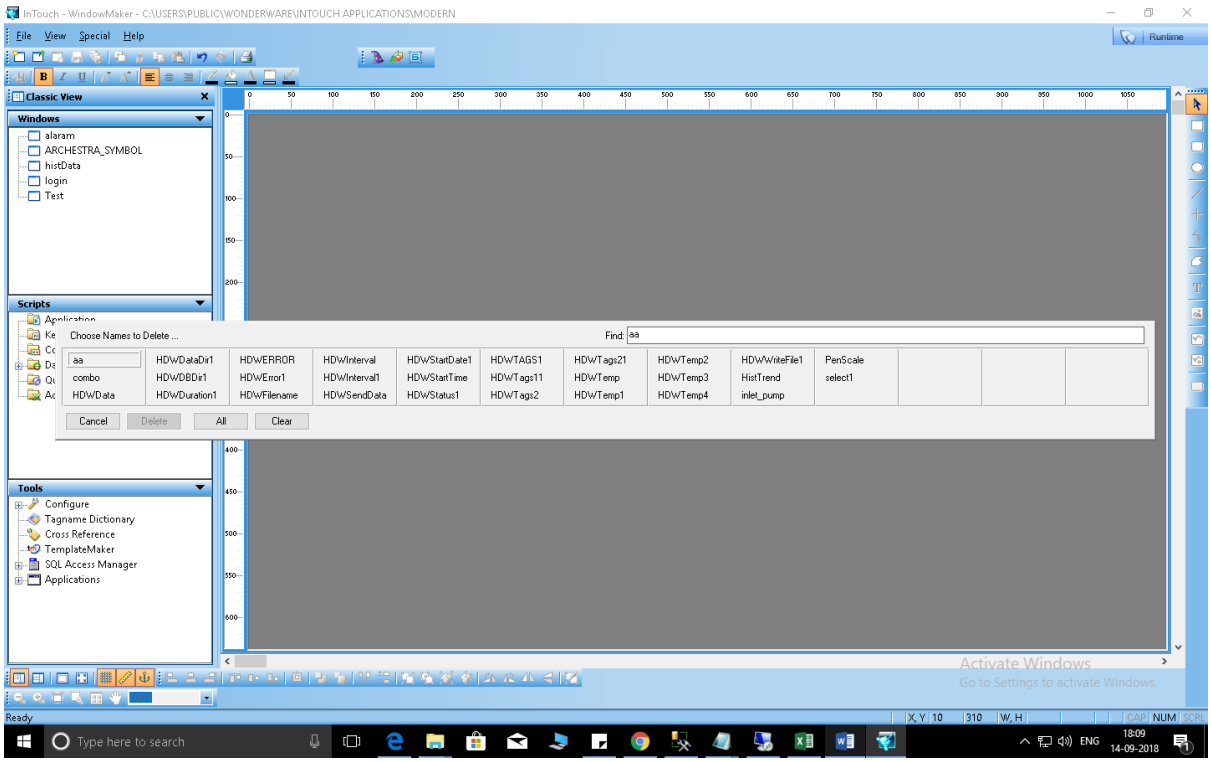


5.Now go to special >delete unused tag, It will show you the unused Tags.

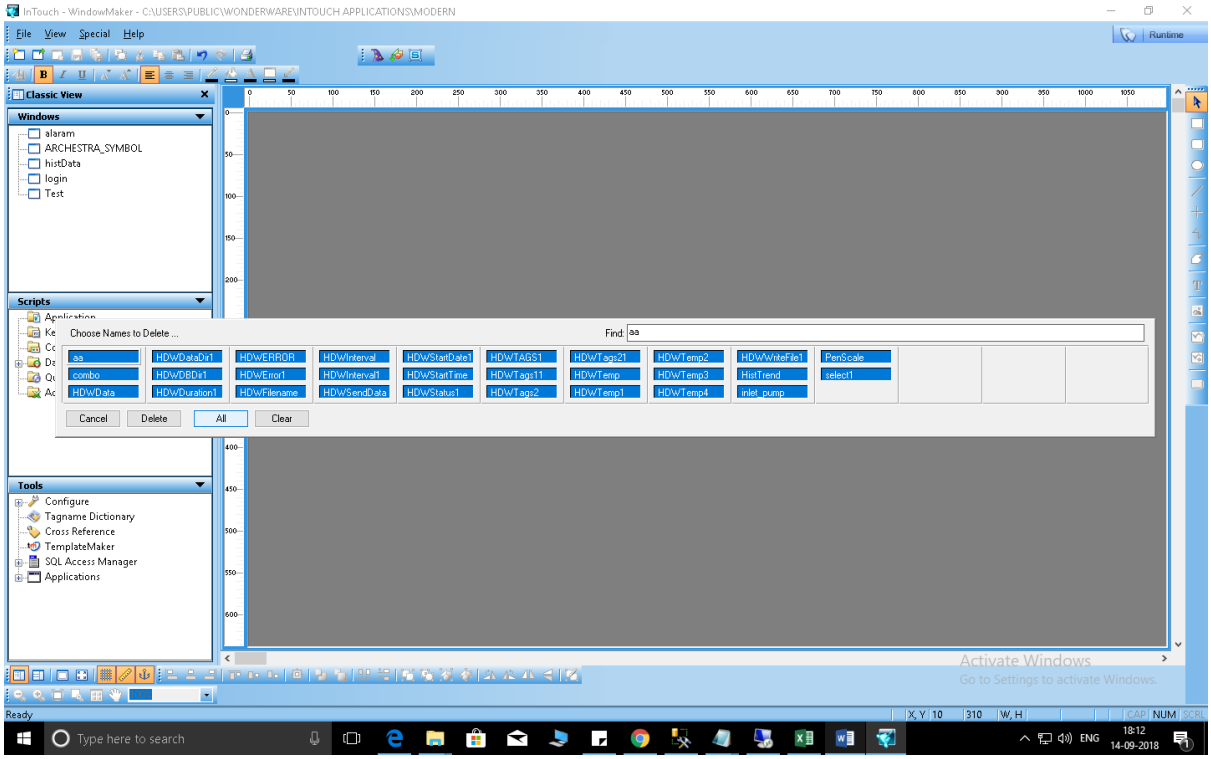


2.8.5 Deleting Multiple Unused Tagnames

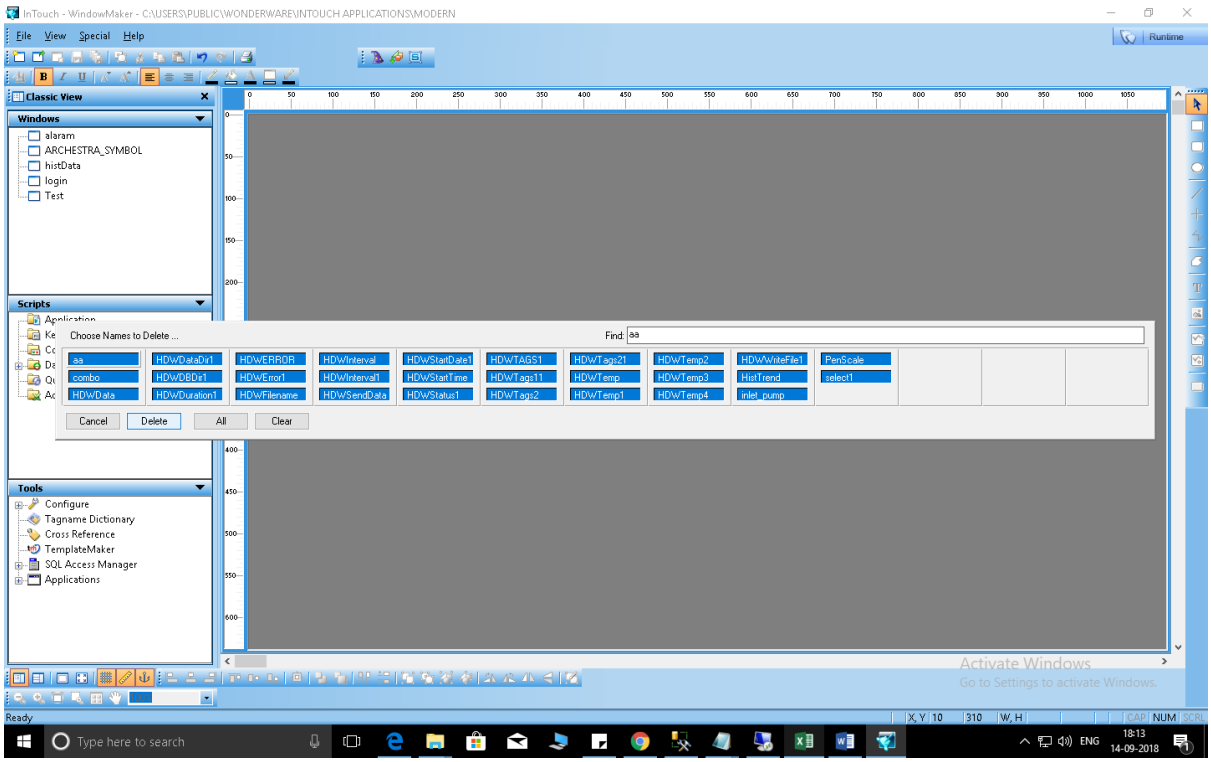
1.Open Intouch application, close all windows, Update the use count than Go to Special>Delete unused Tags.



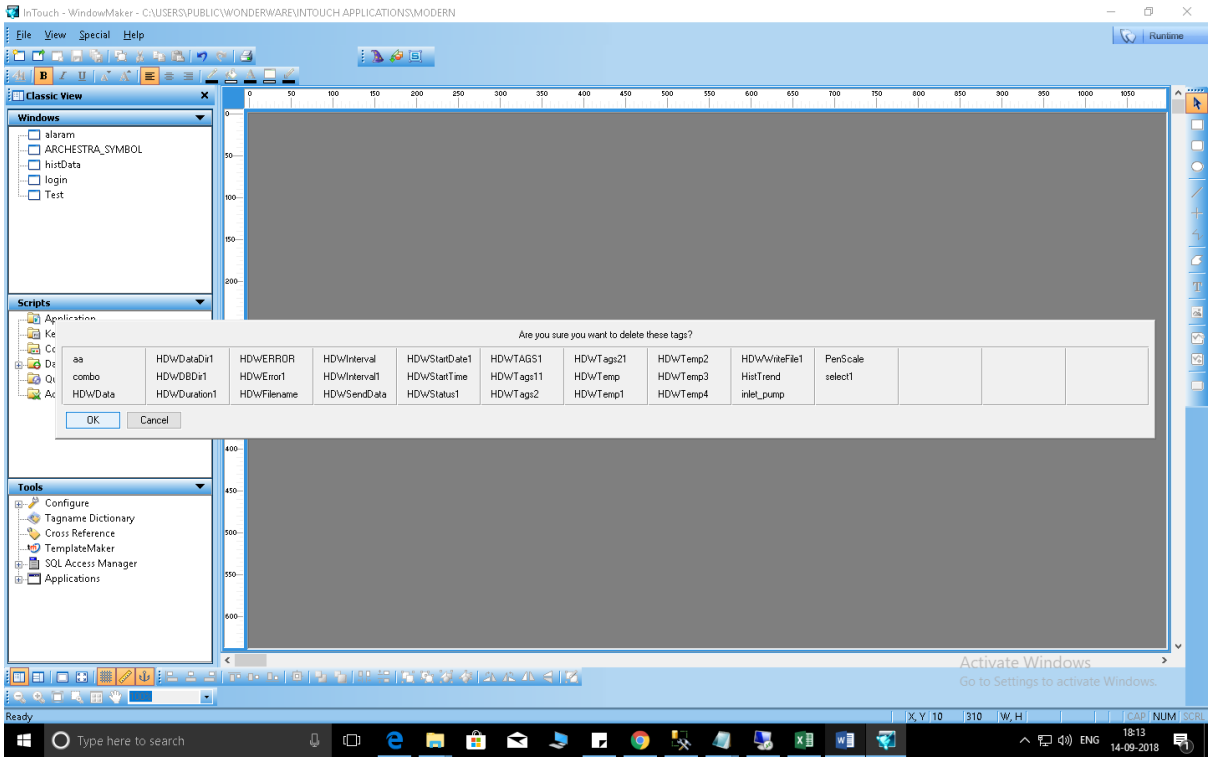
2.Select all to delete all.



3.Than select Delete.



4.It will ask you That are you sure you want to dlete.If you are sure than select ok.

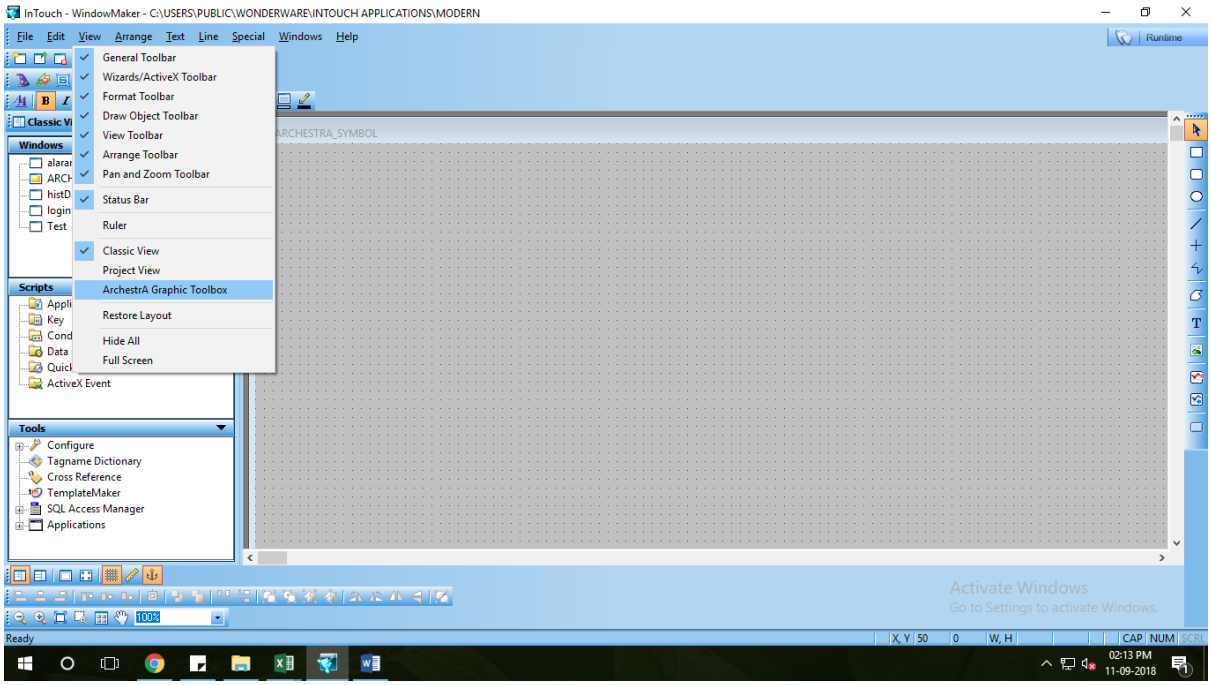


3. Data Presentation

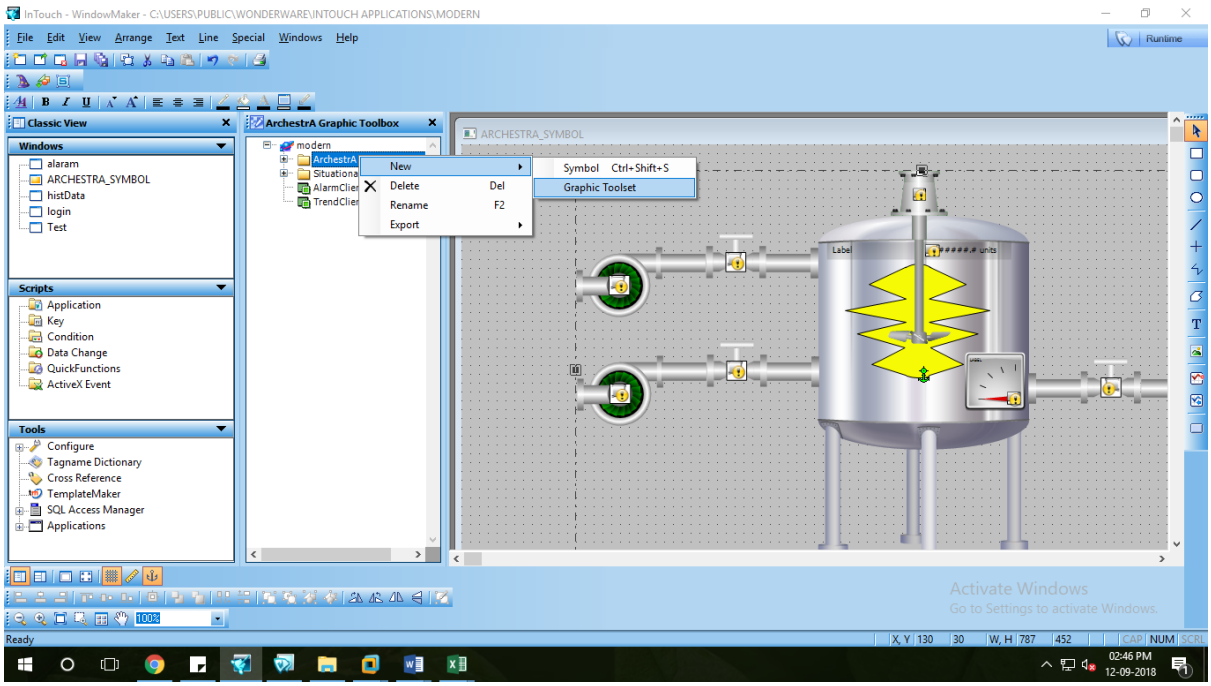
3.1 Working with ArchestrA Symbols

3.1.1 Create a Graphic Toolset

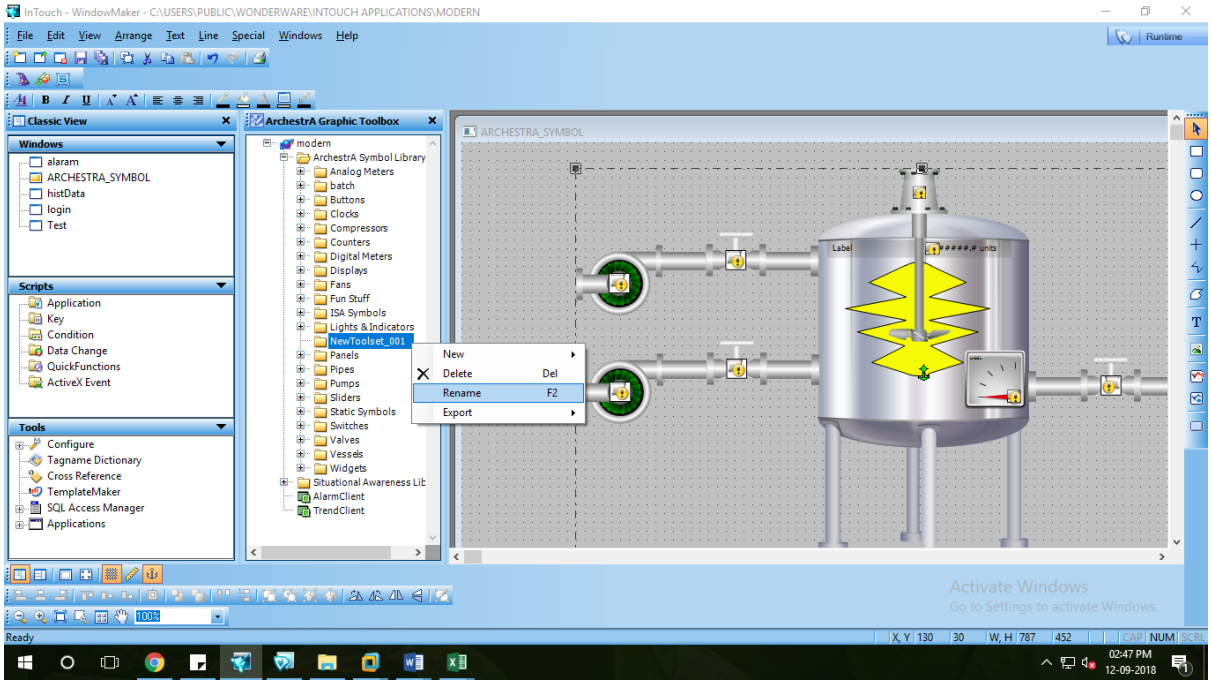
1.GO TO VIEW>ArchestraA Graphic ToolBox



2.To Create a new toolset- ArchestrA symbol library>New>Graphic Toolset

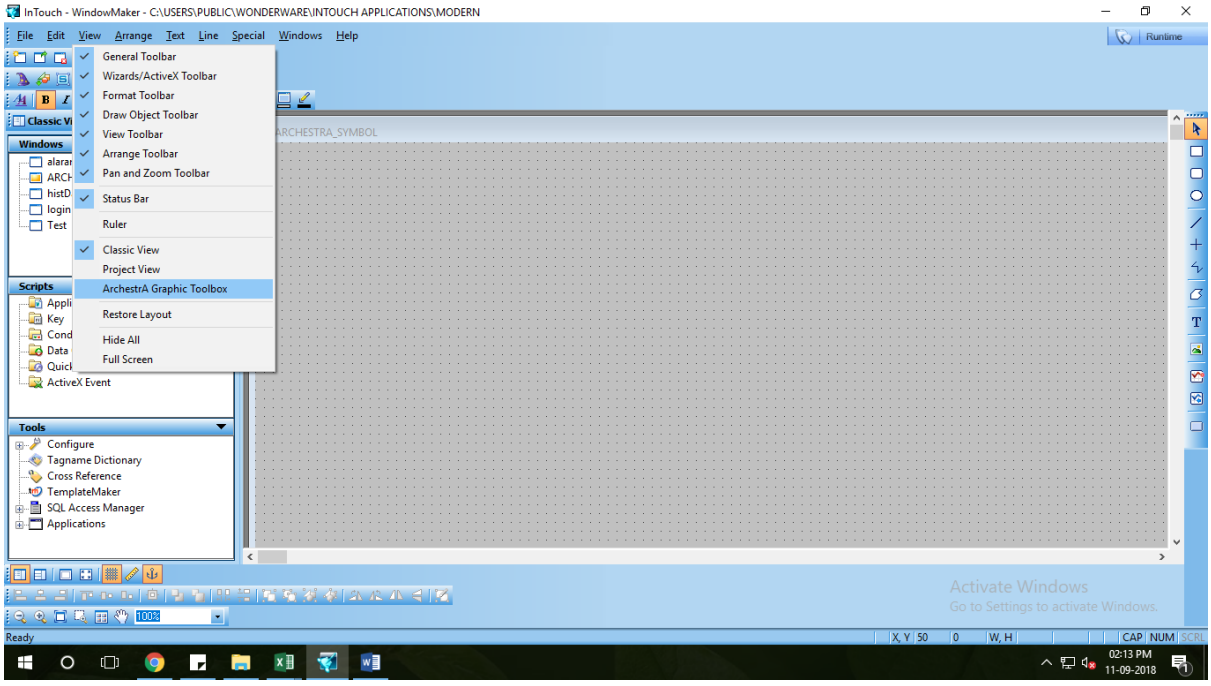


3.Rename Toolset

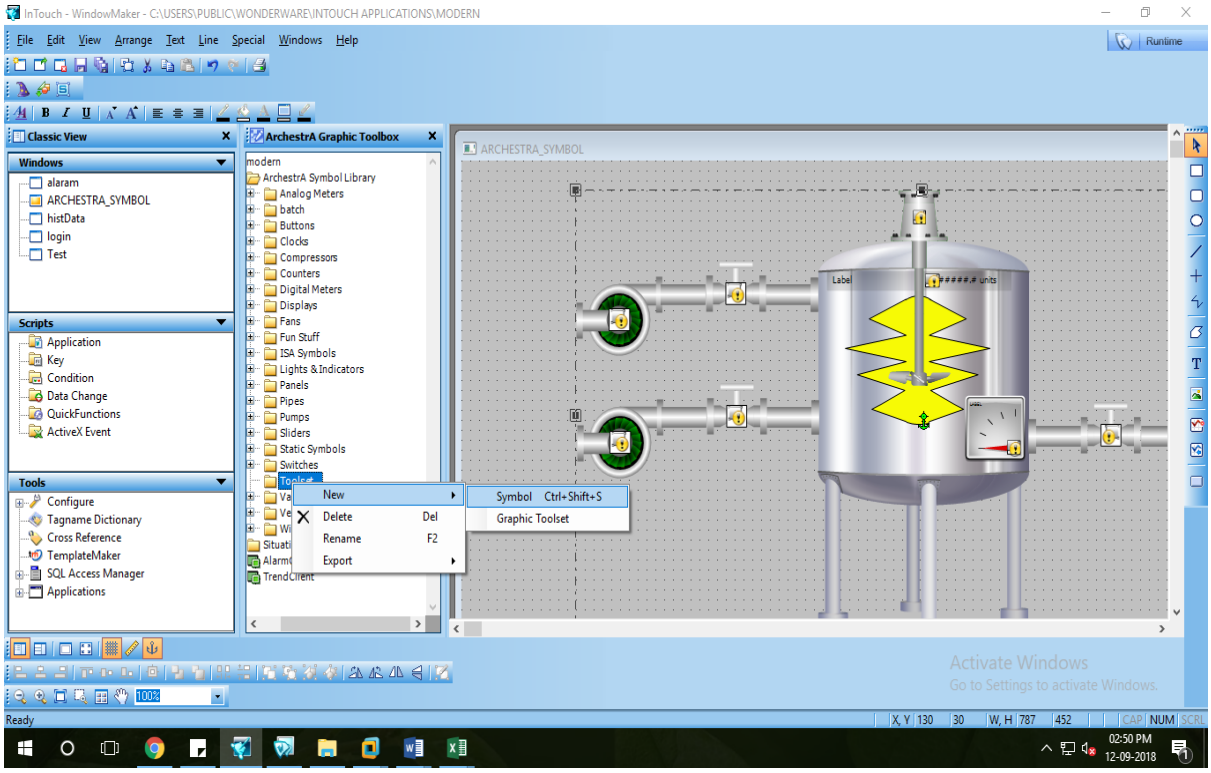


3.1.2 Create an ArchestrA symbol

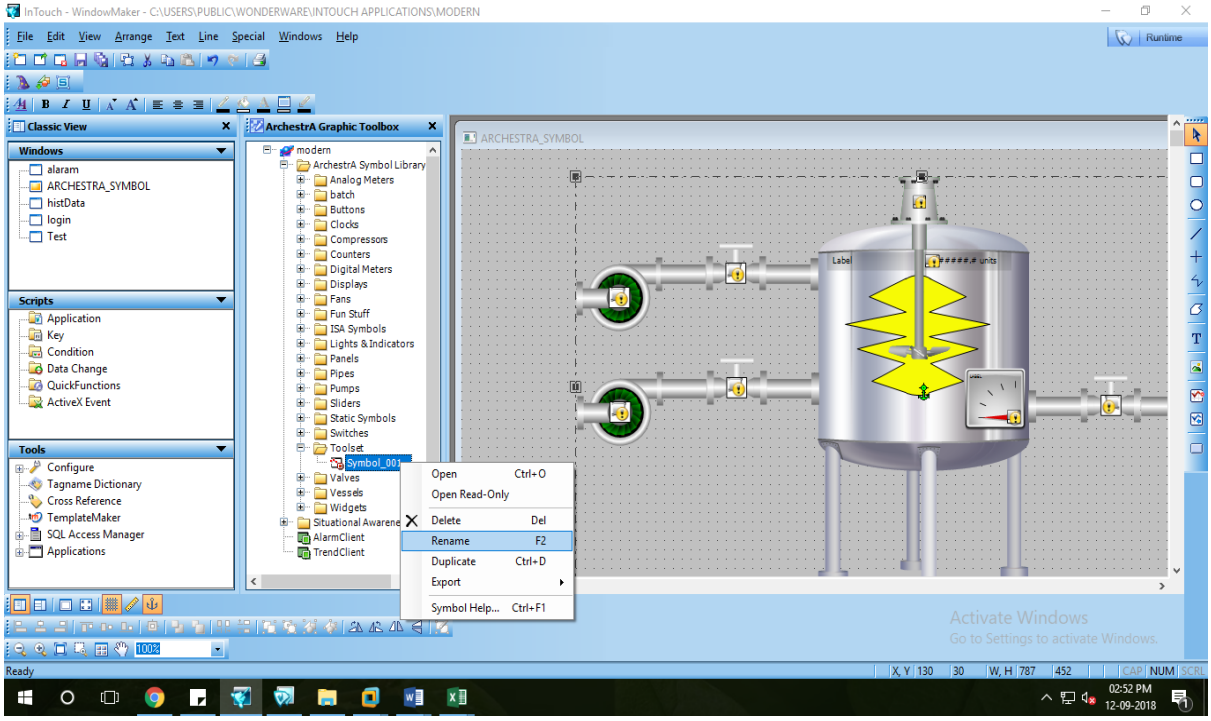
1.GO TO VIEW>ArchestraA Graphic ToolBox



2. To Create a new sysmbol- ArchestraA symbol library>New>Graphic Toolset

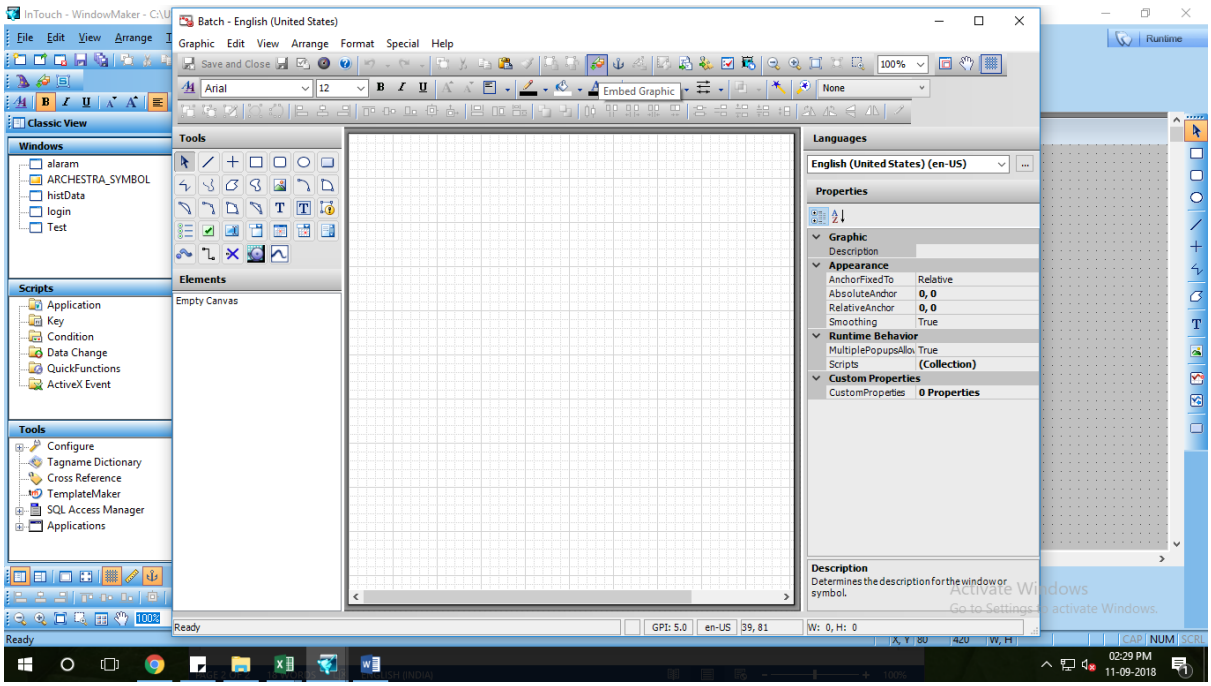


3. Rename symbol

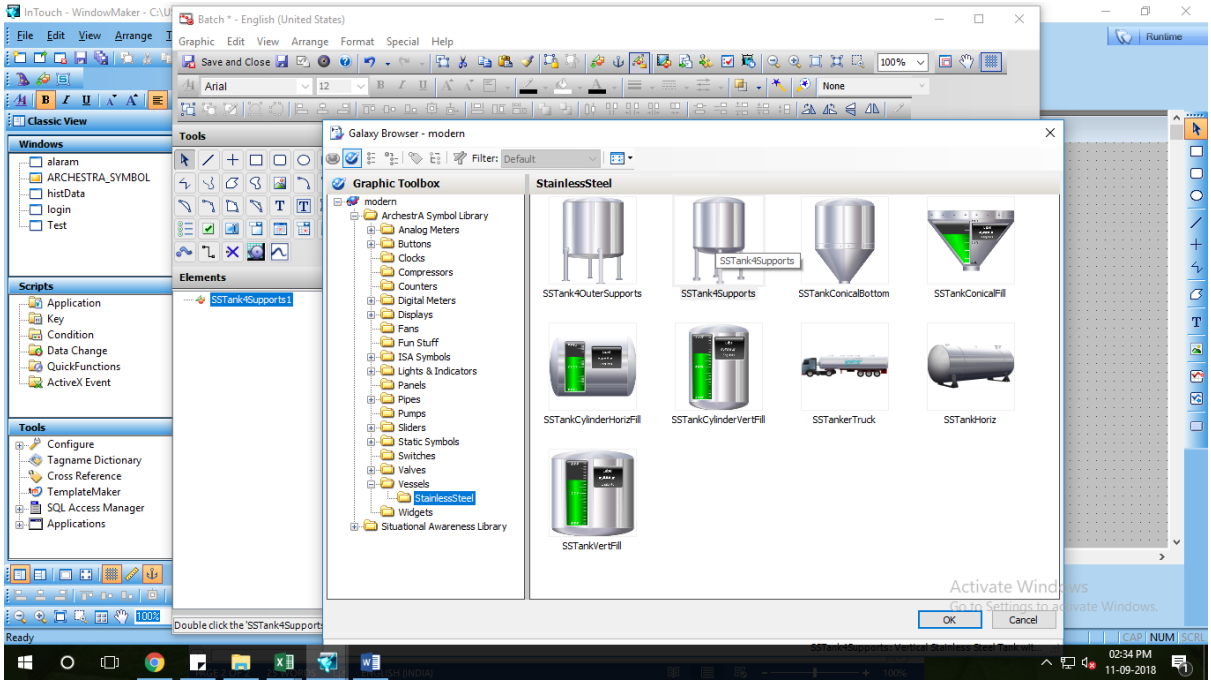


3.1.3 Rename and group elements

1. open the new symbol.
2. Select Embedded Graphics from Toolbar



3. Select Vessels>stainless-steel>SSTank4Supports



4. Same as that take below symbols

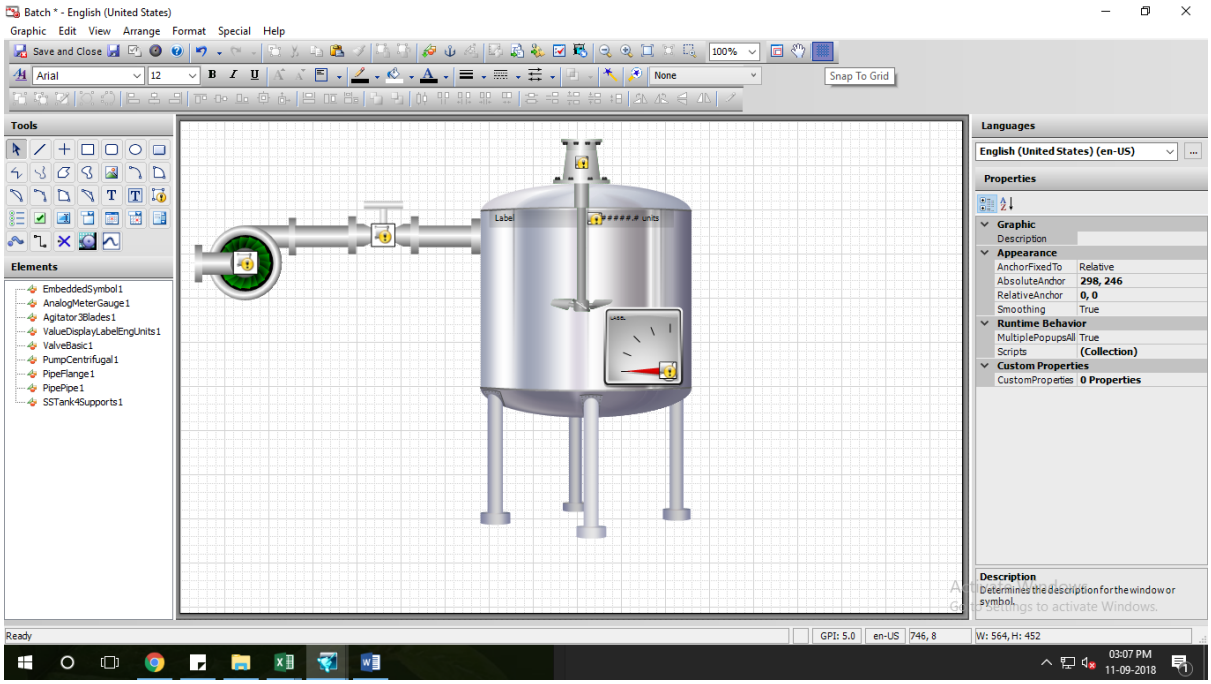
Pipes>PipePipe , Pipes>PipeFlange , Valve>Valvebasic , Pump>PumpCentrifugal Widgets>ValuedisplayLableEngUnits , Widgets>Agitator3Blades ,AnalogMeters>AnalogMeterGauge

5. To change size of symbol select corner point and press shift than change it.

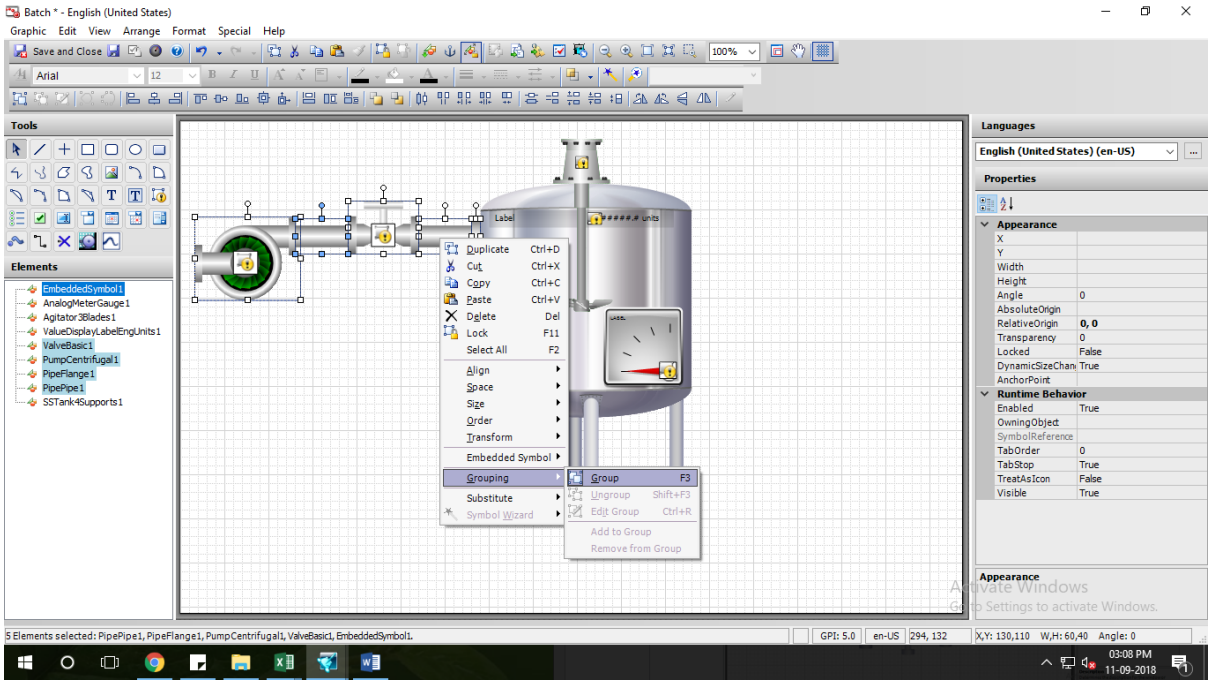
Else for fix size change with and length at bottom of right side.

6. To duplicate the symbol ctrl+d

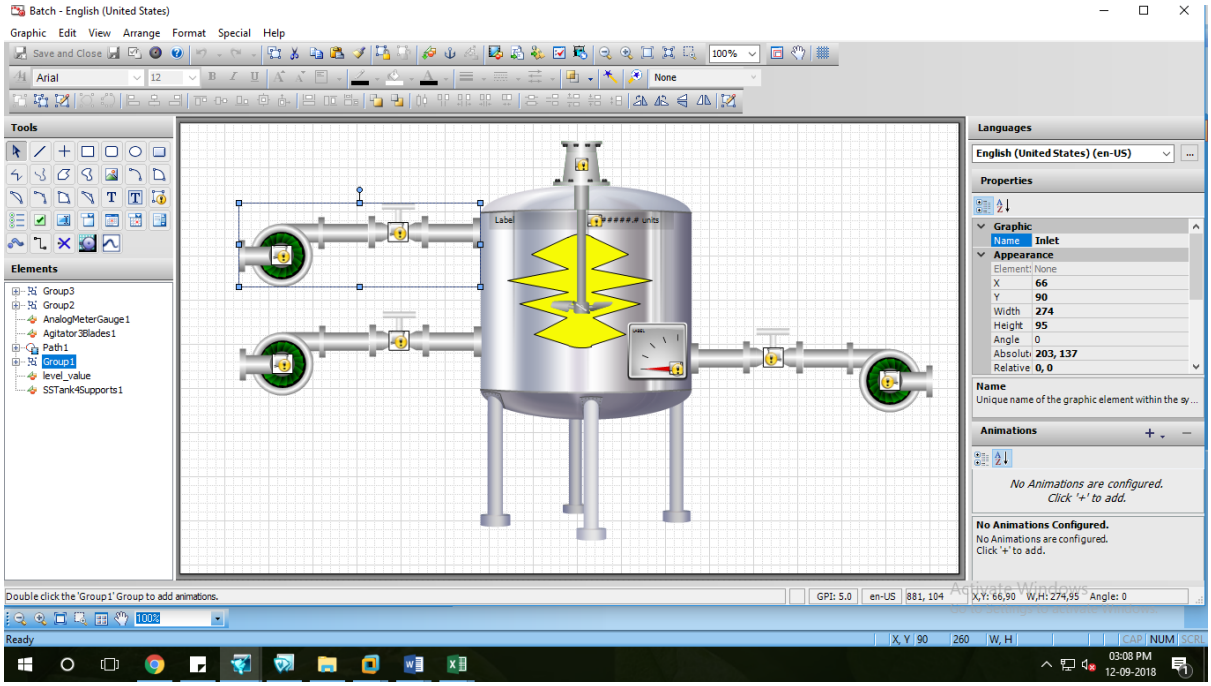
7. Remove grid to softly move symbol



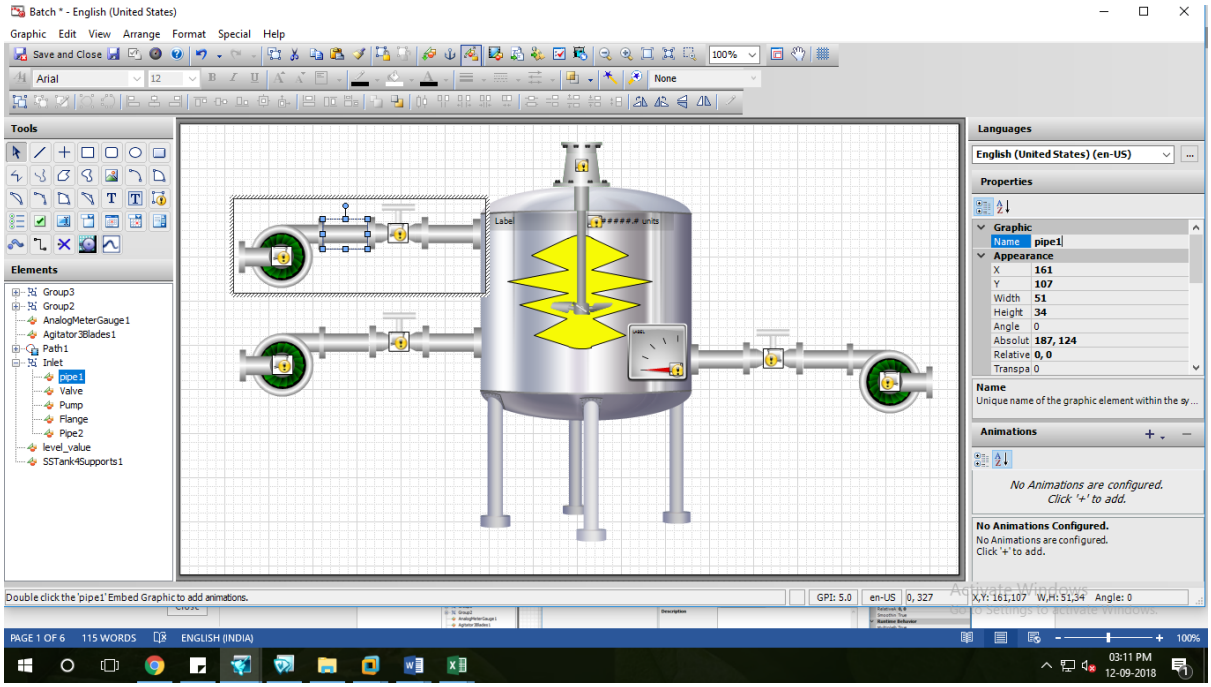
8. to make Group of symbol select all symbol and left click. Go to grouping >group



9.Rename group symbol



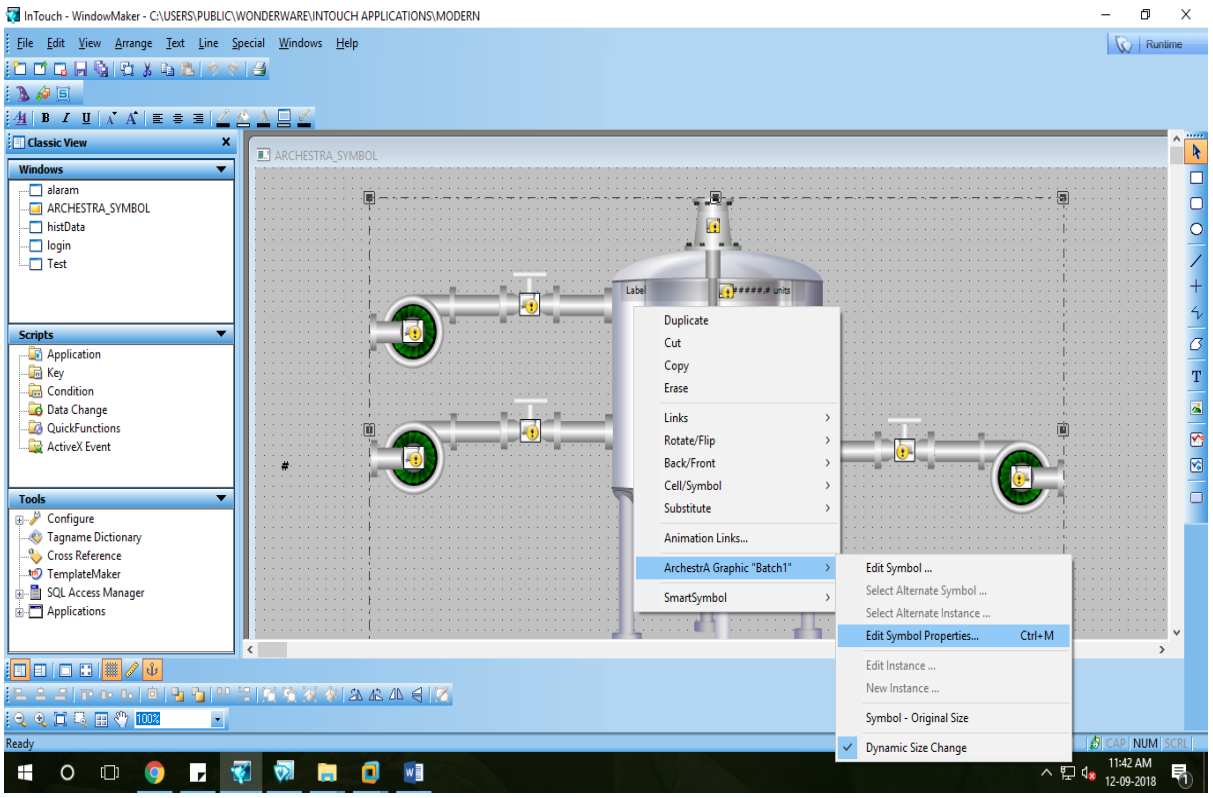
10. Rename elements of symbol



3.1.4 Link tag name Dot Fields

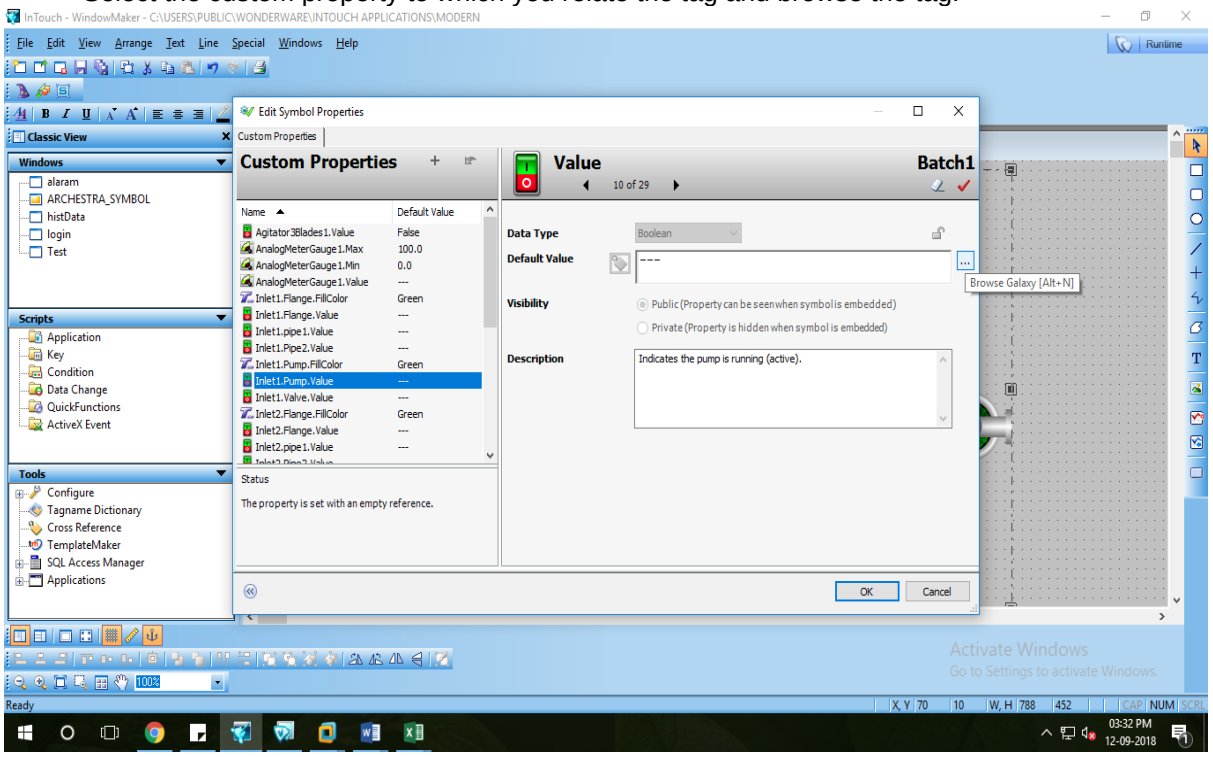
1.to relate custom property with tag values ,go to Archestra graphics >edit symbol

Or double click on symbol.

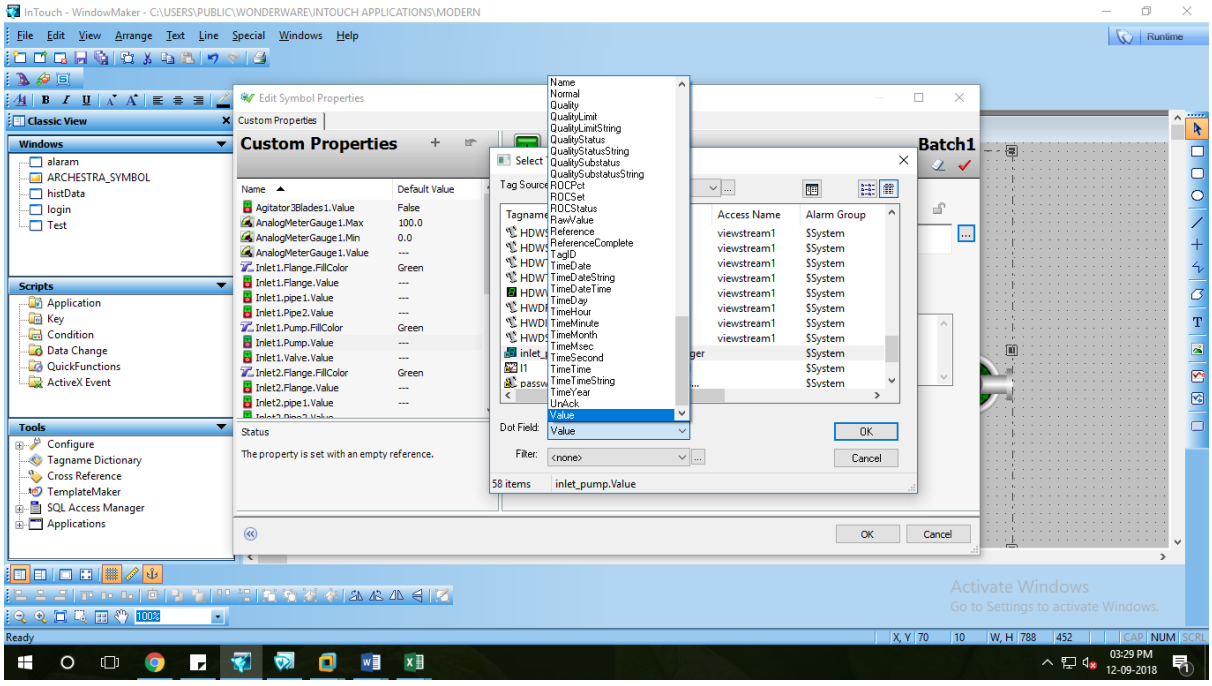


2.Custom property window will popup .

Select the custom property to which you relate the tag and browse the tag.

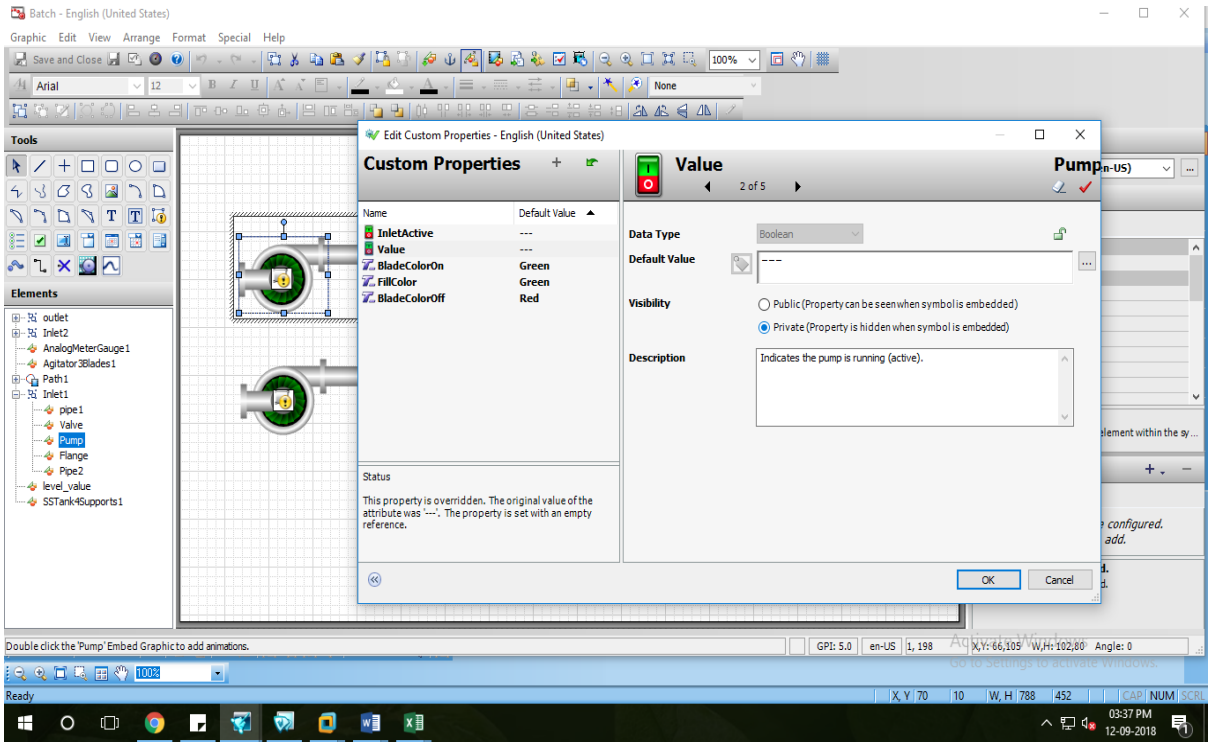


3. To relate with dot field of tag, first select the tag from select tag popup window and than after select dot filed of that particular tag.



3.1.5 Hide unused Custom Properties

1.To hide the custom properties of any symbol ,open the custom(ctrl+M or right click and go to custom properties) property make visibility private .

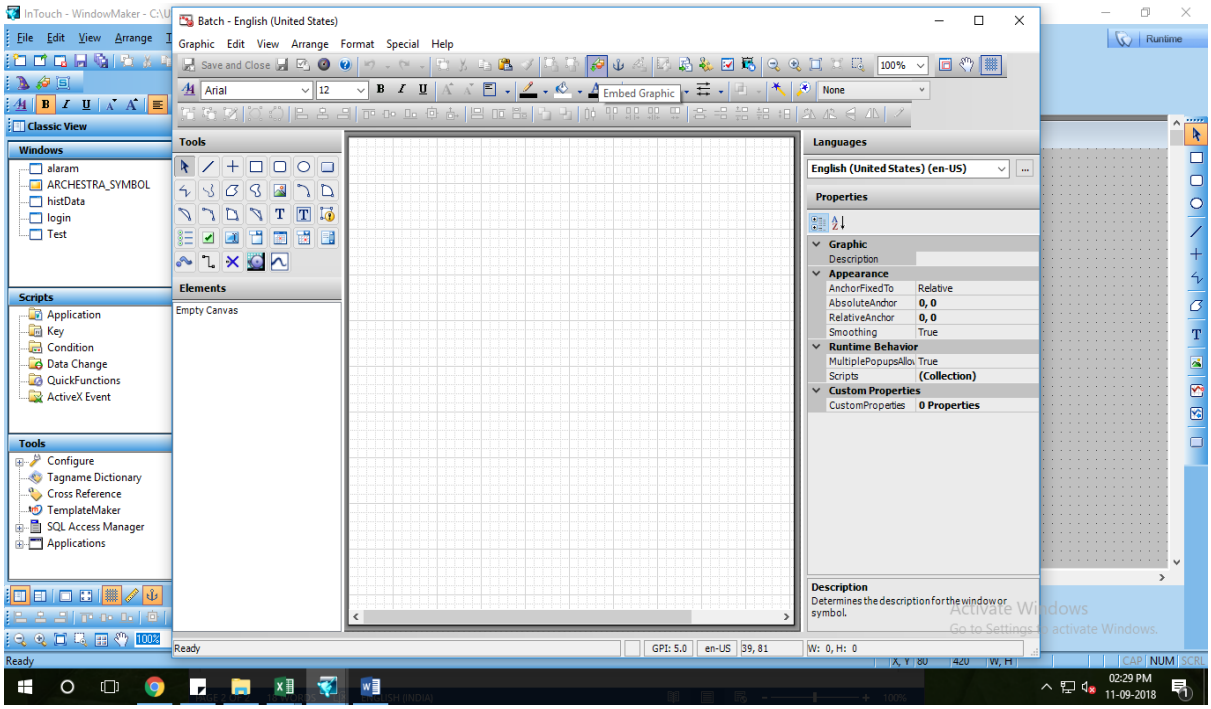


3.2 Using the ArchestrA Symbol Editor

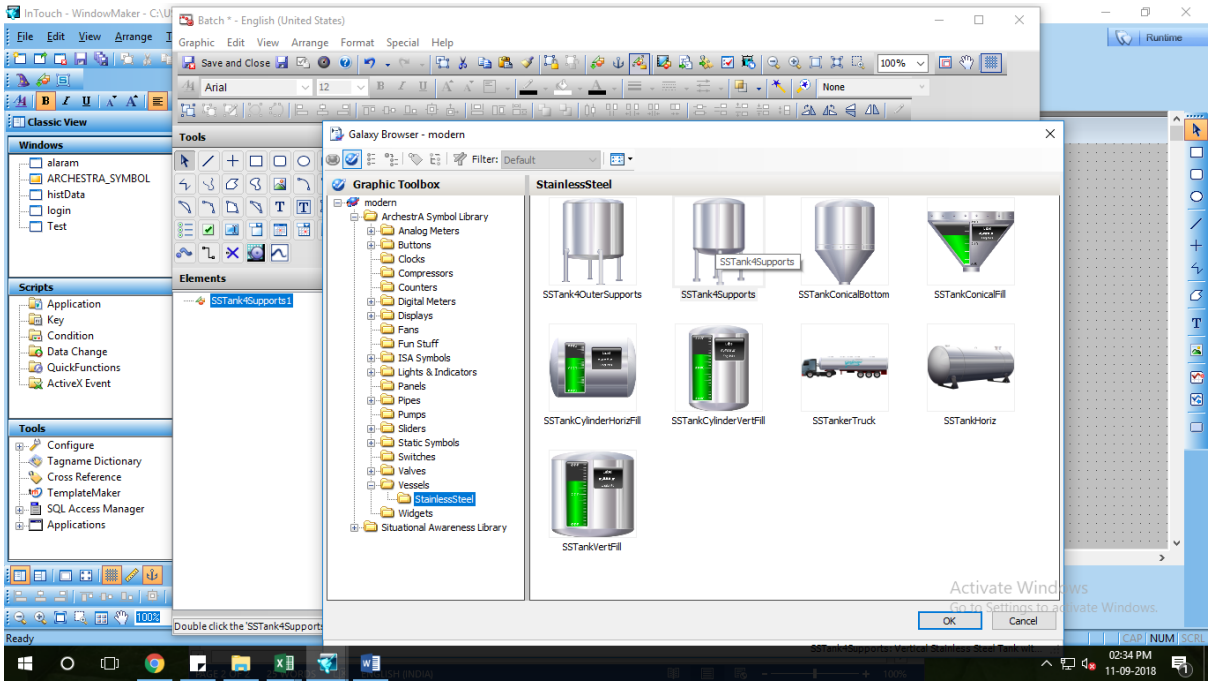
3.2.1 Convert an embedded symbol to a group for editing

1. open the new symbol.

2. Select Embedded Graphics from Toolbar



3. Select Vessels>stainless-steel>SSTank4Supports



4.Same as that take below symbols

Pipes>PipePipe , Pipes>PipeFlange , Valve>Valvebasic , Pump>PumpCentrifugal

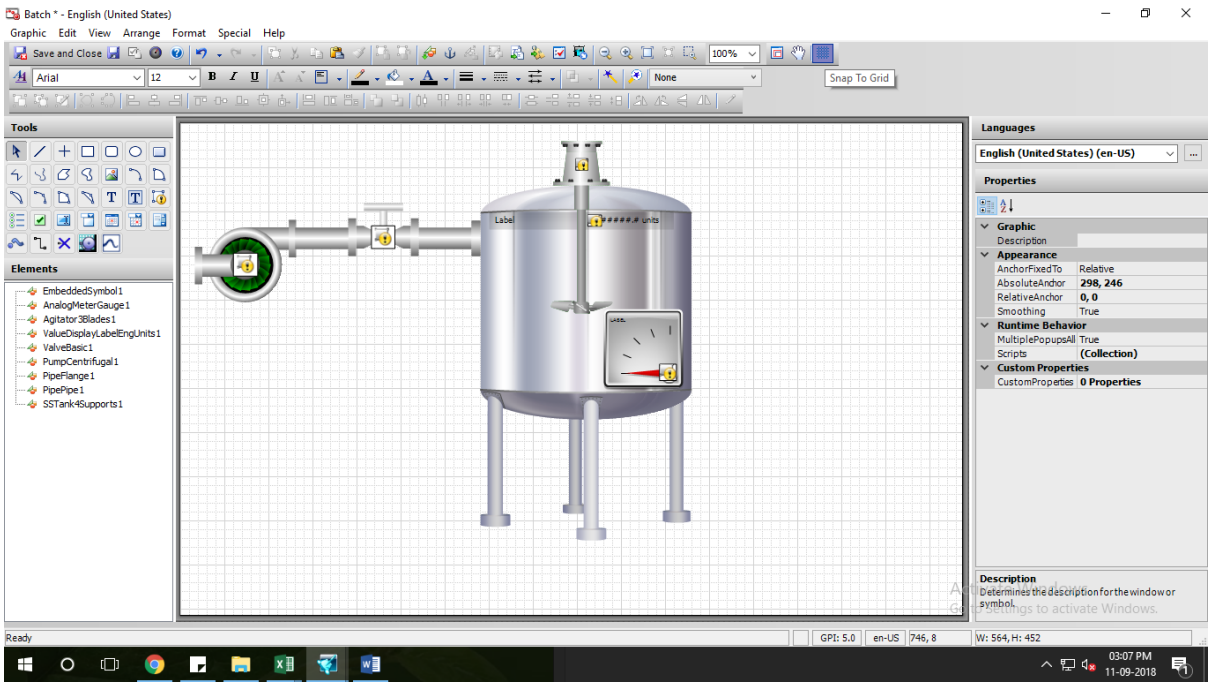
Widgets>ValuedisplayLableEngUnits , Widgets>Agitator3Blades ,AnalogMeters>AnalogMeterGauge

5.To change size of symbol select corner point and press shift than change it.

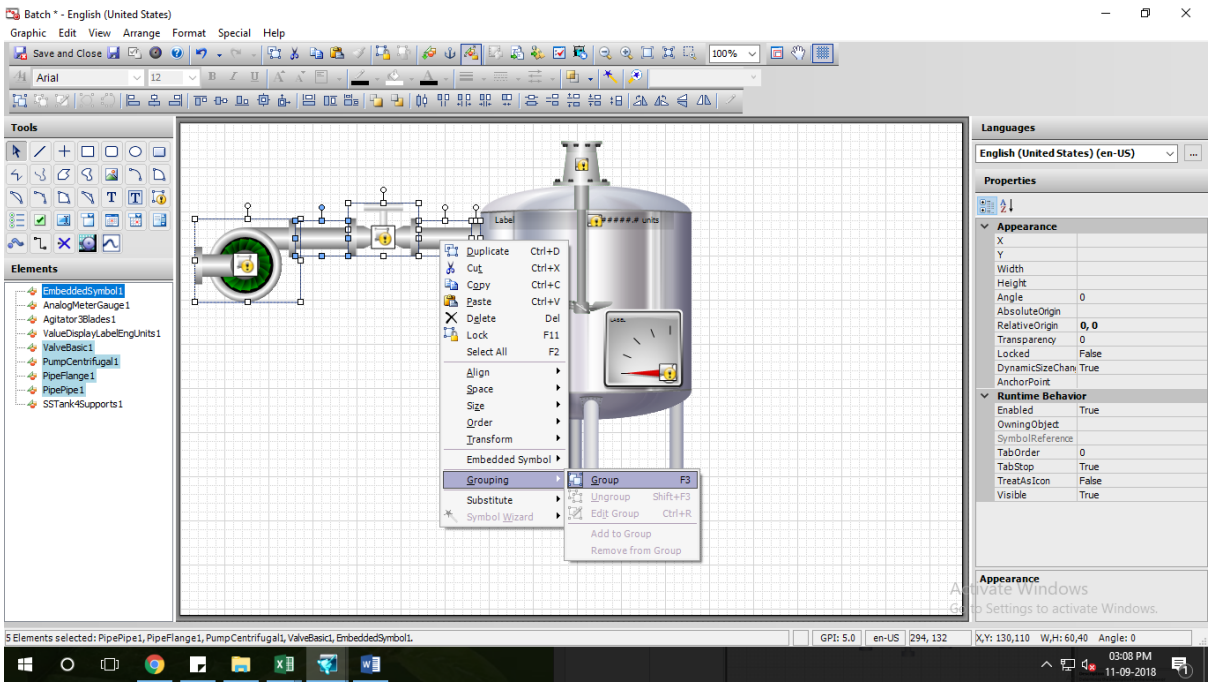
Else for fix size change with and length at bottom of right side.

6. To duplicate the symbol ctrl+d

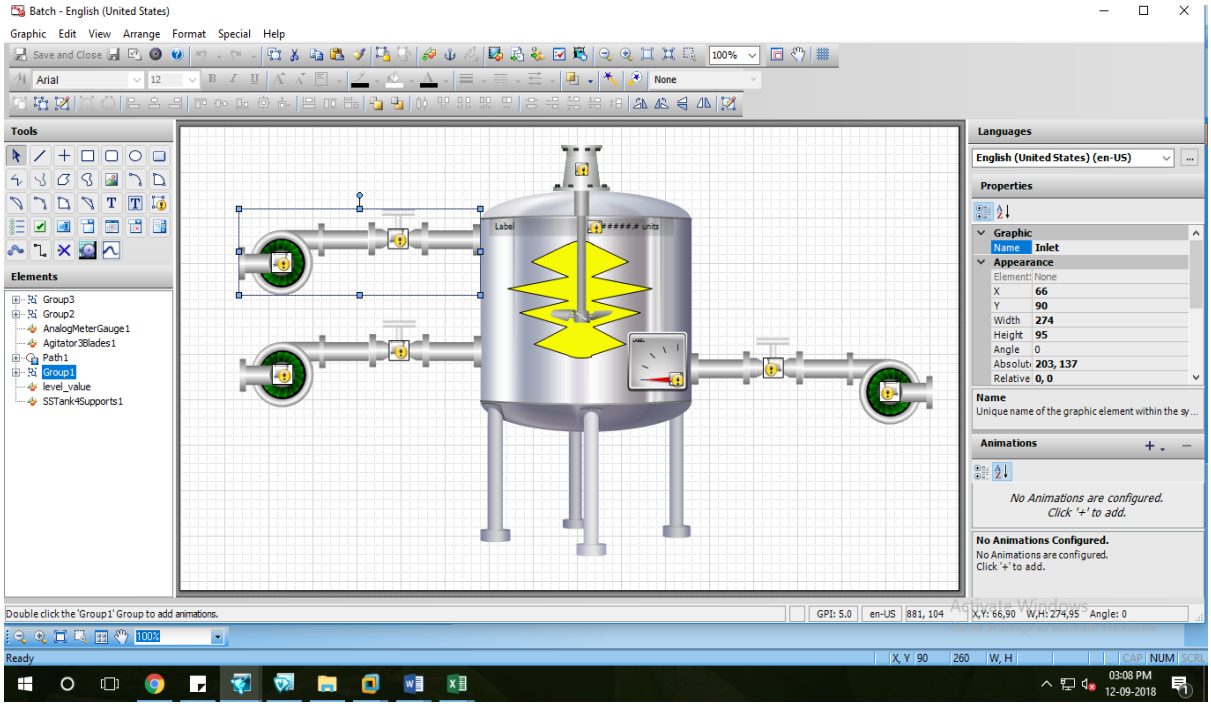
7.Remove grid to softly move symbol



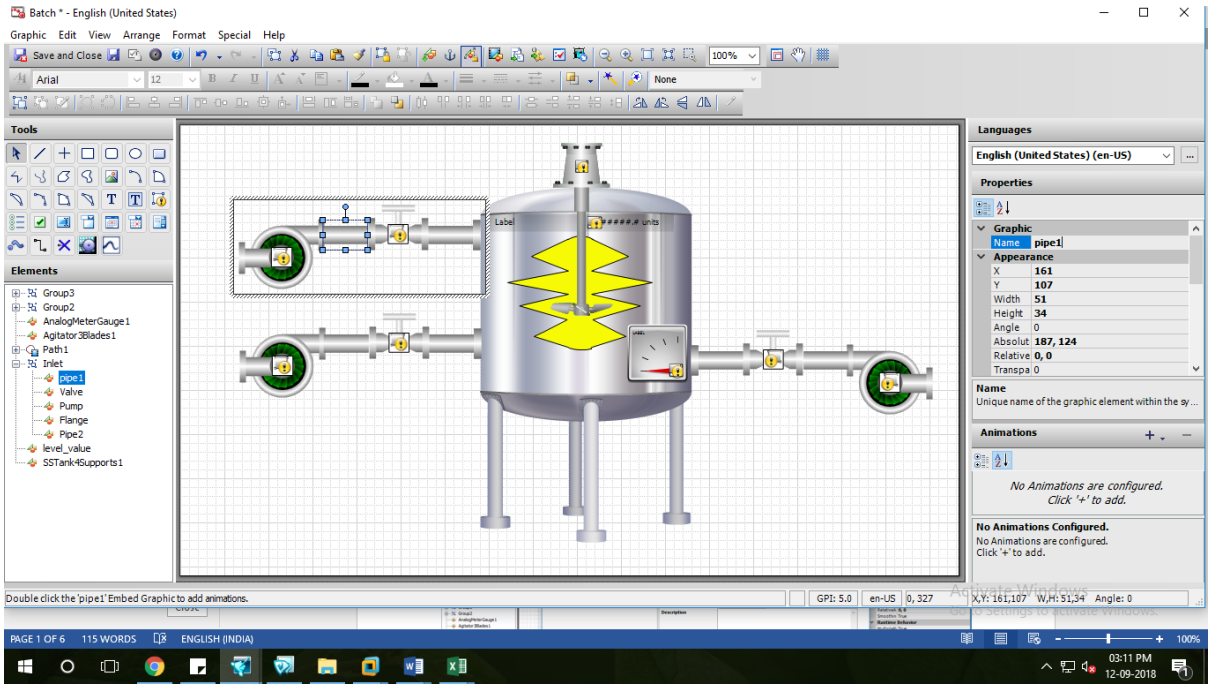
8. to make Group of symbol select all symbol and left click. Go to grouping >group



9.Rename group symbol



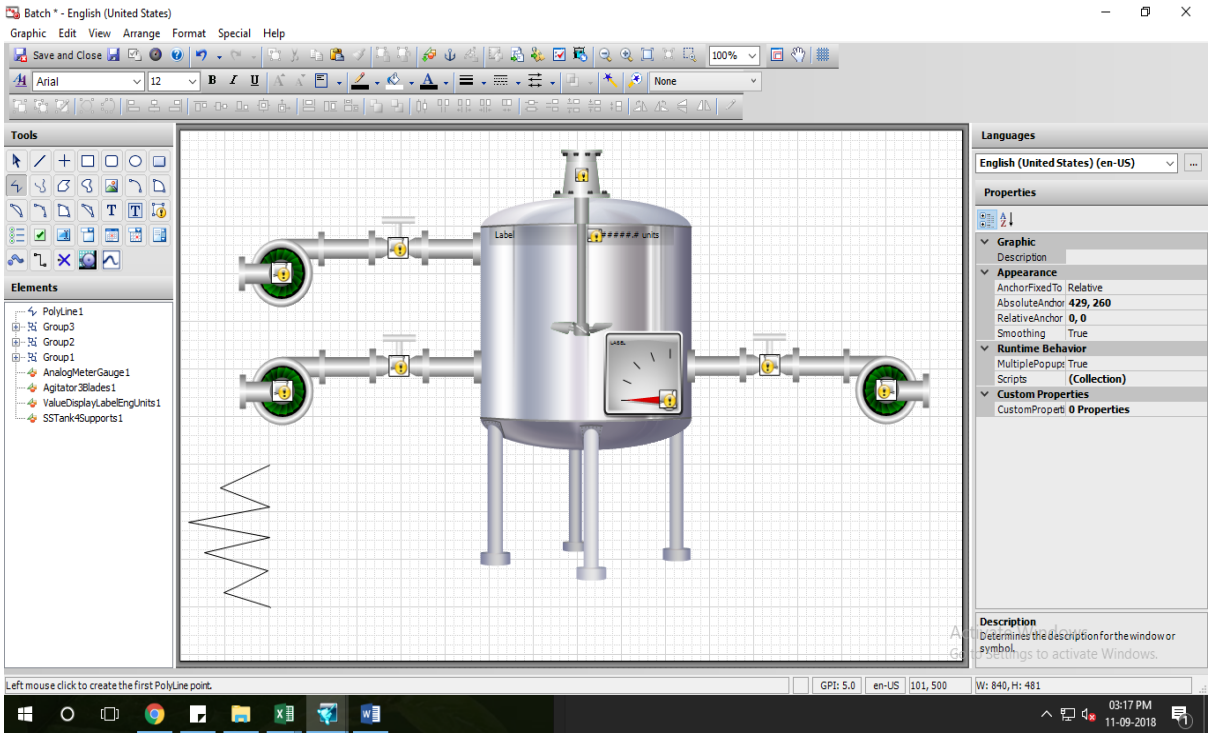
10. Rename elements of symbol



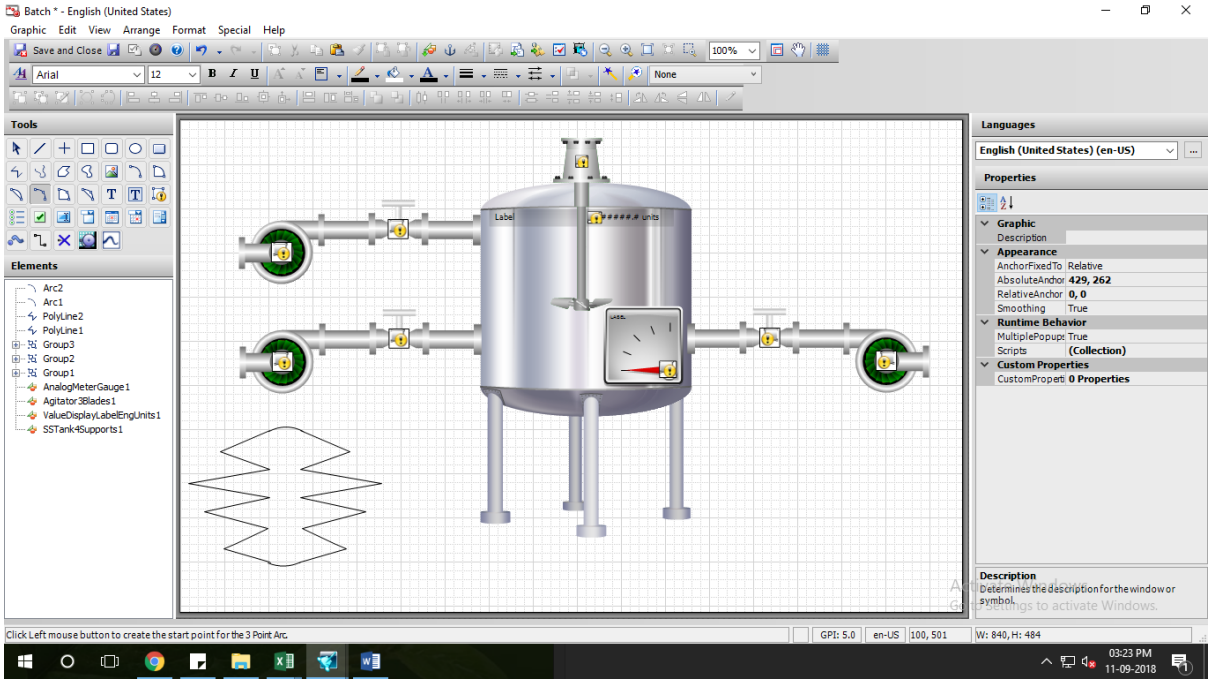
3.2.2 Use the Graphic tools to create custom graphics

1.To use graphic tool ,let us take a example of making creak for tank.

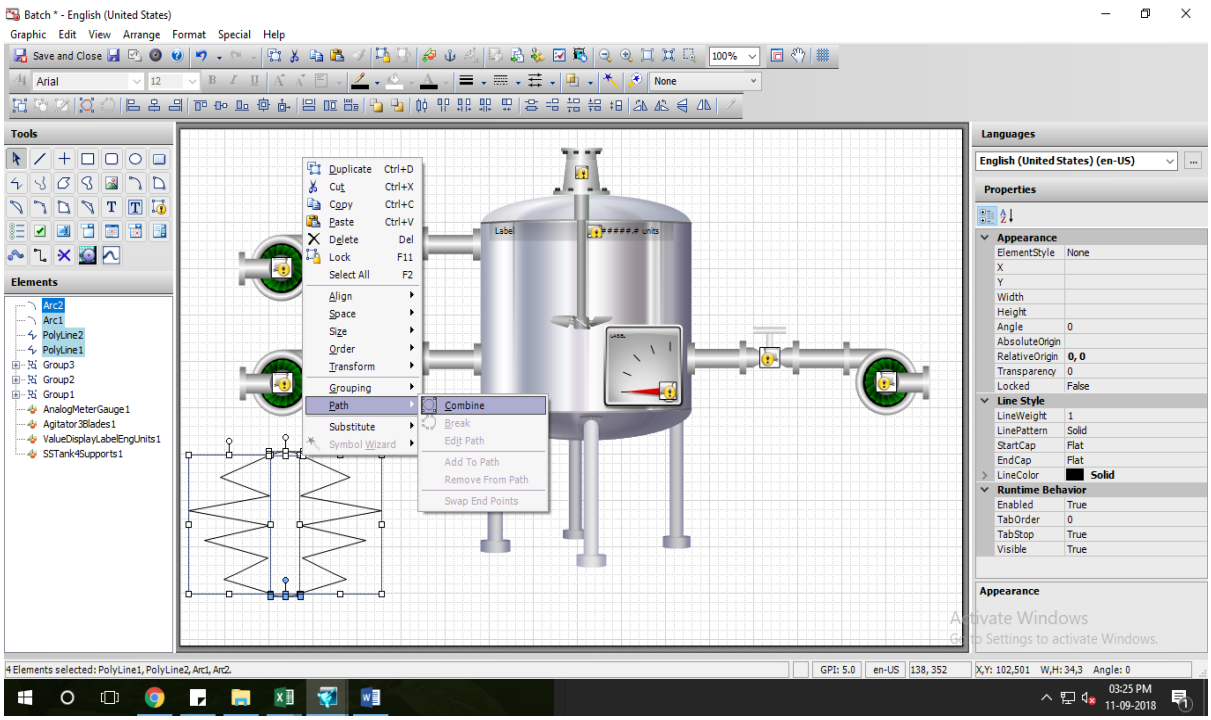
create creak for tank select tools>Polyline



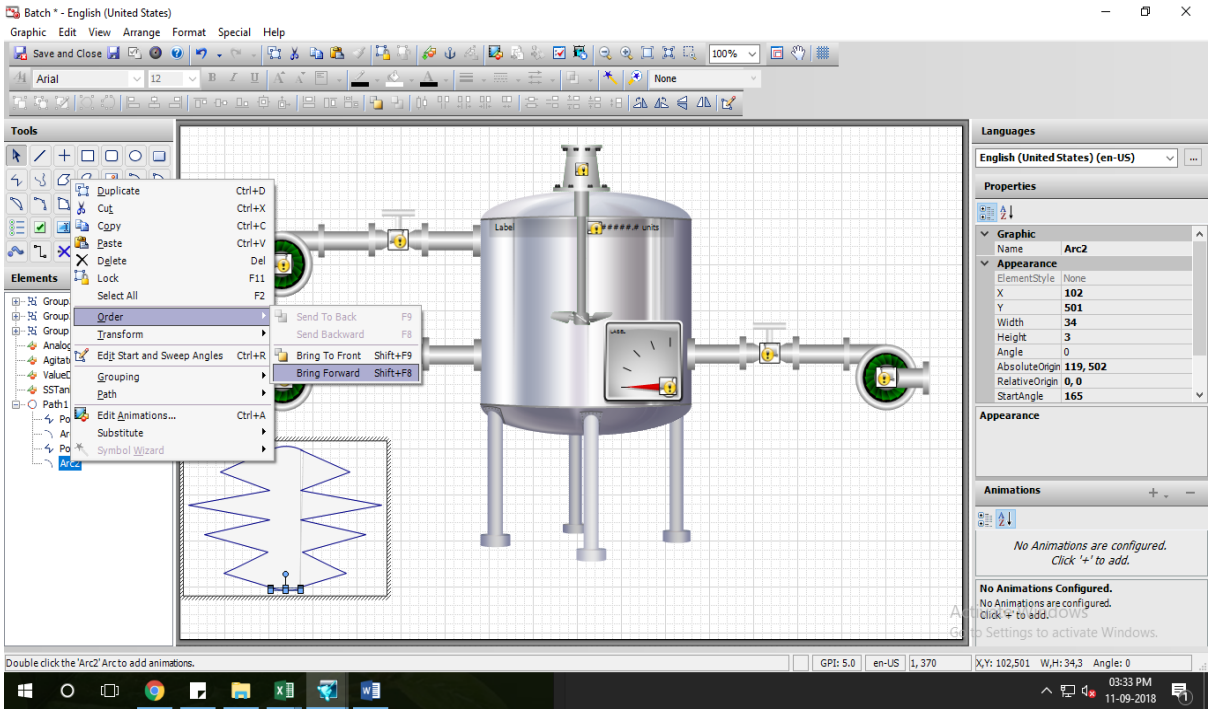
2.To connect the select Tools>3point arc



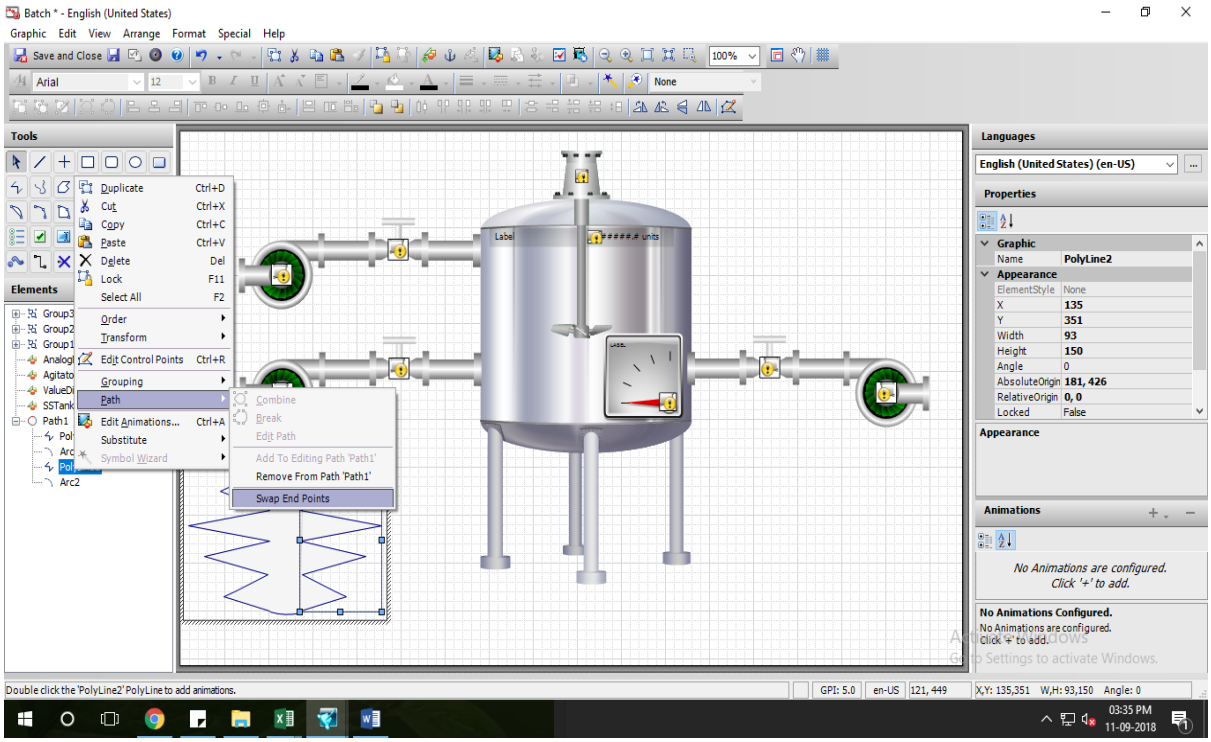
3.To create a path select all the polyline and arc right click ,go to path>combine



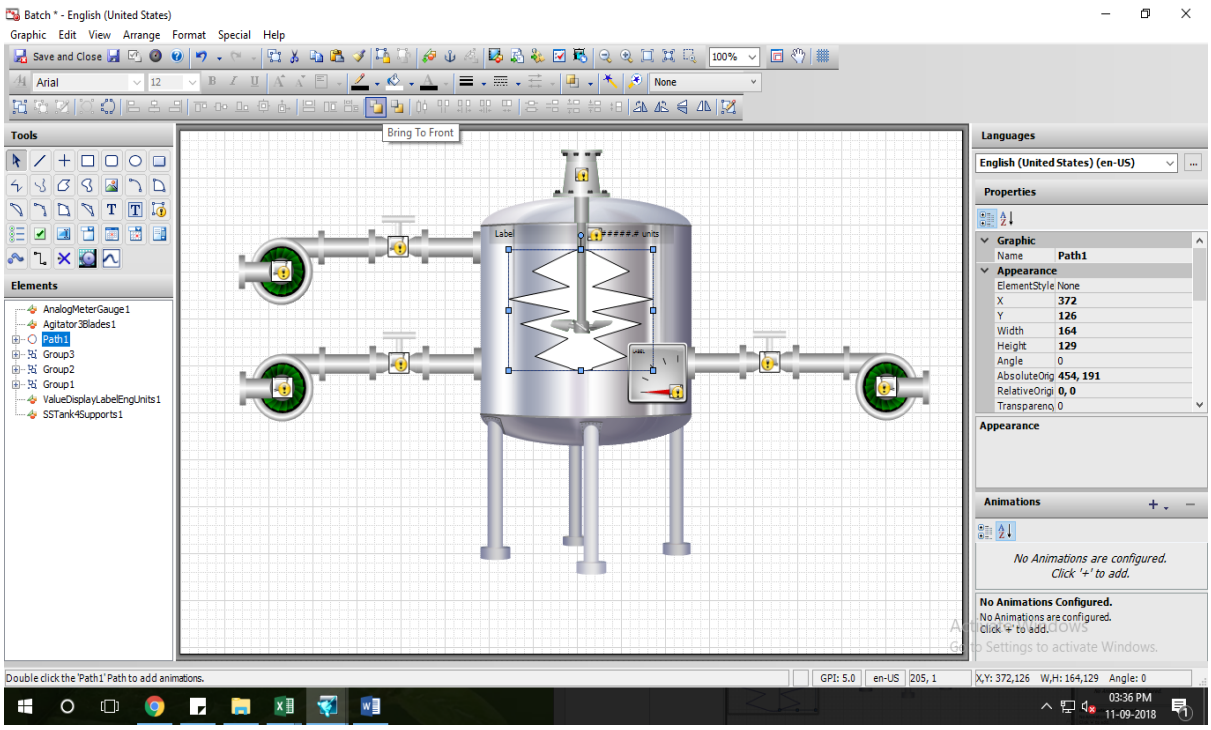
4.change the order of arc and polyline and make symbol



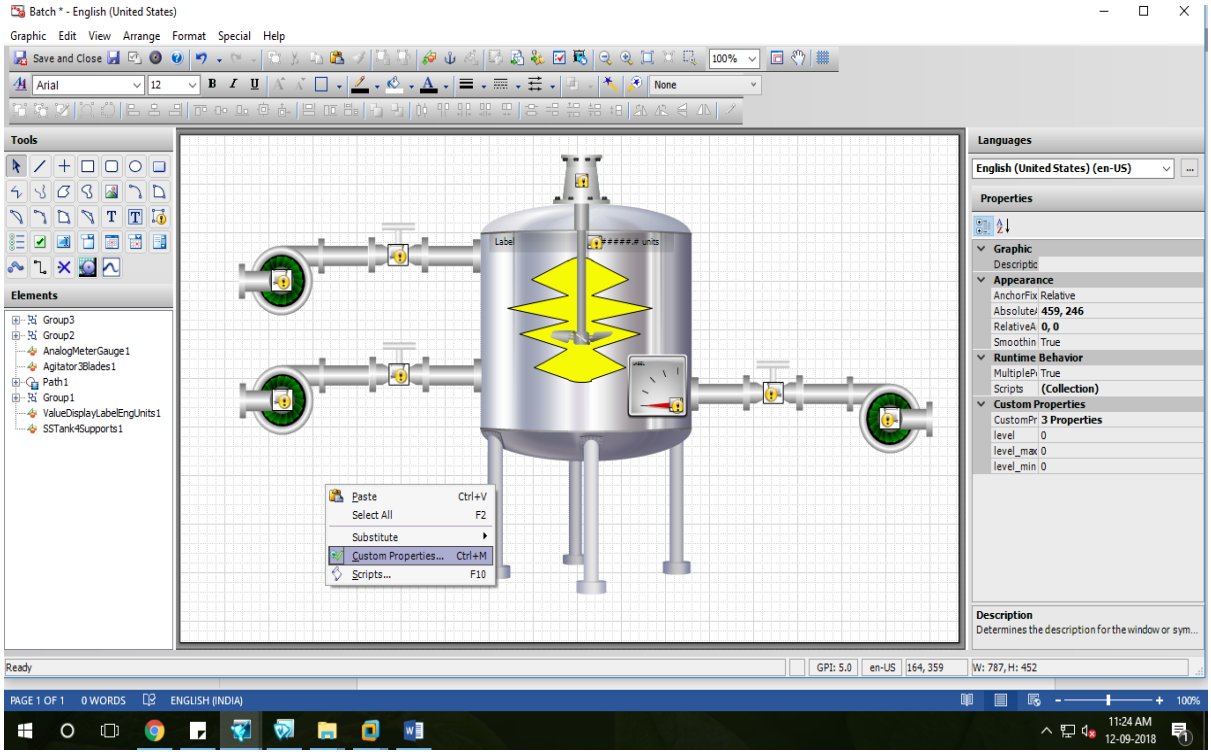
5. if internal line has a end points on the same polyline or arc than swap the end point.



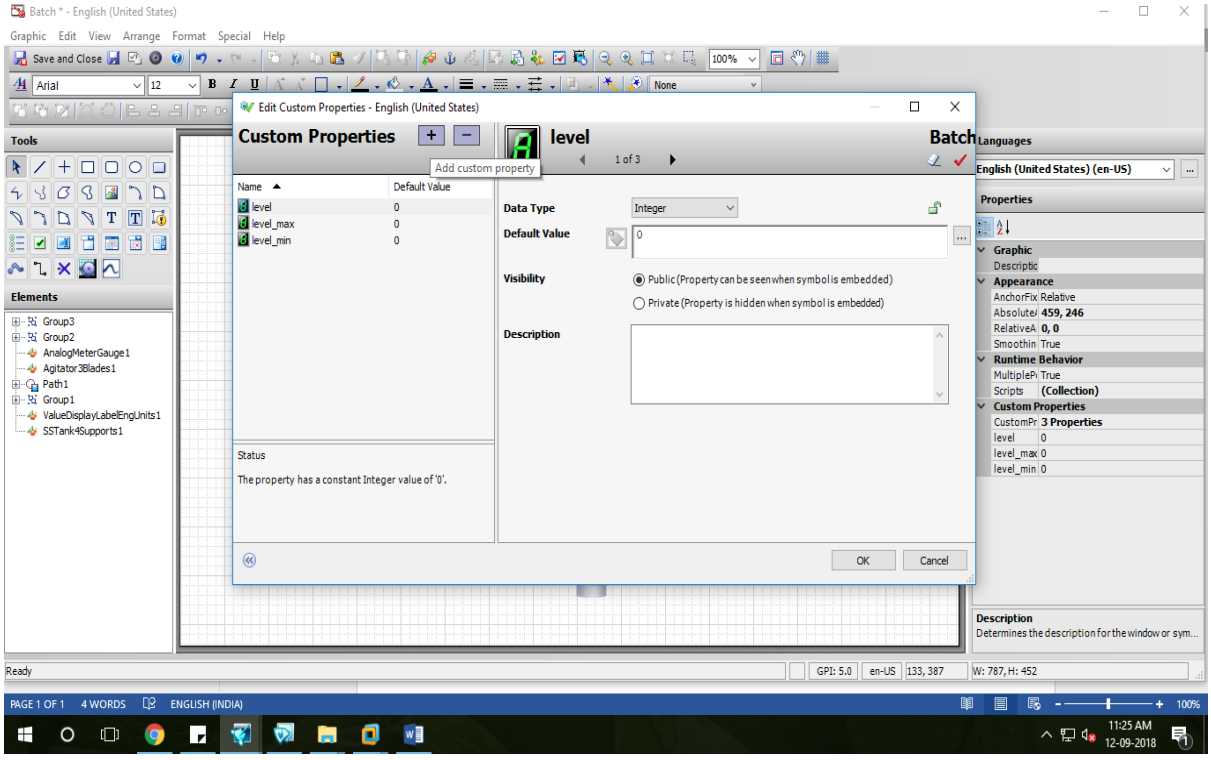
6. put it on its place and if it is hidden than bring it in frount.



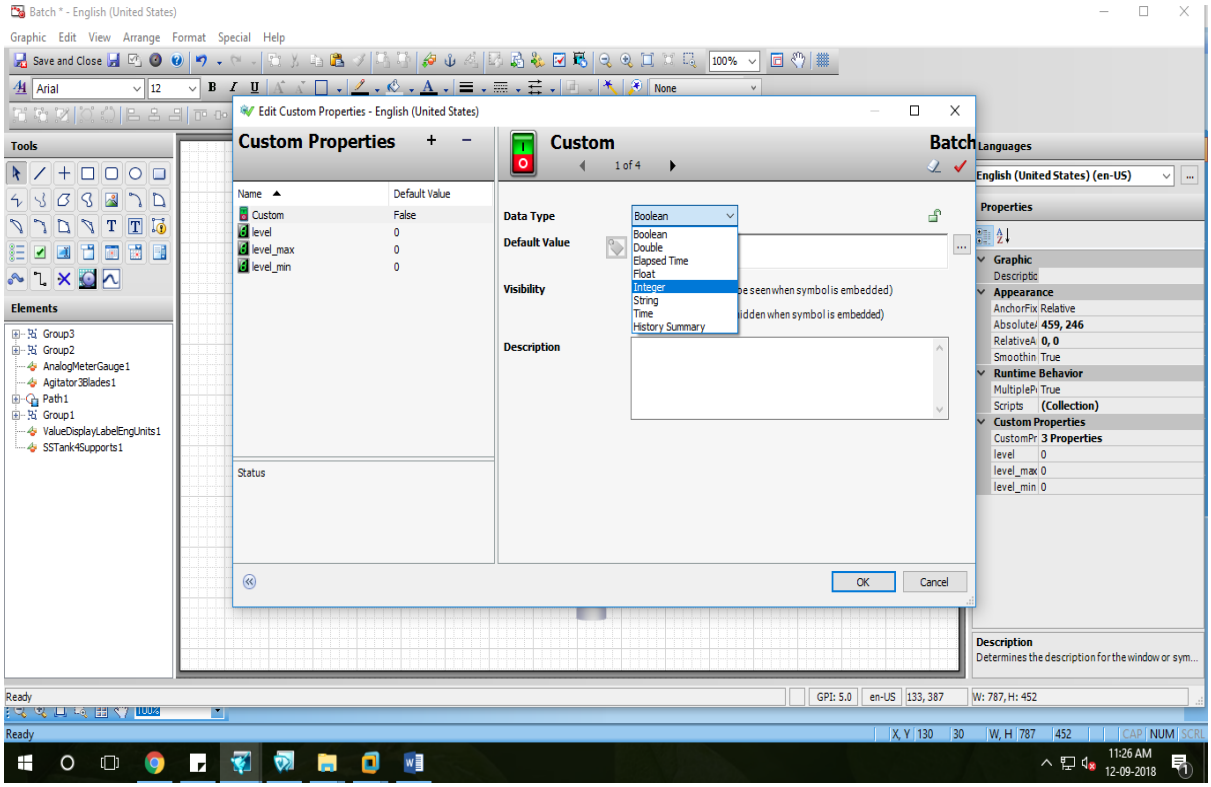
7.create a custom property



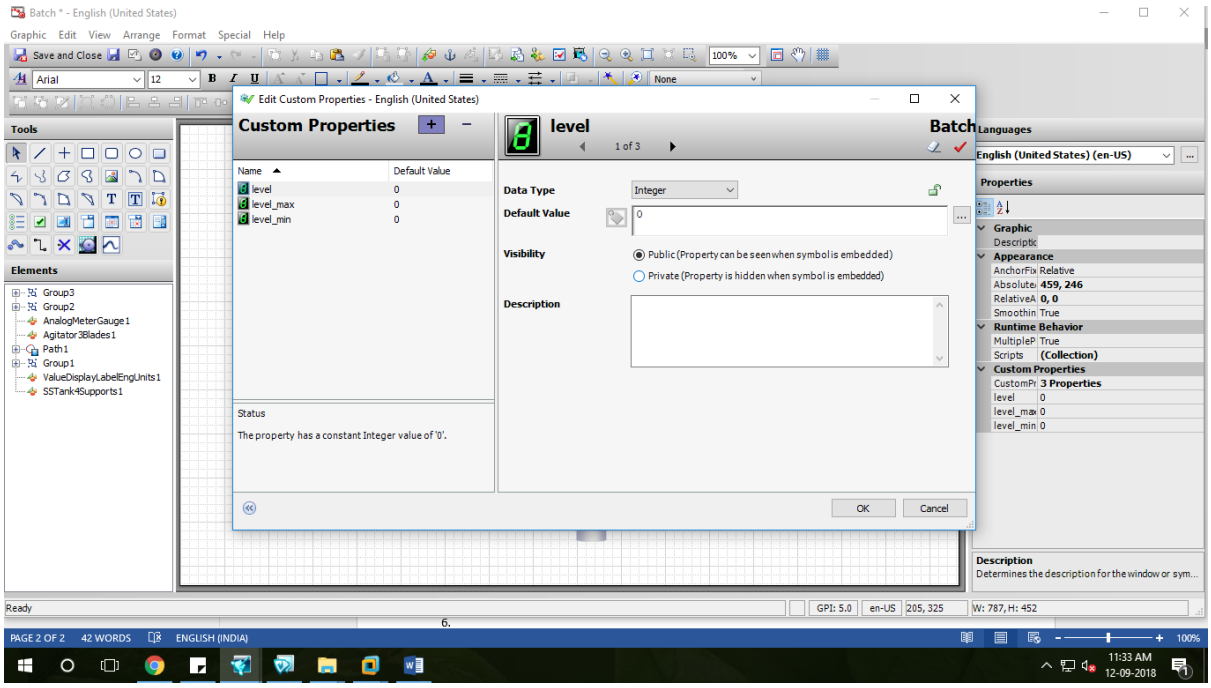
8.Add custom property



9.Give name to the custom property and define data type

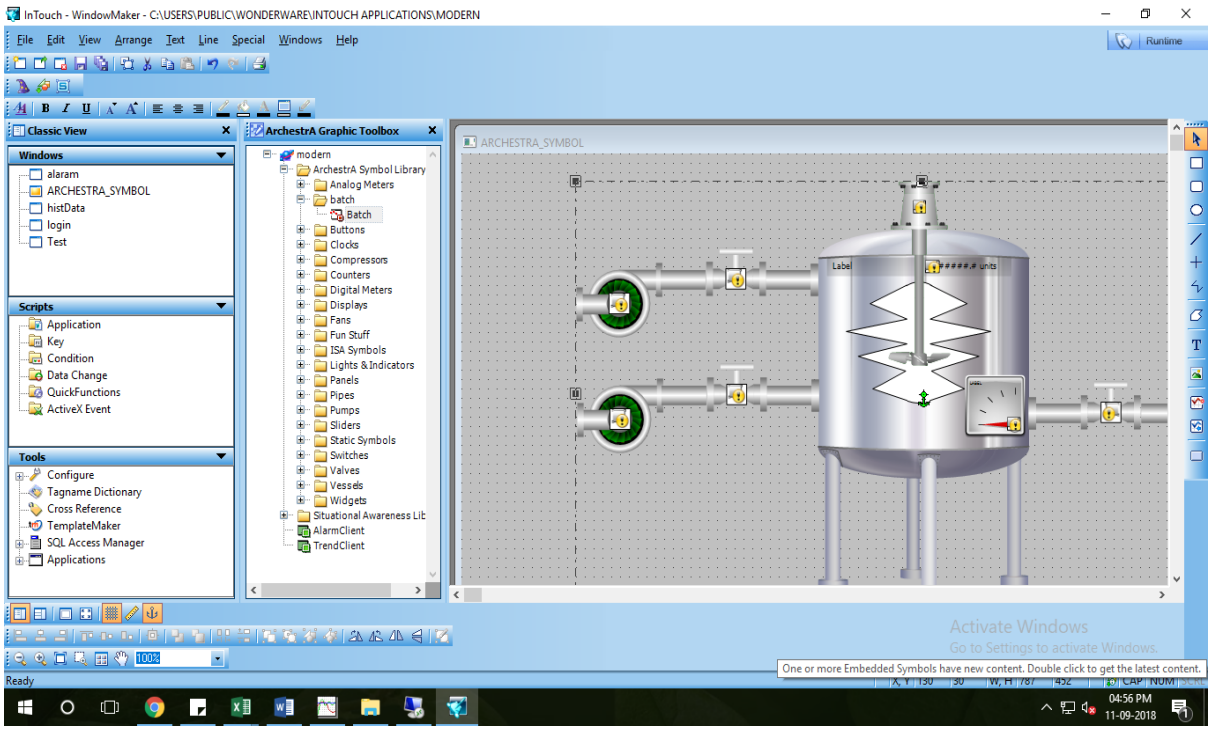


10.Make custom property public or private as Required.



3.2.3 Refresh a symbol in WindowMaker to obtain the latest content

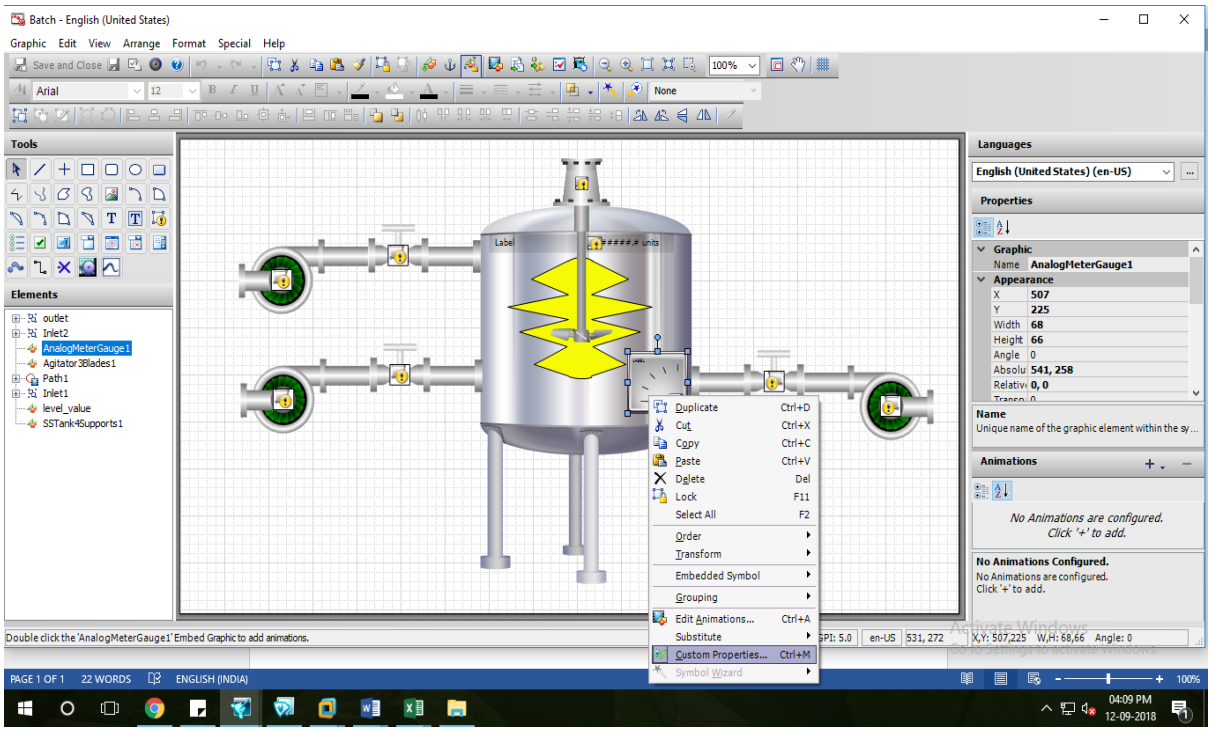
1.After editing symbol save and close the window and go back to windowmaker and double click the refresh button shown in below picture.



3.3 ArchestrA Symbol Custom Properties

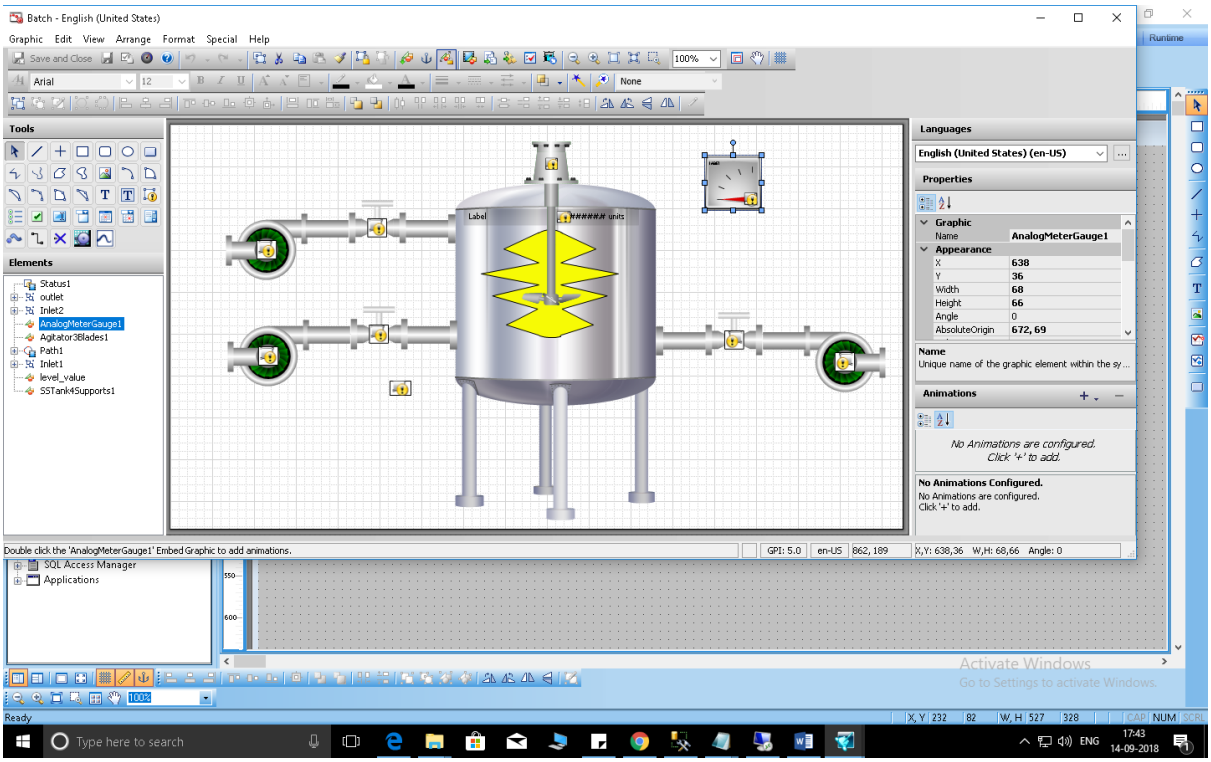
3.3.1 Predefined Properties - Graphic

1. Predefined Custom properties of symbol are predefined properties of graphic

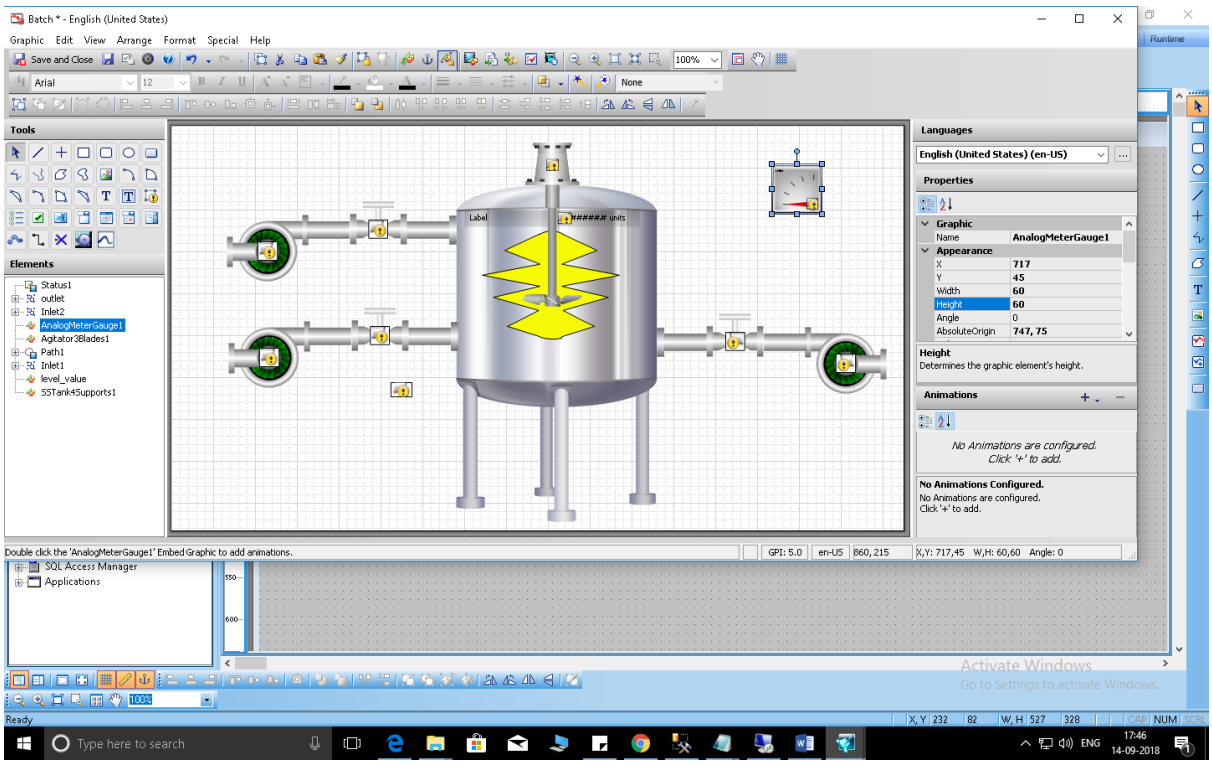


3.3.2 Predefined Properties – Appearance

1. Predefined properties of appearance are given on the right hand side when you click the symbol.

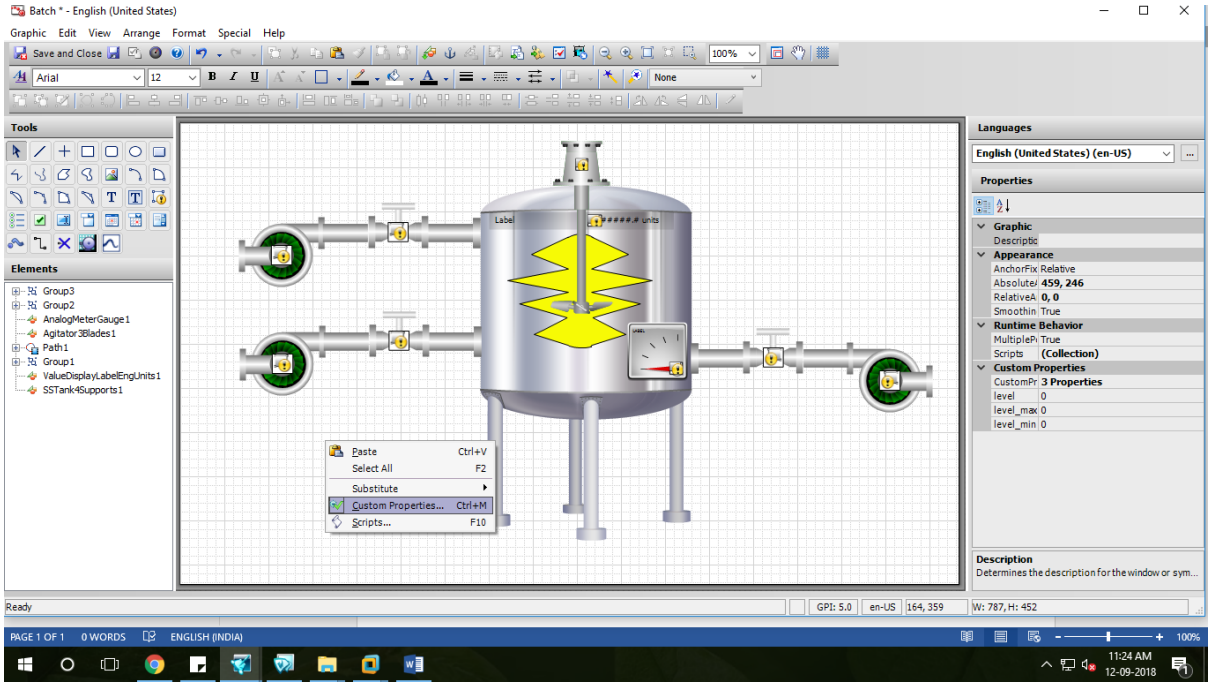


2. You can also change it as you required.

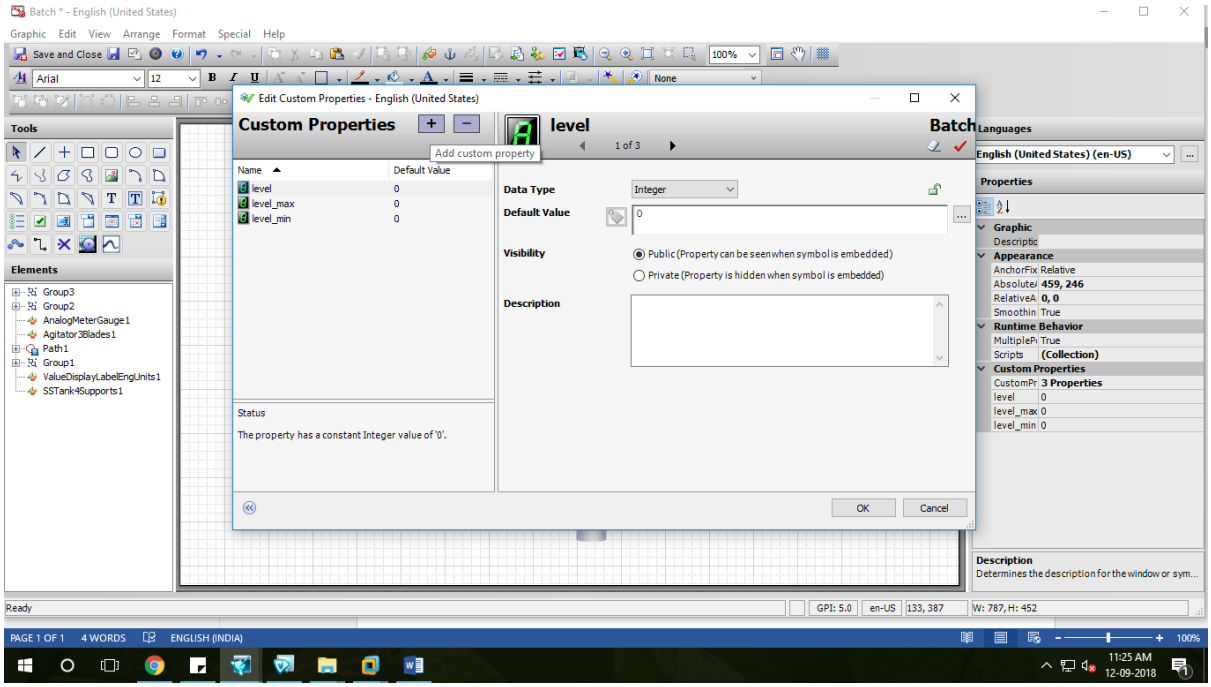


3.3.3 Adding Custom Properties

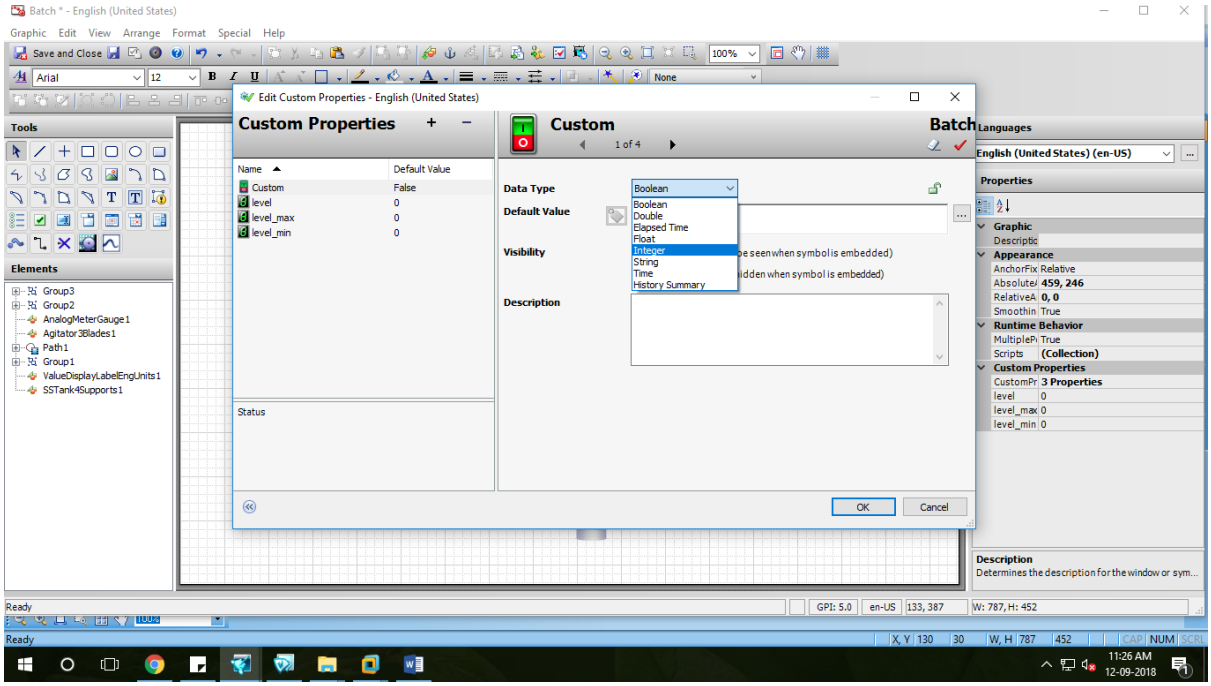
1. create a custom property



2. Add custom property

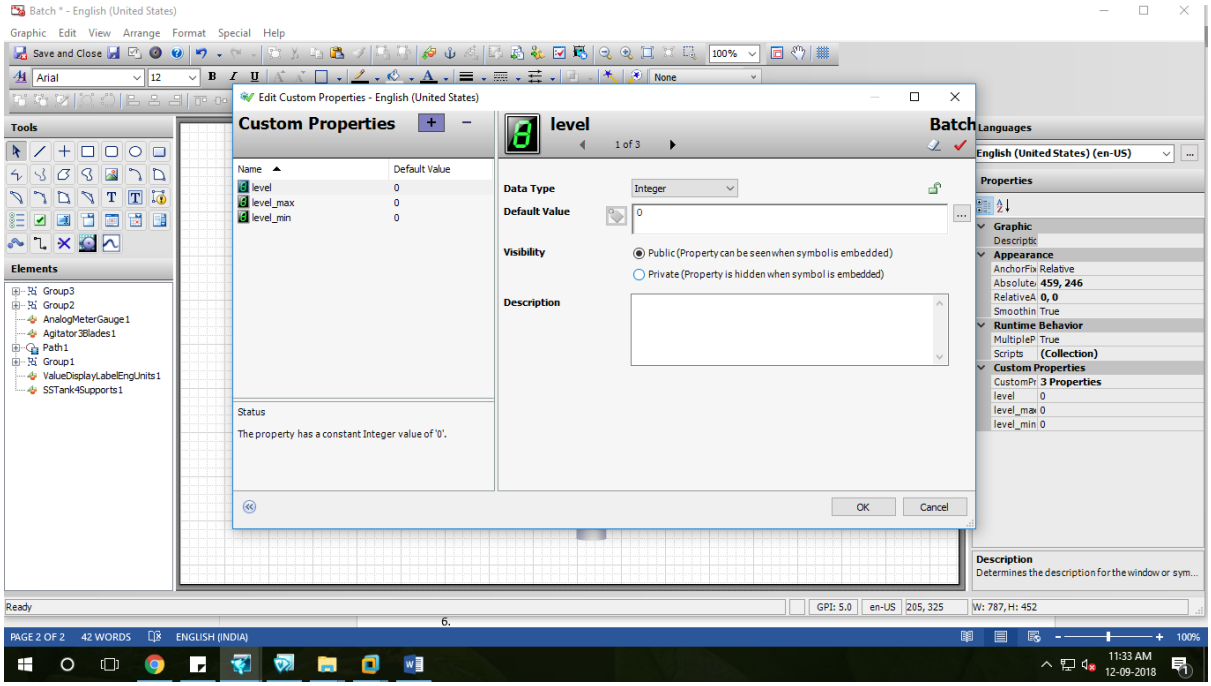


3. Give name to the custom property and define data type



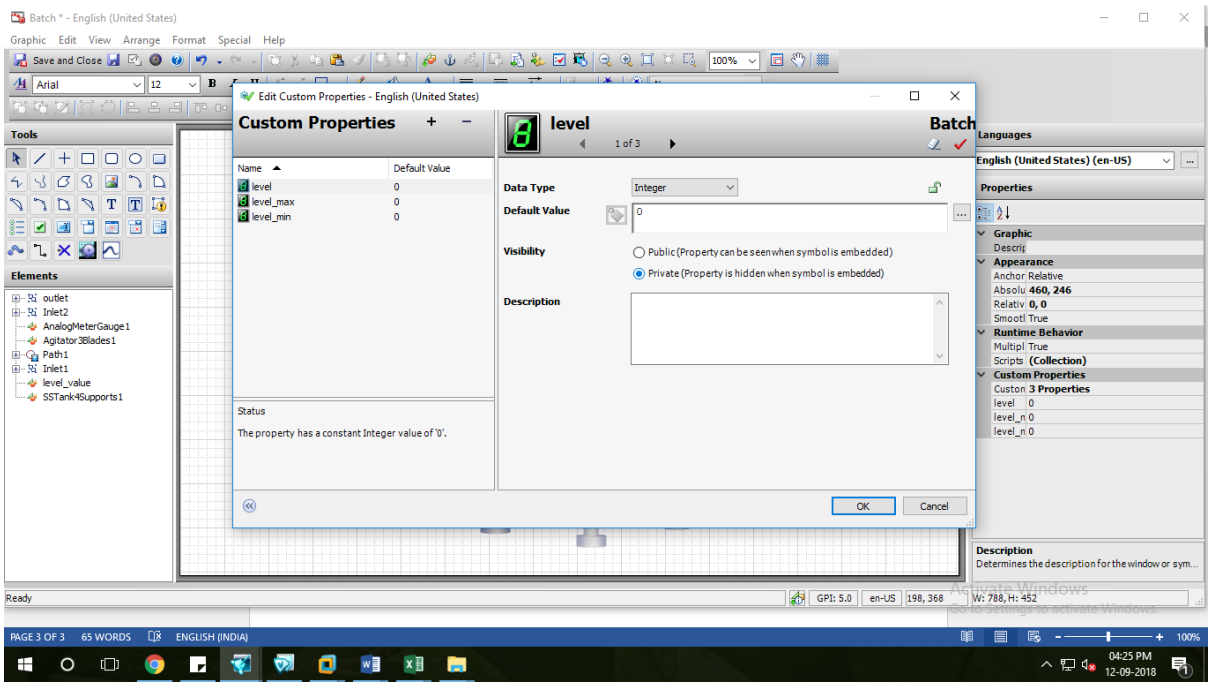
3.3.4 Visibility- Public

Make custom property public.



3.3.5 Visibility- Private

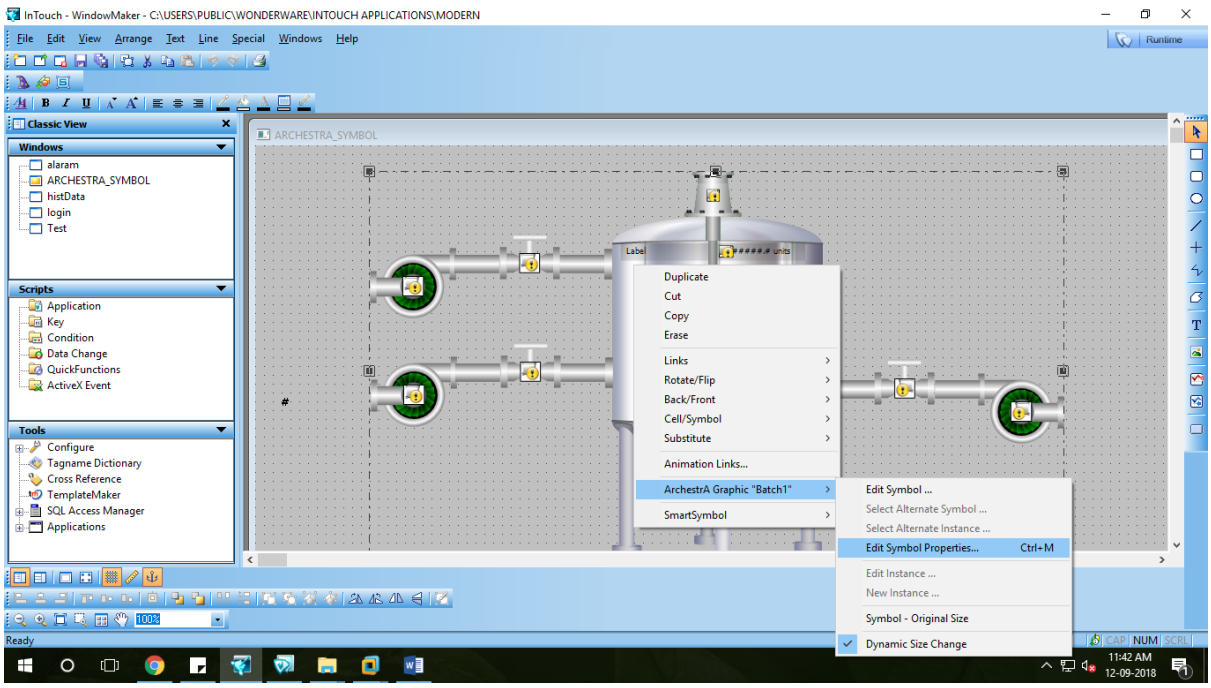
Make custom property private.



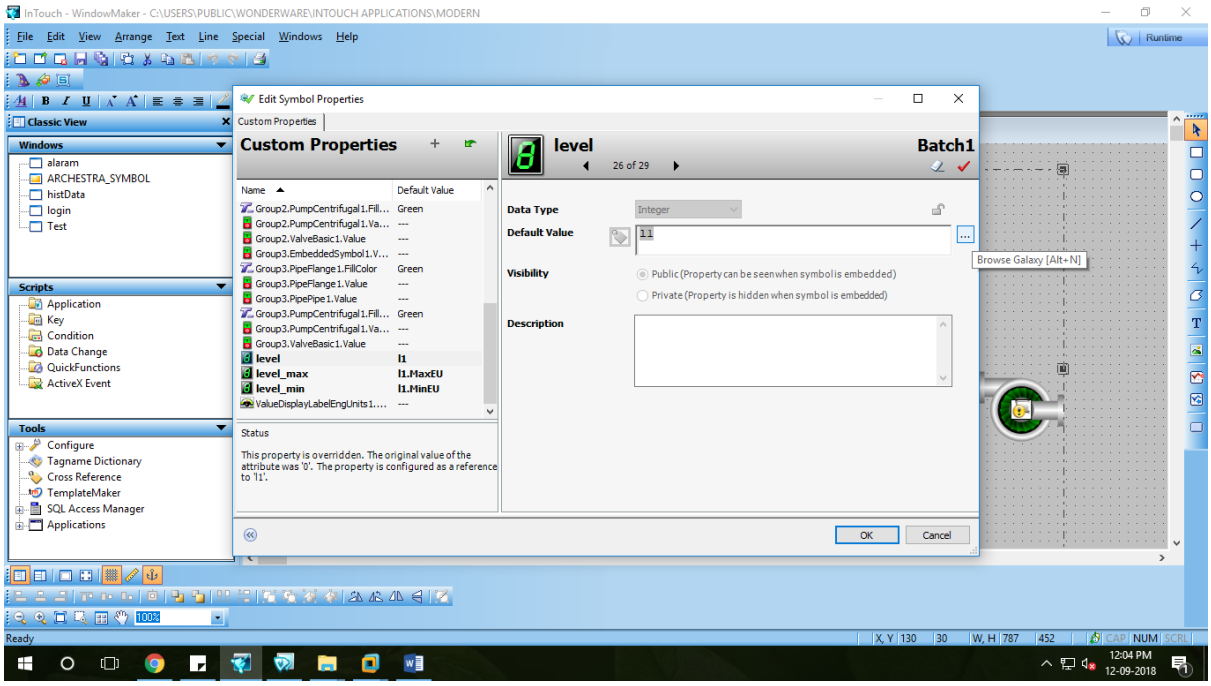
3.3.6 Linking Custom Properties to External Sources

1. To link custom property with tag values ,go to Archestra graphics >edit symbol

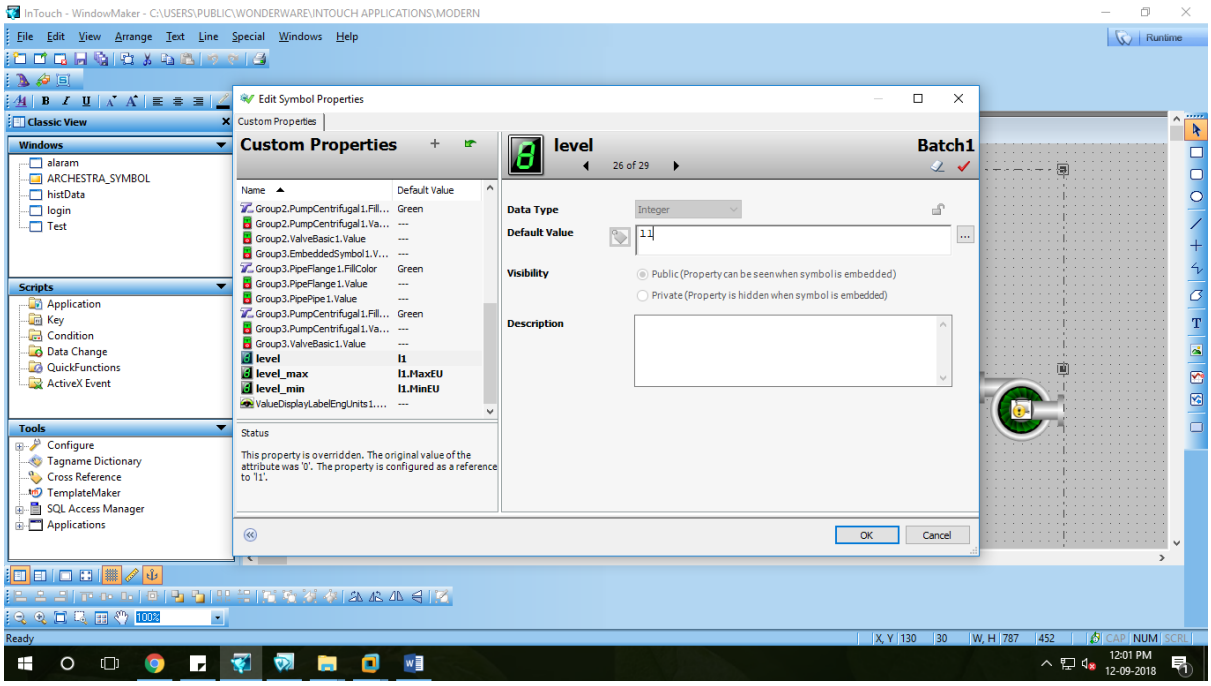
   Or double click on symbol.



2. In default value browse the tag



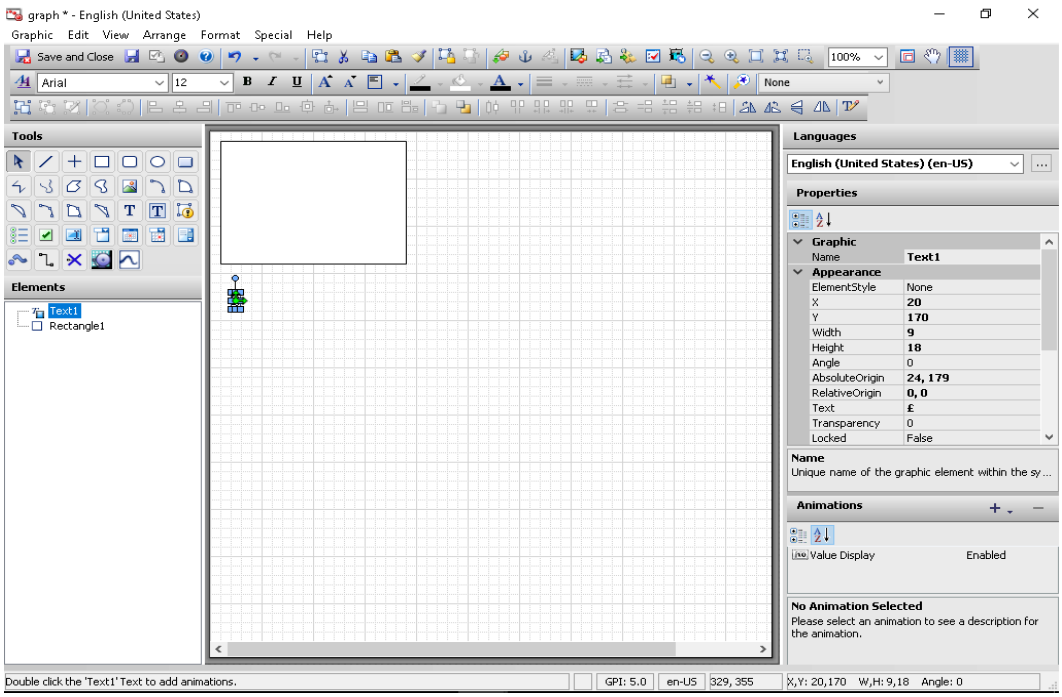
3. Select related tag .



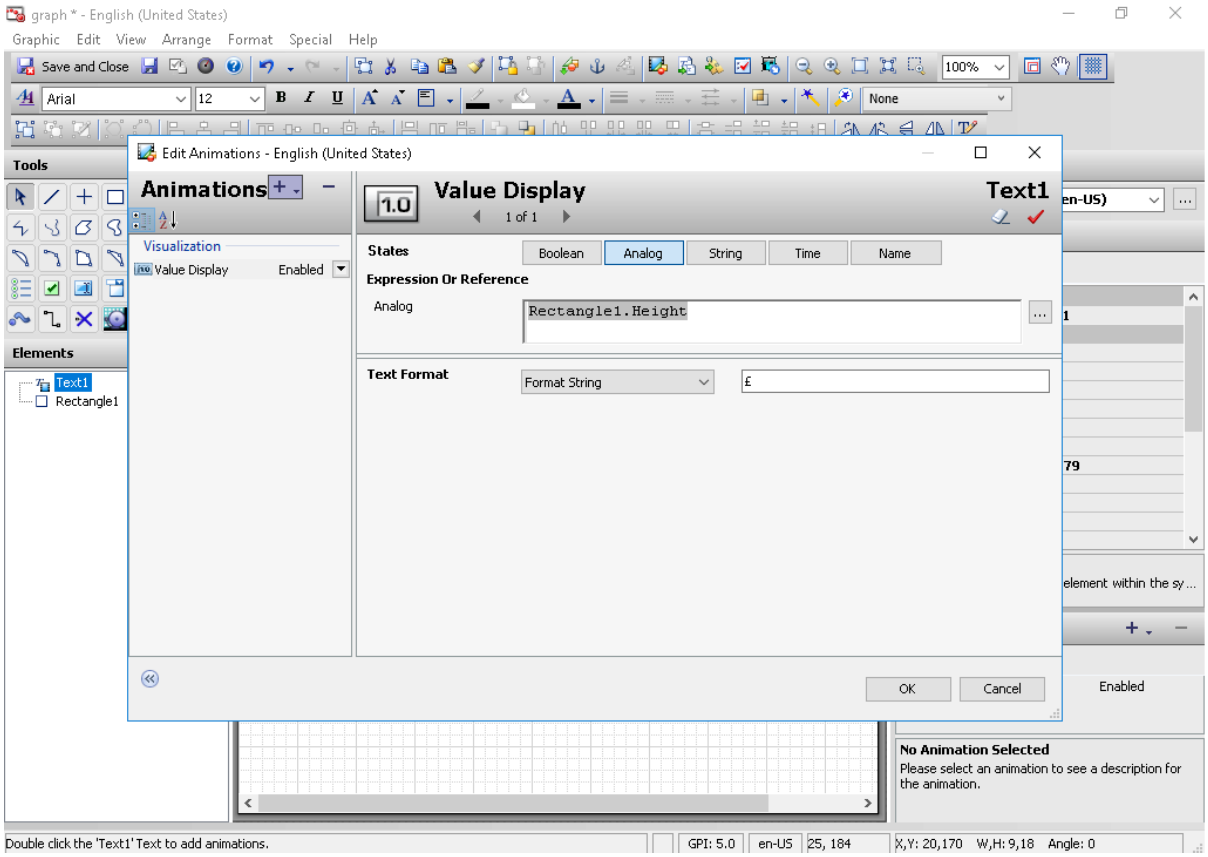
3.4 ArchestrA Symbol Animation

3.4.1 Connect Animations with Element Properties

1. To link element property with tag values ,go to Archestra graphics >take new symbol or open the symbol suppose here we want to link element properties of rectangle.

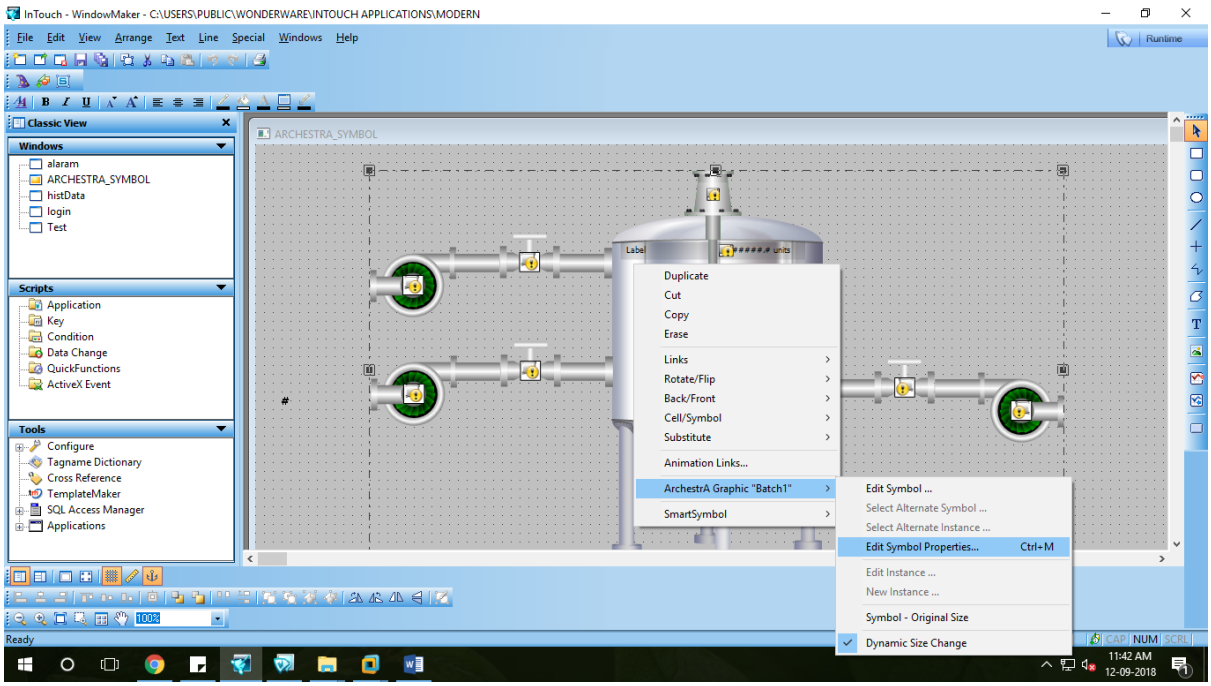


2. Take one tag and open its animation link by double click on it then in value display animation browse the rectangle properties here we take height of rectangle.
3. In run time this shows the height of the rectangle.

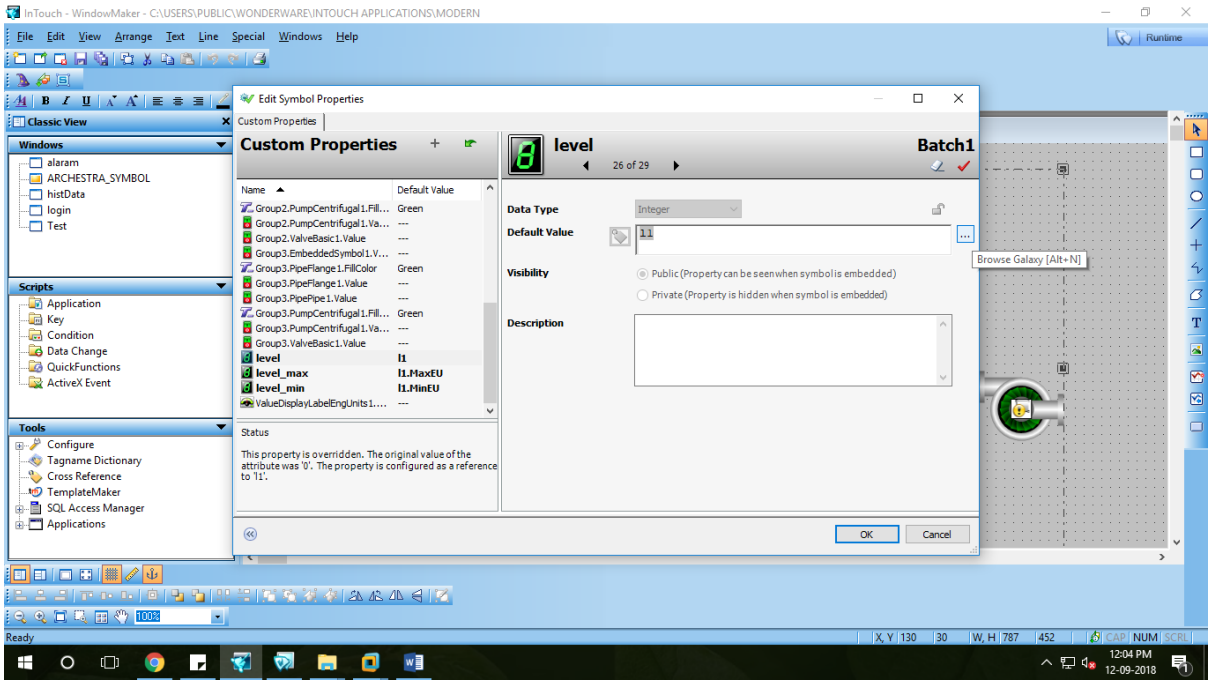


3.4.2 Connect Animations with Custom Properties

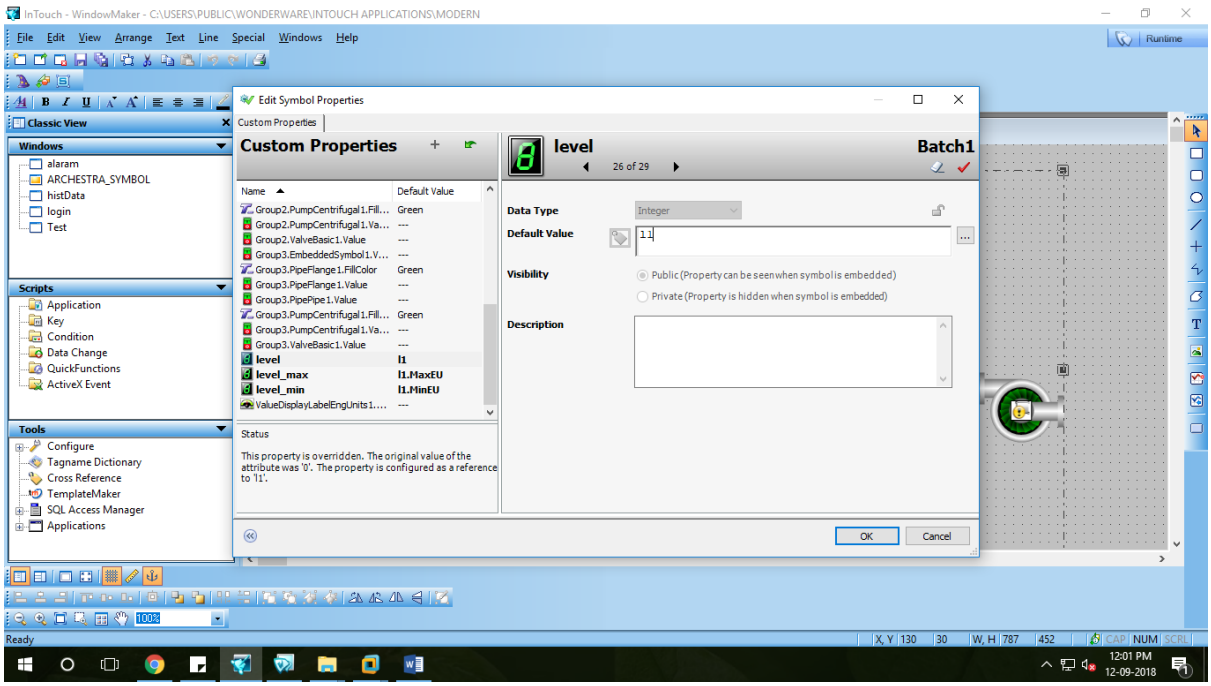
1. To link custom property with tag values, go to Archestra graphics >edit symbol
   Or double click on symbol.



2. In default value browse the tag



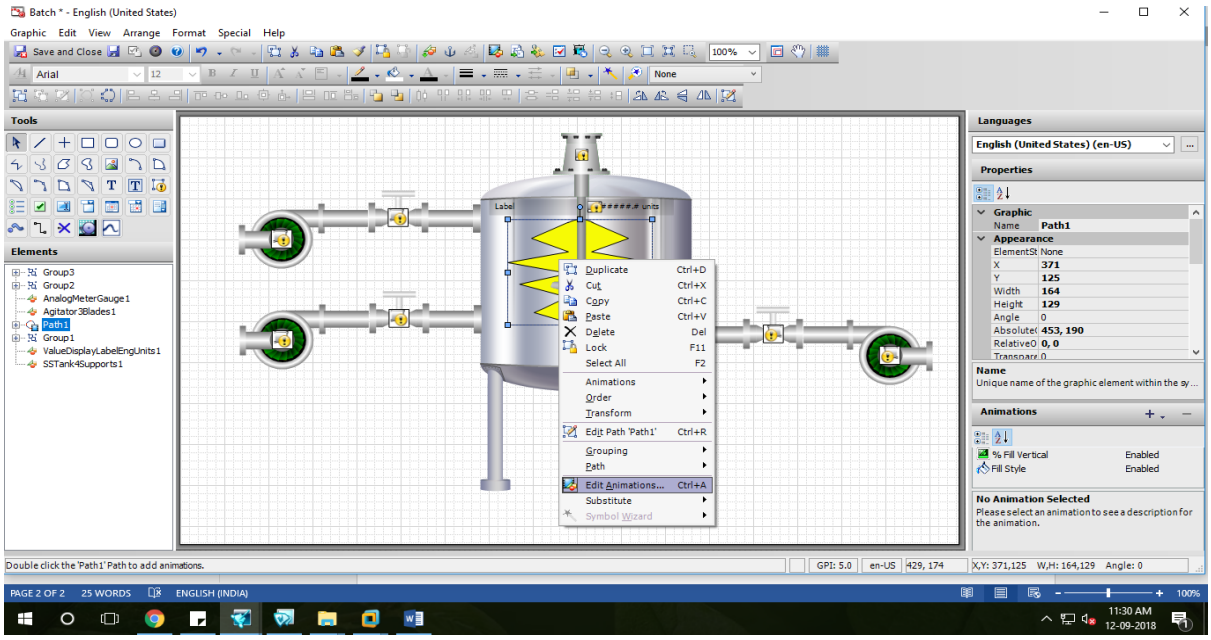
3. Select related tag .



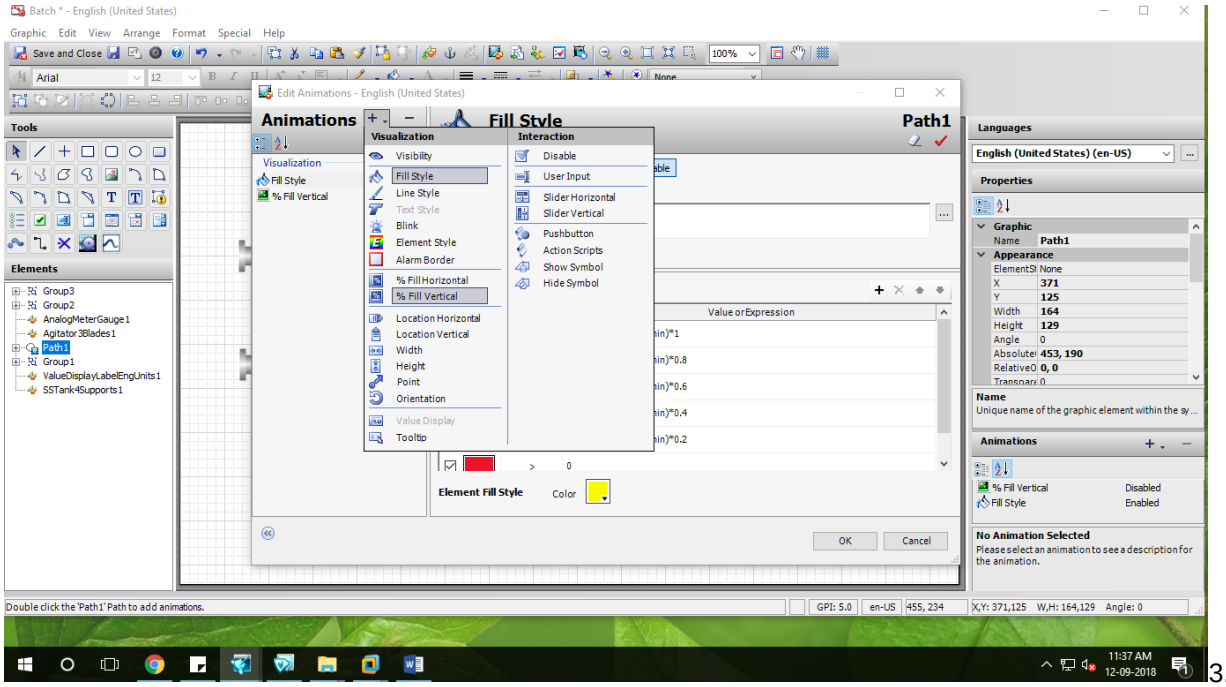
3.4.3 Configure Common Types of Animations

1. Open animation window ,Right click on symbol go to edit animation

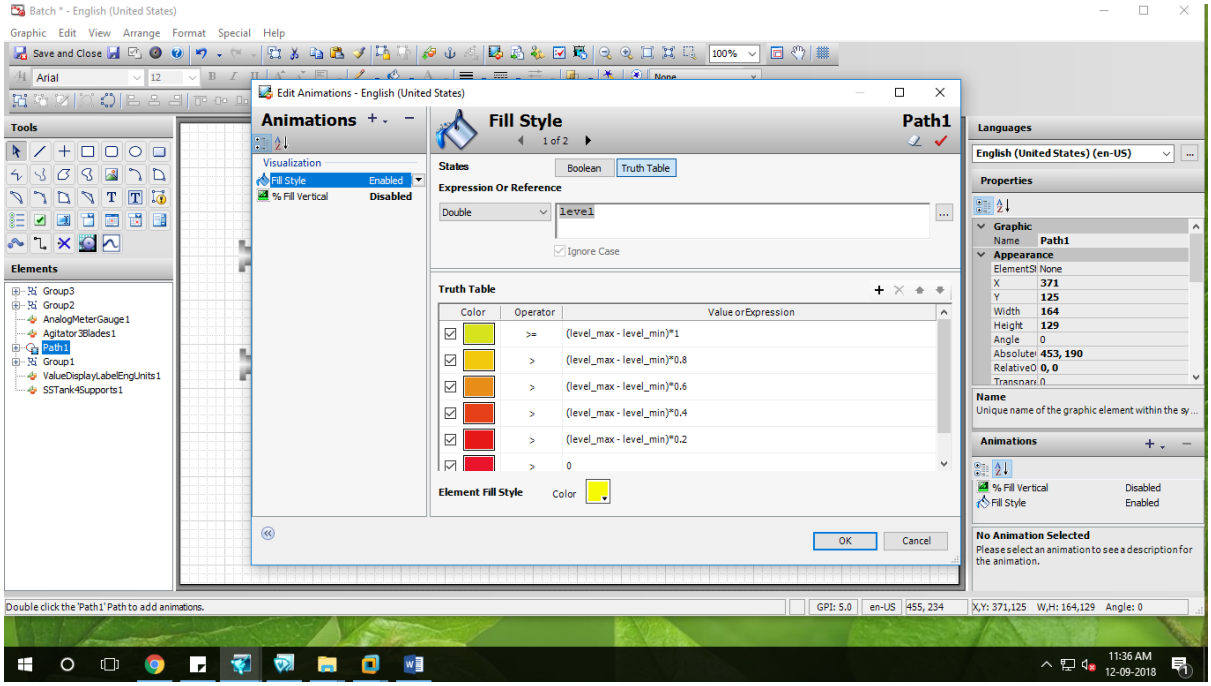
Or double click on symbol.



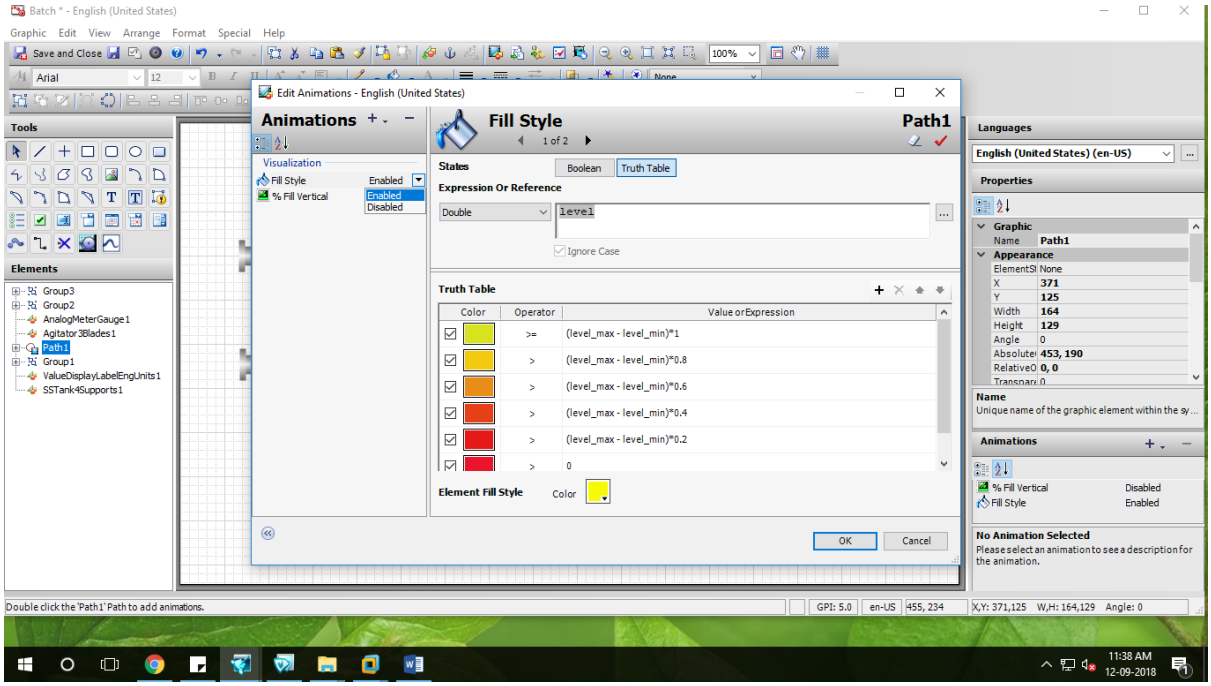
2. Choose animation.



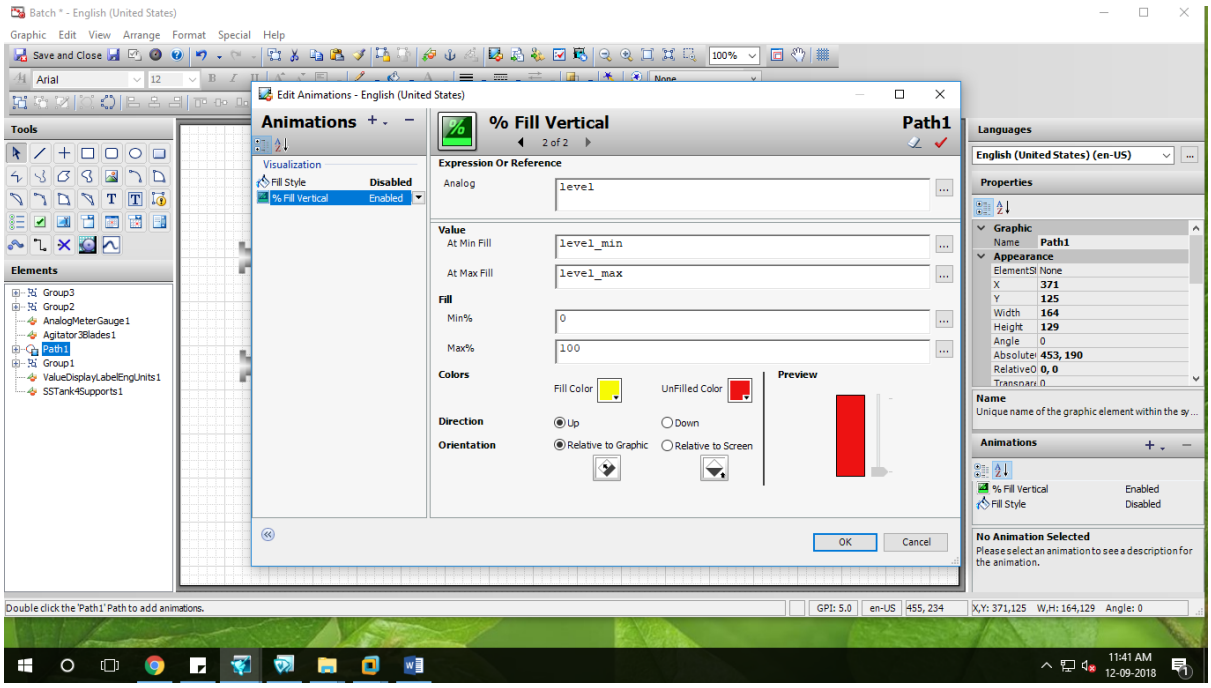
3. Give animation using custom properties



4. If u have created more than one animation and now you want to make enable only few of them than enable or disable visualization.



5. Example of %fill animation

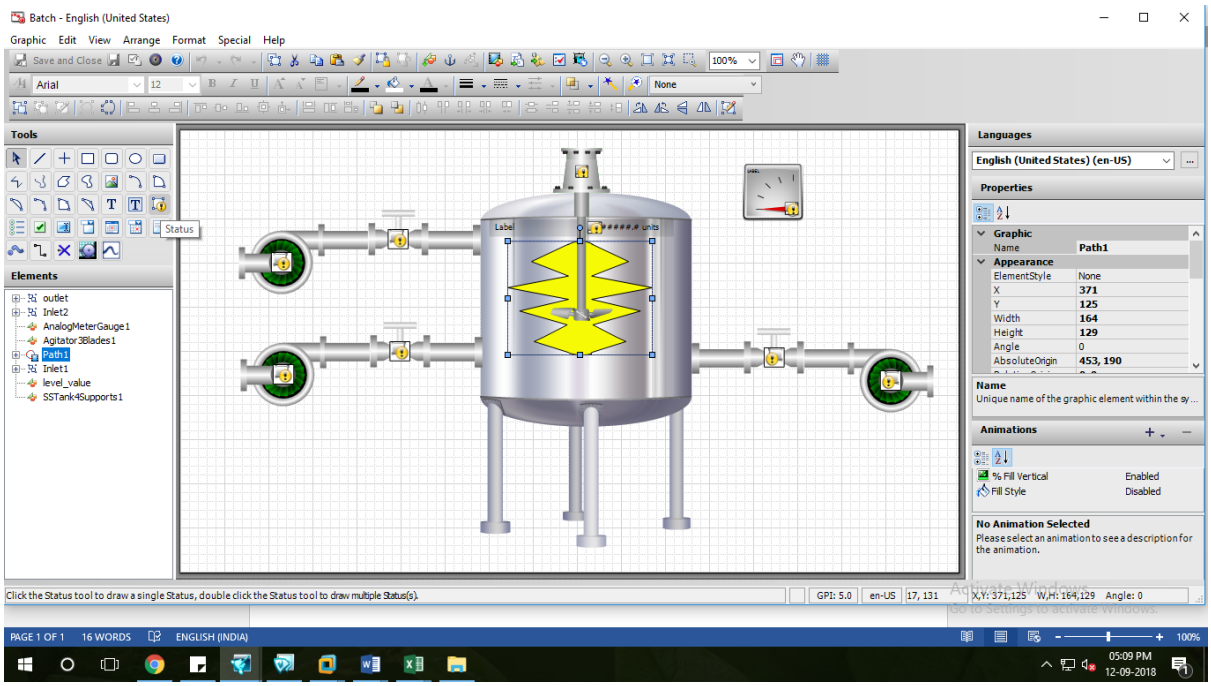


6. after giving the animation save and close it.

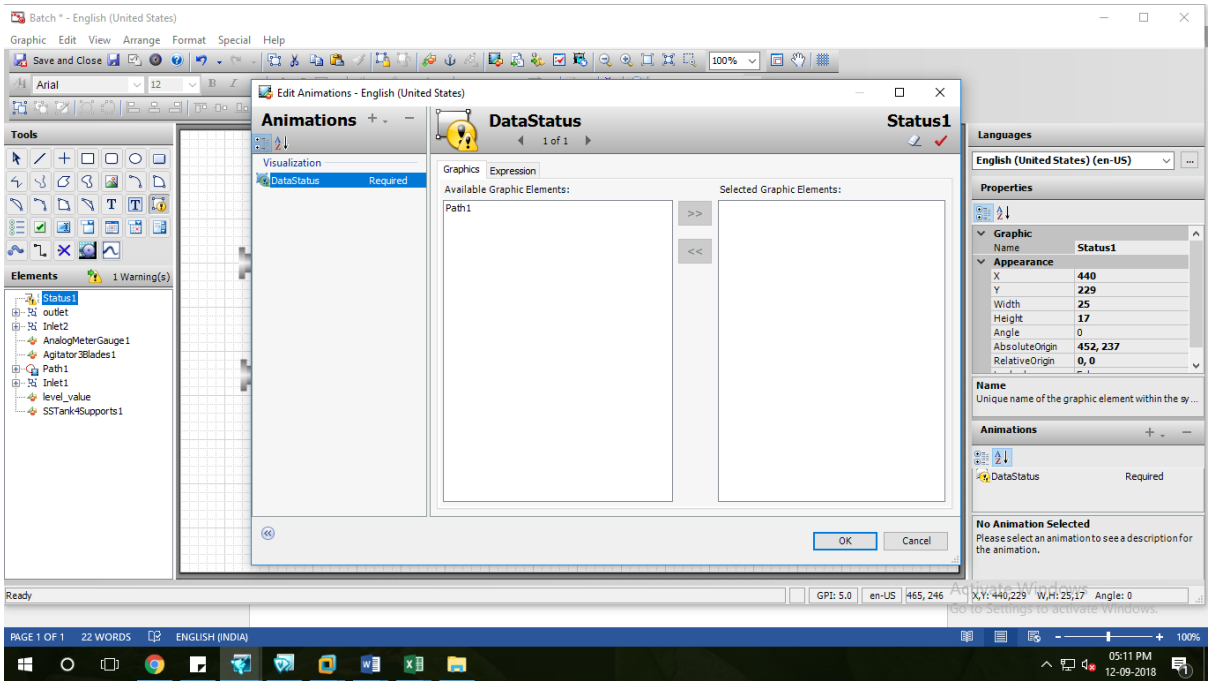
3.5 ArchestrA Symbol Status and Quality

3.5.1 Add Quality and Status elements to a symbol

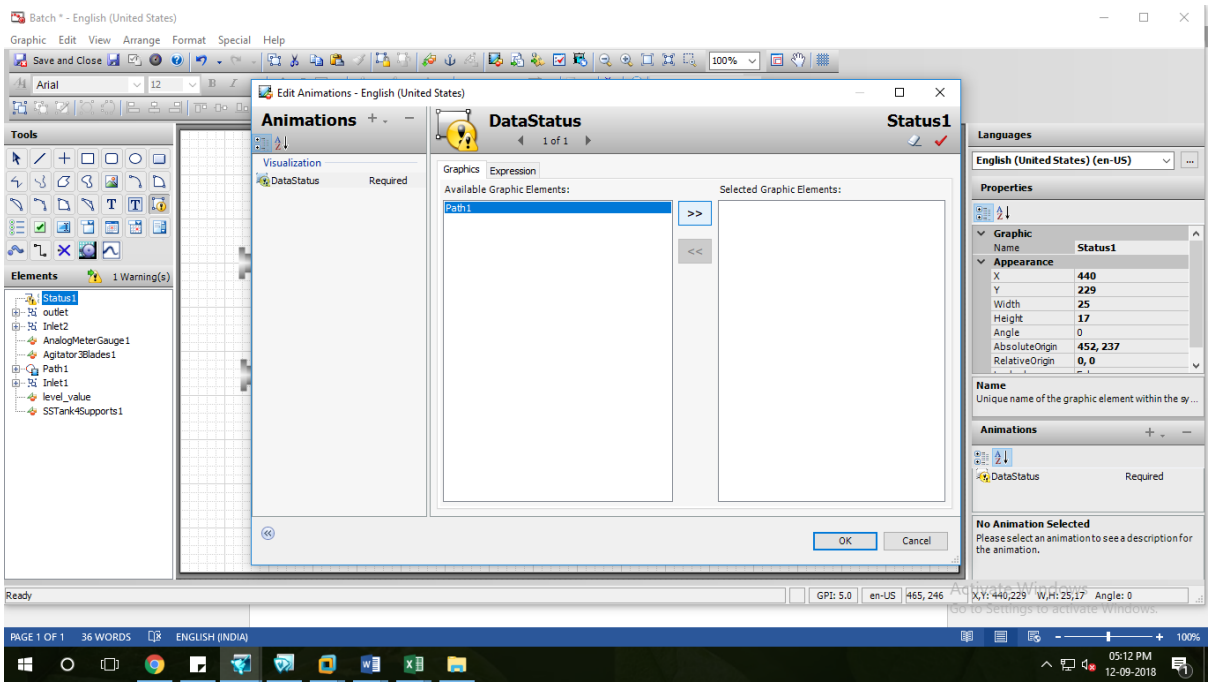
1. Take a status tool from Tools.



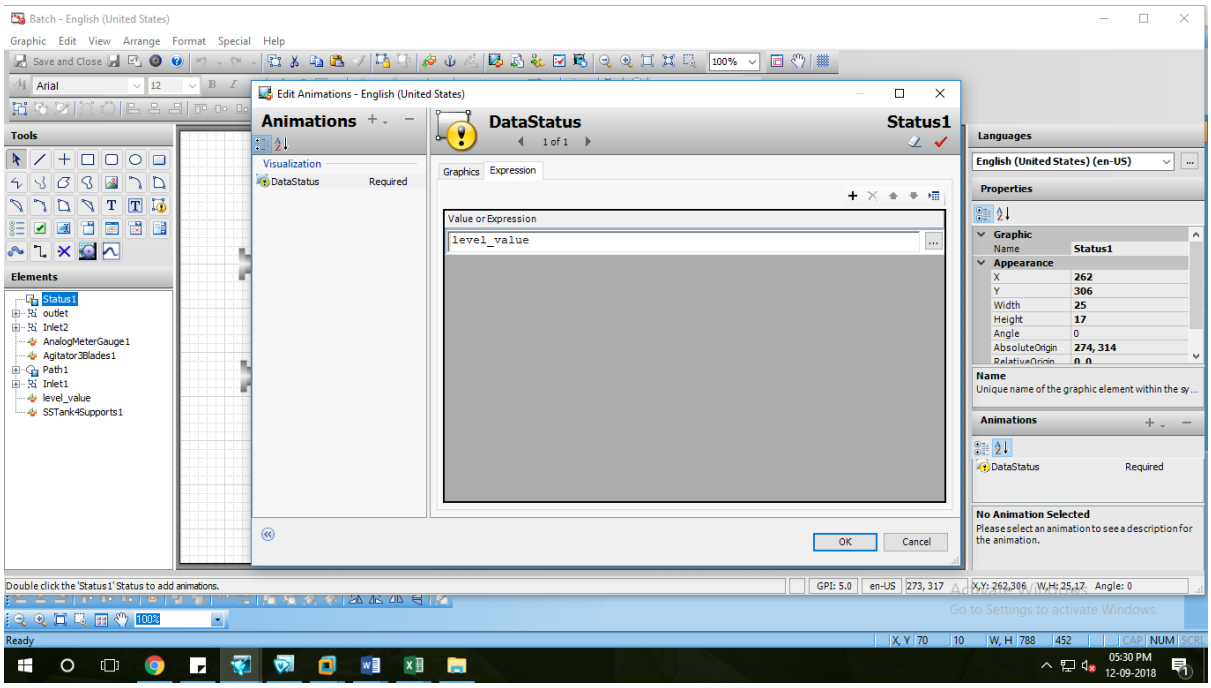
3. As you will put this tool on symbol it will pop-up the window.



3. Move the available graphic to selected graphic.



4. Give the expression. In the Value or Expression list, type a value or expression that can be a literal, or a reference or element property.



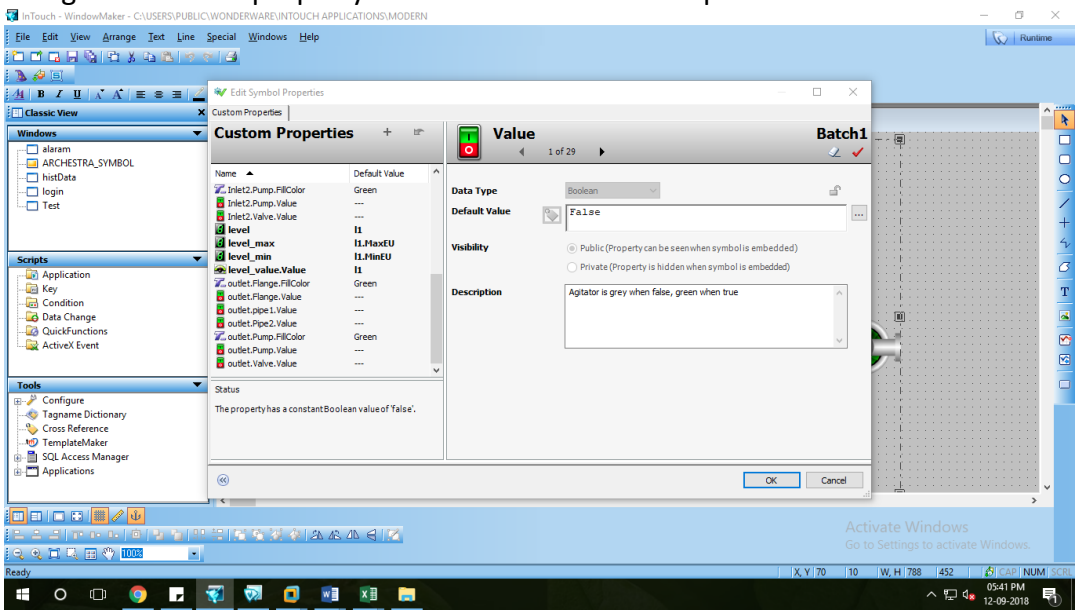
6.Mode of staus.

A status element prioritizes error and status conditions, as shown in the following list

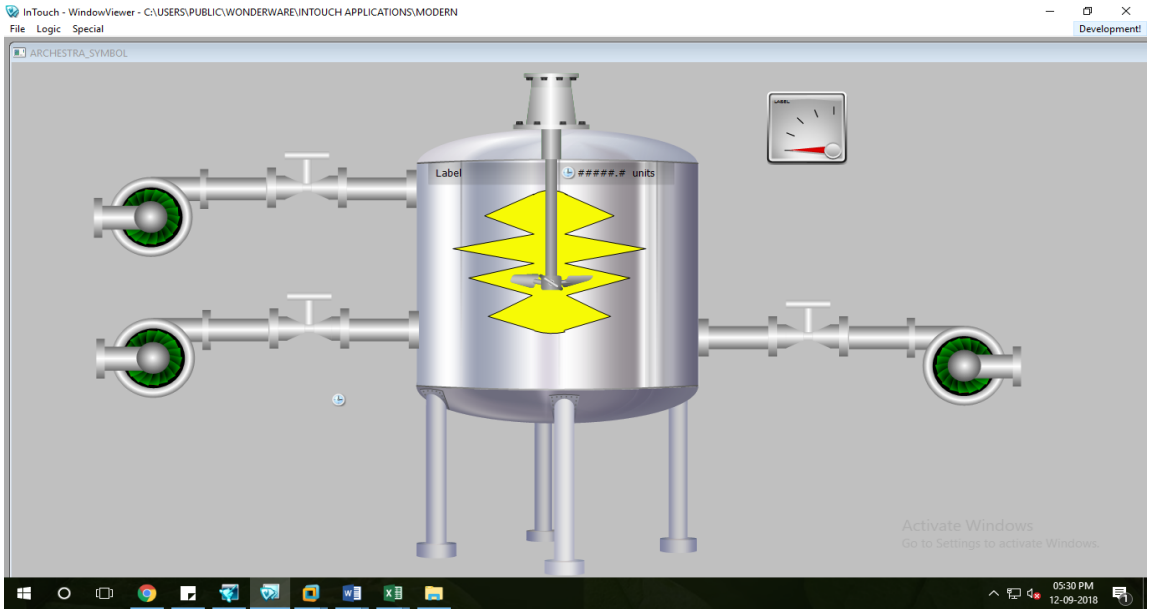
- Communication Error (highest priority)
- Configuration Error
- Pending
- Operational Error
- Software Error
- Security Error
- Warning
- Bad
- Uncertain
- Initializing (lowest priority)

3.5.2 Link animations to quality and status, Identify I/O communication.

1.link the tag with custom property which is defined in the expression of status tool.



2. Than check it in window viewer.

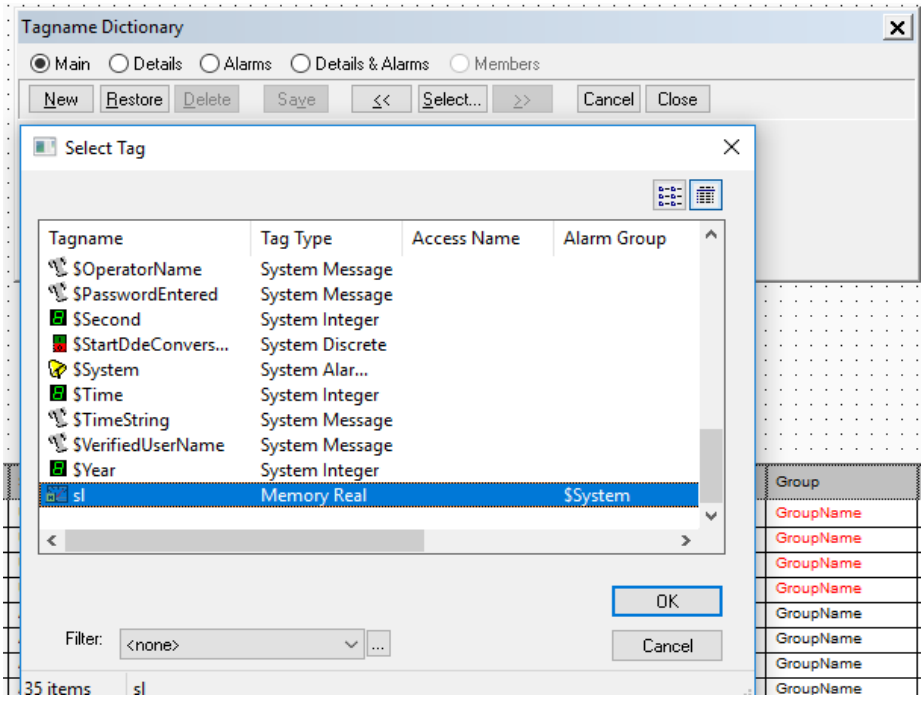


4 Alarms and Events

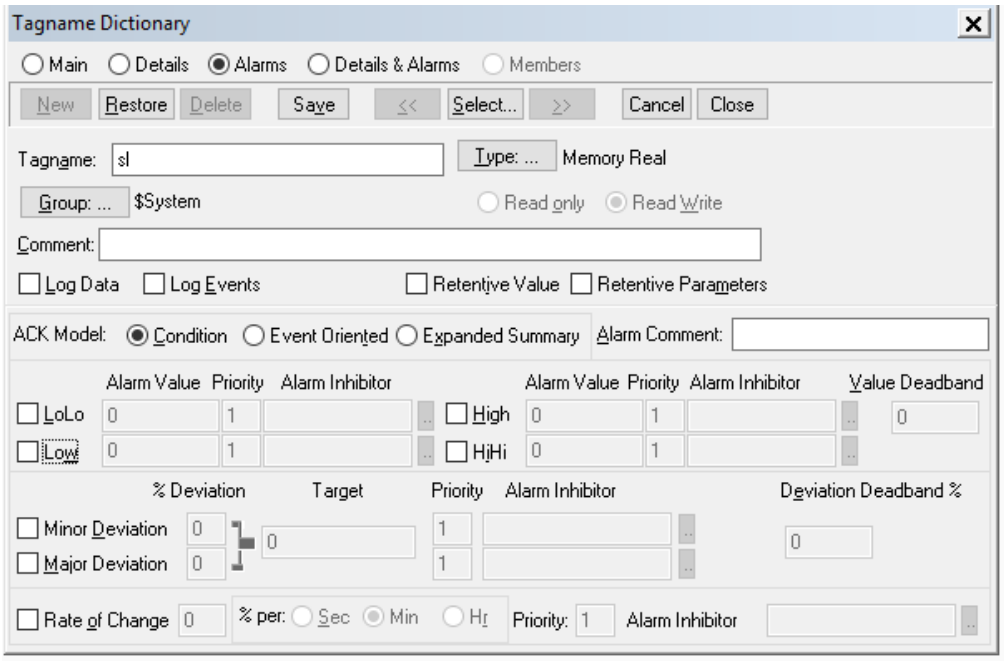
4.1 Enabling and Configuring Alarms

4.1.1 Limit Alarms

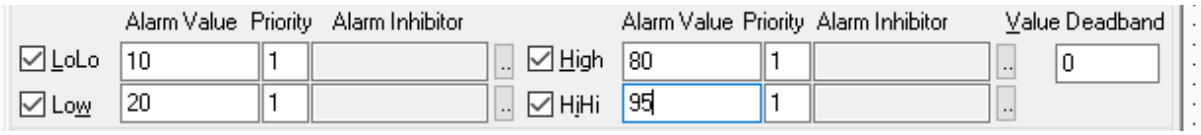
1. Open InTouch application
2. Open Tag name Dictionary(Ctrl+T)
   Select tag from Tag name Dictionary.



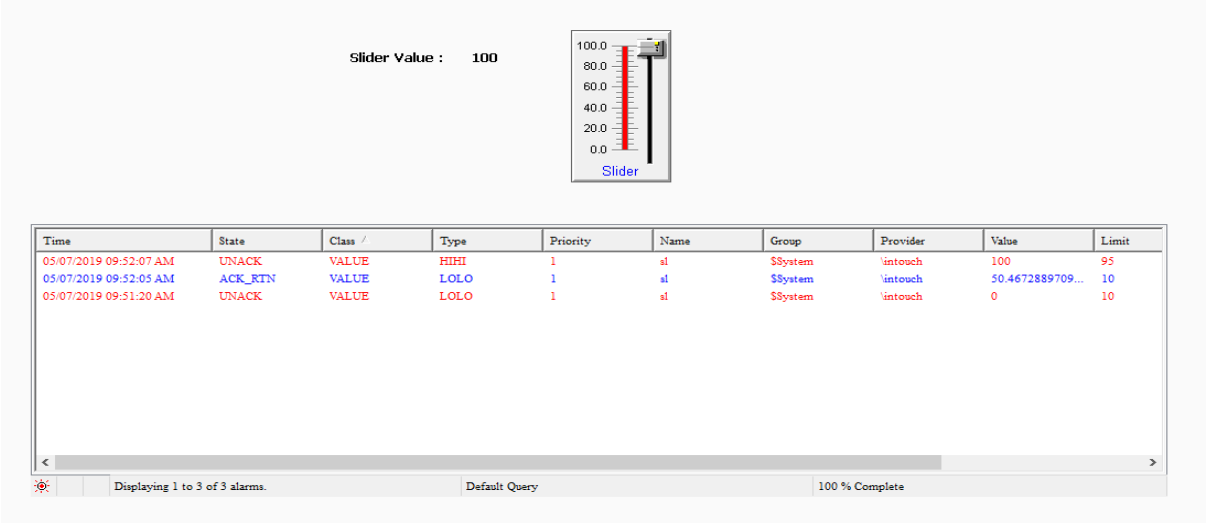
3. Go to Alarm Tab .



4. Enable Alarm.

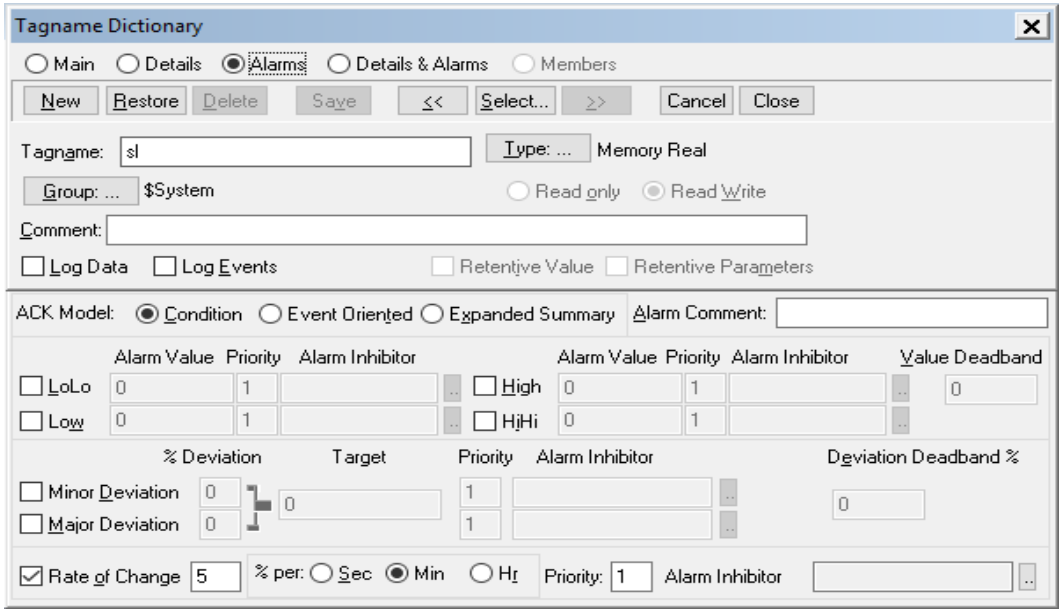


5. Visualize Alarm.

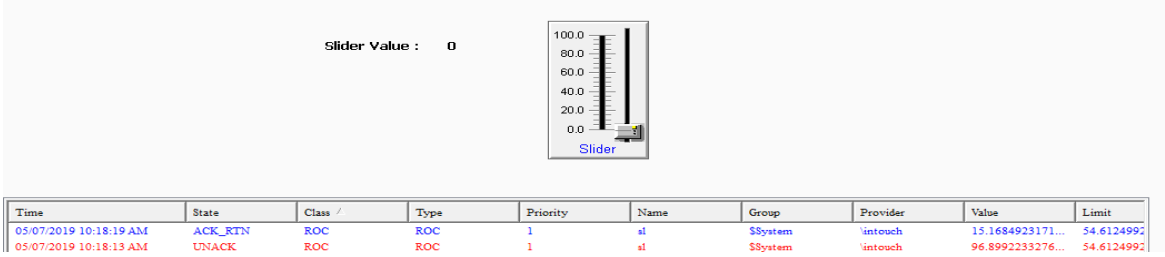


4.1.2 Rate of Change Alarms

1. Open the Tag name Dictionary.



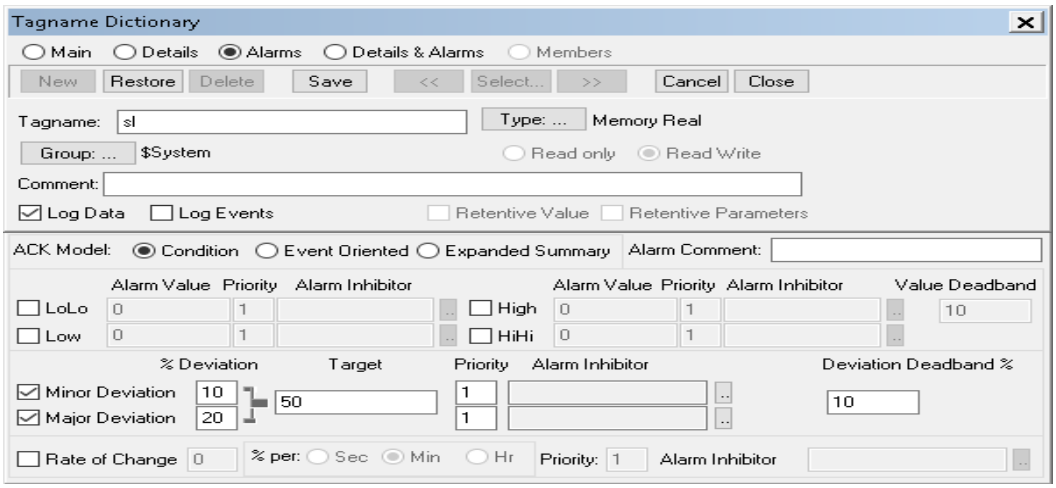
2. Visualize Alarm



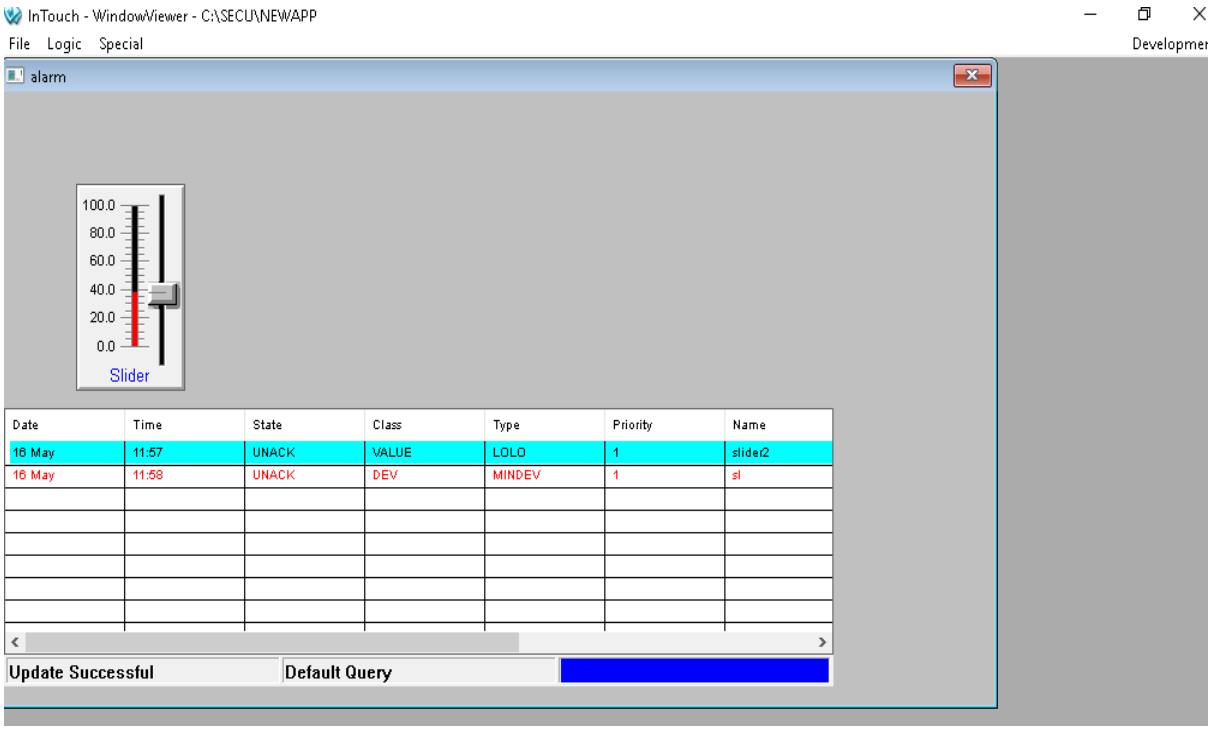
4.1.3 Minor and Major Deviation Alarms

The current tag value is compared to a target value, and then the absolute value of the difference is compared to one or more limits, expressed as a percent of the range of the tag value.

1. take one slider and give deviation alarm value as below.

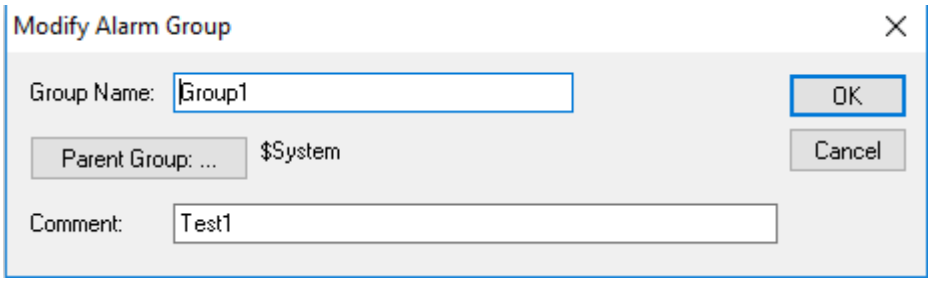


2. Here Range of 0 to 100 and give target of 50
3. Minor deviation of 10 percent, which sets the minor deviation thresholds at 40 and 60
4. Major deviation of 20 percent, which sets the major deviation thresholds at 30 and 70
5. Deadband of 10 percent
6. If the tag value is 39, a minor deviation alarm occurs. However, the value must change at least to 50 (40 plus the deadband of 10) before the alarm is evaluated and cleared
8. This we can see in run time.



4.1.4 Alarm Groups

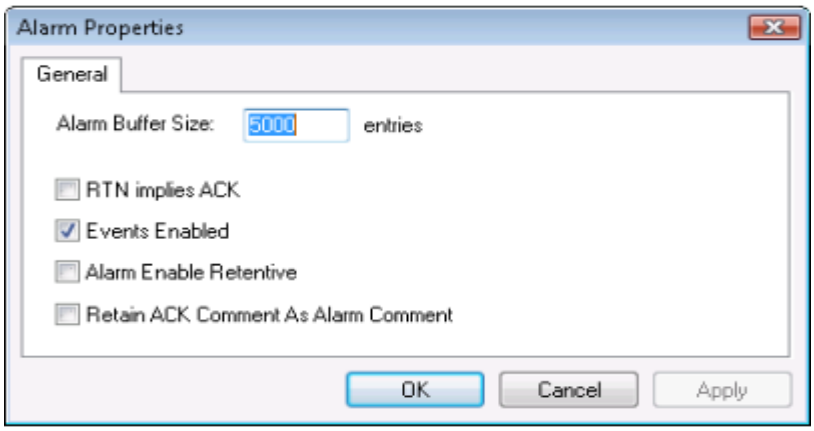
1. On the Special menu, click Alarm Groups. The Alarm Groups dialog box appears.
2. Select the alarm group to modify and click Modify. The Modify Alarm Group dialog box appears.



3. 3 Make any changes to the alarm group's name or comment.
4. To reassign the alarm group to another parent group:
   a Click Parent Group to show the Alarm Groups dialog box.
   b Select a new parent group from the list and click Close.
5. Click OK.

4.1.5 Alarm and Event Properties

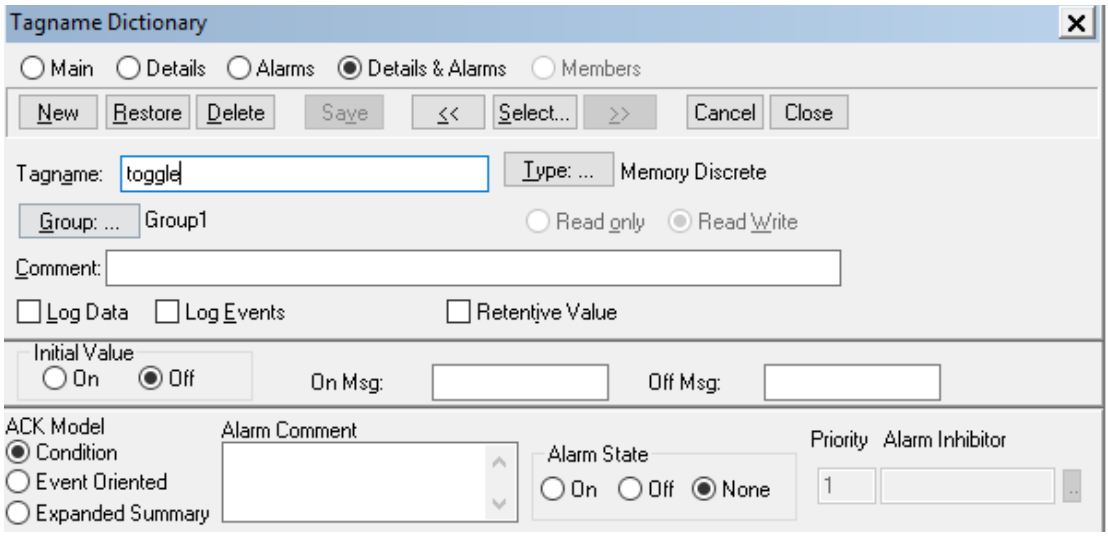
1. Open the InTouch application in Window Maker.
2. On the Special menu, point to Configure, and then click Alarms. The Alarm Properties dialog box appears.



3. In the Alarm Buffer Size box, type the maximum number of alarm entries that can be stored in the memory alarm buffer for summary or historical queries.
4. Select the **RTN implies ACK** check box to have the InTouch HMI automatically acknowledge alarms whose values return to the normal state (RTN).
5. Select the **Events Enabled** check box to log all events that occur while an InTouch application is running.
6. Select the Alarm **Enable Retentive** check box to retain the current state of the .Alarm Enabled dot field as the initial value when the InTouch application re-started.
7. Select the Retain ACK Comment as Alarm Comment check box to update the tag's .Alarm Comment dot field and the Tagname Dictionary with the comments entered with alarm acknowledgments.
   If you do not select this check box, the acknowledgment comment is shown with the acknowledged alarm (in the database, printouts, and displays), but .AlarmComment does not change.

4.1.6: Alarm Acknowledgment Models – Condition, Event Oriented, Expanded Summary.

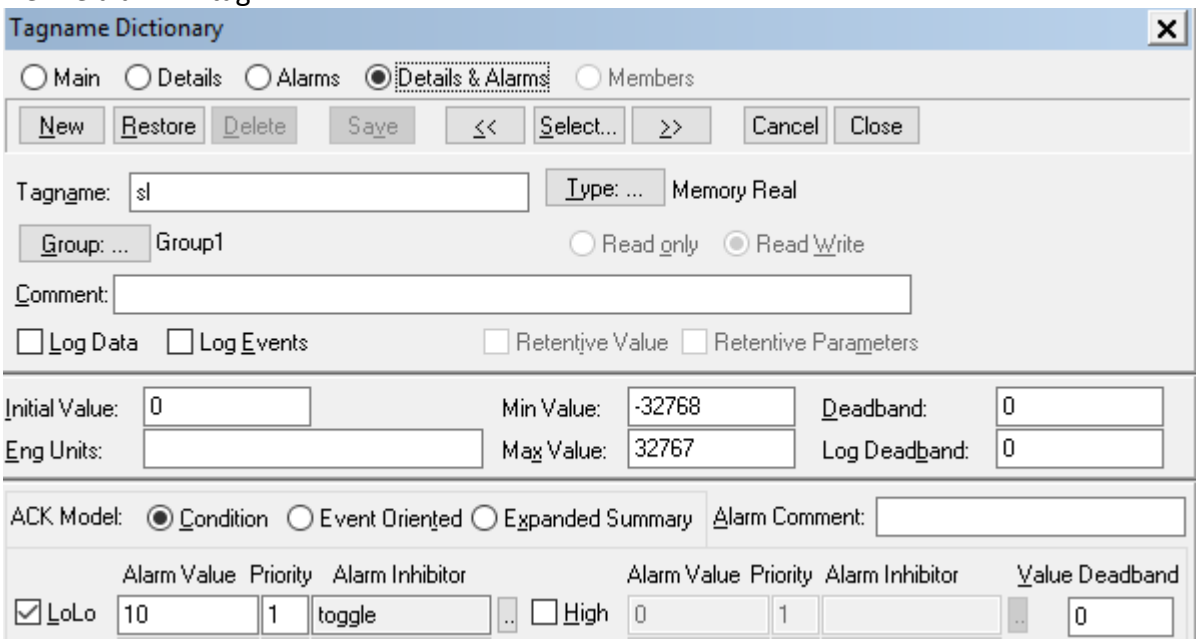
1. Open the Tag name Dictionary.
2. Select an existing discrete tag or create a new discrete tag.
3. Click either **Alarms or Details & Alarms** at the top of the **Tagname Dictionary** dialog box to show the discrete alarm details dialog box.



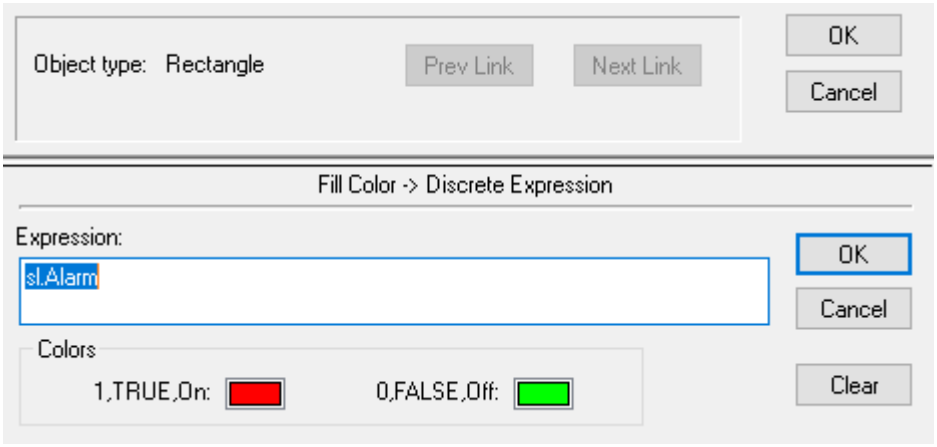
4. In the **ACK Model** area, select the alarm acknowledgement model for the tag.
   - Click Condition for acknowledgment to count against all transitions into the alarmed state or a sub-state up to the time of the acknowledgement. This is the default acknowledgement model.
   - Click **Event Oriented** for an acknowledgment to only be for a particular transition to the alarmed state or a sub-state; an acknowledgment is accepted only if it refers to the most recent transaction.
   - Click **Expanded Summary** for an acknowledgment to only be for a particular transition, whether to an alarmed state, to a sub-state, or a return to normal. Each transition from the normal state marks the beginning of a new "return to normal" (RTN) group. All transitions in an RTN group must be acknowledged individually before the overall RTN group is considered acknowledged.

4.1.7 Alarm Annunciation

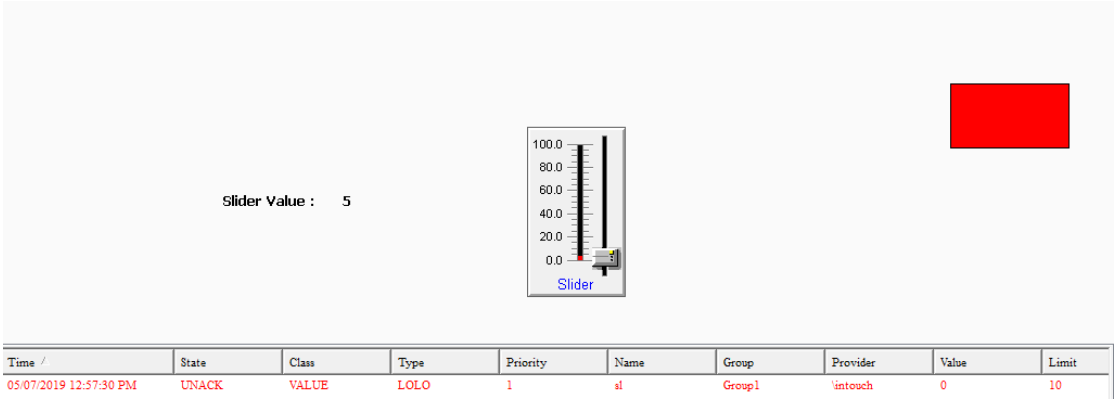
1. Open the tag name dictionary.
2. Define alarm in tag.



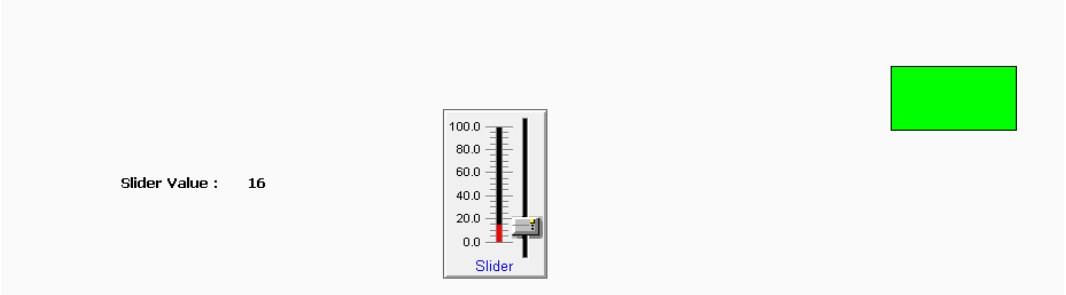
3. Use Tagname. Alarm dot field to show alarm in runtime.



Define in maker



Alarm Condition in runtime

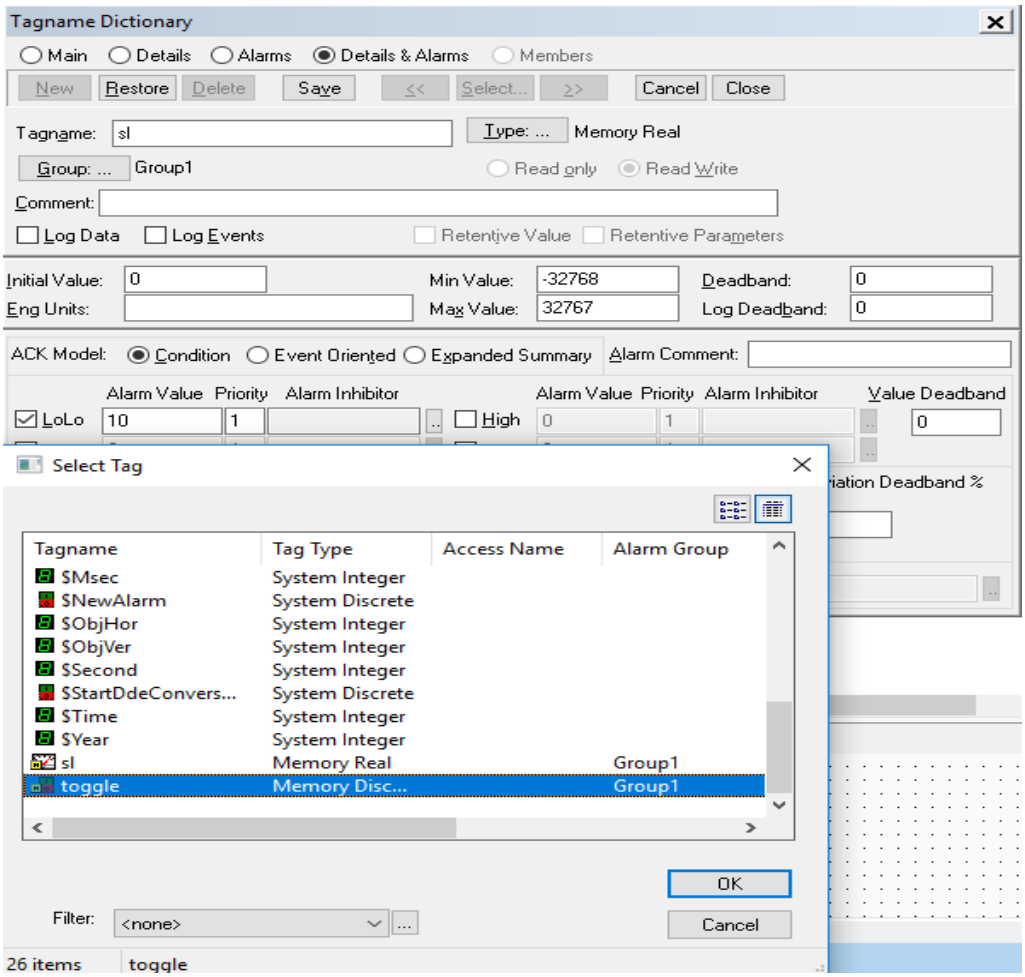


Normal Condition in runtime

4.1.8 Alarm Inhibition

Alarm Inhibition: An alarm can be inhibited by identifying a tag that marks it as inhibited. This tag is called an inhibitor tag. No other change to the alarm configuration is involved. While the inhibitor tag is FALSE (or zero), the alarm is handled normally; but while the inhibitor tag is TRUE (or non-zero), the item cannot alarm.

1. Open the Tag name Dictionary (Special / Tag name Dictionary).
2. Select an existing tag.
3. Go to Details & Alarm.
4. Select Inhibiter tag from tag name dictionary.

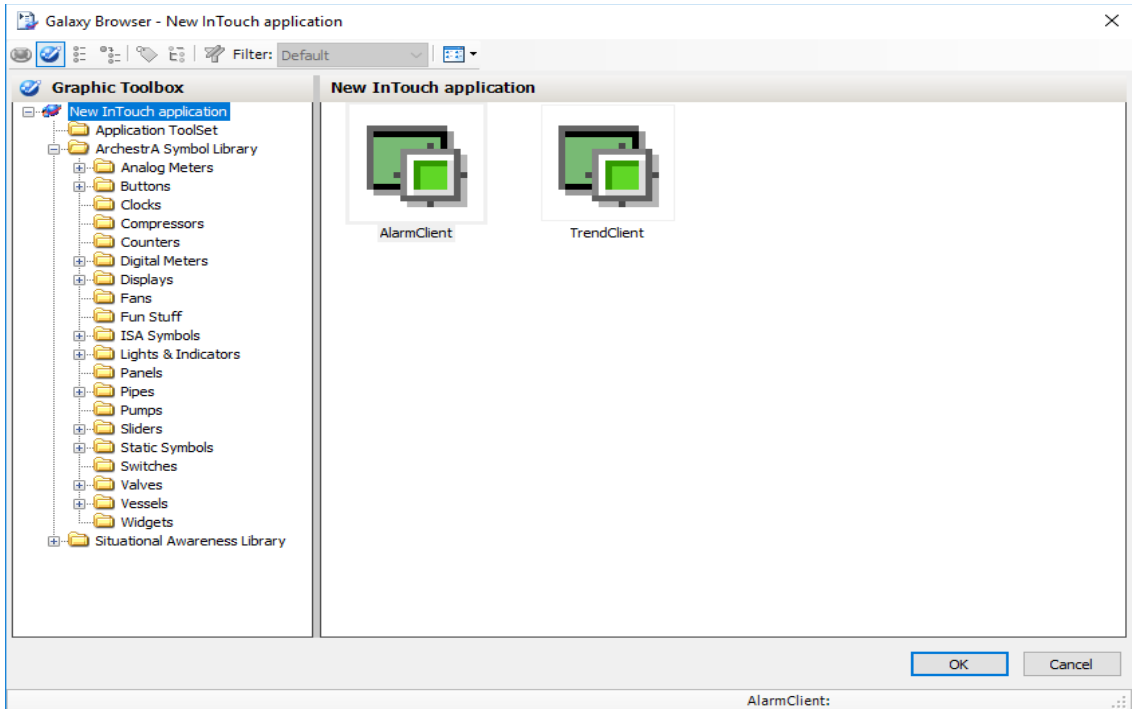


5. Save and Close.

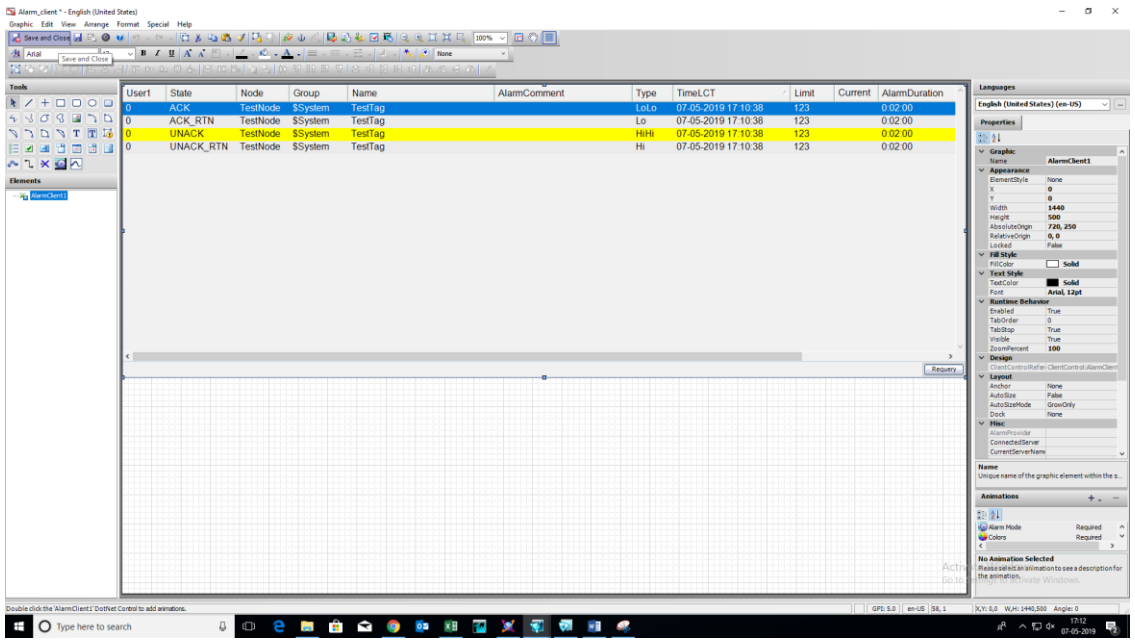
4.2 Alarm Client

4.2.1 Configure and use the Alarm Client

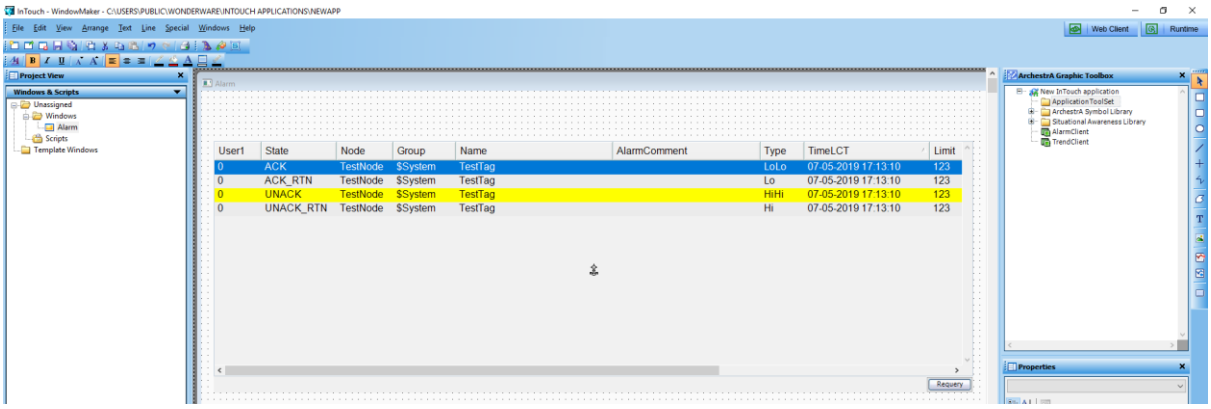
1. Create a new Graphic toolset.
2. Create a new Symbol in Graphic tool set.
3. Open Symbol.
4. Open Embedded Graphic.
5. Select Alarm Client from Archestra Symbol.



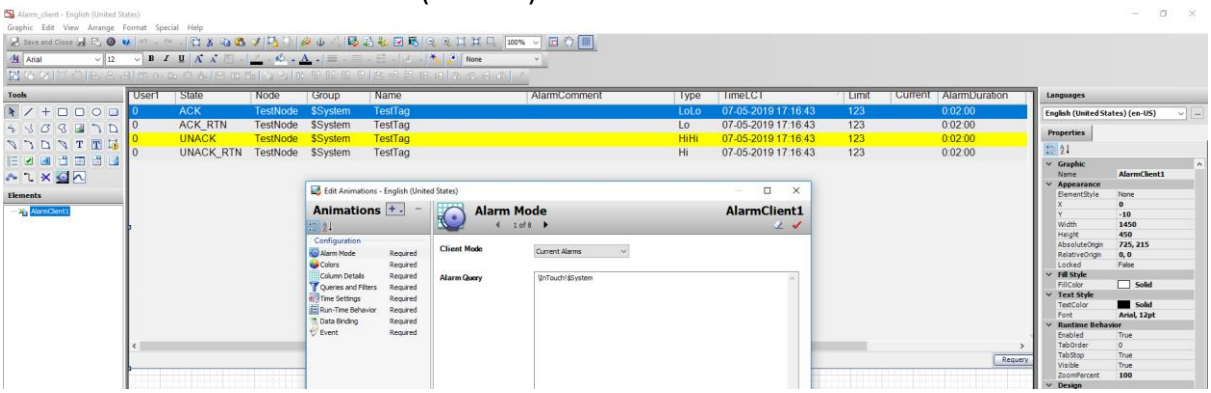
6. Select Save and Close.



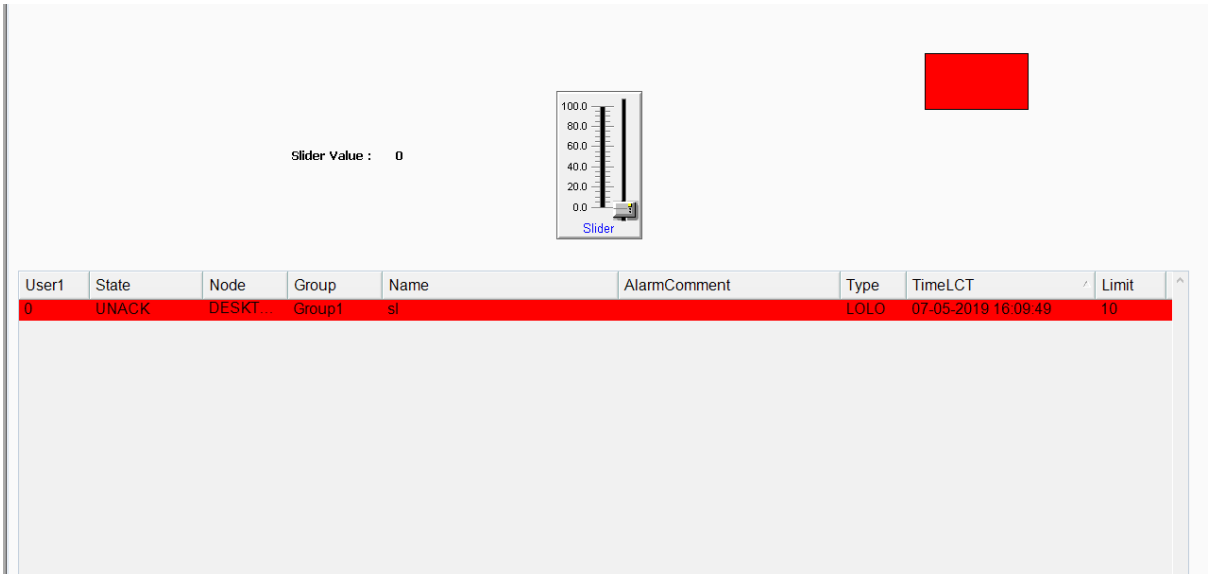
7. Open Symbol in Window.



8. Go to Embedded Symbol.
9. Select animation of Alarmclient.(CTRL+A)



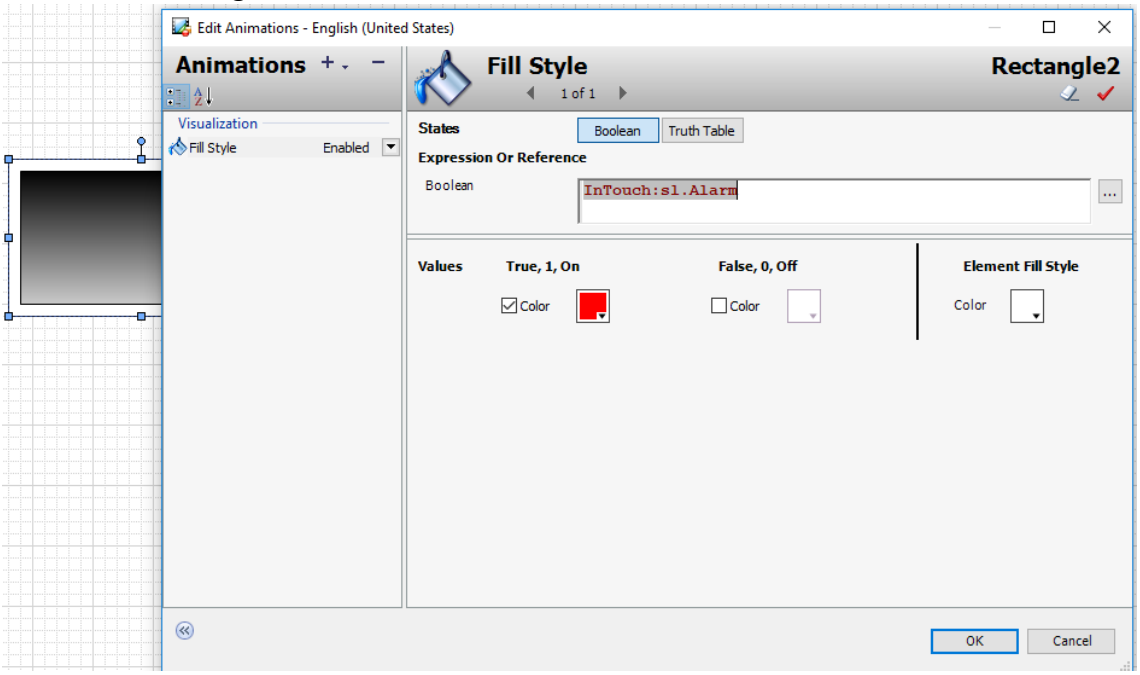
10. Write Query: \InTouch!$System , to see InTouch Alarm.
11. Save and Close.
12. Check In runtime.



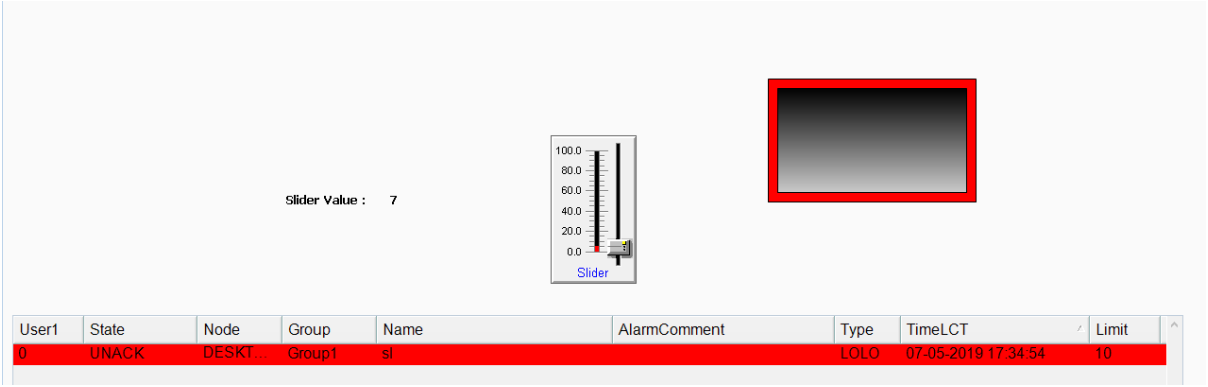
4.2.2 Link ArchestrA animations to InTouch tags

1. Open Archestra Graphic Toolbox
2. Create a new Graphic toolset.
3. Create a new Graphic symbol.
4. Open Symbol.
5. Take a Rectangle.

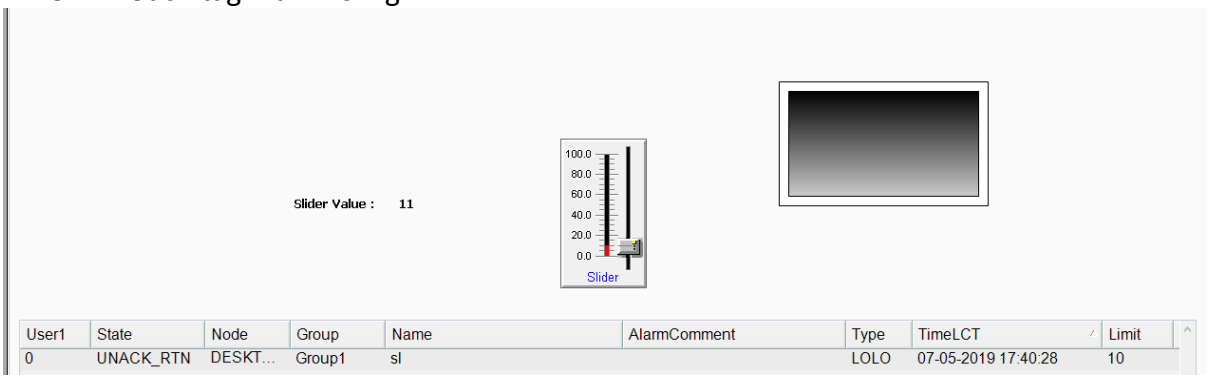
6. Apply Animation Fill style on it.
7. Link InTouch tag to animation.



8. Open that symbol on any window to visualize.
9. Check in Runtime.



When InTouch tag Alarm is high.

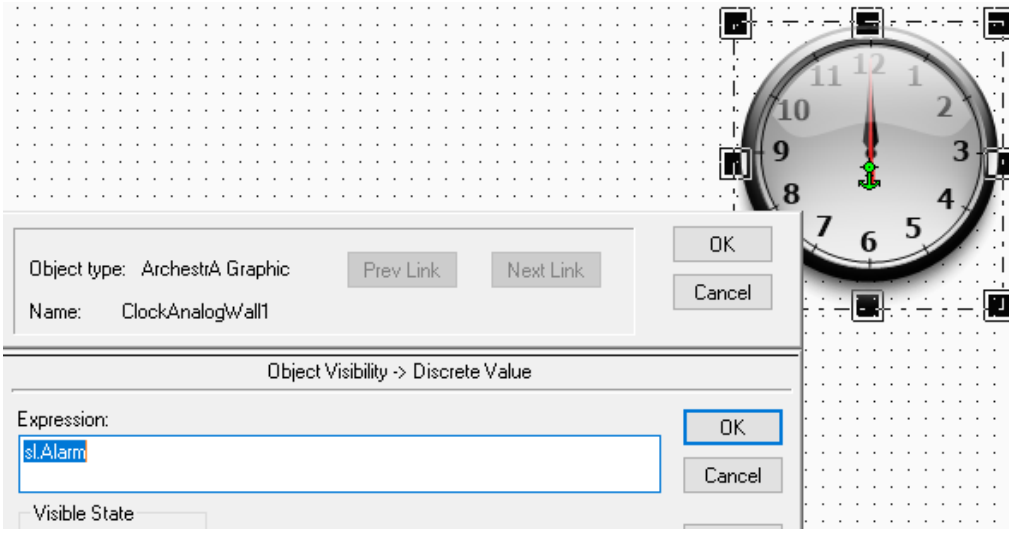


When InTouch tag Alarm is Low.

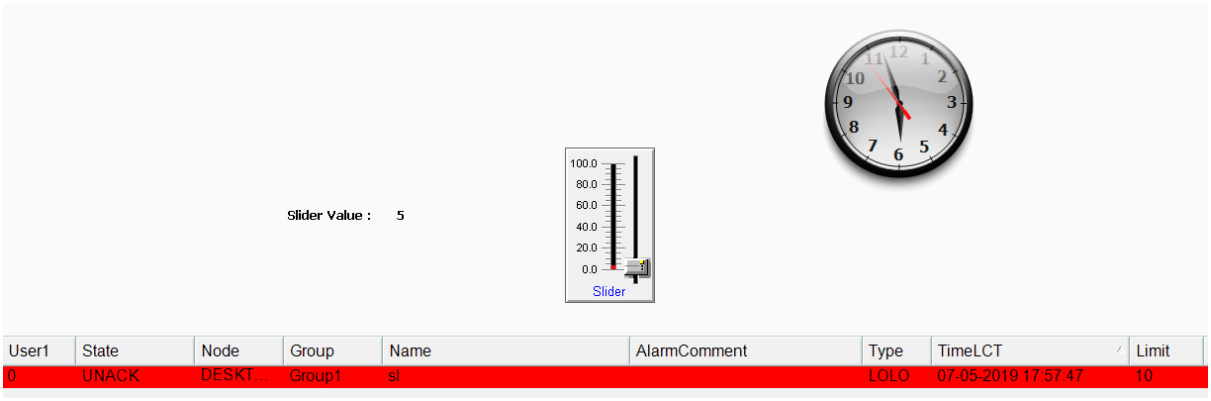
4.2.3 Add InTouch animations to embedded ArchestrA graphics

1. Open Window.
2. Take any Archestra Symbol from Archestra Graphic Toolbox.
3. Right Click on that symbol, Select Animation Links…

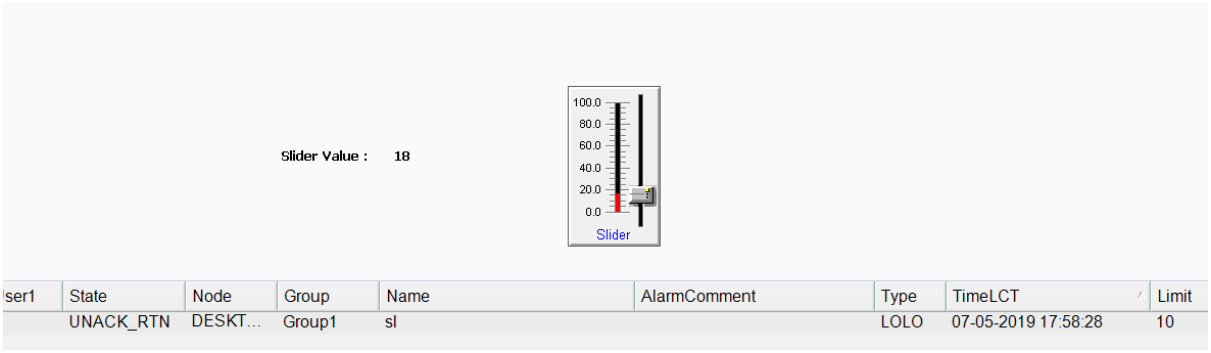
4. Define Animation.



5. Visualize animation in Runtime.



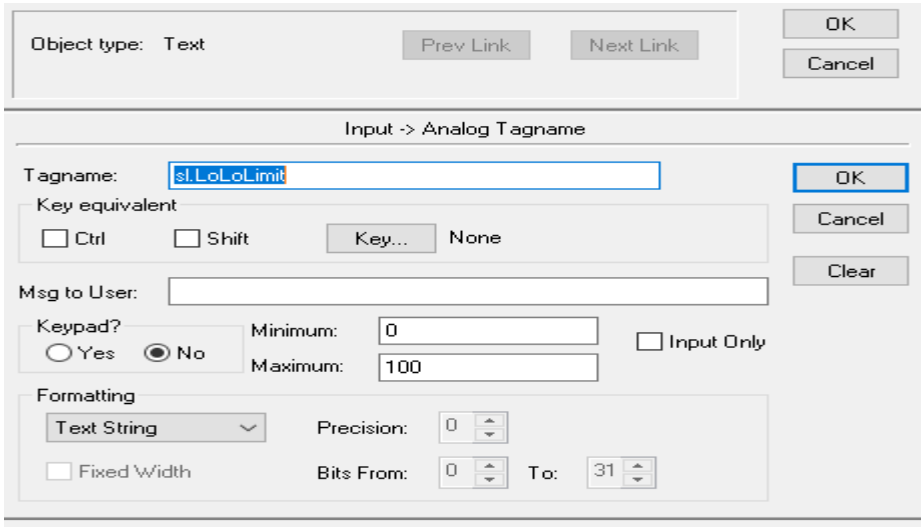
When Condition is true.



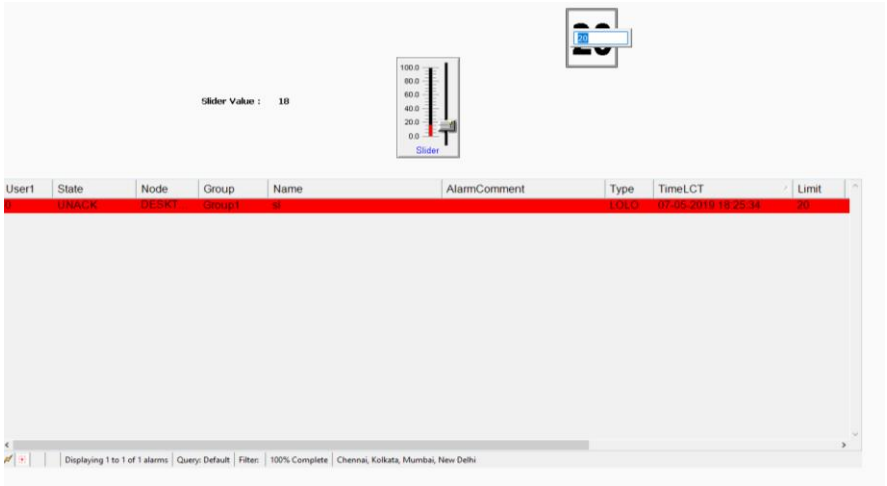
When Condition is False.

4.2.4 Use the alarm Dot Fields to create controls for the Alarm Client

1. Open Window.
2. Take Text, Give animation.
3. Link Alarm Dot field in animation.

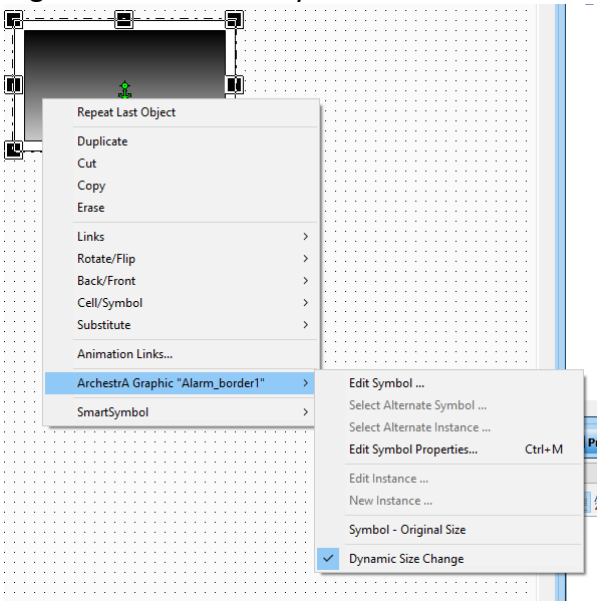


4. Change LoLo Limit alarm value from Runtime.



4.2.5 Disable Dynamic Size Change to set a fixed area for a graphic

1. Open Archestra Symbol in window.
2. Right click on symbol > Archestra Graphic >Dynamic Size Change.

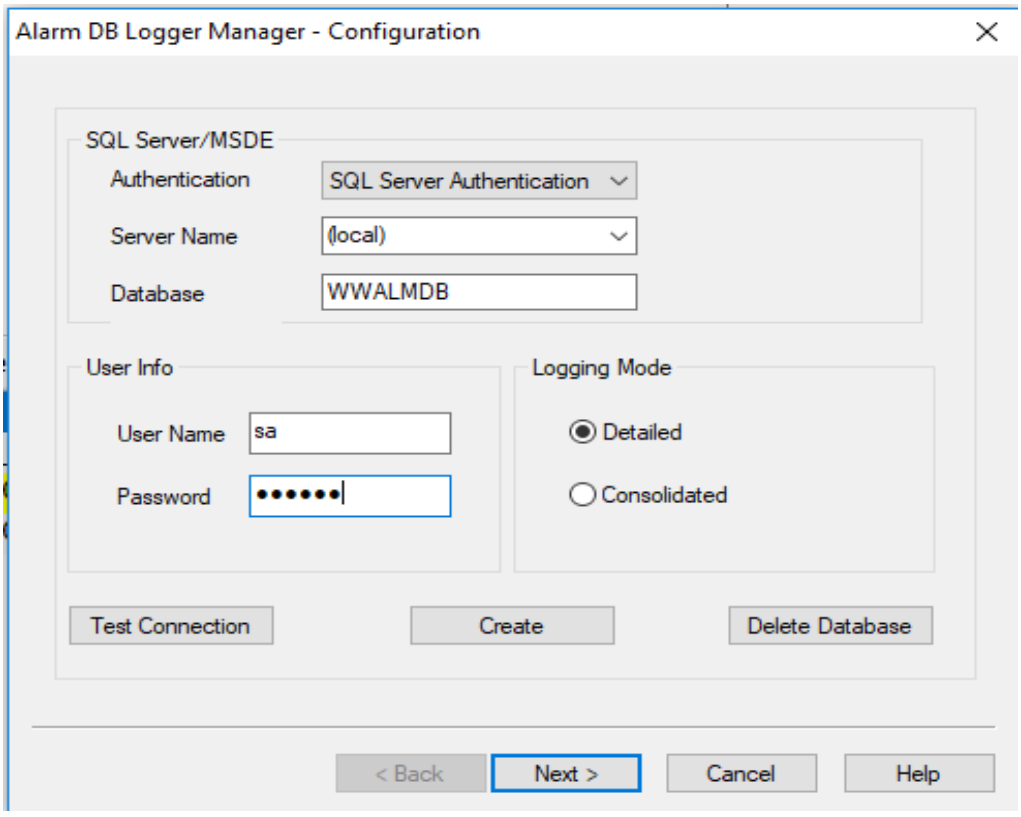


4.3 Alarm DB Logger

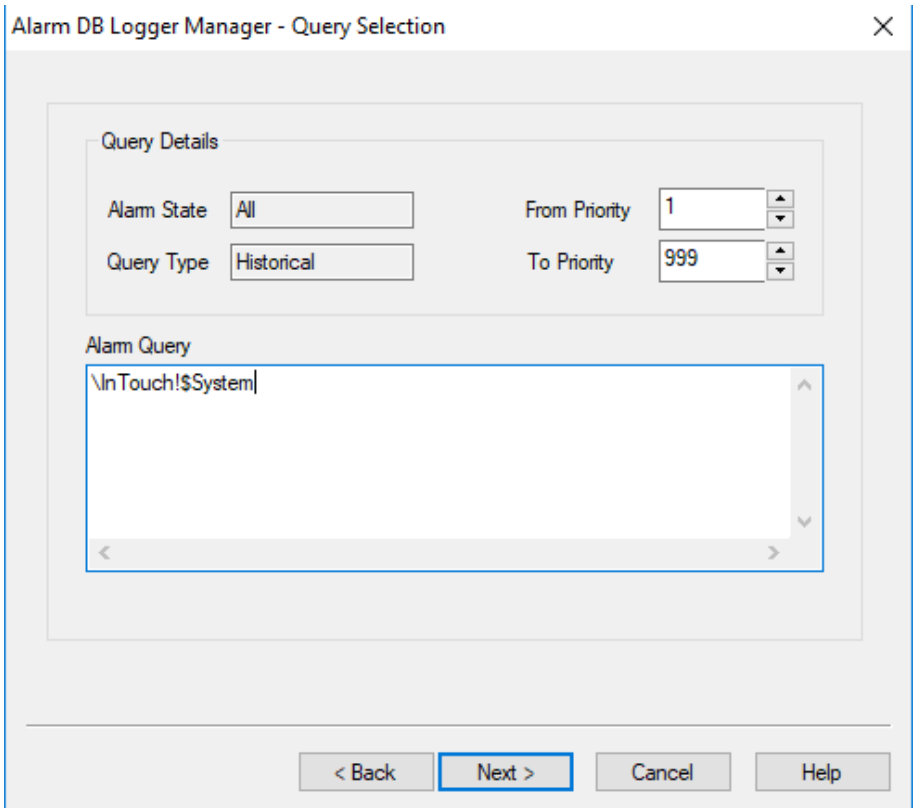
4.3.1 Enable and configure the Alarm DB Logger

1. Open InTouch application.
2. Go to tools >Applications>alarm DB Logger Manager.
3. Go to Settings.
4. Enter Authentication mode in Authentication Drop Down.
   Select Server name.
   Define Database name.
   In User Login, give Credential.
   Select Create.
   Select Logging Mode.
   (1. Click **Detailed** to store a separate record for each alarm condition (in alarm, acknowledged, and returned to normal).

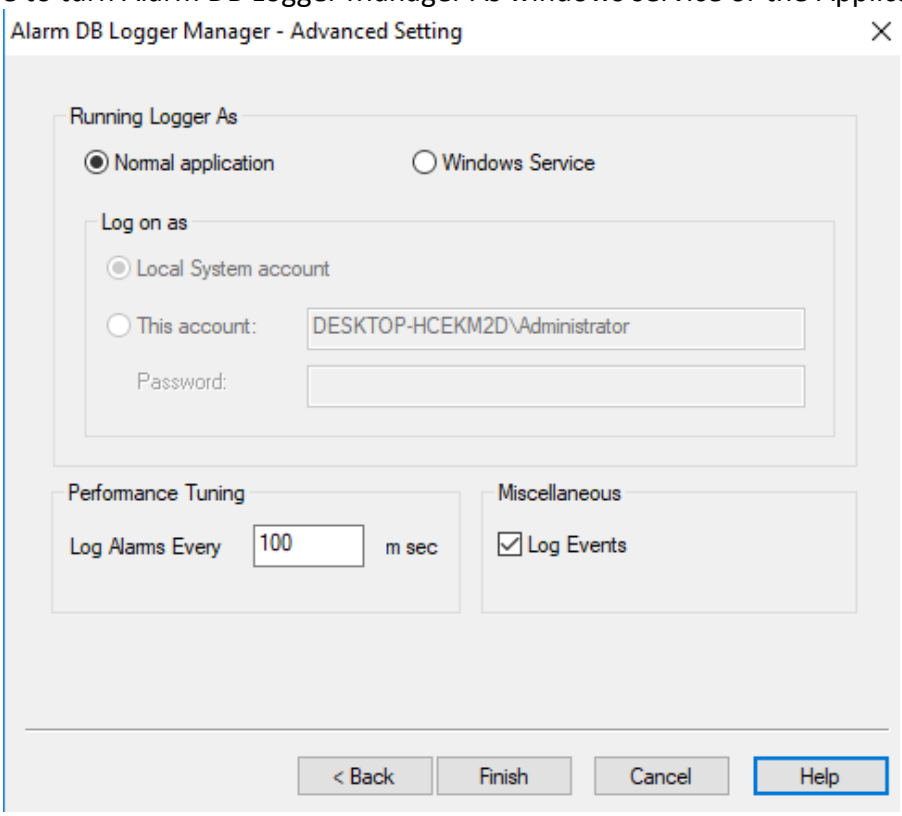
   2. Click **Consolidated** to store all states of an alarm (in alarm, acknowledged, and returned to normal) in a single record with time stamps for each transition.)
   For testing, select Test connection.



5. Select next.
6. Define Query to retrieve the data base on alarm Group.

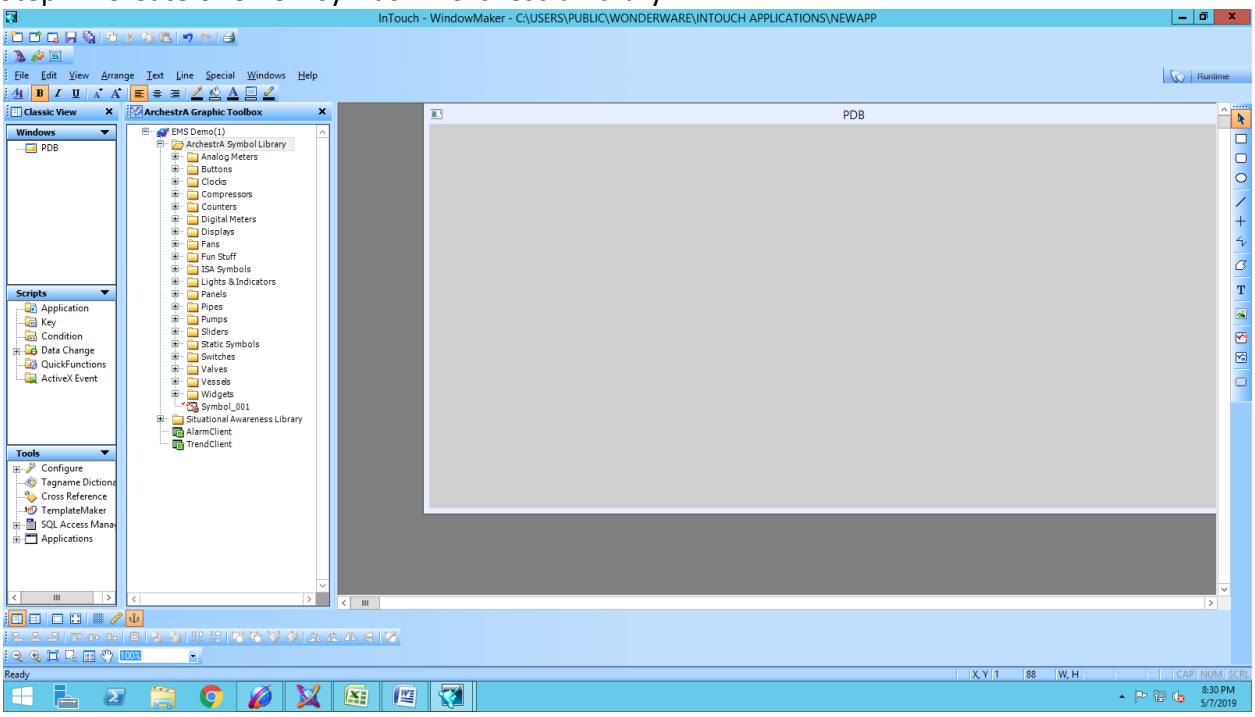


7. Define to turn Alarm DB Logger Manager As windows service or the Application.

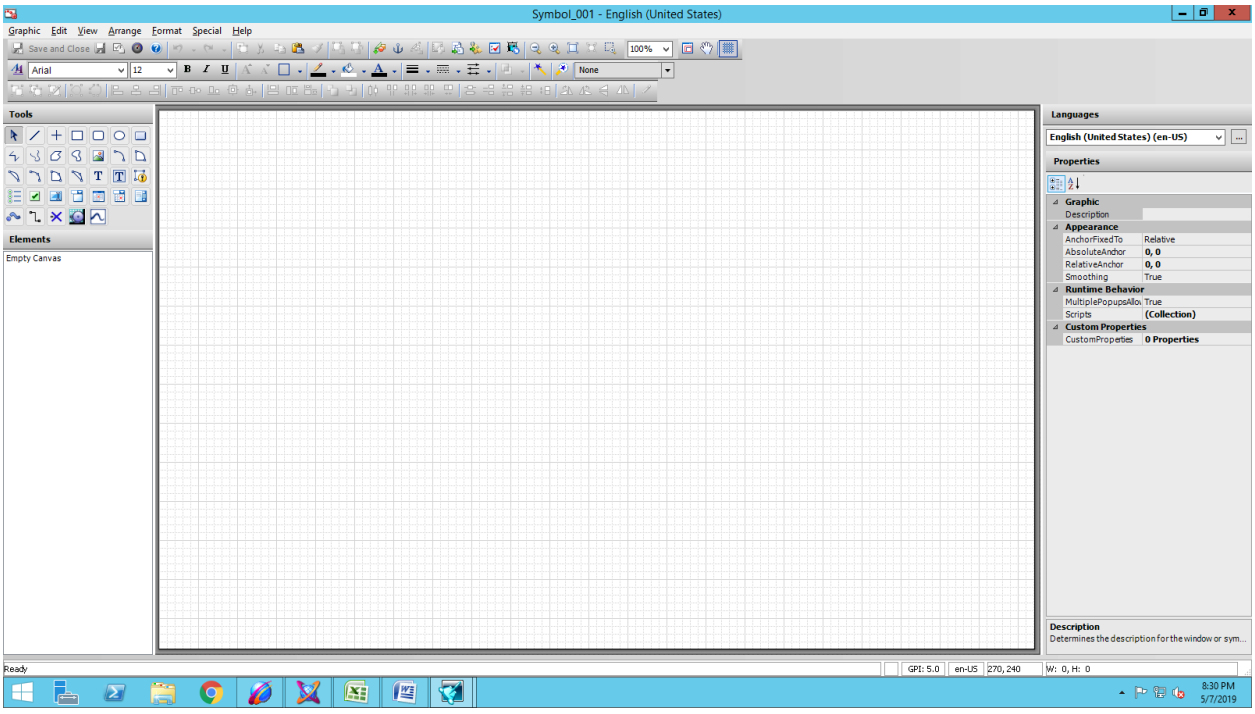


4.3.2 Configure an Alarm Client to connect to the database, Review historized alarms with the Alarm Client

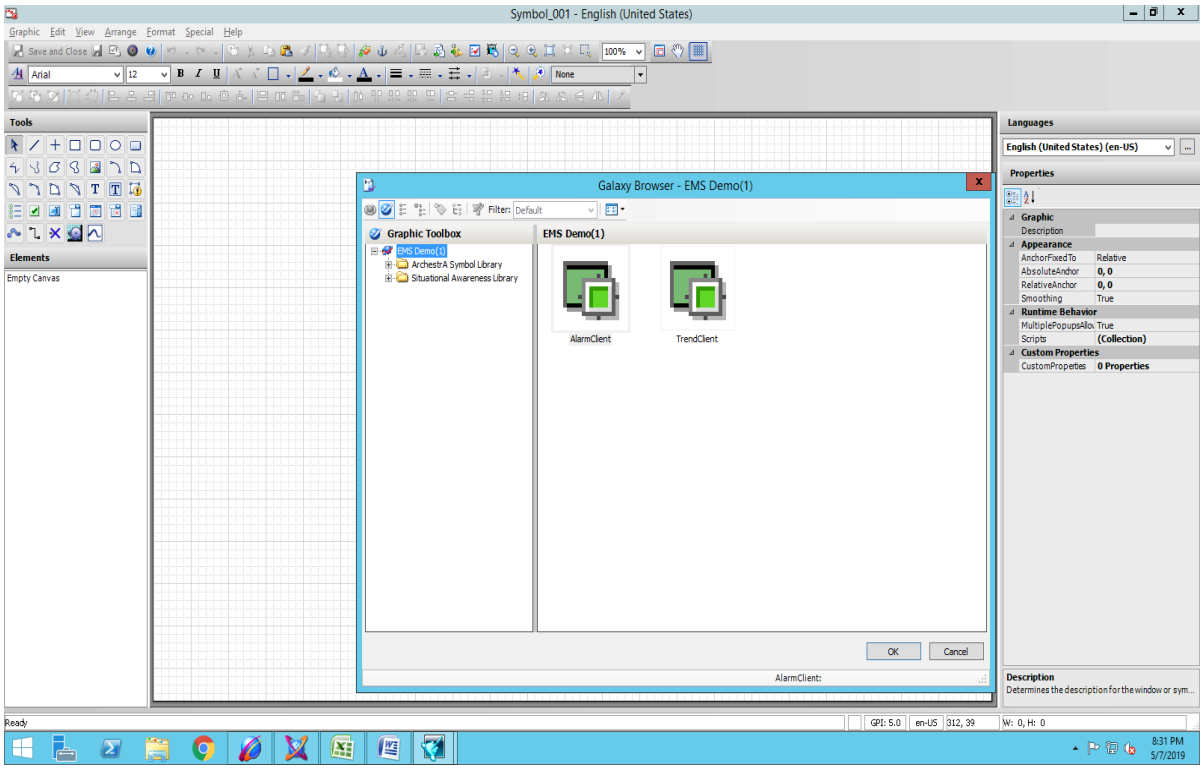
Step 1 : Create one new symbol in orchestra library

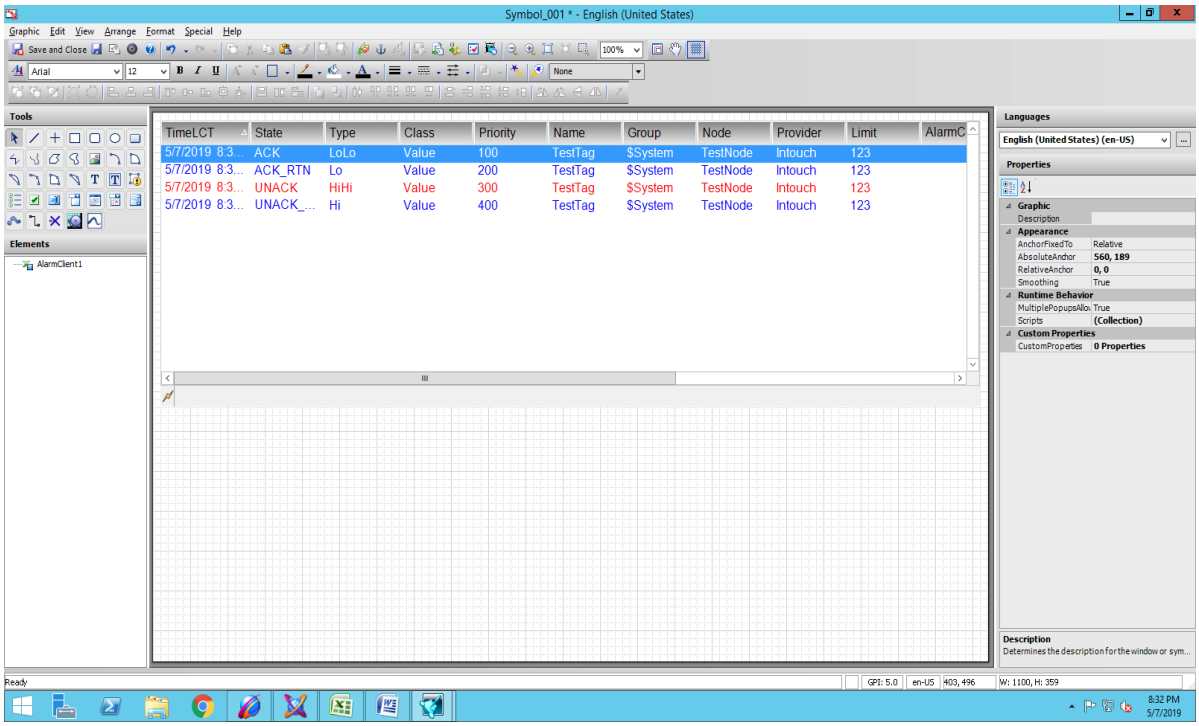


Step 2:- Double click on new symbol then below window will open.

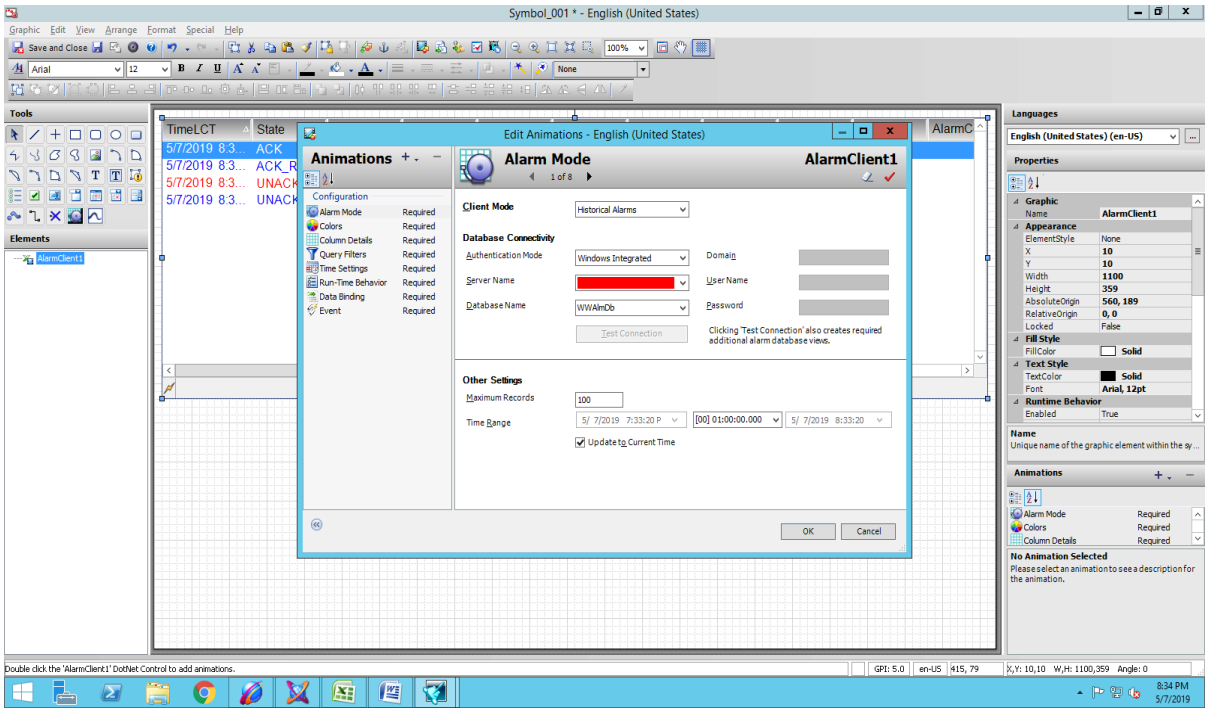


Step 3:- Click on Embedded Graphics and select alarm client and paste it on window.

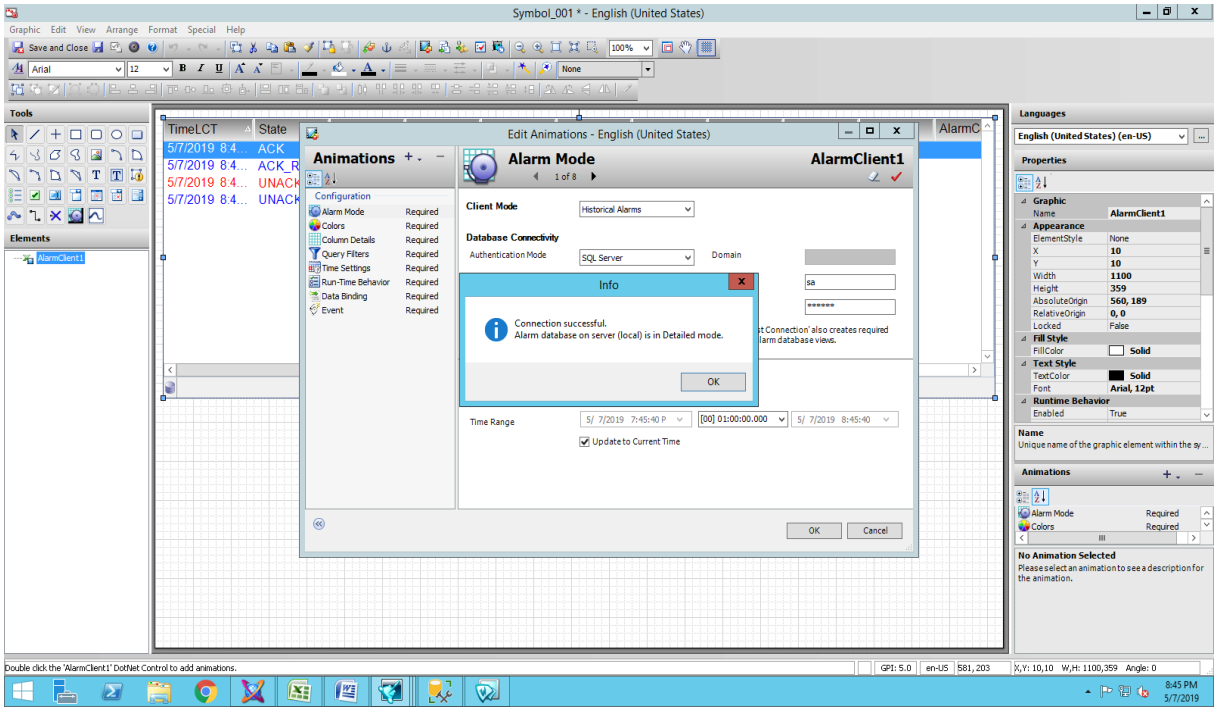




Step4:- Double click on it, then in alarm mode, click on client mode and select historical alarm



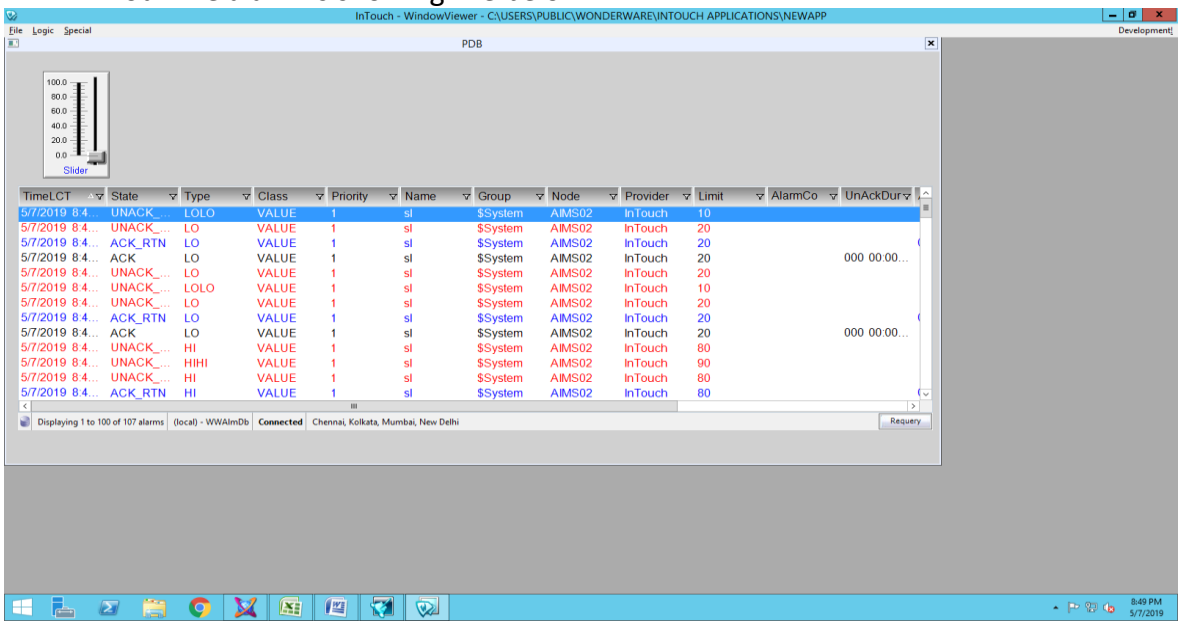
then in database connectivity select authentication mode = SQL Server, select server name of SQL server and database name as well as write user name and password of SQL server and click on Test connection. If connection is succeeded. Then below popup will come.



Save and close the window.

- For runtime alarm

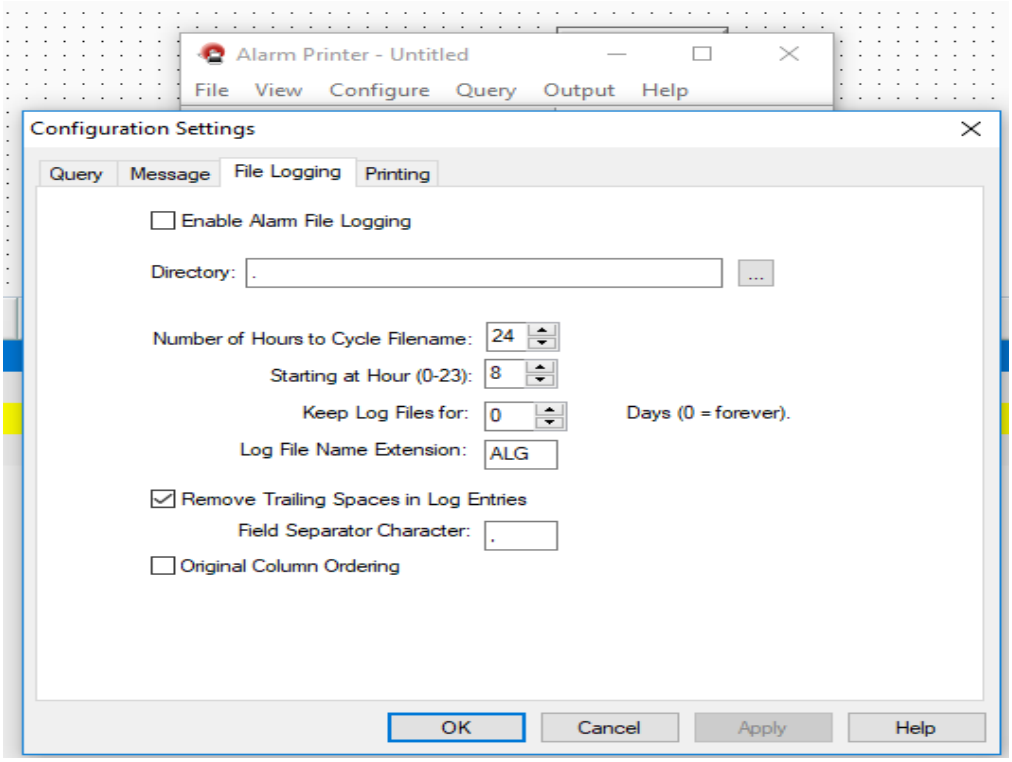
- Open window in InTouch, drag and drop the Archestra symbol which is created for alarm client and click on alarm Runtime.
- Your live alarm is showing like below:



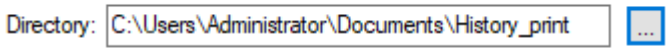
4.4 Alarm Printing

4.4.1 Configuring Alarm Printing

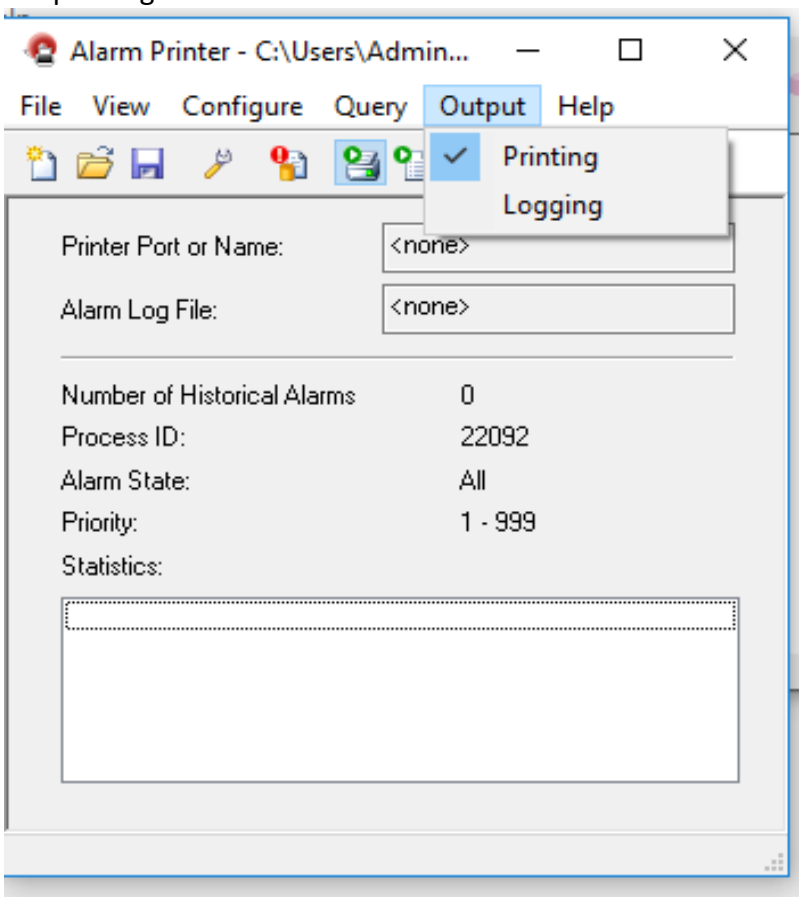
1. Open InTouch application.
2. Go to tools > Alarm Printer.
3. Go to configure.



4. Define the path.



5. Select apply and ok.
6. Select output as printing.



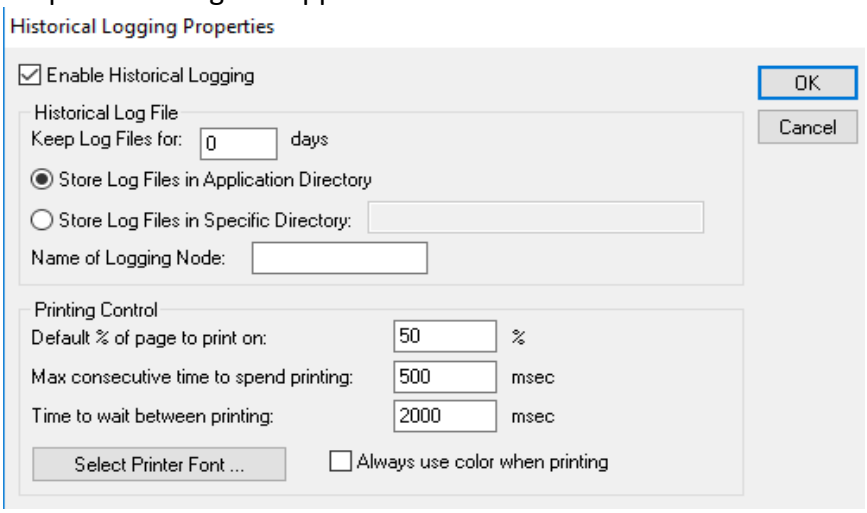
7. Save the configuration file.(which will be .alc file)

5 Data Tracking and Trending

5.1 Historical Trend

5.1.1 Enable Historical Logging

1. Open Window Maker.
2. On the Tools view, expand Configure and select Historical Logging. The Historical Logging Properties dialog box appears.

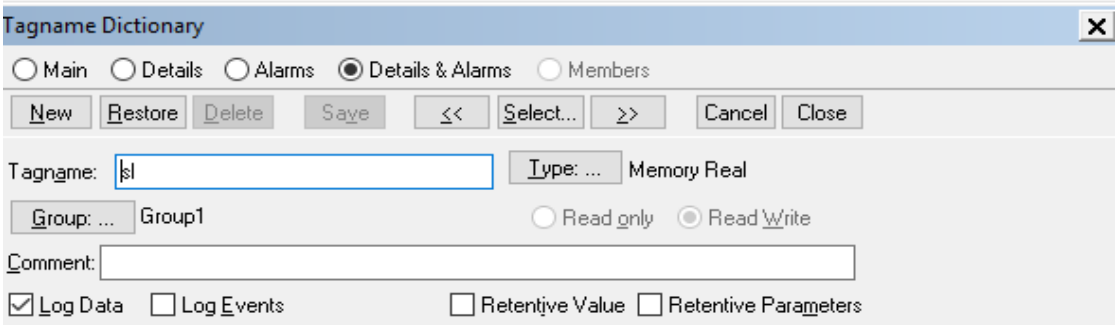


3. Select the Enable Historical Logging check box.
4. In the Keep Log Files for box, type the number of days prior to the current day to retain log files.
    - Log files are kept for the current day and the number of days within the specified retention period. Log files that are older than the retention period are deleted. Setting the value to 0 retains all log files indefinitely.
5. Consider disk space usage when you set the number of days to save logging data. Historical logging stops if your hard disk runs out of free space. You must free disk space to resume logging.
6. Select the location of the folder to save log files.
7. The Historical Logging Properties dialog box includes two options to set the folder location to store the log files.
8. Note: The folder path and the name of the file to store log data can be a maximum of 55 characters.
9. Select Store Log Files in Application Directory to save the log files in the same folder as the InTouch application creating the logged data.
10. Select Store Log Files in specific Directory to specify another folder to store log files. You can specify the folder to store log files as:
11. In the Name of Logging Node box, type the node name of the computer running the InTouch application creating log data.

5.1.2 Configure tags for historical logging

1. Open InTouch application.
2. Select the tag from tag name dictionary.(CTRL+T)
3. Go to Details and Alarm tab.

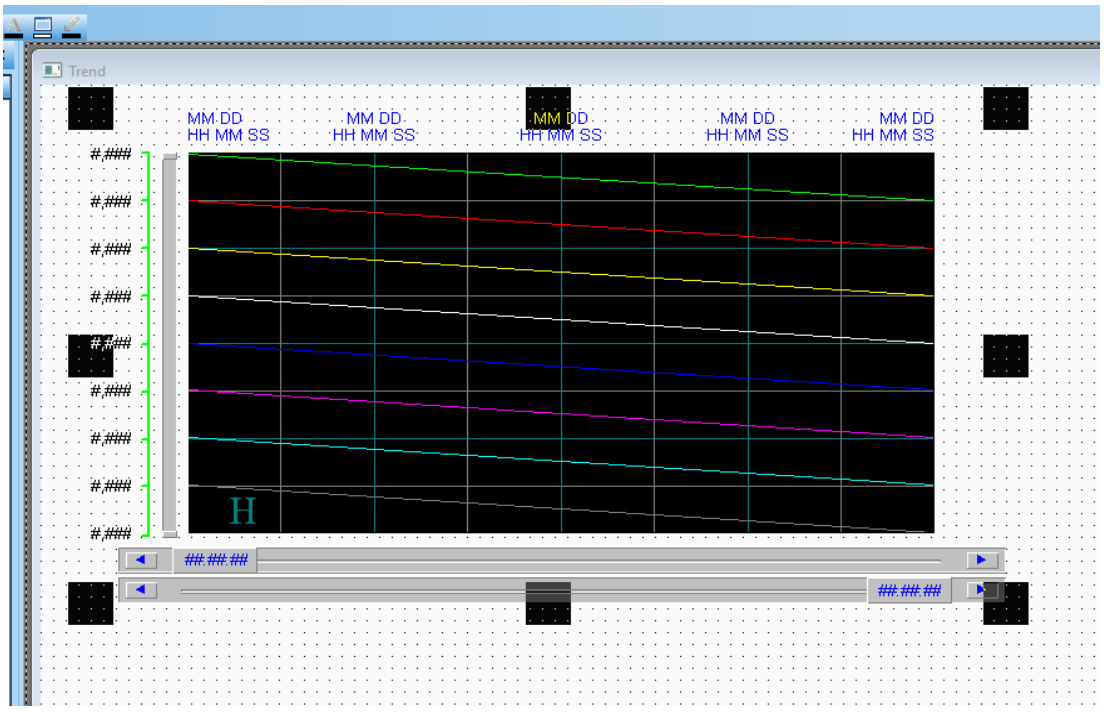
4. Select check box of Log data to histories data.



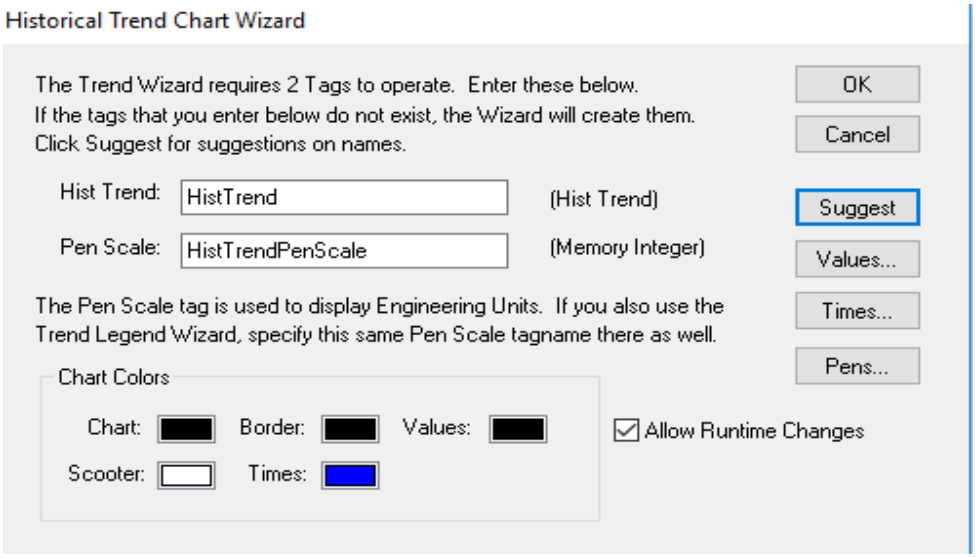
5. Select save and close.

5.1.3 Configure historical trend wizards and Retrieve historical data

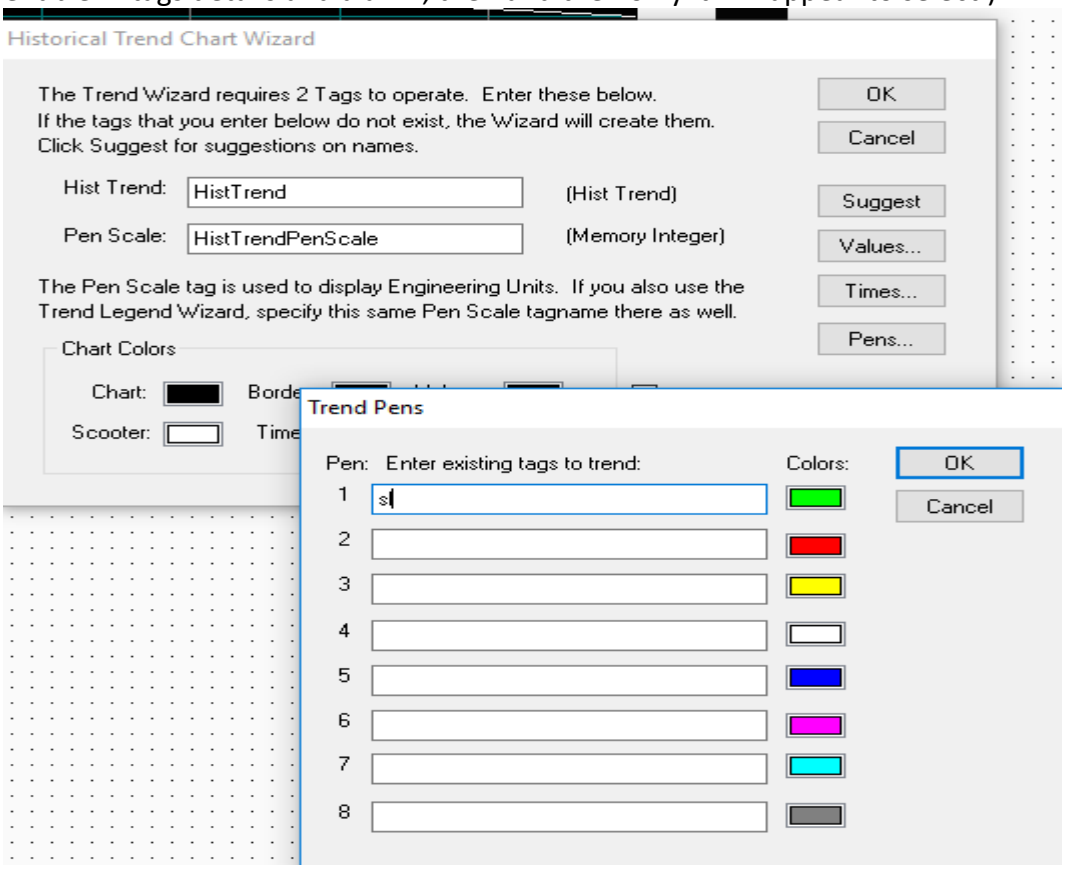
1. Open InTouch application.
2. Open the window.
3. Go and select from Wizard>Trend> Hist Trend with Scooters wizard.
4. Move the cursor to the window location where you want to place the upper left corner of the historical trend. Click to place the trend in the window.



5. Double Click to see the properties.
6. Give hist trend name and pen scale name .(Pen scale name will be memory integr)

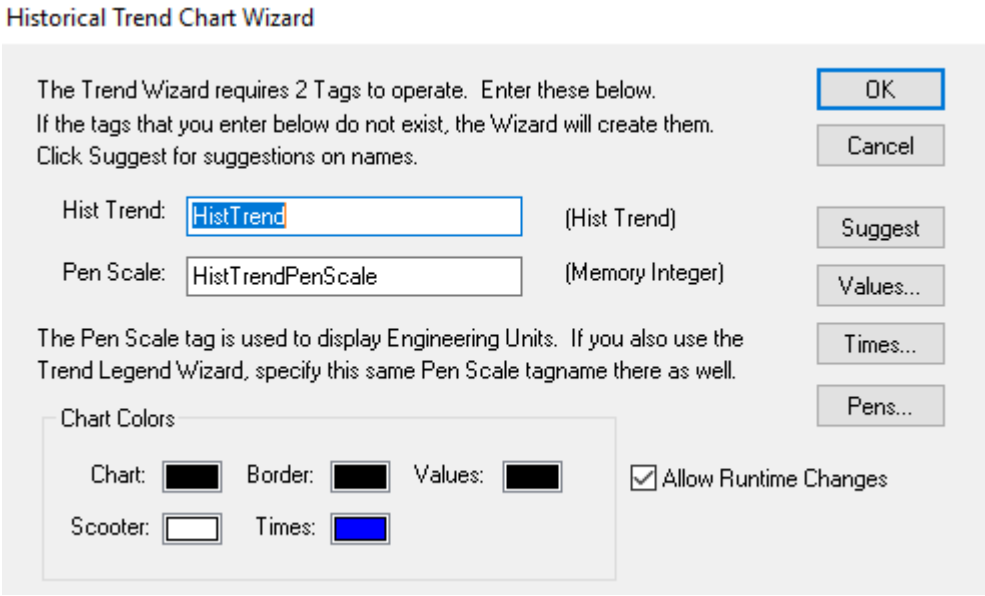


7. Go to Pens tab and select tags of which you want to see the trend.(log data should be enable in tags details and alarm , then and then only it will appear to select.)

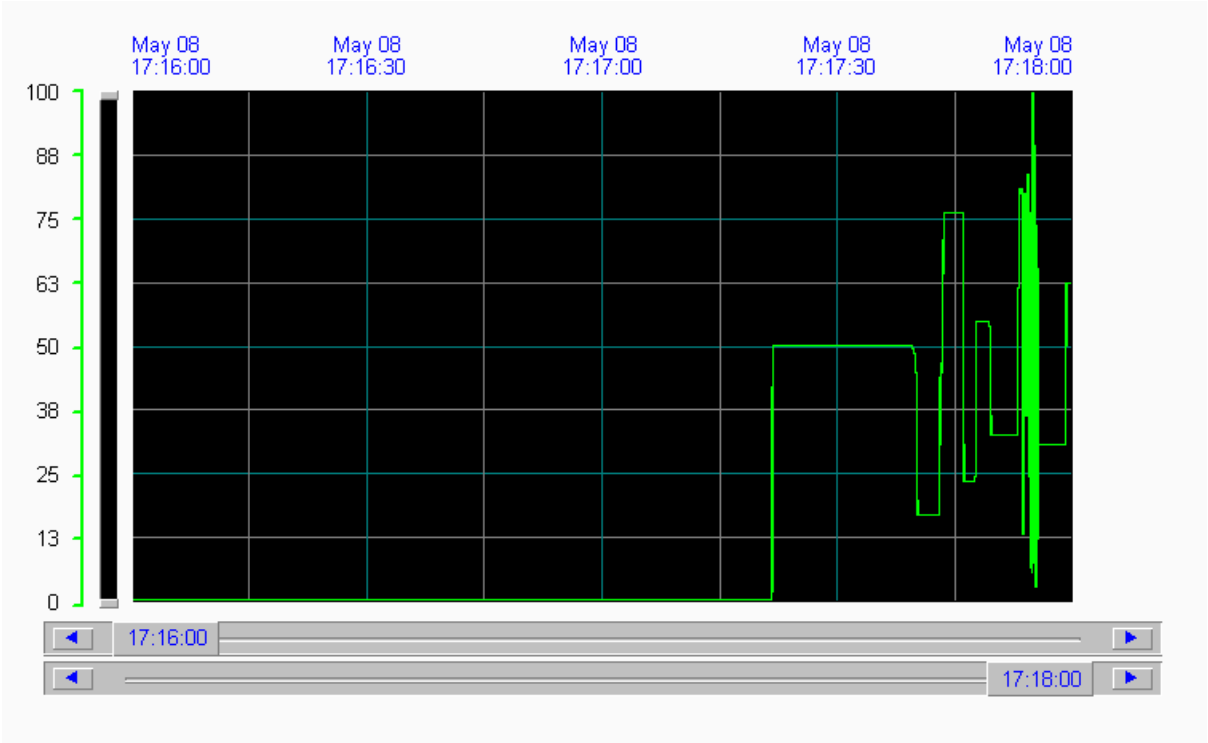


8. Select ok on trend pens.

9. Select Allow Runtime changes to make changes during runtime.



10. Select ok and check in runtime.

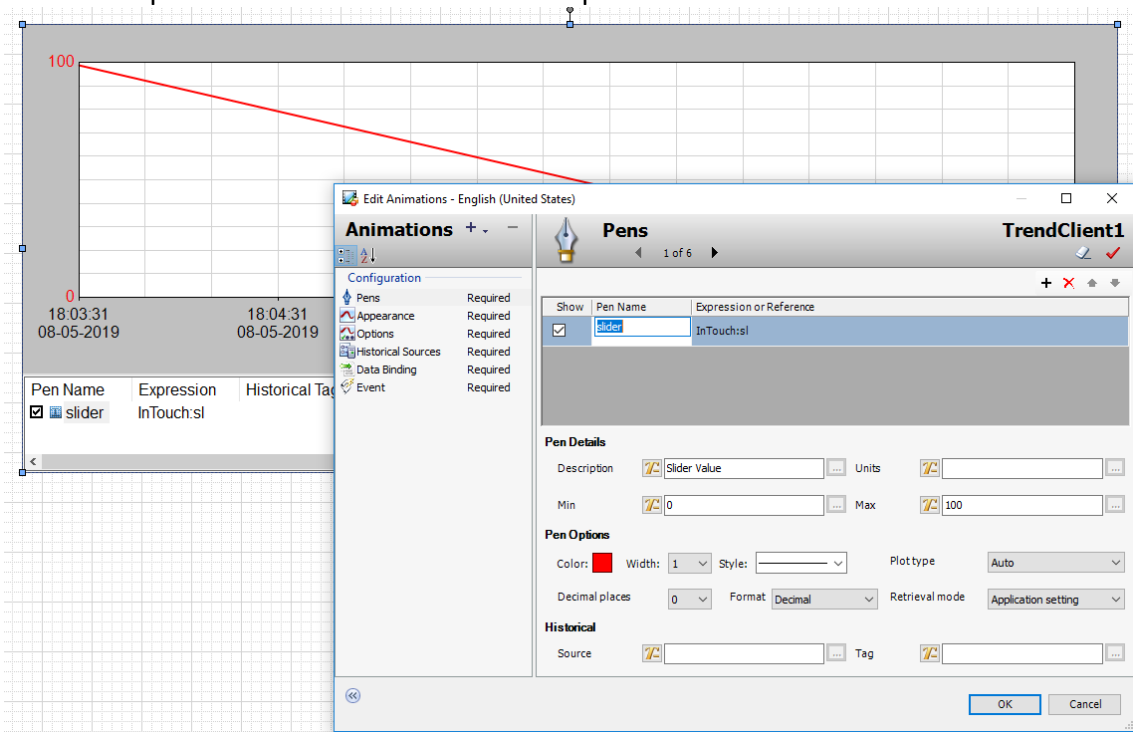


5.2 Trend Client & Trend Pen

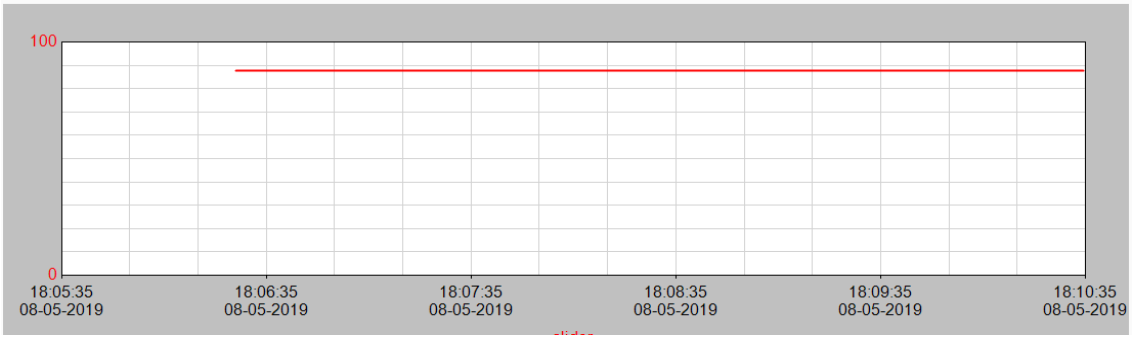
5.2.1 Configure the Trend Client to monitor real-time tag

12. Open Window Maker.

13. Go to ArchestrA Graphic Toolbox.
14. Create a new symbol.
15. Select a Trend Client from embedded graphics.
16. Double click on the Trend Client.
17. Add a new pen and define the reference for pen.

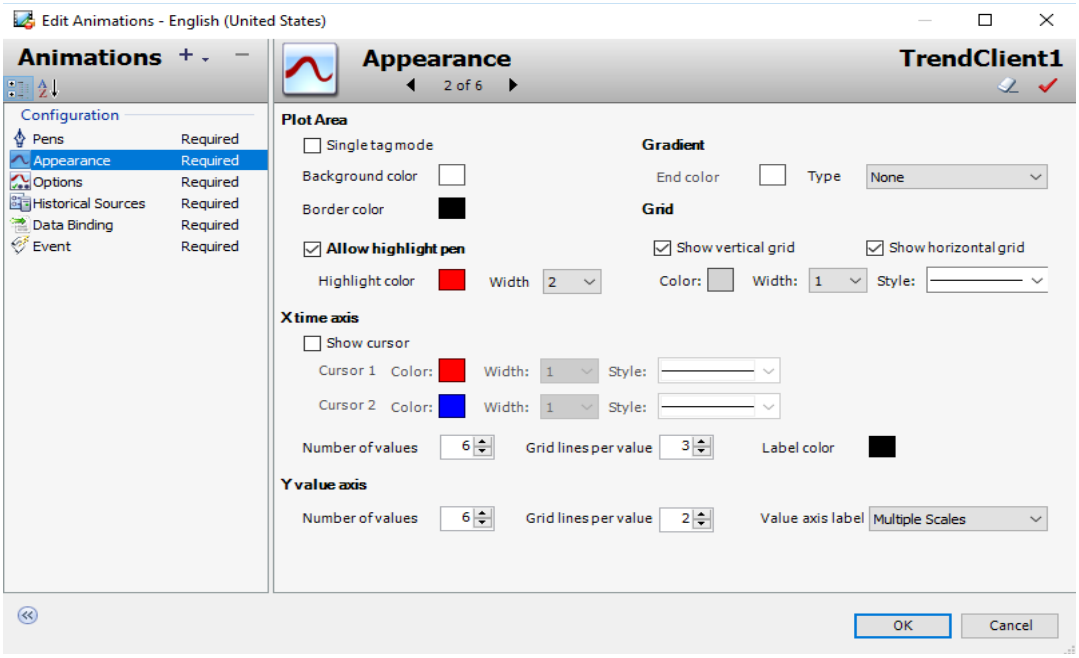


18. Save and close.
19. Check it in runtime.

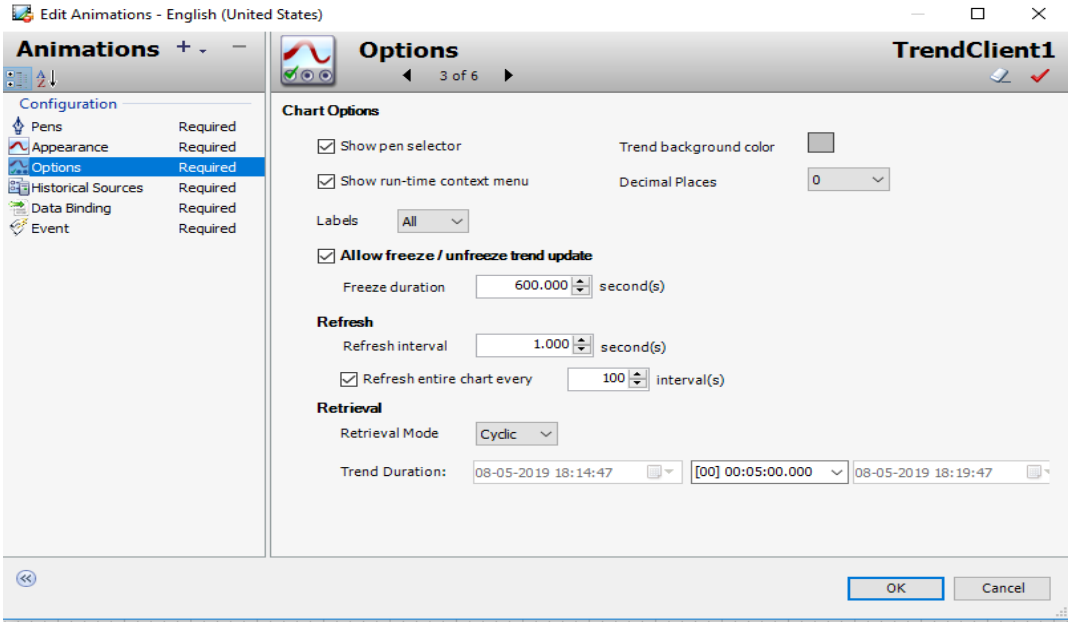


5.2.2 Modify the appearance and behaviour of the TrendClient

1. Go to properties of TrendClient.
2. Go tab Appearance tab.
   Here you can change the tag mode, grid selection, Pend colour, x axis and y axis number values.

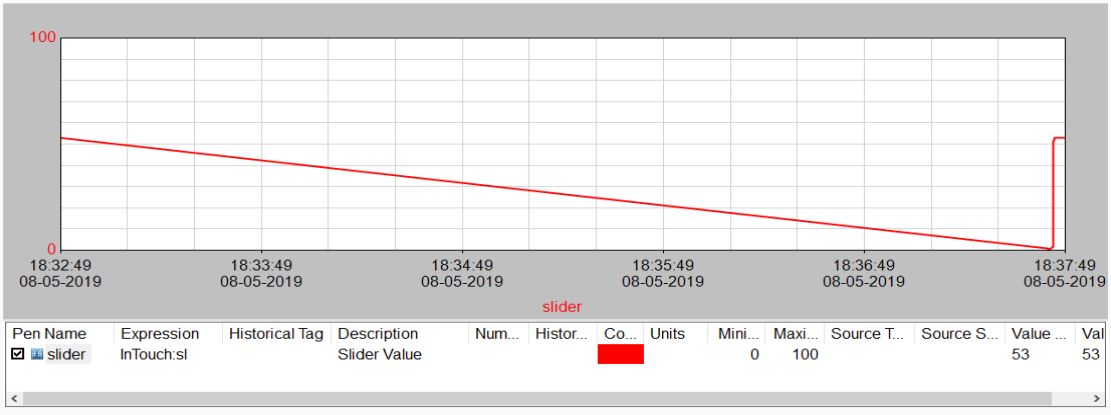


3.Go to option tab for more changes.



5.2.3 Monitor a tag with Trend Pen

1. Drag and drop the symbol of Trend Client to window.
2. Check in runtime.

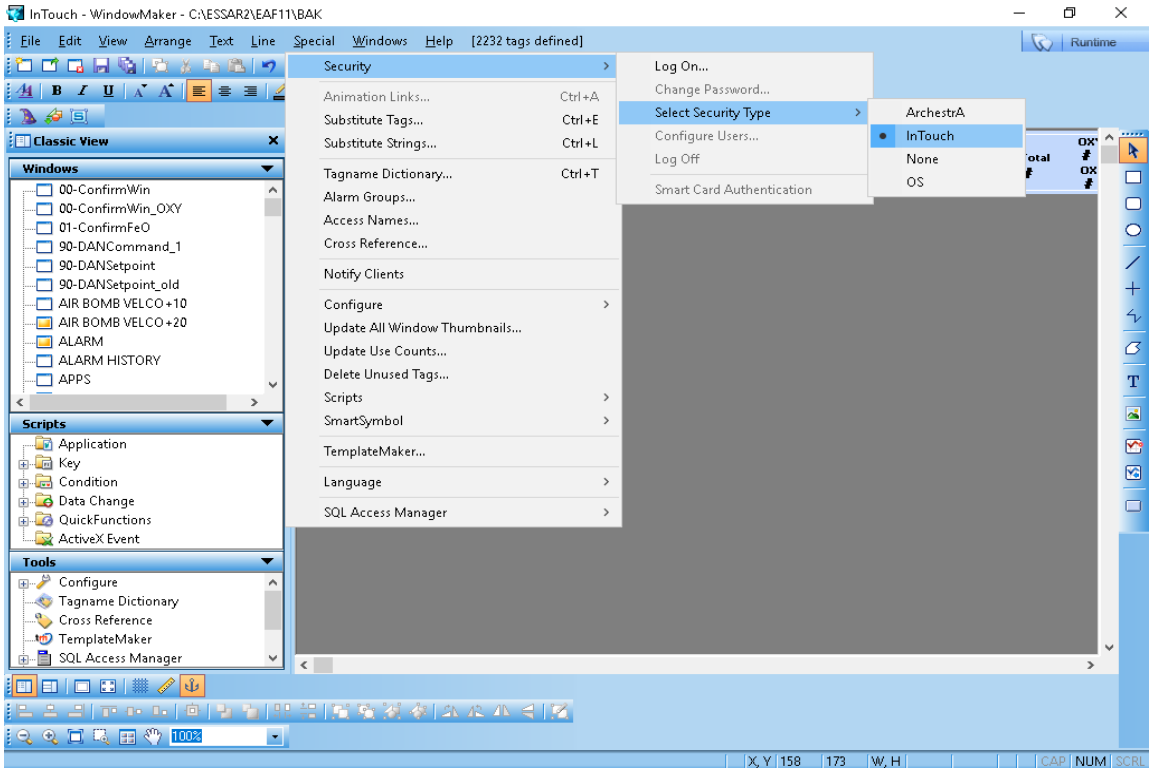


6.Application Security

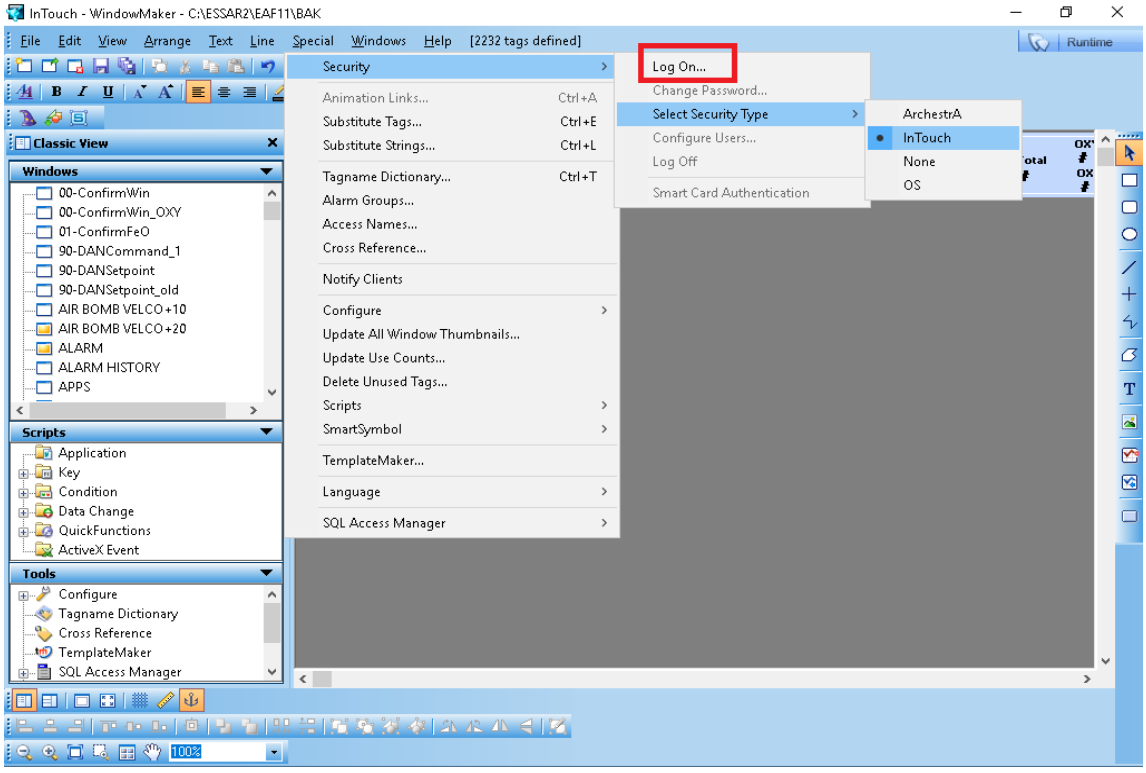
6.1 Intouch security.

6.1.1 Enable intouch security

1. First go to security in special menu and select security type.



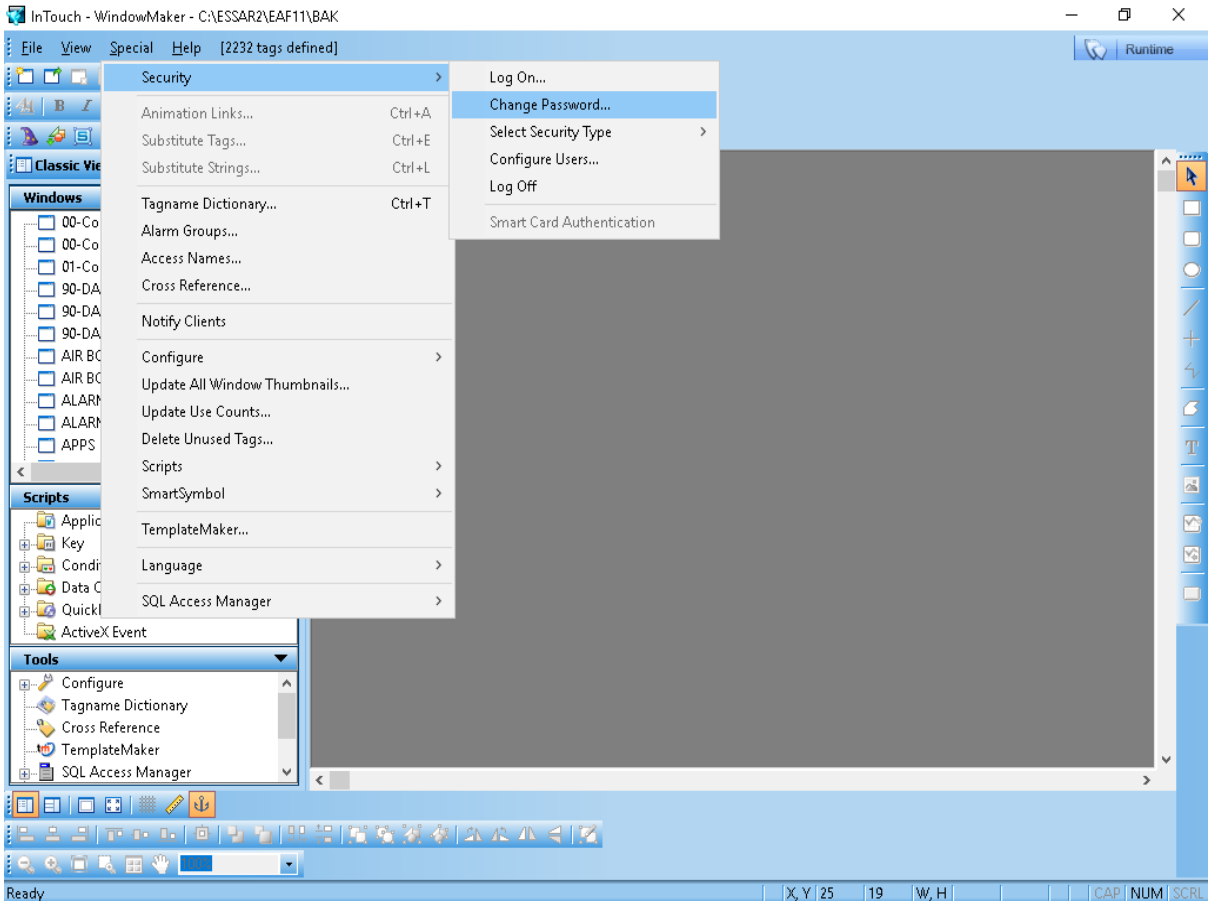
2. Then first log on for configure other users.



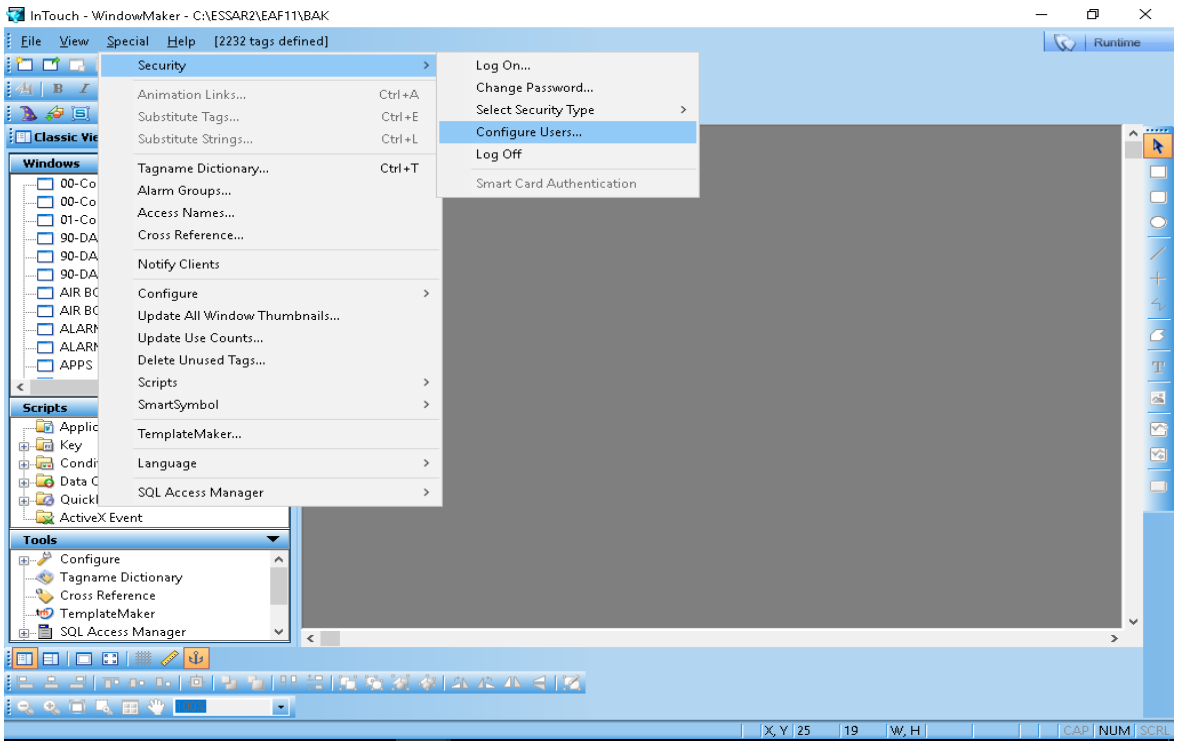
Here give user name:Administrator
Password:Wonderware

6.1.2 Create users and password in intouch.

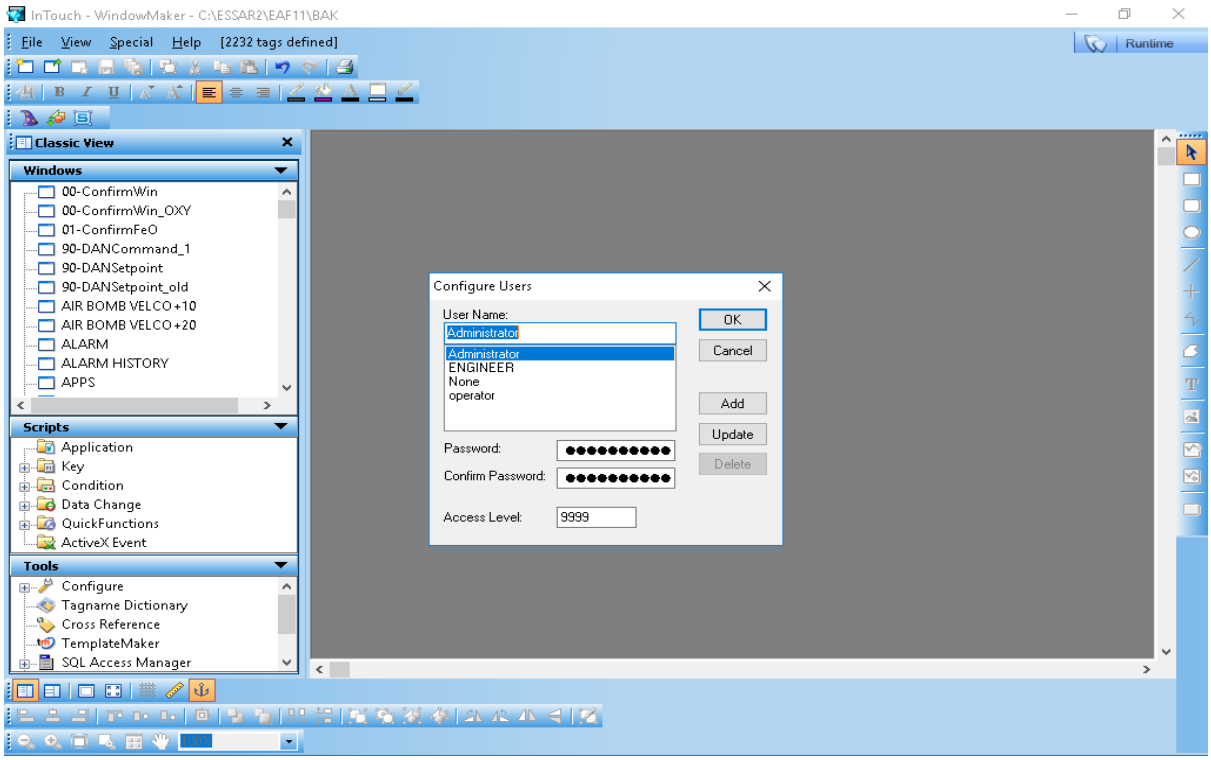
1. Now you change password if you want to change



2. After log on you can configure more users.



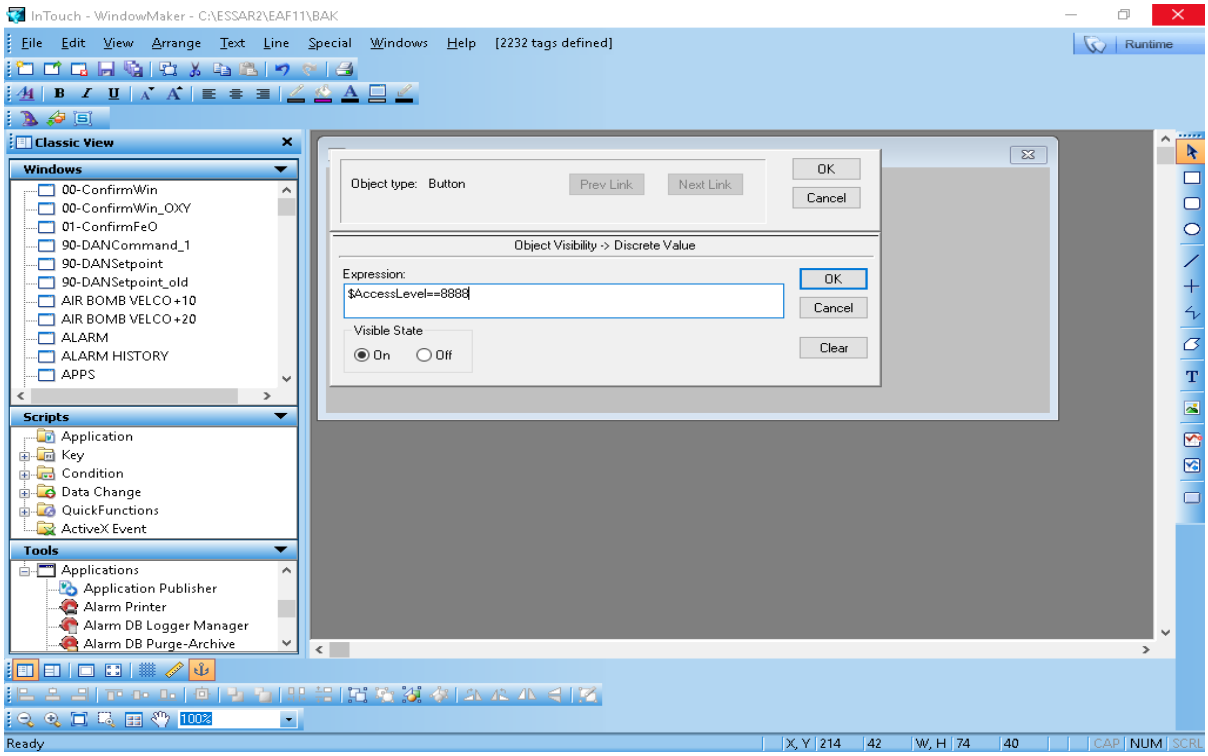
3. For that here Add user name and password and give access level to that user



4. Access level should be between 0 to 9999 but Administrator itself having 9999 access level so you can take it between 0 to 9998.
5. Suppose here we add user engineer having access level 8888.

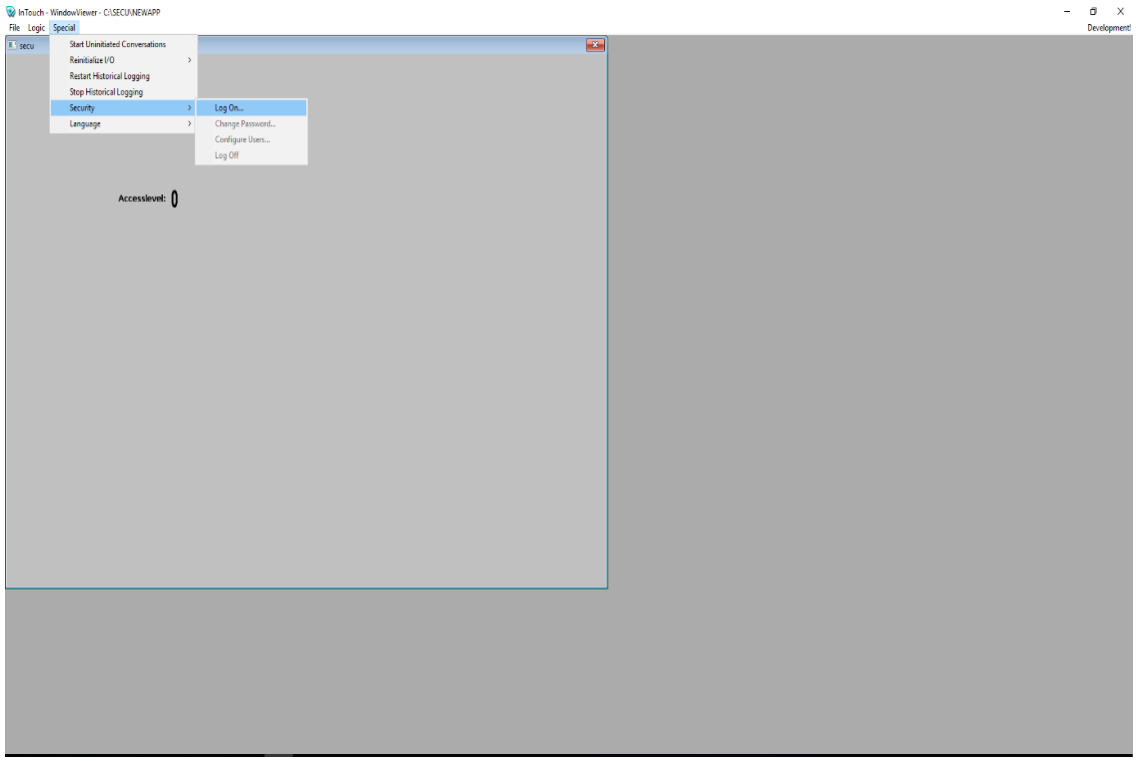
6.1.3 Use intouch animation to secure your application.

1. Now take on button from window and give visibility animation link with access level condition 8888.

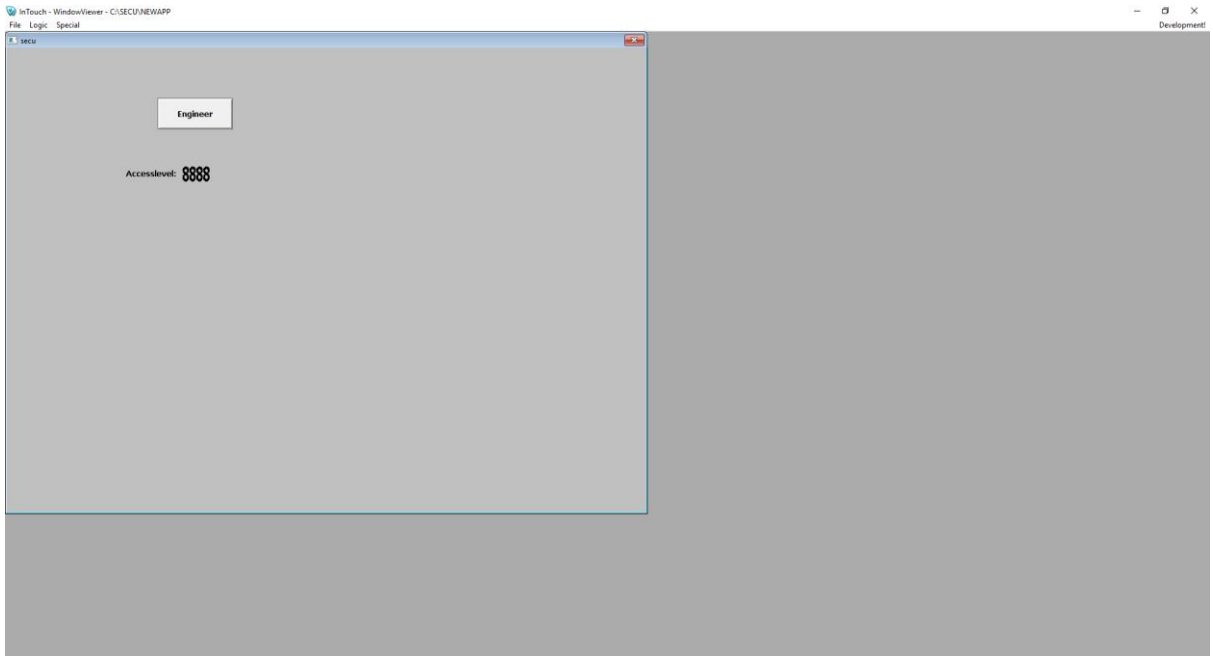


2. So in run time when we log in with engineer user then only this button is visible.

3. Here access level is 0 so button is invisible.
4. Now in we log in with engineer user.

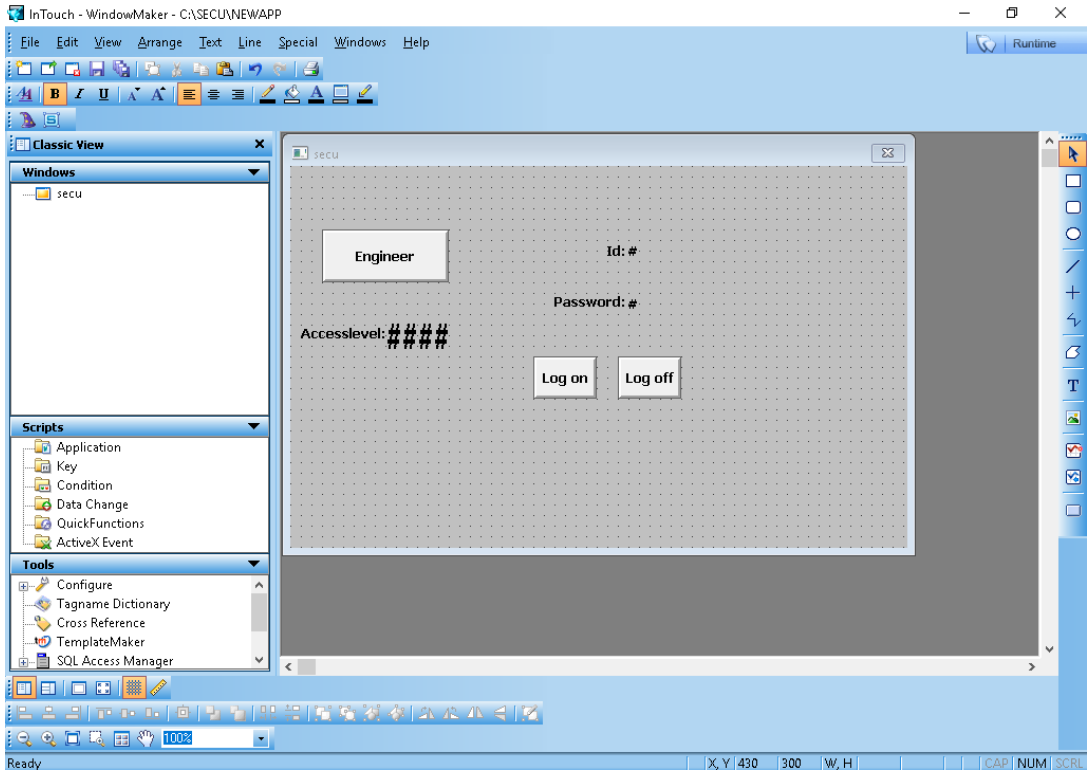


5. When log in with engineer user access level is 8888. And button is visible.

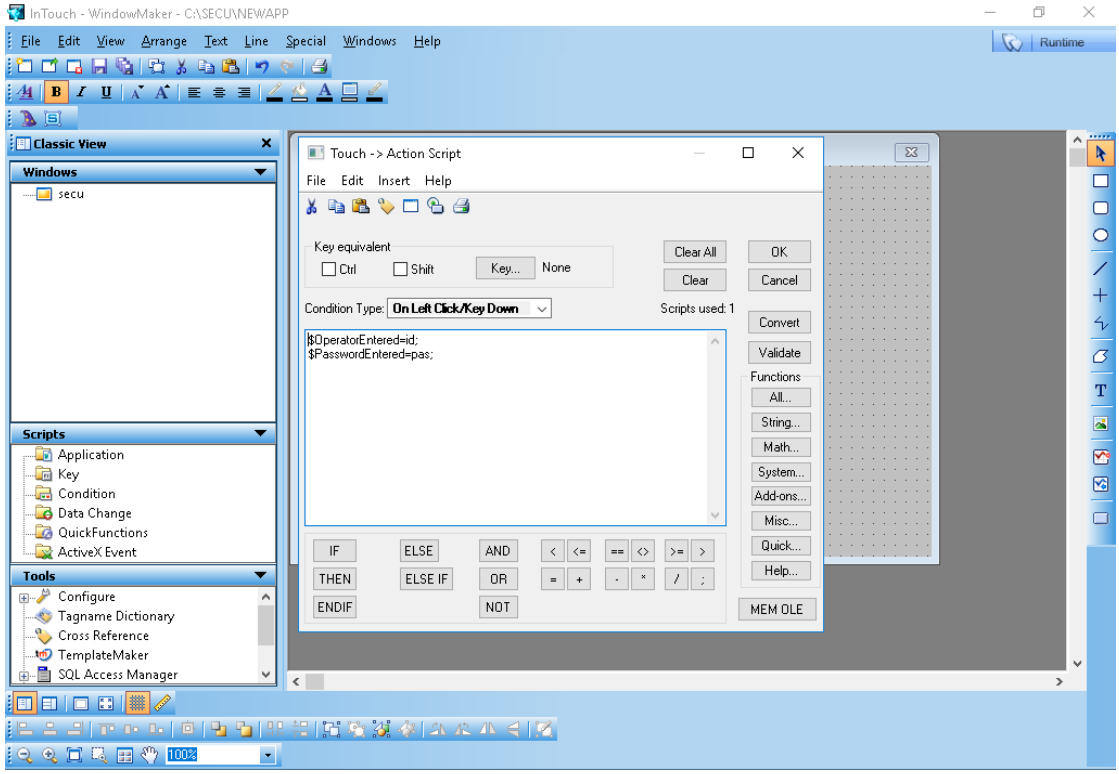


6.1.4 Create an operator login using $system tags.

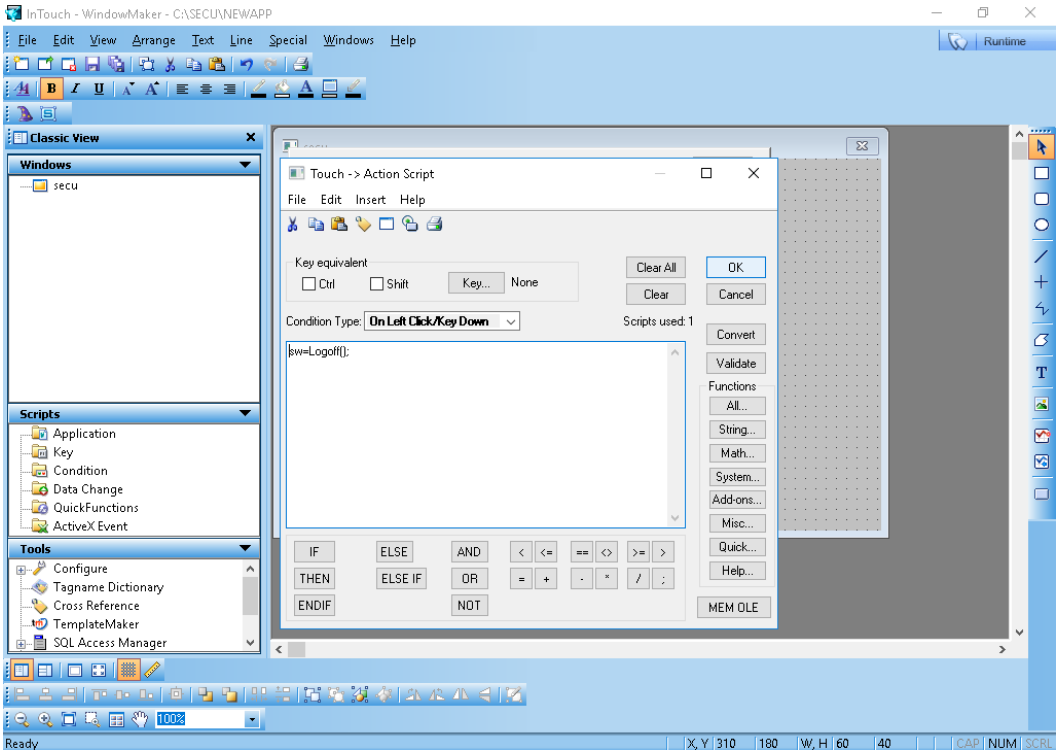
1. First take two tags for id and password and give it user input animation link.
2. Take two buttons one for log on and other for log off.



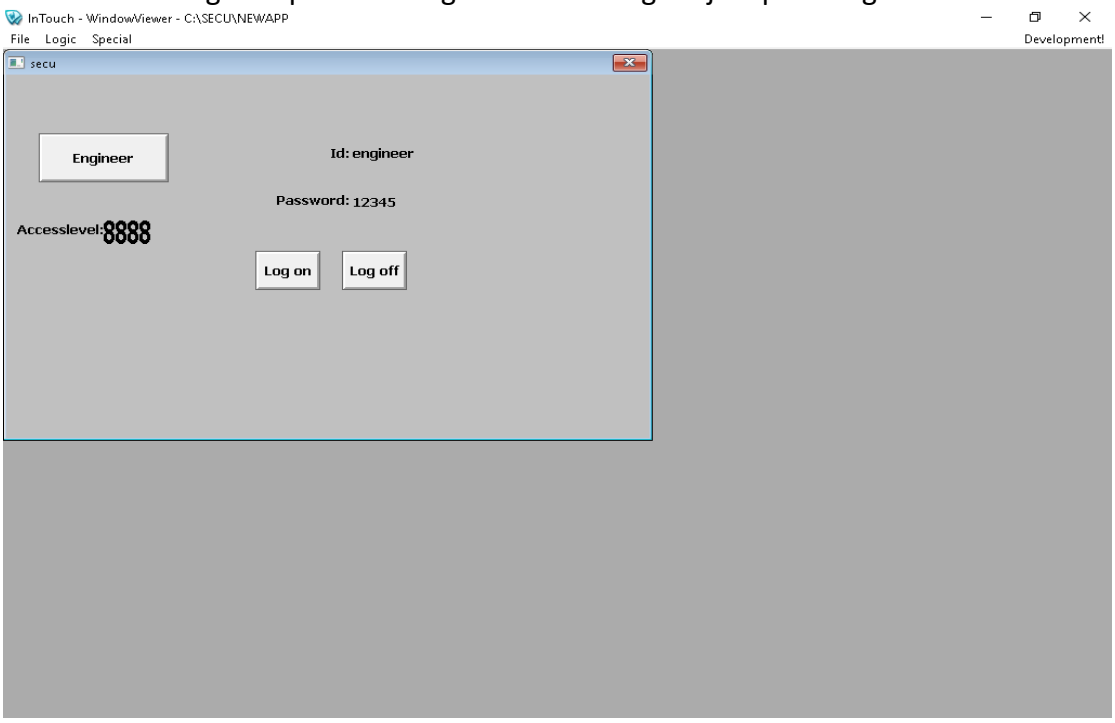
3. In this log on button give action script as below.



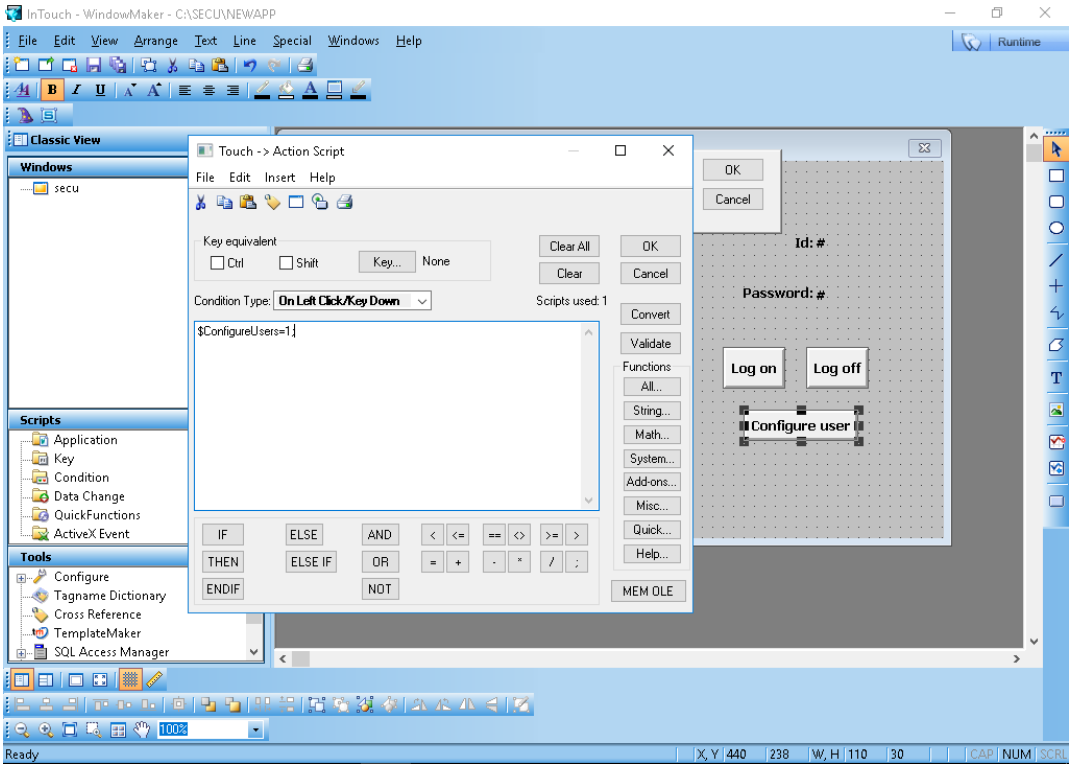
4. In log off button give action script as below.



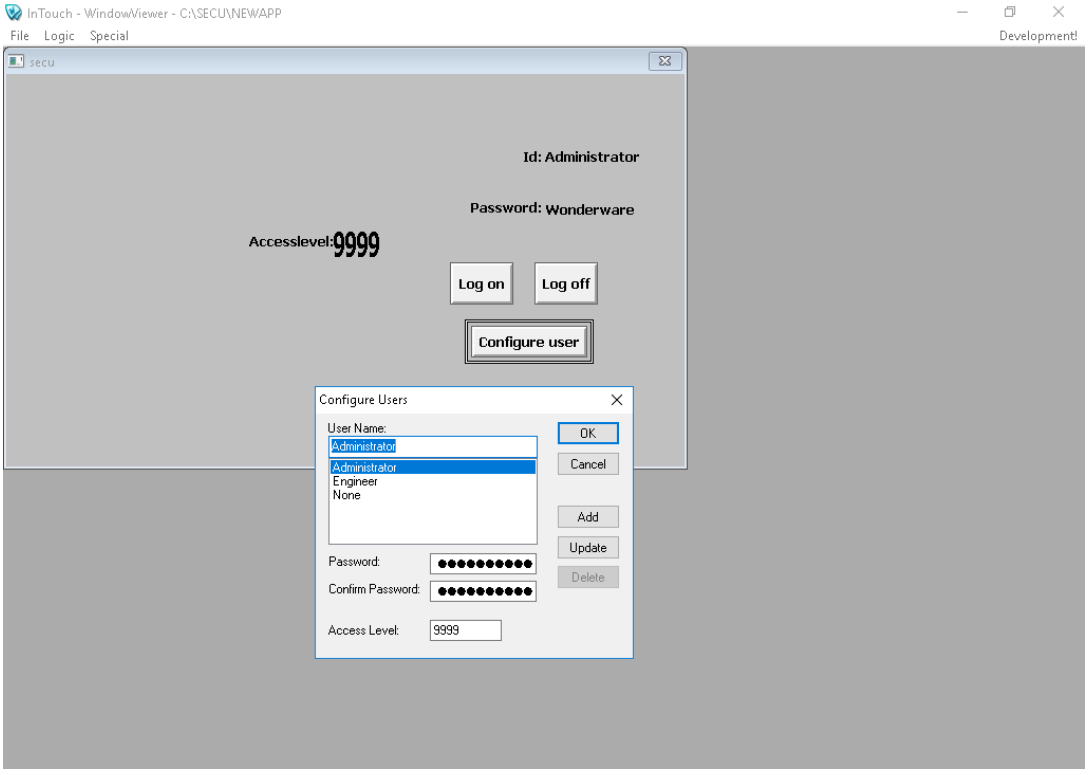
5. In run time first write id and password and then press log on button so here we don't need to go in special for log on. And for log off just press log off button.



6. If you want to configure more user in run time take one button and give it action script as below.



7. In run time for activating configure user we need access level should be more than 9000 so first we log on with Administrator user and then click on configure user button, then we can configure more users in run time.

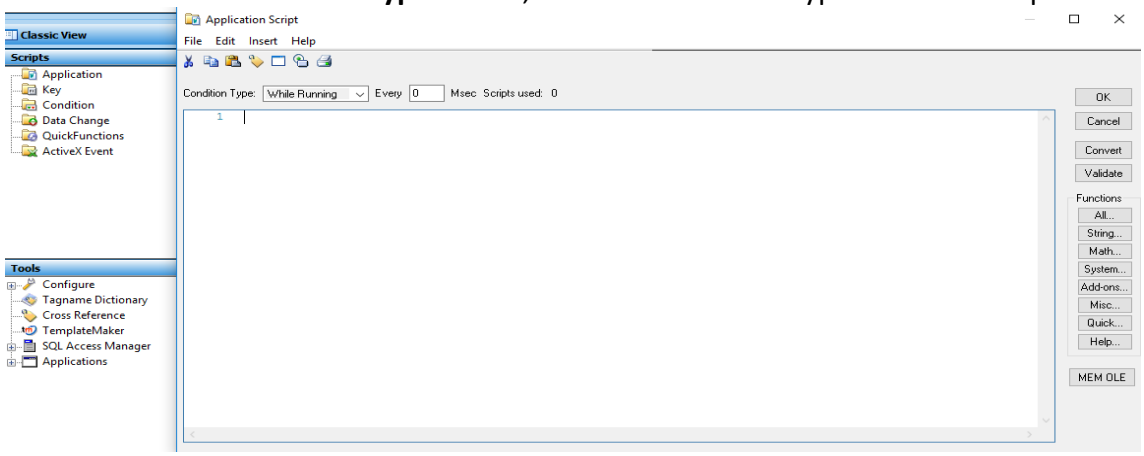


7. Enhancing Your Application with QuickScript.

7.1 Introduction to Quick Script

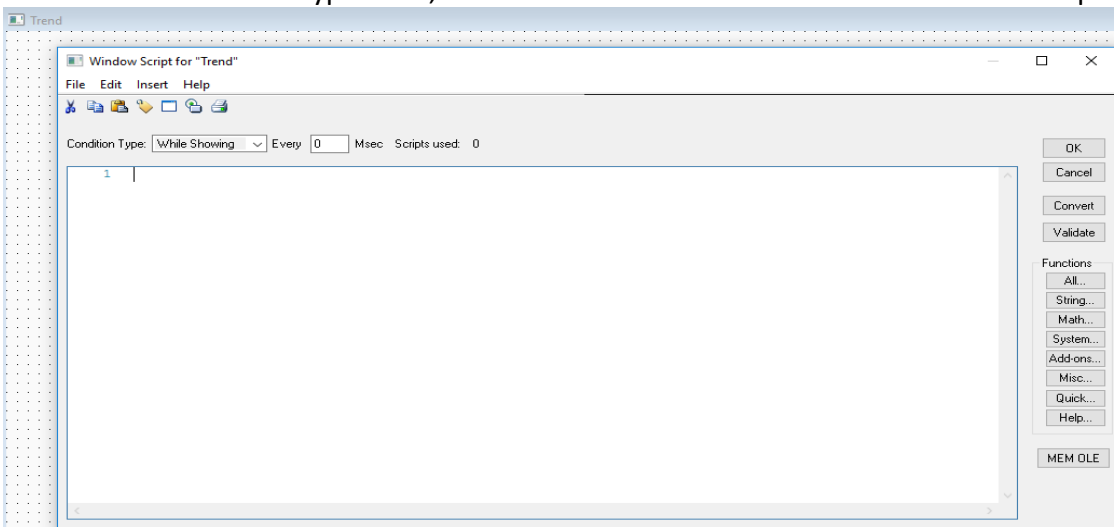
7.1.1 Application

1. To open an application script
2. Do either of the following:
   - Using the **Classic View**, in the **Scripts** pane, double-click **Application**.
   - On the **Special** menu, point to **Scripts**, and then click **Application Scripts**.
3. In the **Condition Type** list, click the type of script to edit.



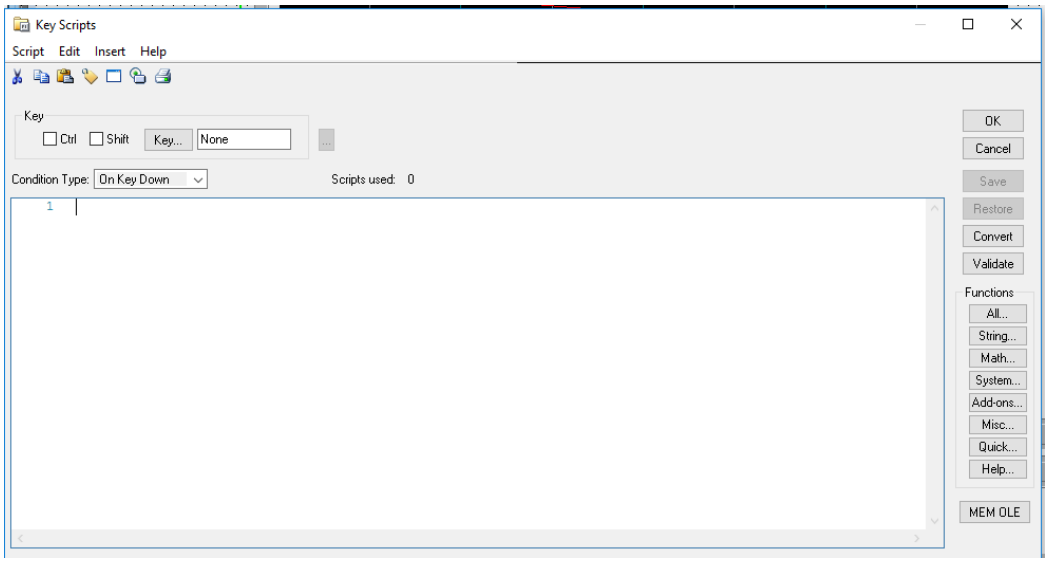
7.1.2 Window

1. To open a window script
2. Do any of the following:
   - Using the Classic View, in the Windows pane, right-click the window name, and then click Window Scripts.
   - Using the Project View, expand Scripts, and then double-click the script.
   - Open the window that the script is associated with. On the Special menu, point to Scripts, and then click Window Scripts.
   - Open the window that the script is associated with. Right-click on a blank area in the window, and then click Window Scripts.
3. In the Condition Type list, click the condition to cause the script to run.

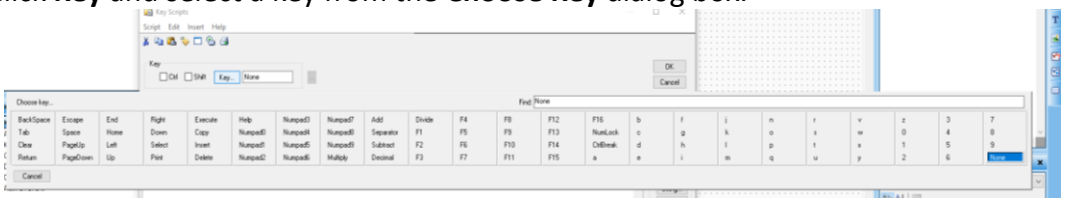


7.1.3 Key

1. Using the **Classic View**, in the **Scripts** pane, do one of the following:
    - To configure a new key script, right-click **Key**, and then click **New**. The **Key Scripts** dialog box appears.



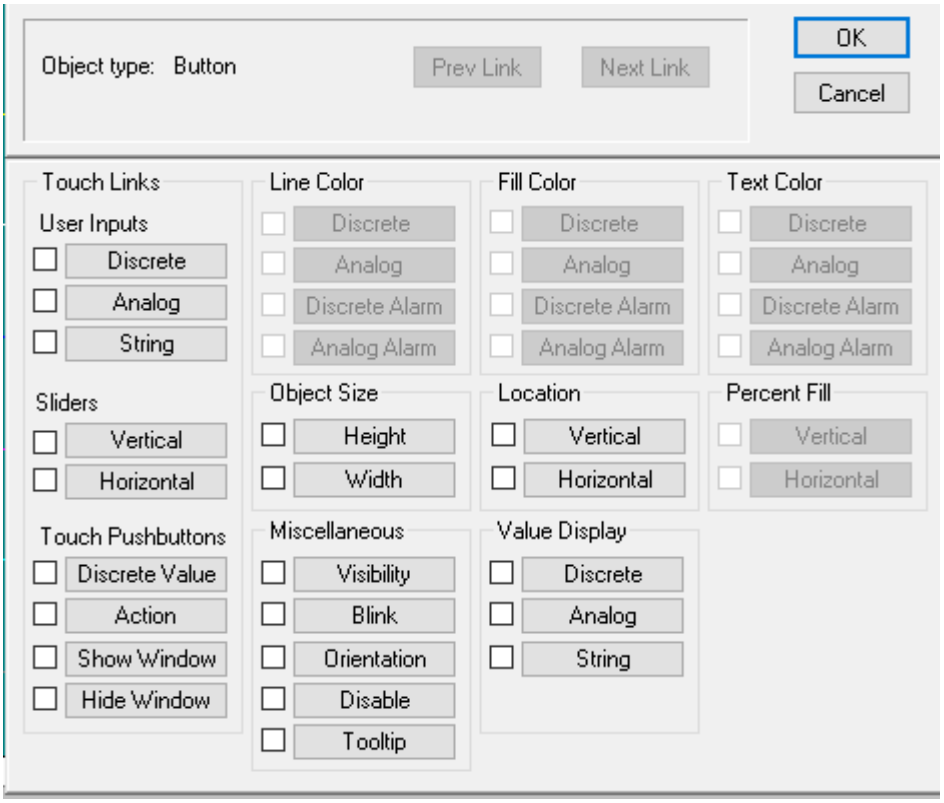
    - To configure an existing key script, expand **Key**, right-click the script name, and then click **Edit**. The **Edit Key Script** dialog box appears.
2. Click **Key** and select a key from the **Choose Key** dialog box.



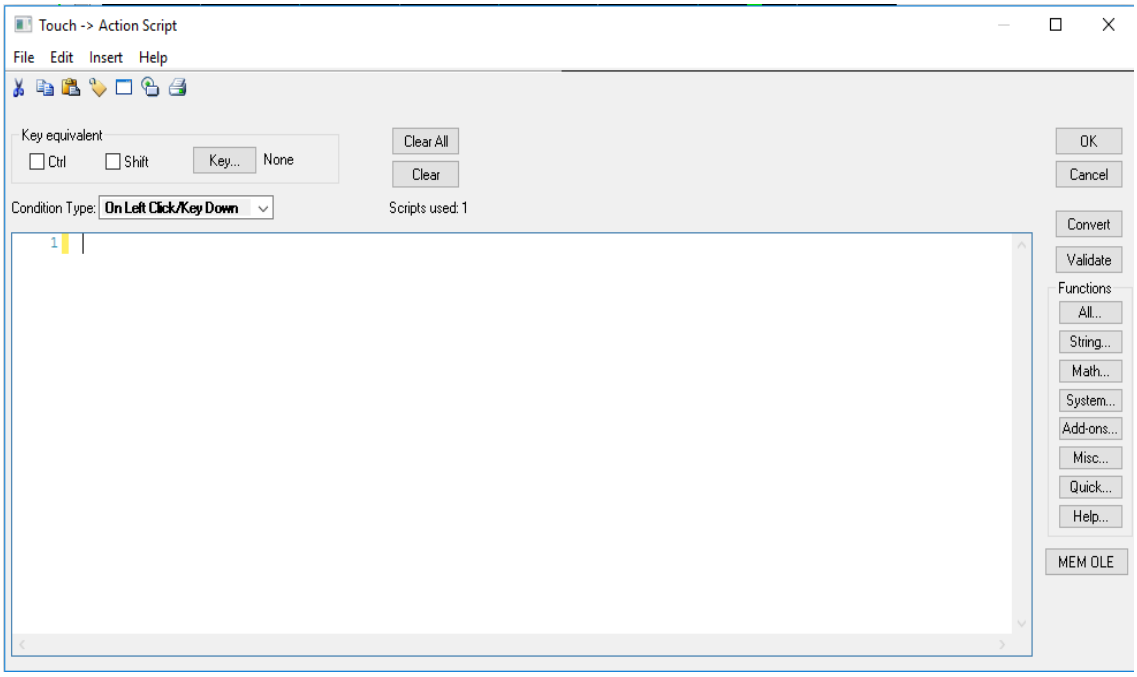
3. Select the **Ctrl** and/or **Shift** check boxes to assign a control key and/or shift key combination with your selected key.
4. In the **Condition Type** list, do one of the following:
    - Click **on Key Down** to configure a script to execute one time when the associated key or key combination is pressed.
    - Click **While Down** to configure a script to execute periodically while the associated key or key combination is pressed.
    - Click **on Key Up** to configure a script to execute one time when the associated key or key combination is released.
5. If you selected **While Down** in the previous step, type a time interval between 1 and 360000 milliseconds in the **every** box.
6. Type your script in the window.
7. Click **OK**.

7.1.4 Action

1. Double-click the graphic object. The **Animation Links Selection** panel appears.



2. Click **Action**. The **Touch -> Action Script** dialog box appears.



3. In the **Condition Type** list, click one of the following:

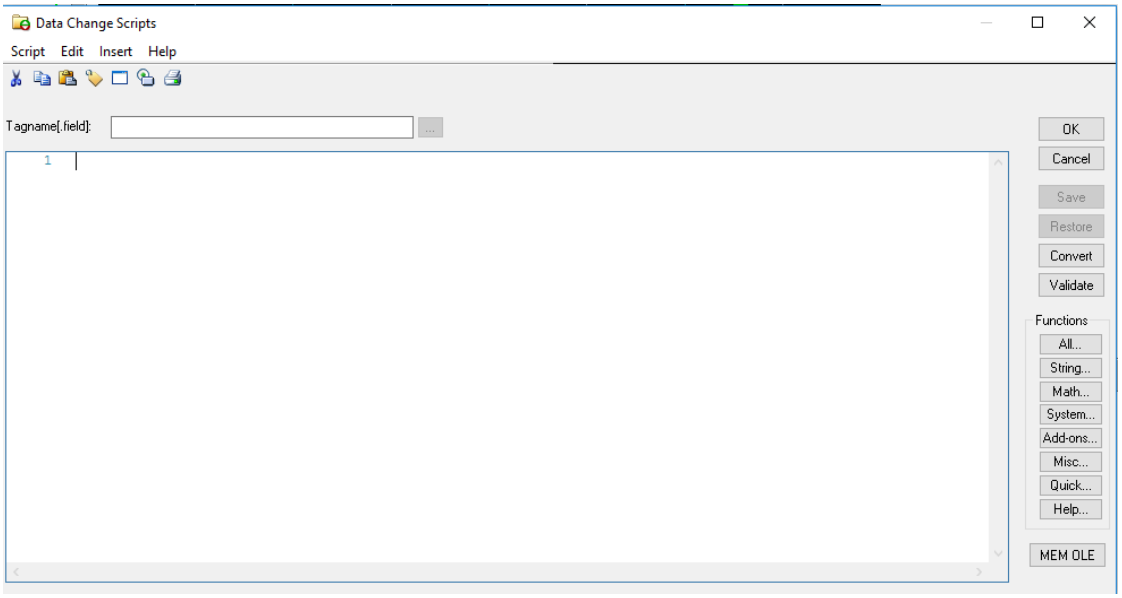
To configure a script that executes on this condition	Click
One time when the left mouse button or a certain key or key combination is pressed	**On Left Click/Key Down**

Periodically while the left mouse button or a certain key or key combination is pressed	**While Left/Key Down**
One time when the left mouse button or a certain key or key combination is released	**On Left/Key Up**
One time when the left mouse button is double-clicked	**On Left Double Click**
One time when the right mouse button is pressed	**On Right Click**
Periodically while the right mouse button is pressed	**While Right Down**
One time when the right mouse button is released	**On Right Up**
One time when the right mouse button is double-clicked	**On Right Double Click**
One time when the center mouse button is pressed	**On Center Click**
Periodically while the center mouse button is pressed	**While Center Down**
One time when the center mouse button is released	**On Center Up**
One time when the center mouse button is double-clicked	**On Center Double Click**
One time when the mouse moves over the object	**On Mouse Over**

4. If you select **On Left Click/Key Down**, **While Left/Key Down**, or **On Left/Key Up**:
    1. Click **Key**. The **Choose Key** dialog box appears.
    2. Click a key.
    3. Select the **Ctrl** and/or **Shift** check boxes to assign a control key and/or shift key combination to your selected key.
5. If you select **While Left/Key Down** or **While Right Down**, type a time interval between 1 and 360000 milliseconds in the **every** box.
6. If you select **On Mouse Over**, in the **after** box, type the number of milliseconds between 1 and 360000 to pass after the mouse has moved over the object before the script is executed.
7. Type your script in the window.
8. Click **OK**.

7.1.5 Data Change

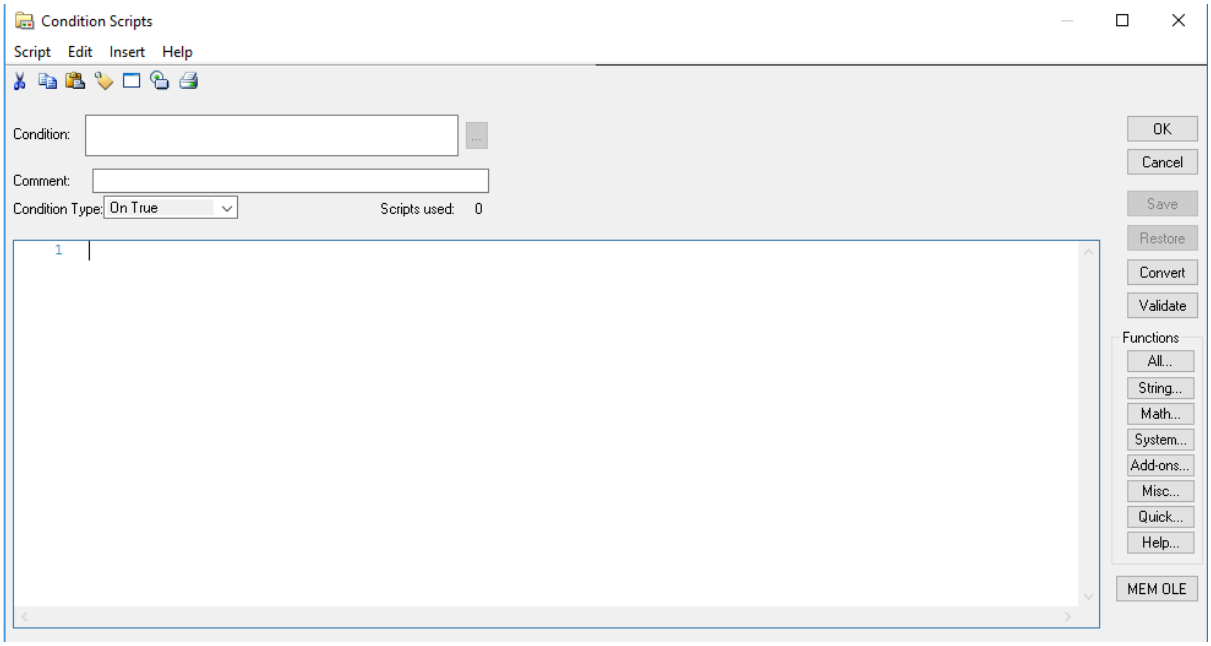
1. Using the **Classic View**, in the **Scripts** pane, right-click **Data Change** and click **new**. The **Data Change Scripts** dialog box appears.



2. To create a new script, in the **Tagname [.field]** box, enter a tagname or tagname field.
   To edit an existing script, click the ellipsis button to the right of the **Tagname [.field]** box and select the script from the list that appears.
3. Type your script in the window.
4. Click **OK**.

7.1.6 Condition

1. Using the **Classic View**, in the **Scripts** pane either:
   - Right-click **Condition** and click **new**. The **Condition Scripts** dialog box appears.

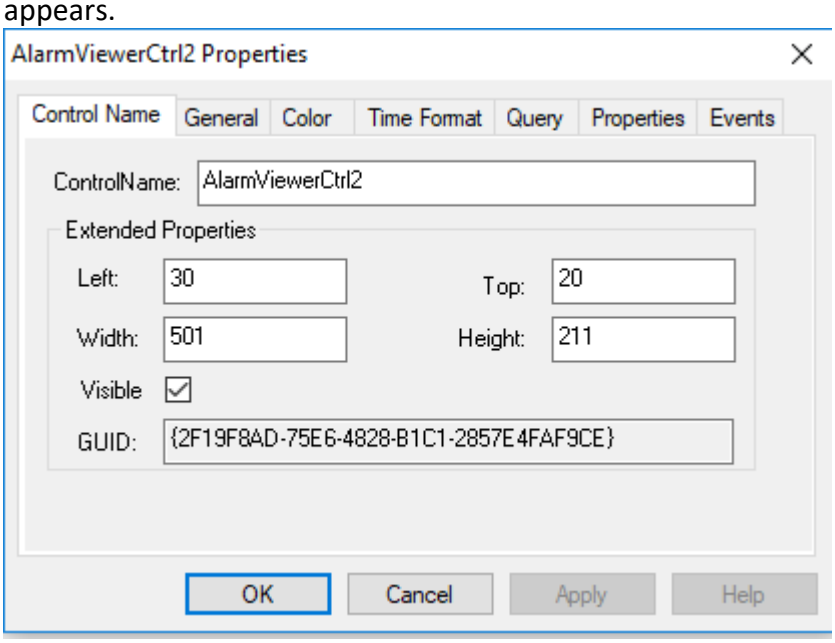


   - To edit an existing condition script, click the plus sign next to **Condition**, right-click the condition script name, and click **Edit**. The **Edit Condition Script** dialog box appears.
2. In the **Condition** box, type the expression that you want to use as the condition.
   You can type the expression to a maximum length of 1024 characters.
3. You can enter a comment in the **Comment** box.

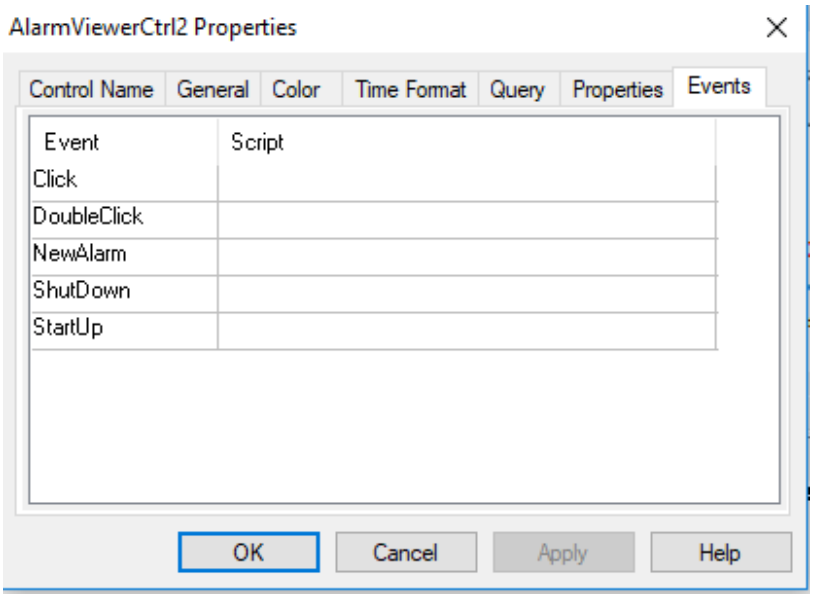
4. In the **Condition Type** list, do one of the following:
   - Click **on False** to configure a script to execute one time when the condition becomes false.
   - Click **While False** to configure a script to execute periodically while the condition is false.
   - Click **on True** to configure a script to execute one time when the condition becomes true.
   - Click **While True** to configure a script to execute periodically while the condition is true.
5. If you selected **While False** or **While True** in the previous step, type a time interval between 1 and 360000 milliseconds in the **every** box.
   Note: The conditional WindowViewer timers will stop themselves if the condition is no longer true. For example, While Mouse Button Down events will not trigger if the mouse button is no longer down, and key scripts will stop if keys are no longer down.
6. Type your script, or modify the existing script in the window.
7. Click **OK**.

7.1.7 ActiveX Event

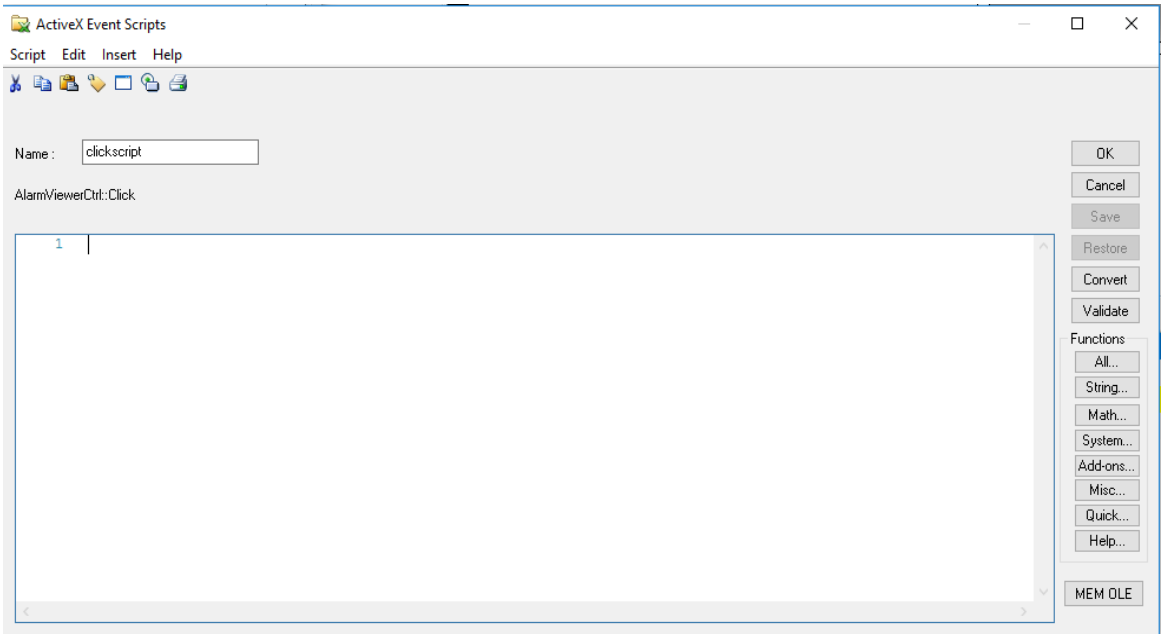
1. Double-click on the ActiveX control to configure. The ActiveX control properties dialog box appears.



2. Click the **Events** tab.



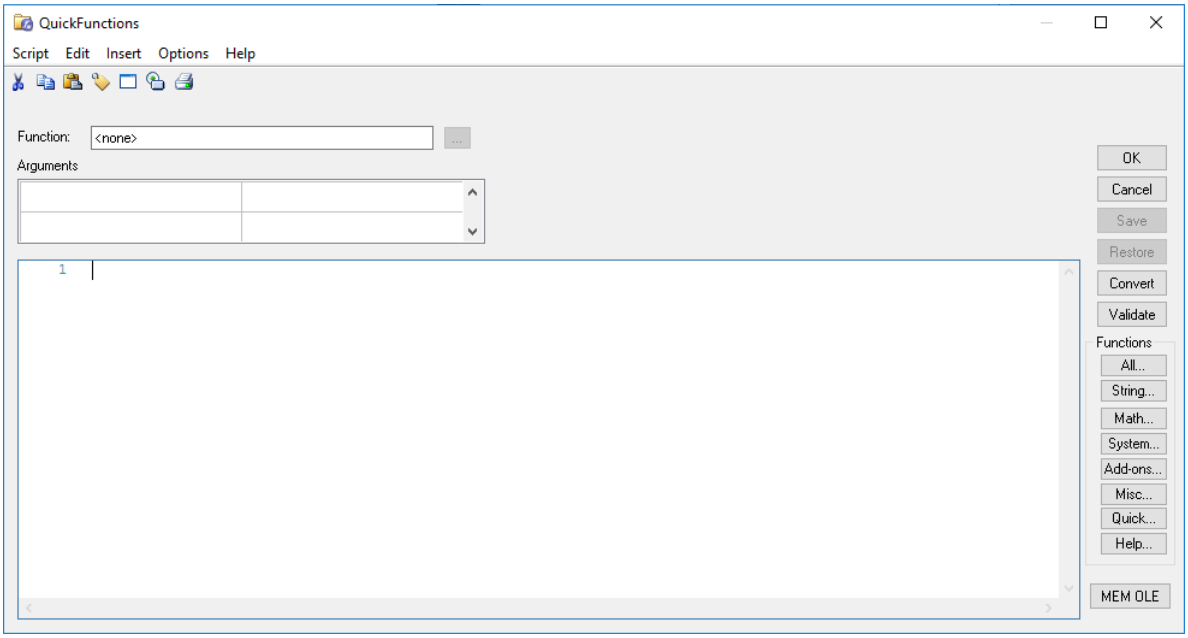
3. Select an event such as click, double-click, shut down, or start up.
4. Click in the **Scripts** cell for that event. Square brackets appear.
5. Type in a new name for an event script and click **OK**. When a message appears, click **OK** to create a new script. The **ActiveX Event Scripts** dialog box appears.



6. In the **Name** box, you can make changes to the ActiveX event script name.
7. Type your script in the window.
8. Click **OK**.

7.1.8 Quick Functions

1. In the **Scripts** pane, right-click **QuickFunctions,** and then click **new**. The **QuickFunctions** dialog box appears.



2. In the **Function** box, enter a name for the QuickFunction.
3. In the **Arguments** area, for each argument, enter a name on the left and a data type on the right. Arguments are local variables that exist only within the QuickFunction in which they are defined. You can have up to 16 arguments per QuickFunction. Argument names can have 31 characters but no spaces. The argument names must begin with an alpha character. Argument names must be unique.
4. Type your script in the window.
5. To cause the QuickFunction to return a result, add to your script: RETURN value
   Value can be a literal value, a local variable, or global tagname or calculated expression. The script terminates at the RETURN command and continues at the calling function.
6. Click **OK**.

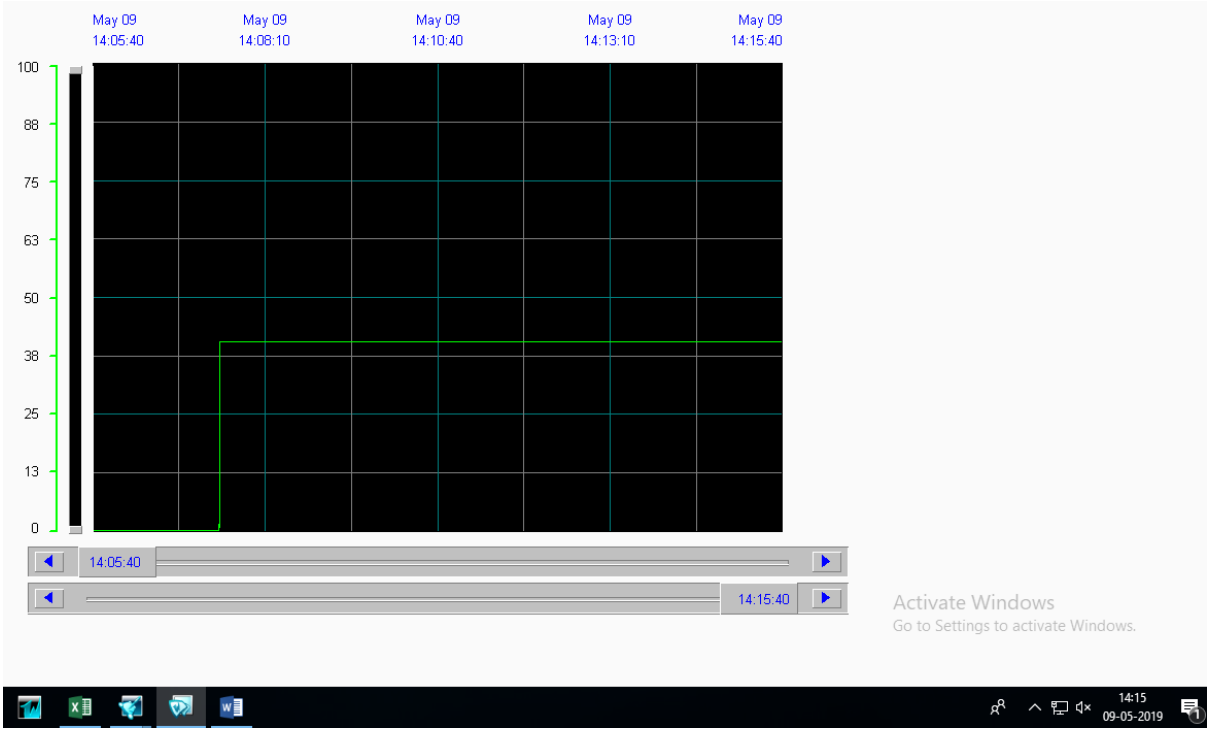
7.2 Enhancing History with QuickScript

7.2.1HTUpdateToCurrentTime (Hist_Tag)

The HT**UpdateToCurrentTime()** function retrieves and shows the data with an end time equal to the current time. The start time is equal to end time minus the width of thechart.

1. Open the windows.
2. Take and configure historical trend.
3. Take button on screen.
4. Write action script.
   HTUpdateToCurrentTime("HistTrend");
   Where, HistTrend is a name of historical trend.
5. Go to Runtime and check.

Before button pressed.



After Button pressed.

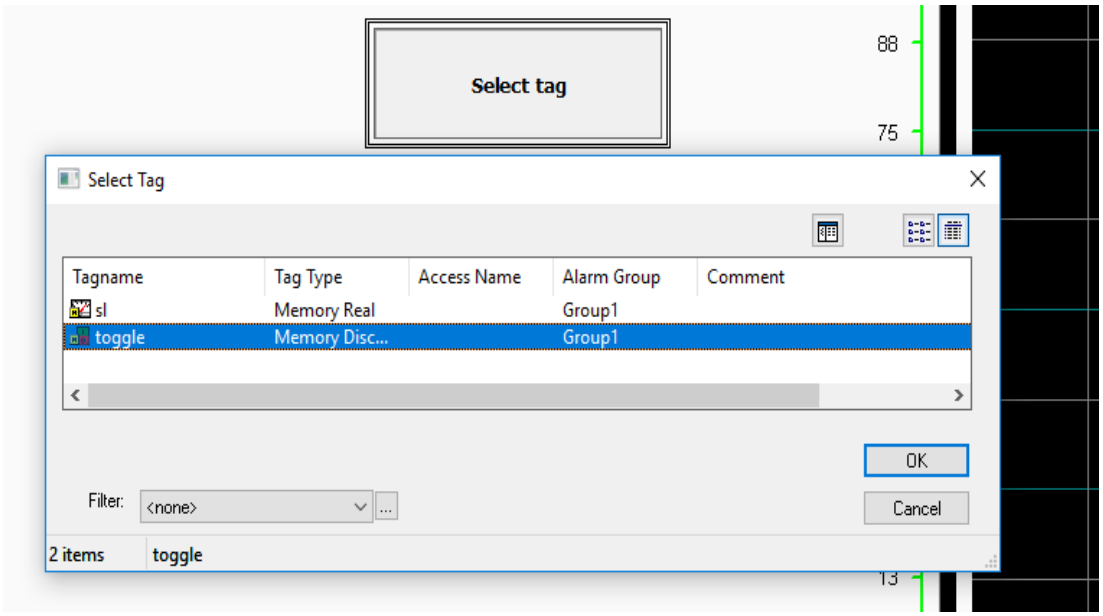
7.2.2 HTSelectTag()

The **HTSelectTag()** function opens the **Select Tag** dialog box for the operator to assign a different tag to a trend pen.

1. Take one button on window and Write an action script to select the historical tag.

HTSelectTag();

2. Go to runtime and check.



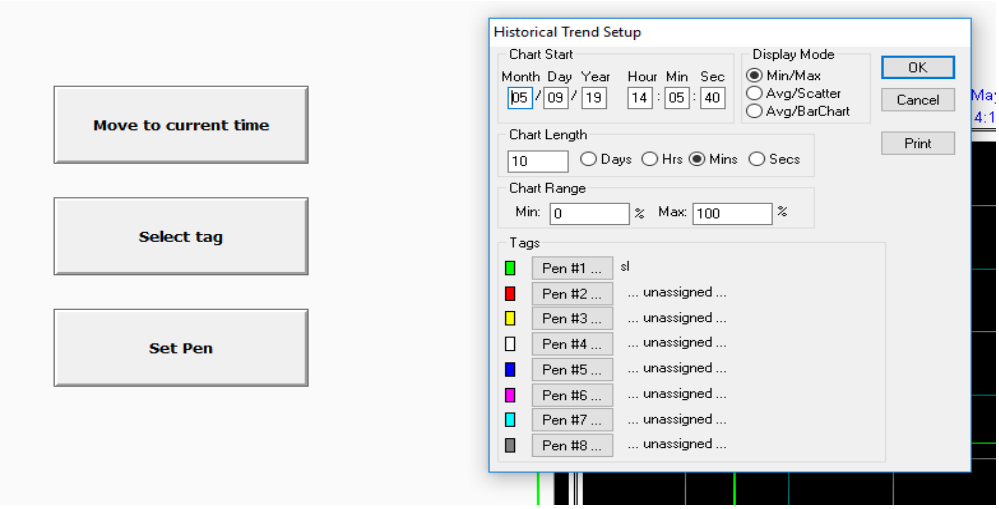
7.2.3 HTSetPenName() Function

The HTSetPenName() function assigns a different tag to a trend's pen.

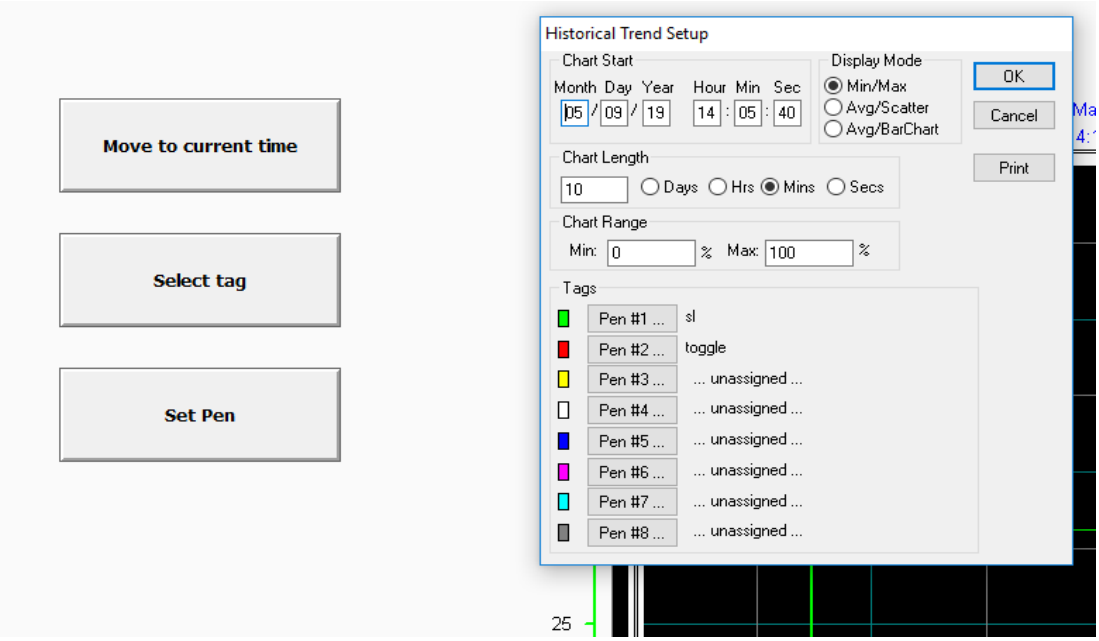
1. Open Window and take button.
2. Write an action script.
3. To Select the from runtime, you can use HTSelectTag() function.
4. The user can then select a tag from the list. This tag is assigned to pen 2 by the Historical Object named HistTrend.

```
HTSetPenName("HistTrend",2, HTSelectTag());
```

5. Check in runtime.



Before Button pressed.



After button pressed and tag selection.

7.2.4 HTGetPenName()

The **HTGetPenName()** function returns the name of the tag currently assigned to the specified pen number of the historical trend.

1. Open Window and take button.
2. Write an action script.
   TrendPen=HTGetPenName("HistTrend", HistTrend.UpdateCount,pen_num);
   Where, trendpen is tag that will return Selected trend pen name,
   HistTrend is trend name ,
   Pen_num is memory int tag to change Pen number from runtime.
3. Check in runtime.

Before num entered and button pressed.

Afer num enterted and button pressed.

7.2.5 HTGetTimeAtScooter()

The HTGetTimeAtScooter() returns the time in seconds after 00:00:00 hours GMT, January 1, 1970 for the sample at the scooter location specified by the ScootNum and ScootLoc arguments.

1. 1. Open Window and take button.
2. Write an action script.
   scooter_time=HTGetTimeAtScooter("HistTrend",HistTrend.UpdateCount,1,
   HistTrend.ScooterPosLeft);
   Where,

Histtrend is trend name,
And .scooterposleft will retrieve the time of Left Scooter.

3. Check in runtime.

After Pressing the button, Scooter time value.

7.2.6 HTGetTimeStringAtScooter()

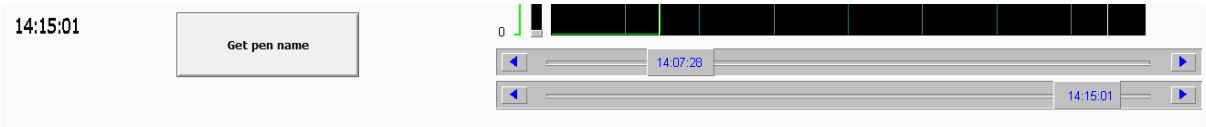
The HTGetTimeStringAtScooter() function returns the string containing the time/date for the sample at the specified scooter location.

1. Open Window and take button.
2. Write an action script.

NewRightTimeString=HTGetTimeStringAtScooter ("HistTrend",HistTrend.UpdateCount,2, HistTrend.ScooterPosRight,"Time");

Where,
Histtrend is trend name,
And .scooterposleft will retrieve the time of Left Scooter.

3. Check in runtime.



After Pressing the button, Scooter time value.

7.2.7 HTGetValue() Function

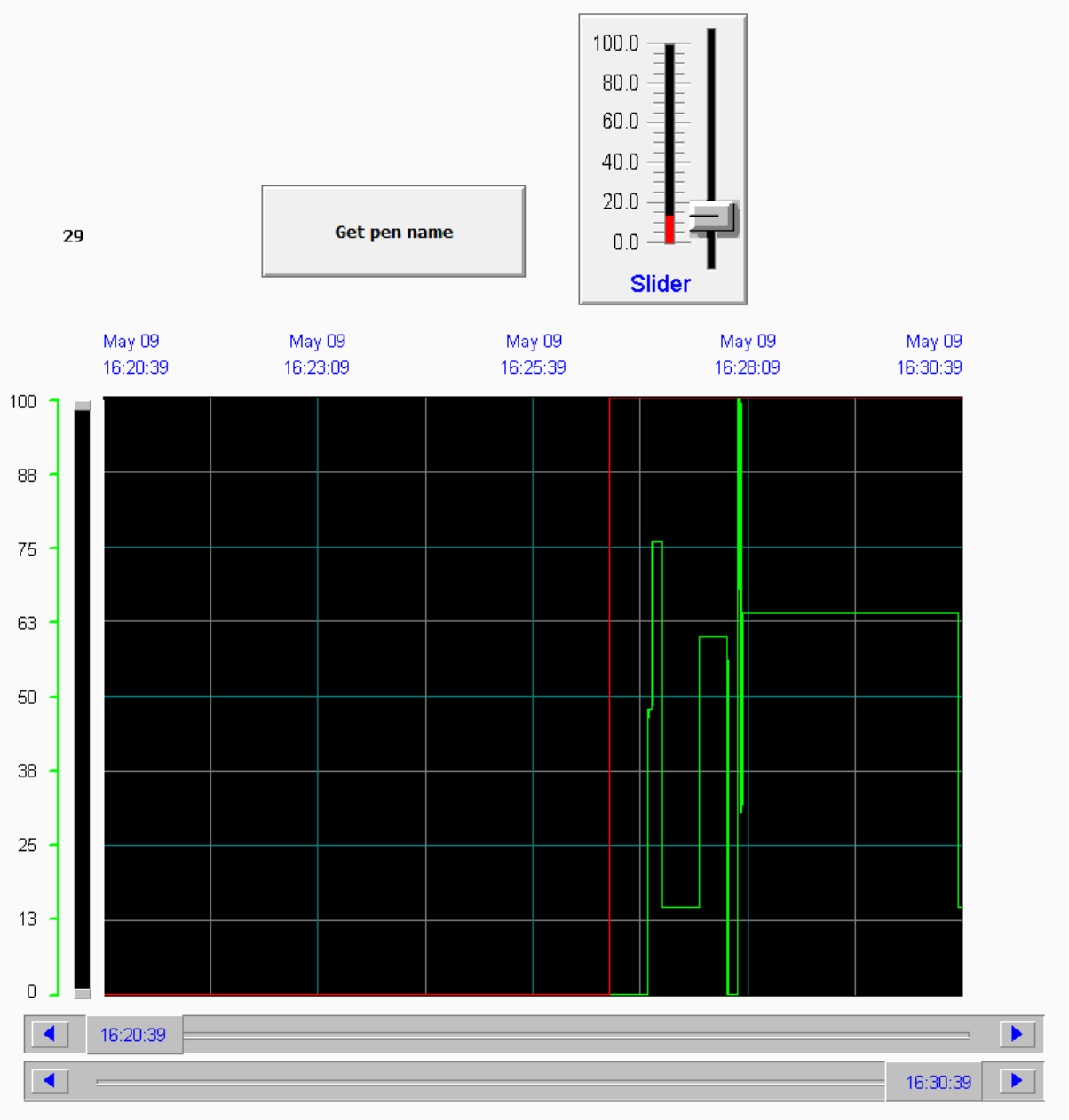
The HTGetValue() function returns a value of the requested type for the trend's specified pen.

1. Open Window and take button.
2. Write an action script.

trend_tag_value=HTGetValue("HistTrend", HistTrend.UpdateCount,1,"PenStdDev");

Where,
Histtrend is trend name,
And PenAverageValue = Average for the entire trend.
PenMaxValue = Maximum pen value for the entire trend.
PenMinValue = Minimum pen value for the entire trend.
PenMaxEU = Maximum engineering units value for the entire trend.
PenMinEU = Minimum engineering units value for the entire trend.
PenStdDev = Standard deviation for the entire trend.

3. Check in runtime.



7.2.8HTGetValueAtScooter()

The HTGetValueAtScooter() function returns a value of the requested type for the sample at the specified scooter position, trend, and pen number. The UpdateCount argument causes the expression to be evaluated after function processing is finished.

1. Open Window and take button.
2. Write an action script.

```
ValueAtScooter =HTGetValueAtScooter(Hist_Tag,
        UpdateCount,ScootNum,ScootLoc,PenNum, ValType_Text);
```

Where,

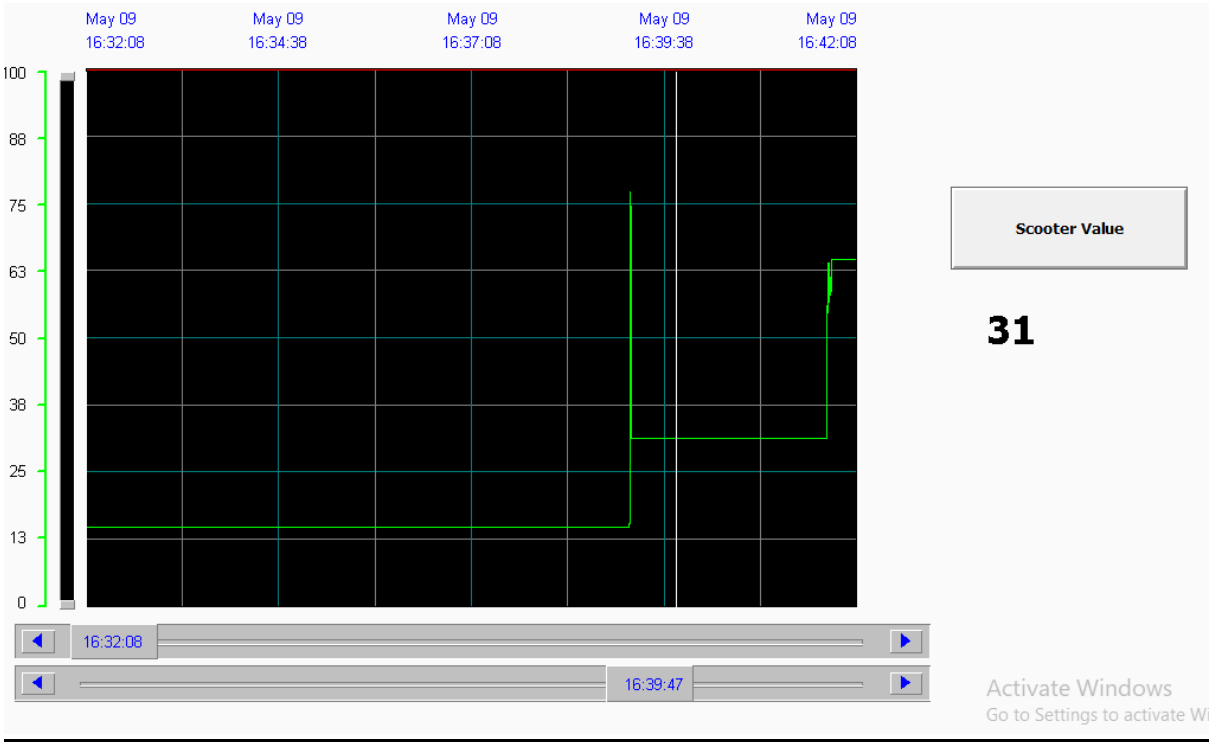
ScootNum

Integer representing the left or right scooter:

1 = Left Scooter

2 = Right Scooter
ScootLoc
Real number representing the trend's .ScooterPosRight or .ScooterPosLeft dotfields.
PenNum
Integer tag or value representing the pen number (1-8).
ValType_Text
String indicating the type of value to return:
PenValue = Value at scooter position.
PenValid = 0 if value is invalid, 1 if valid.
When the ValType_Text argument is used with the HTGetValueAtScooter() function, use one of the valid types listed.

3. Check in runtime.



7.2.9 HTGetValueAtZone()

The HTGetValueAtZone() function returns a value of the requested type for the data located between the right and left scooter positions for a trend's specified pen.

1. Open Window and take button.
2. Write an action script.

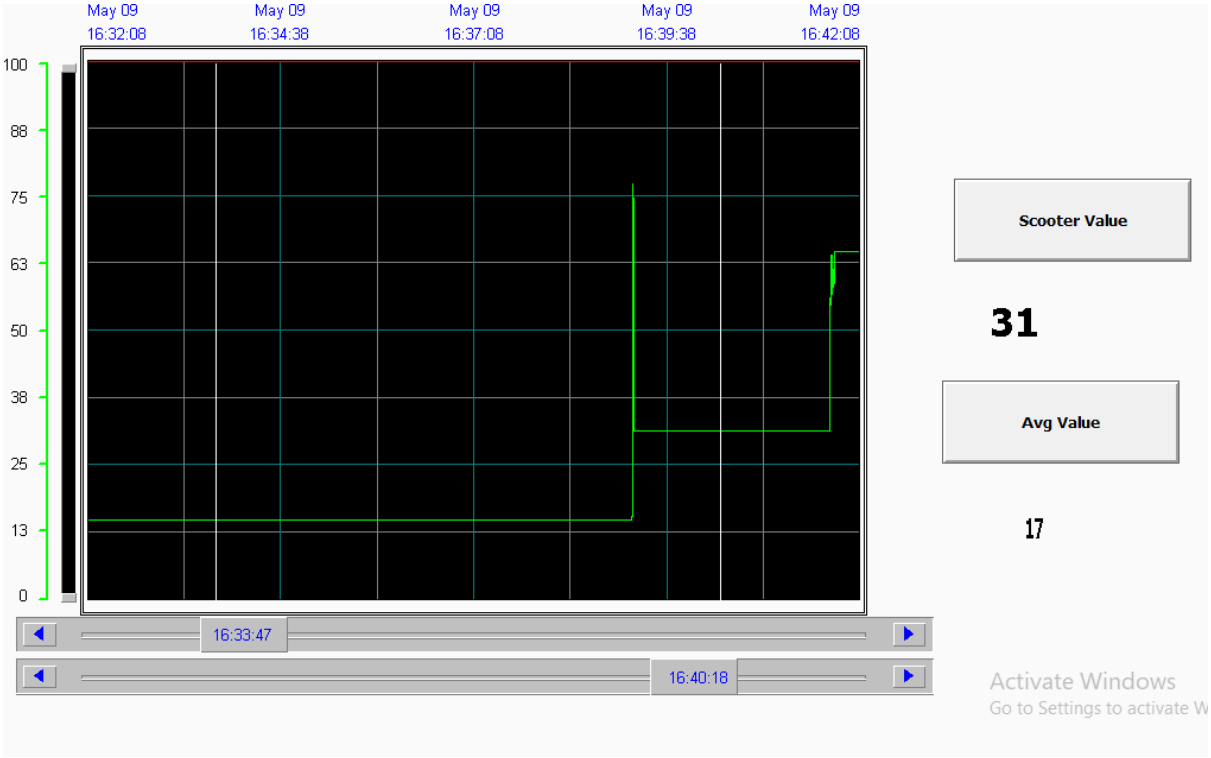
RealResult=HTGetValueAtZone(Hist_Tag,UpdateCount,
Scoot1Loc,Scoot2Loc,PenNum,ValType_Text);

Where,

Scoot1Loc
Real representing the trend's .ScooterPosLeft dotfield. It is used only as a trigger to evaluate the function.
Scoot2Loc
Real representing the trend's .ScooterPosRight dotfield. It is used only as a trigger to evaluate the function.
PenNum

Integer tag or value representing the pen number (1-8) of the trend.
ValType_Text
String indicating the type of value to return.
PenAverageValue = Average for zone between the scooters.
PenMaxValue = Maximum value for the zone between the scooters.
PenMinValue = Minimum value for the zone between the scooters.
PenMaxEU = Maximum engineering unit value for the zone between scooters.
PenMinEU = Minimum engineering unit value for the zone between the scooters.
PenStdDev = Standard Deviation for the zone between the scooters.

3. Check in runtime.



7.2.10 HTScrollLeft()

The **HTScrollLeft()** function sets the start time of the trend to an earlier time than the current start time by a percentage of the trend's total time span. The effect is to scroll the chart to the left to an earlier time by a specified percentage of the trend's total time span.

1. Open Window and take button.
2. Write an action script.

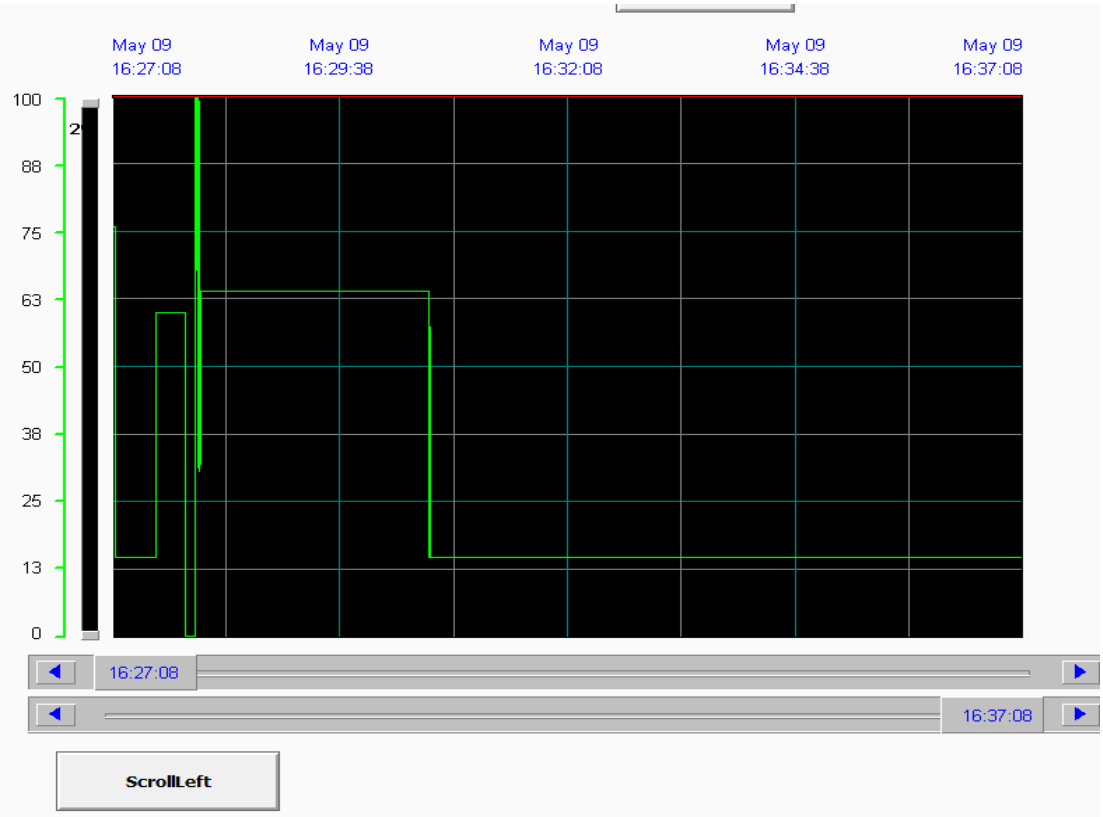
HTScrollLeft(Hist_Tag,Percent);

Where,

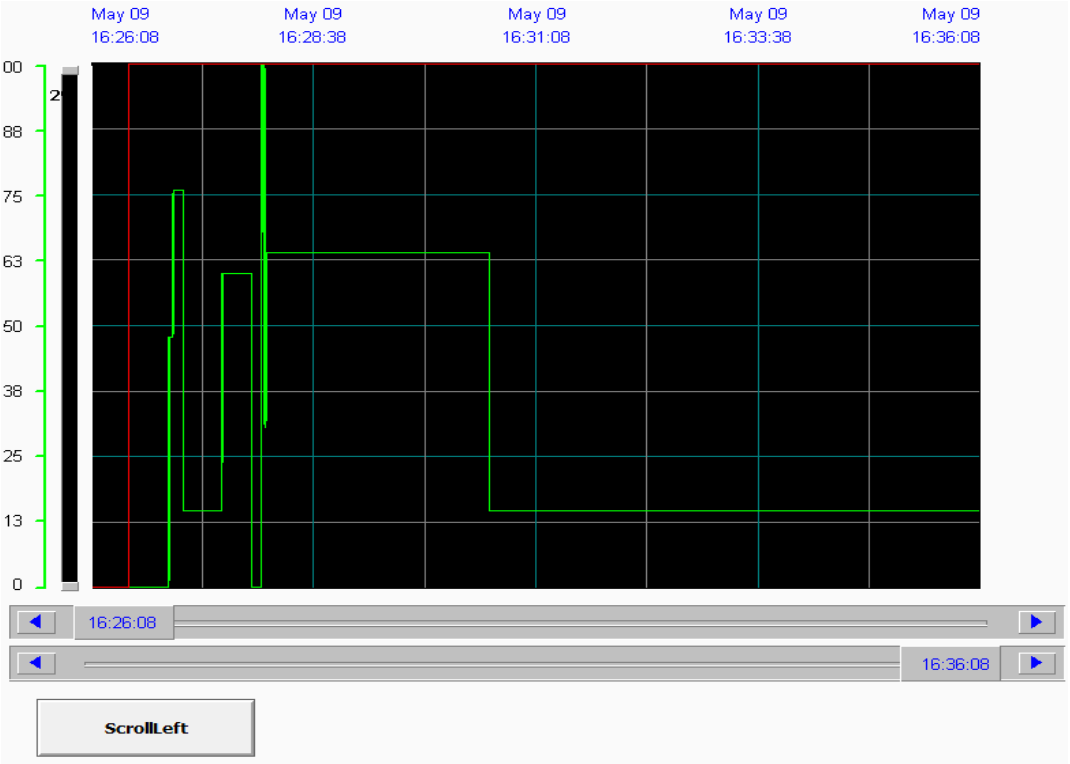
Percent

Real number representing the percentage of the chart's time span to scroll (0.0 to 100.0) left.

3. In Run time before pressing the scroll left button,



4. After pressing the scroll left button,



7.2.11 HTScrollRight()

The **HTScrollRight()** function sets the start time of the trend to a time later than the current start time by a percentage of the trend's width. The effect is to scroll the date/time of chart to the right by a specified percentage of the trend's width.

1. Open Window and take button.

2. Write an action script.

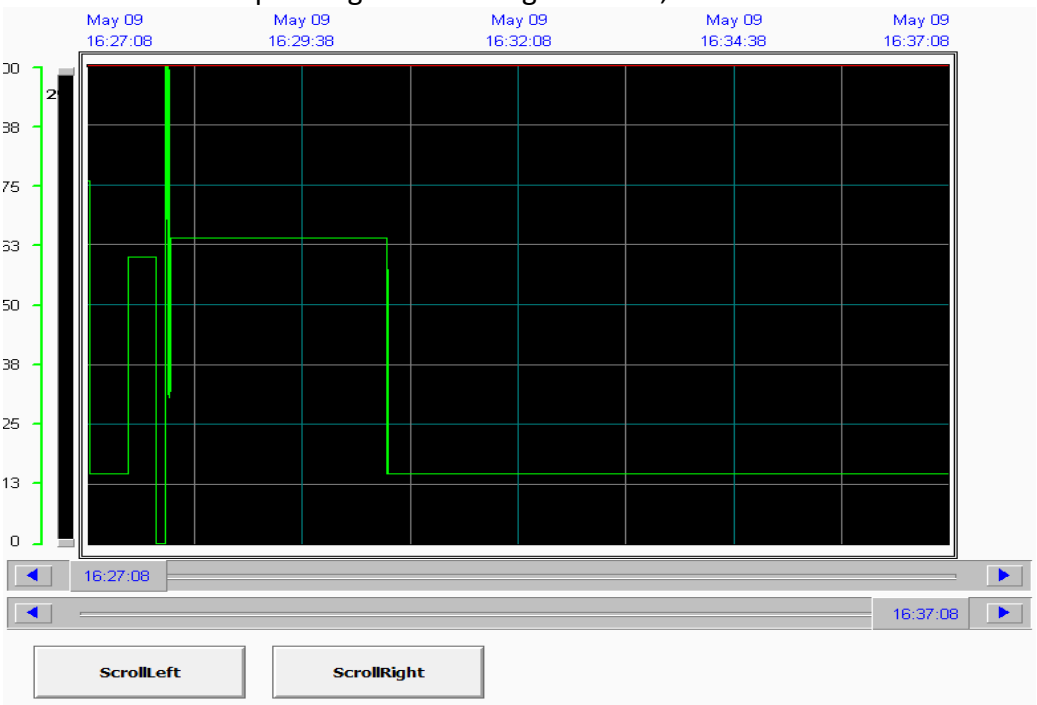
HTScrollRight (Hist_Tag,Percent);

Where,

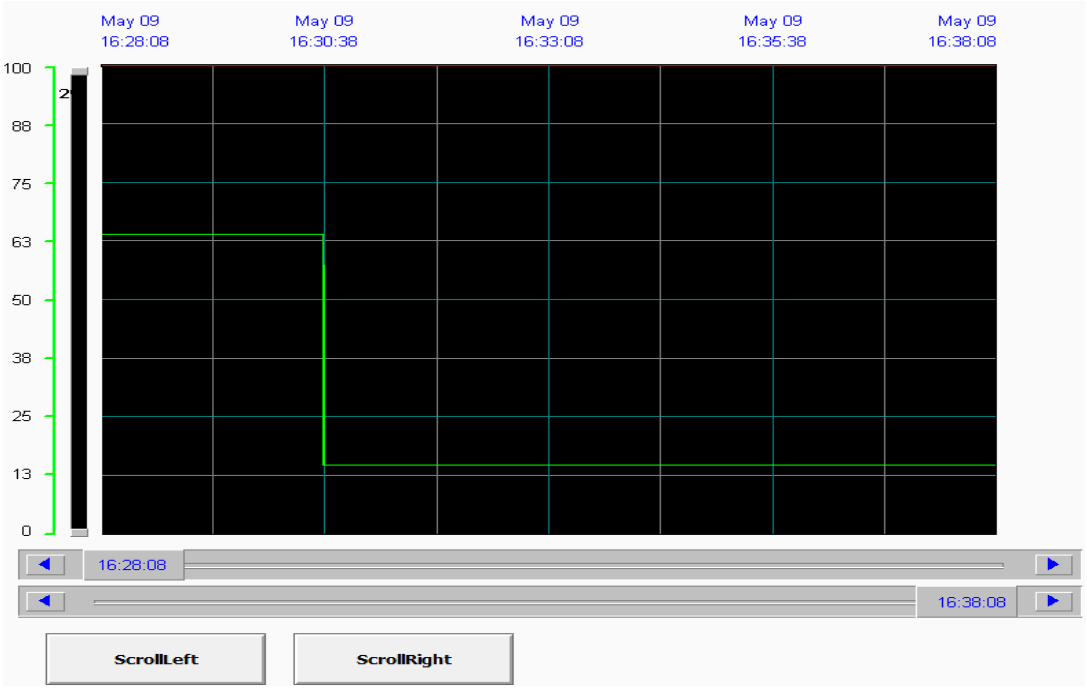
Percent

Real number representing the percentage of the chart's time span to scroll (0.0 to 100.0) left.

3. In Run time before pressing the scroll Right button,



4. In Run time After pressing the scroll Right button,



7.2.12 HTZoomIn()

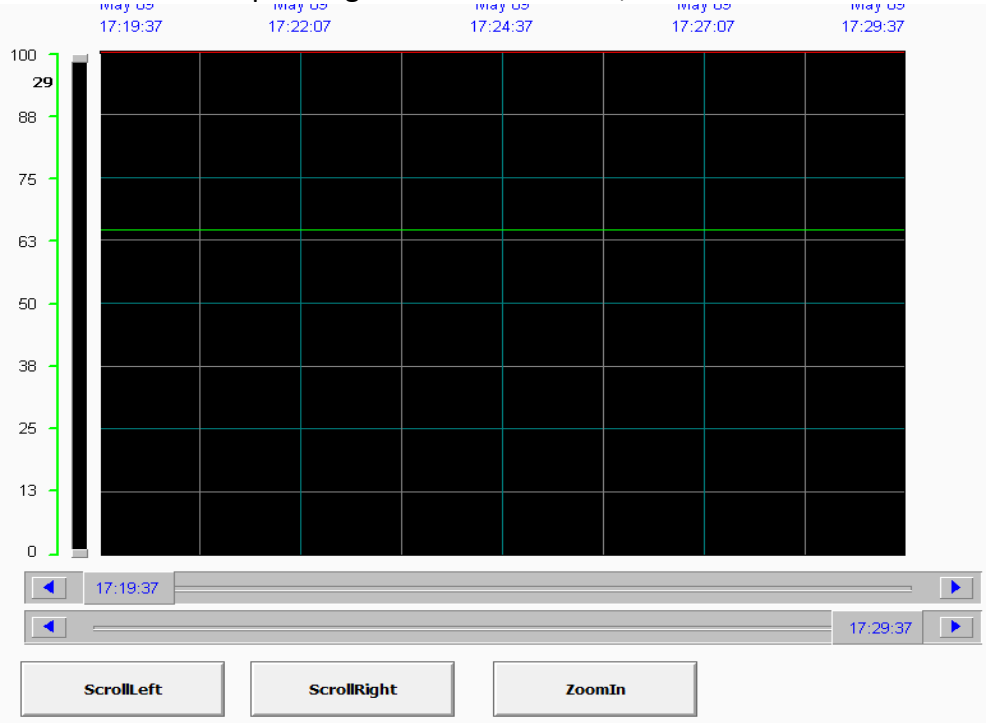
The HTZoomIn() function calculates a new chart width and start time. If the trend's scooters are at the left and right sides of the trend, then the new chart width equals the old chart width divided by two. The new start time is calculated based on the value of the *LockString* argument.
If the scooters are not at the left and right sides of the trend, the HTZoomIn() function zooms the trend to the zone defined by the scooters and ignores the *LockString* argument

1. Open Window and take button.
2. Write an action script.
   HTZoomIn(Hist_Tag,LockString);

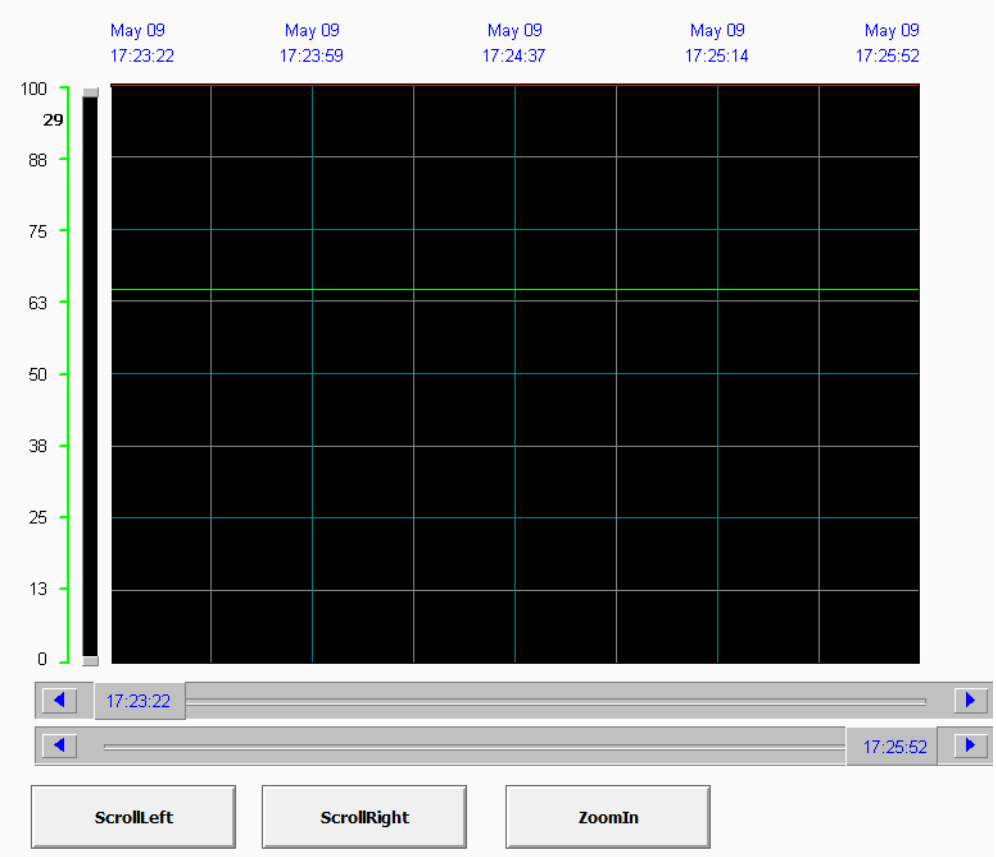
   Where,
   LockString
   String representing the type of zoom:

StartTime	Keep the start time equal to before zoom
Center	Keep center time equal to before zoom
EndTime	Keep end time equal to before zoom

3. In Run time before pressing the Zoom In button,



4. In Run time After pressing the Zoom In button,



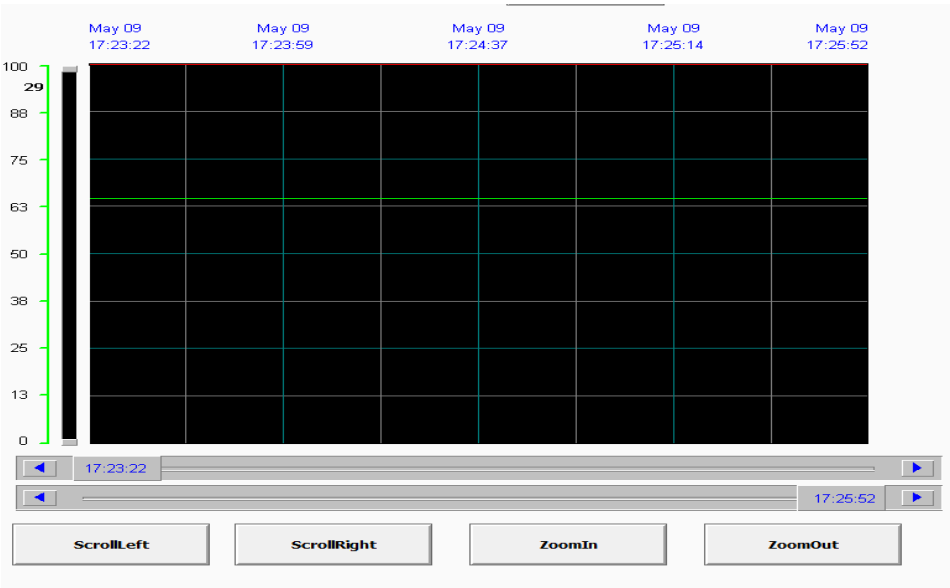
7.2.13 HTZoomOut()

The **HTZoomOut()** function calculates a new chart width and start time. The new chart width is the old chart width multiplied by two. The new start time is calculated based on the value of the *LockString* argument .

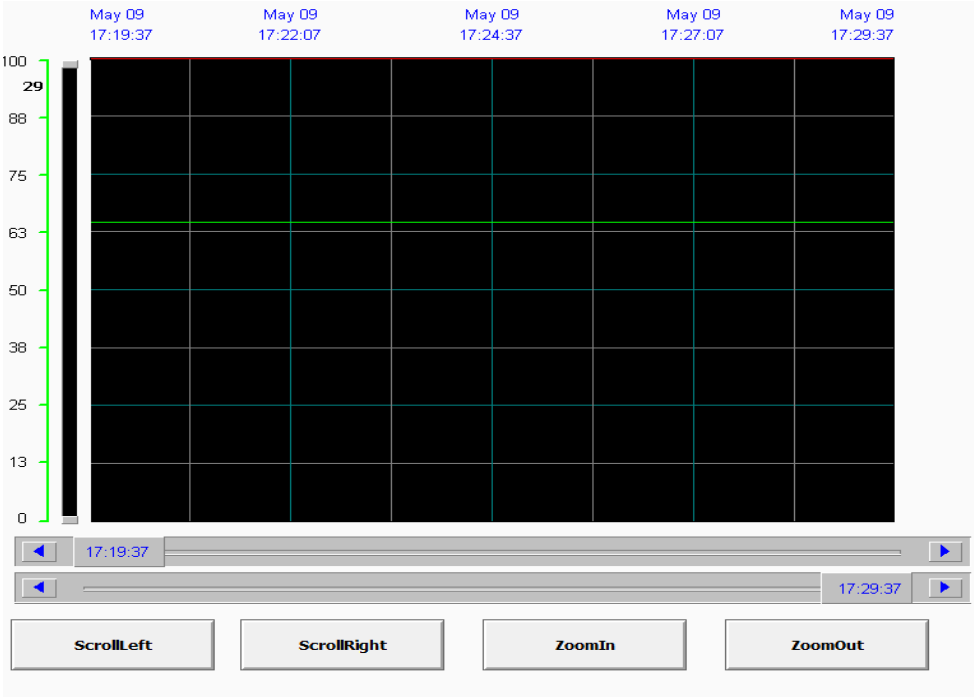
1. Open Window and take button.
2. Write an action script.

   HTZoomOut(Hist_Tag,LockString);

3. In Run time before pressing the Zoom In button,



4. In Run time After pressing the Zoom In button,

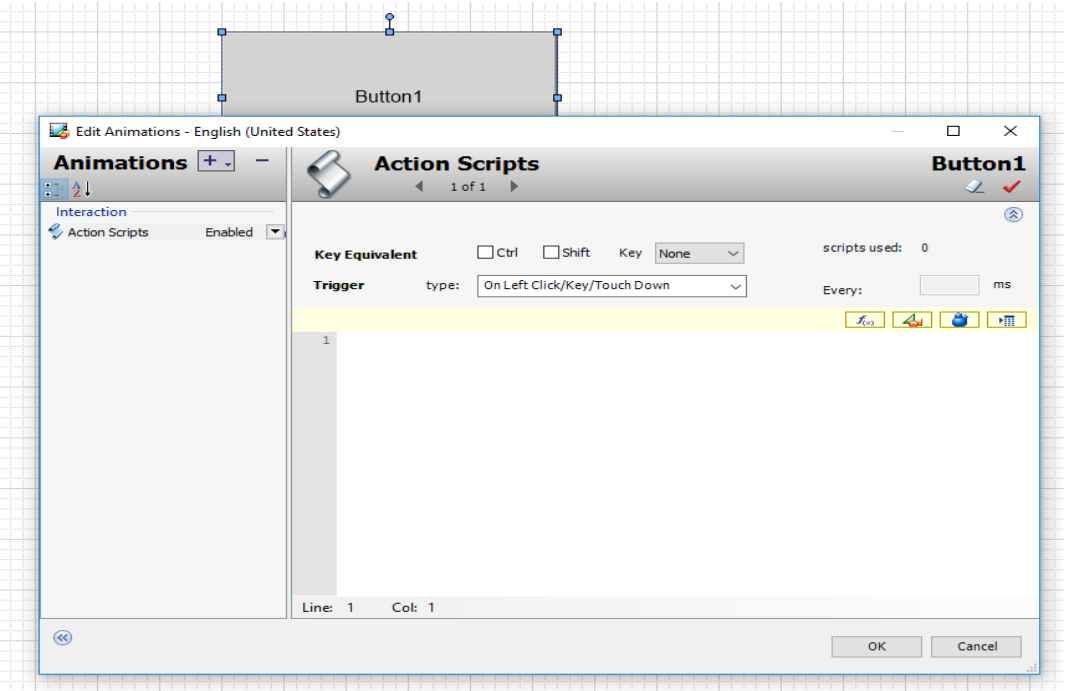


7.3 Action and Named Scripts

7.3.1 Configuring Action Scripts

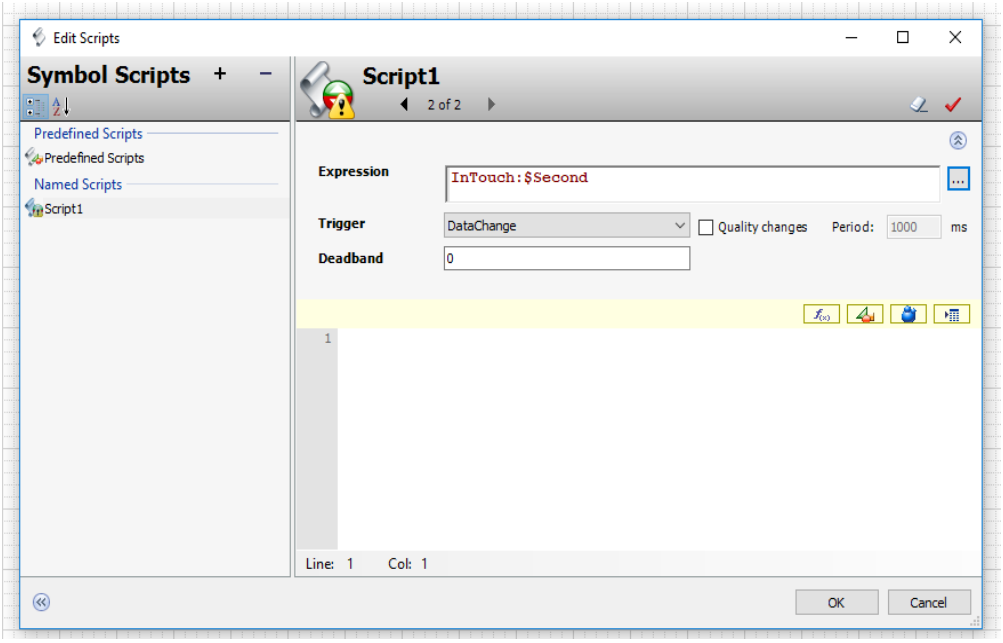
1. Create a new symbol in Archestra graphics toolbox.

2. Create new graphic and give animation action script.



7.3.2 Adding Named Scripts to a Symbol

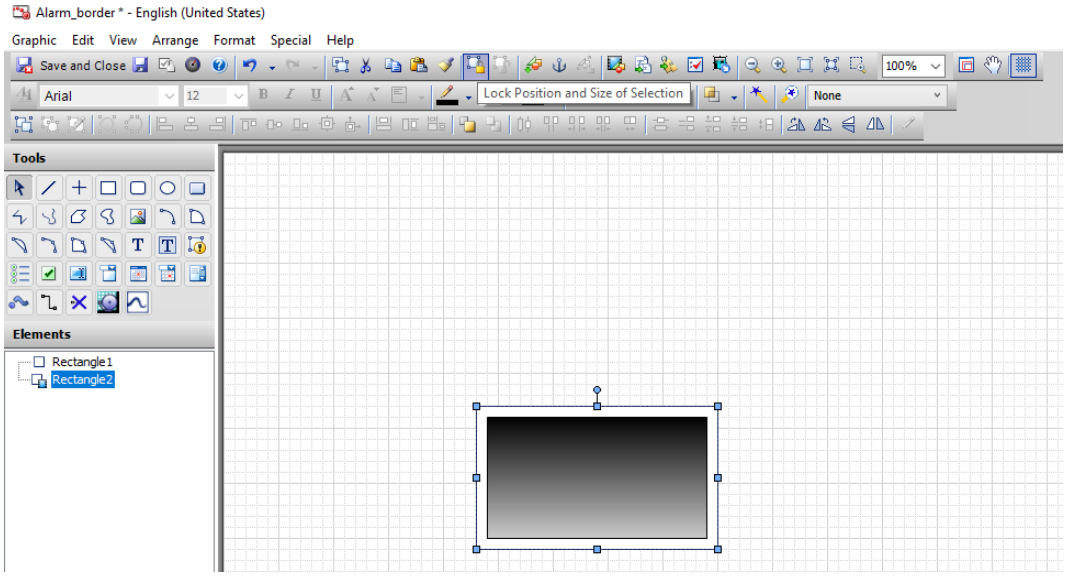
1. Create a new symbol in Archestra graphics toolbox.
2. Right click on canvas.
3. Add new Script. (Shortcut:F10)



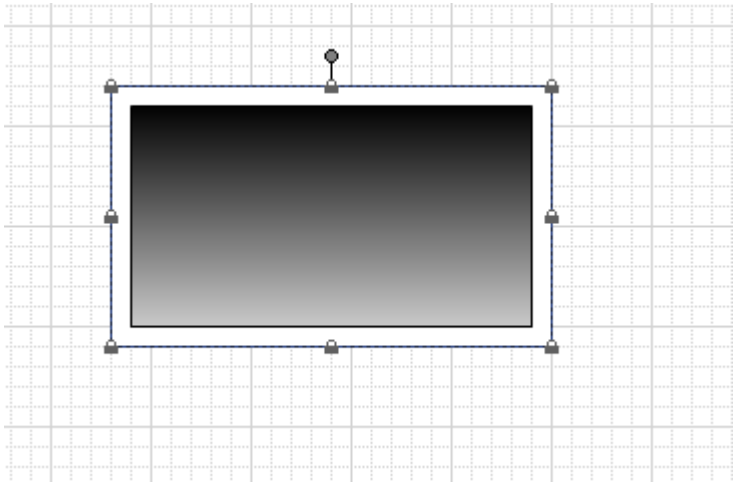
7.3.3 Create Resizable Symbols

1. Open Archestra Symbol.

2. Select Symbol and Lock position and Size of Selection.



3. Size change will be disable.



8 Application Navigation Tools

8.1 Action and Named Scripts

8.1.1 .Name Field

1. A dotfield identifies a tag property.

2. All InTouch tags have properties that describe the characteristics of data or possible conditions associated with a tag.
3. The .Name dotfield is always associated with a tag's name.

8.1.2: Advantages of Indirect Tag Addressing

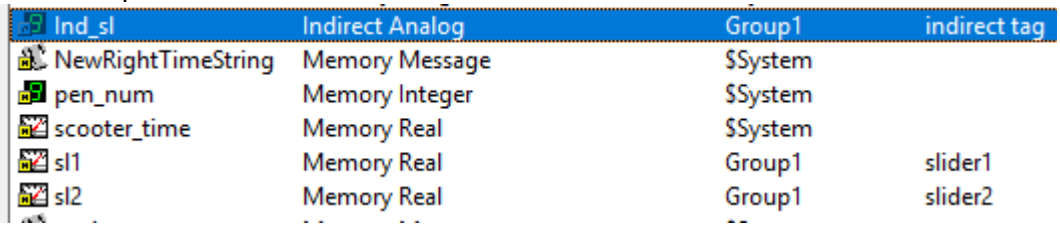
1. Indirect tags act as "pointers" to other tags. For example, you can create a single InTouch window and use indirect tags to show data from multiple different sets of tags.
2. Instead of creating separate windows for each object, you can use indirect tags in one window to show the values of different source tags associated with individual objects.
3. When you equate an indirect tag to another source tag, the indirect tag acts as if it is the source tag. The values associated with the original source and indirect duplicate tags are synchronized together. If the value of the source tag changes, the indirect tag reflects the change. If the indirect tag's value changes, the source tag changes accordingly.
4. You can use discrete, analog, and message types of indirect tags. These three types of indirect tags are comparable to similar memory and I/O types of tags.

8.1.3 Disadvantages of Indirect Tag Addressing

1. Indirect

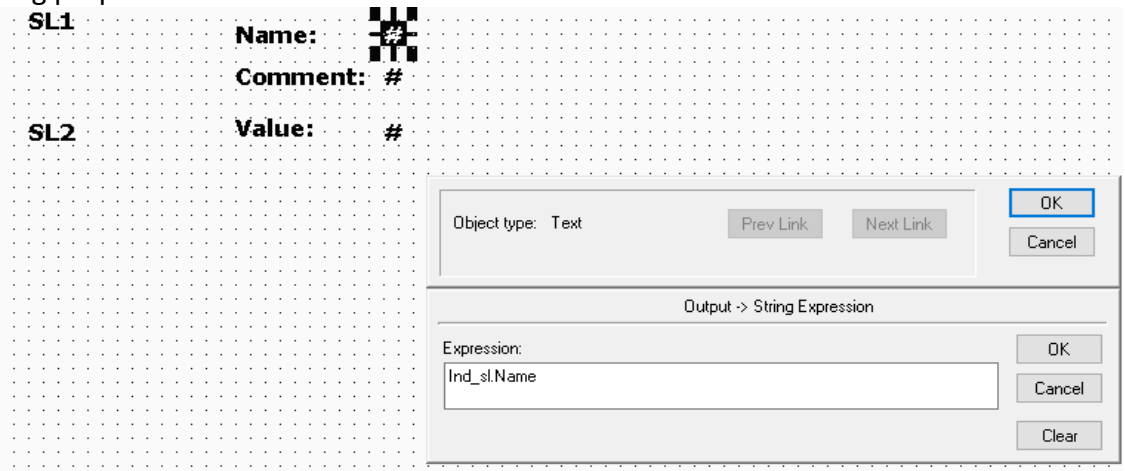
8.1.4 Indirect Tag Addressing

1. Open Window.
2. Create a new tag, type of indirect tag.
3. As on the requirement write the script.
4. In script write indirect_tag.name =Source_tag.name.
5. For example

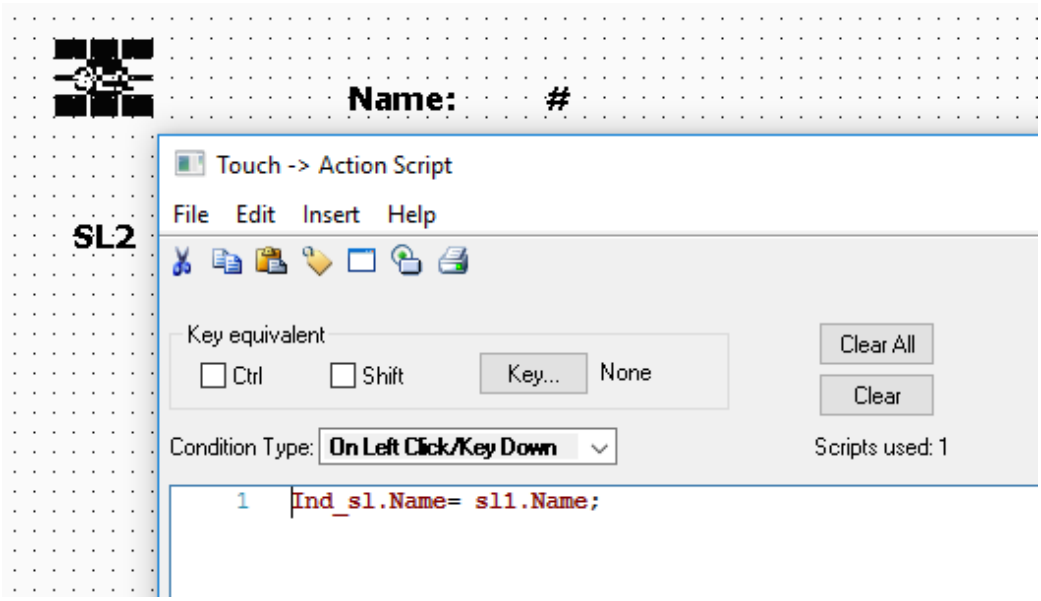


Ind_sl	Indirect Analog	Group1	indirect tag
NewRightTimeString	Memory Message	$System	
pen_num	Memory Integer	$System	
scooter_time	Memory Real	$System	
sl1	Memory Real	Group1	slider1
sl2	Memory Real	Group1	slider2

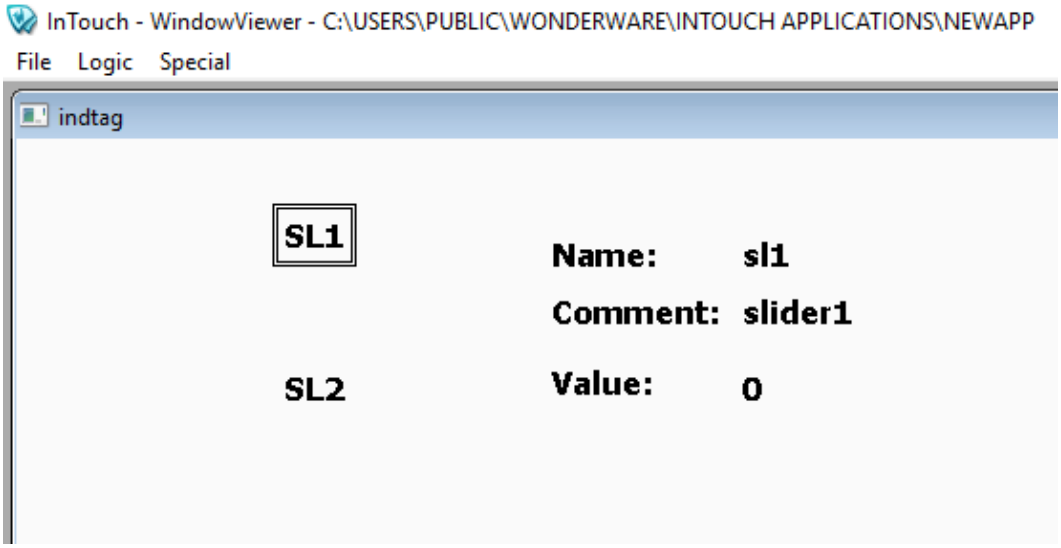
Tag properties



Animation link up



Pass source tag name to indirect tag



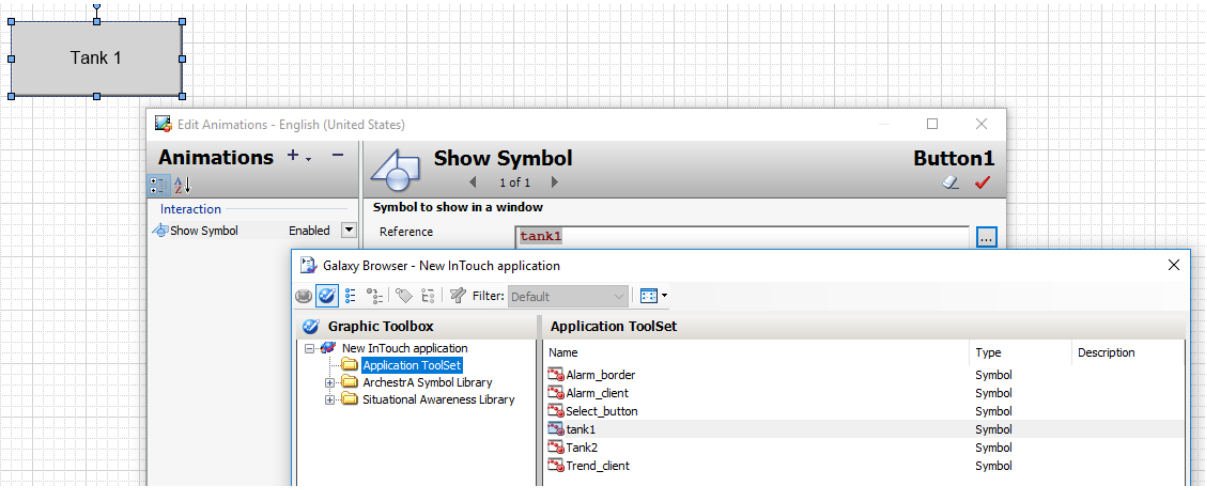
Check in runtime.

8.2 The Show Symbol Animation Link

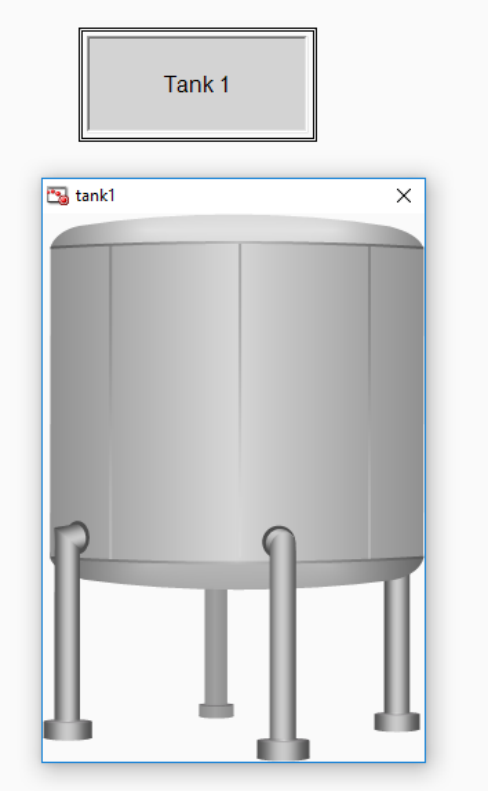
8.2.1 Use the Show Symbol animation

1. Create a new symbol in ArchestrA graphic toolbox.
2. Take a button.
3. Right click and define animation link Show symbol.(CTRL+A)

4. In reference give a name of symbol that you want to open, when you select button.



5. Save and close.
6. Put symbol in InTouch window.
7. Check in runtime.



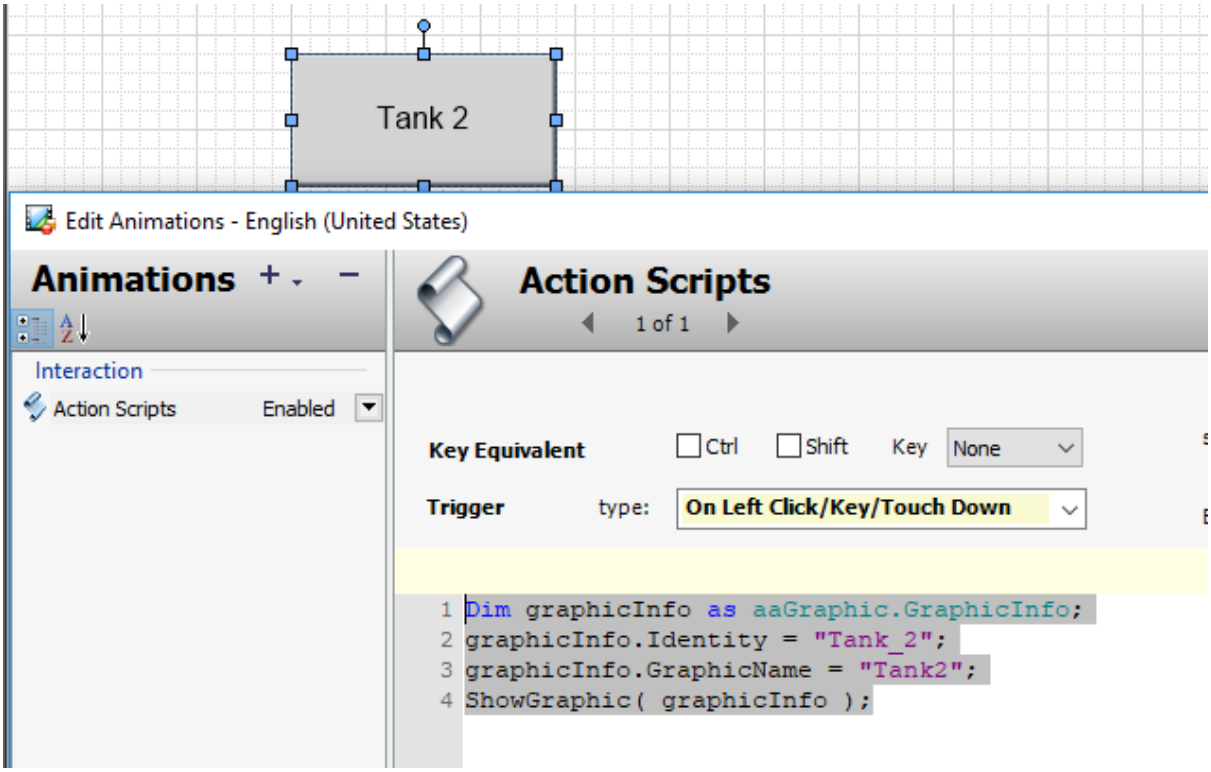
8.2.2 Build and show simplified Tanks using the same symbol

8.3 The Show Graphic Script Function

8.3.1 Uses Show Graphic Script Function rather than an Animation link

1. Create a new symbol to open a graphic using show graphic script.
2. Open Symbol .

3. Take a button.
4. Write action script.



Script : Dim graphicInfo as aaGraphic.GraphicInfo;

graphicInfo.Identity = "Tank_2";

graphicInfo.GraphicName = "Tank2";

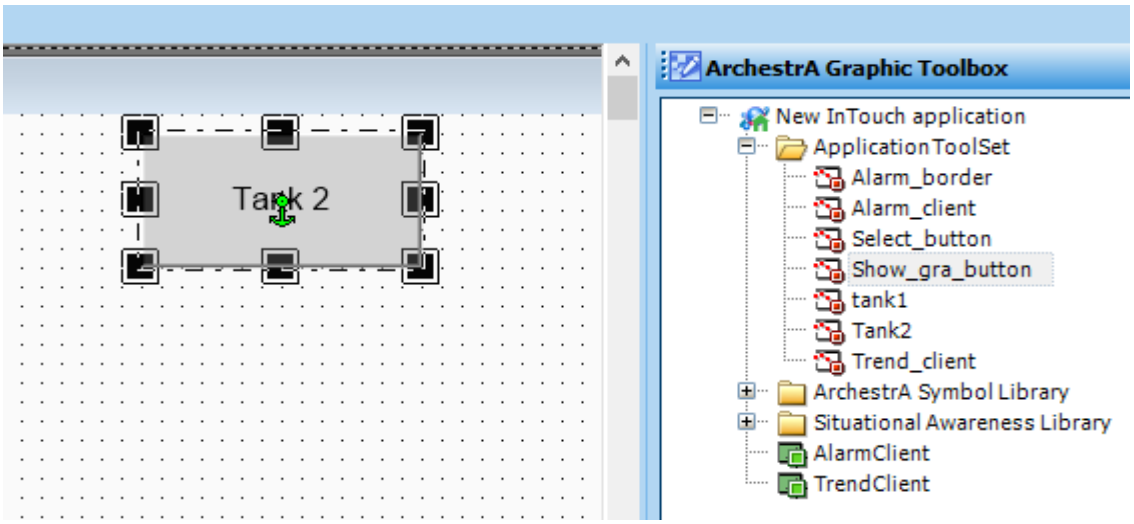
ShowGraphic (graphicInfo);

Where, graphicInfo is Define in memory tag, Type of aaGraphic.GraphicInfo.

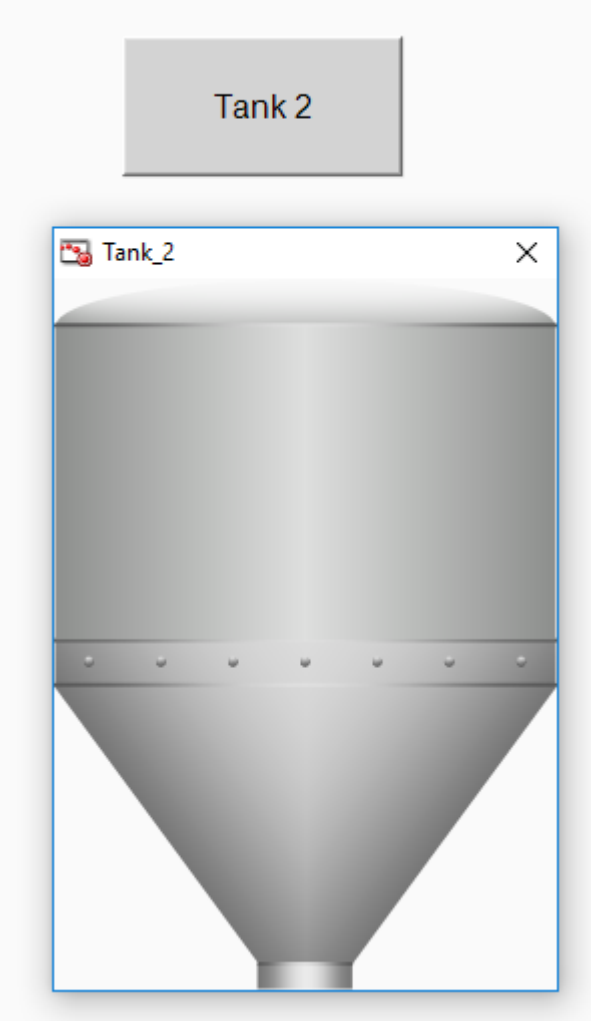
Tagname.identity is the name of graphic.

Tagname.graphicName is name of graphic that you want to show.

5. Take that symbol in InTouch window.

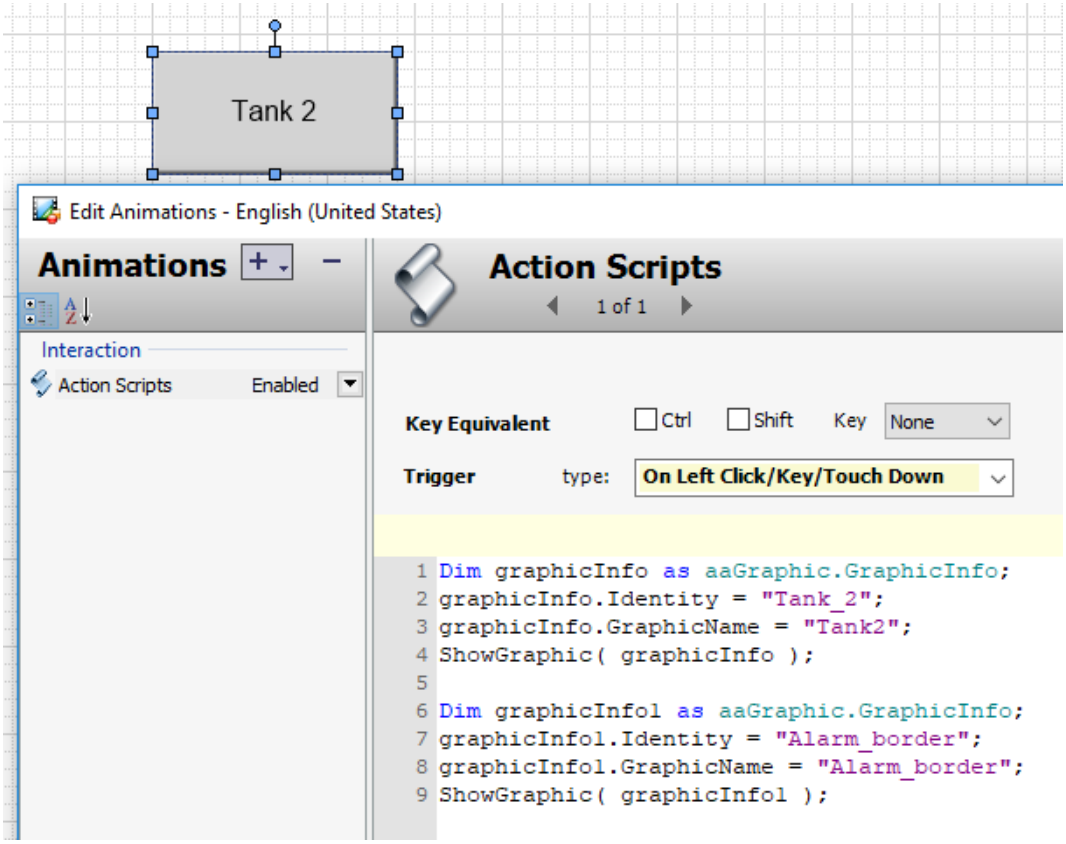


6. Check in runtime.

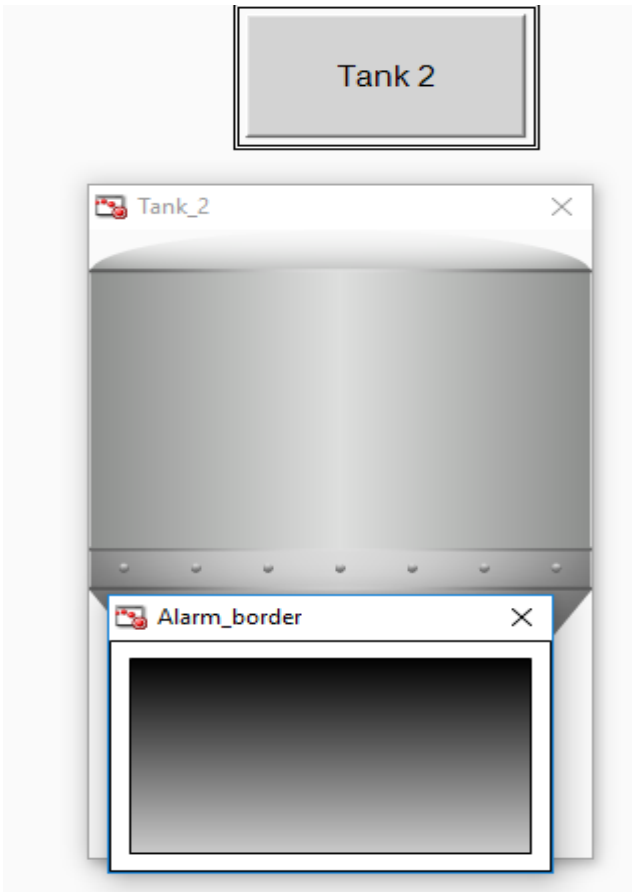


8.3.2 Call multiple symbols at the same time

1. Write the show Graphic action script in Archestra Symbol.
2. Define 2 different tag, type of aa Graphic. Graphic Info and give the graphic and identity name in dot fields.

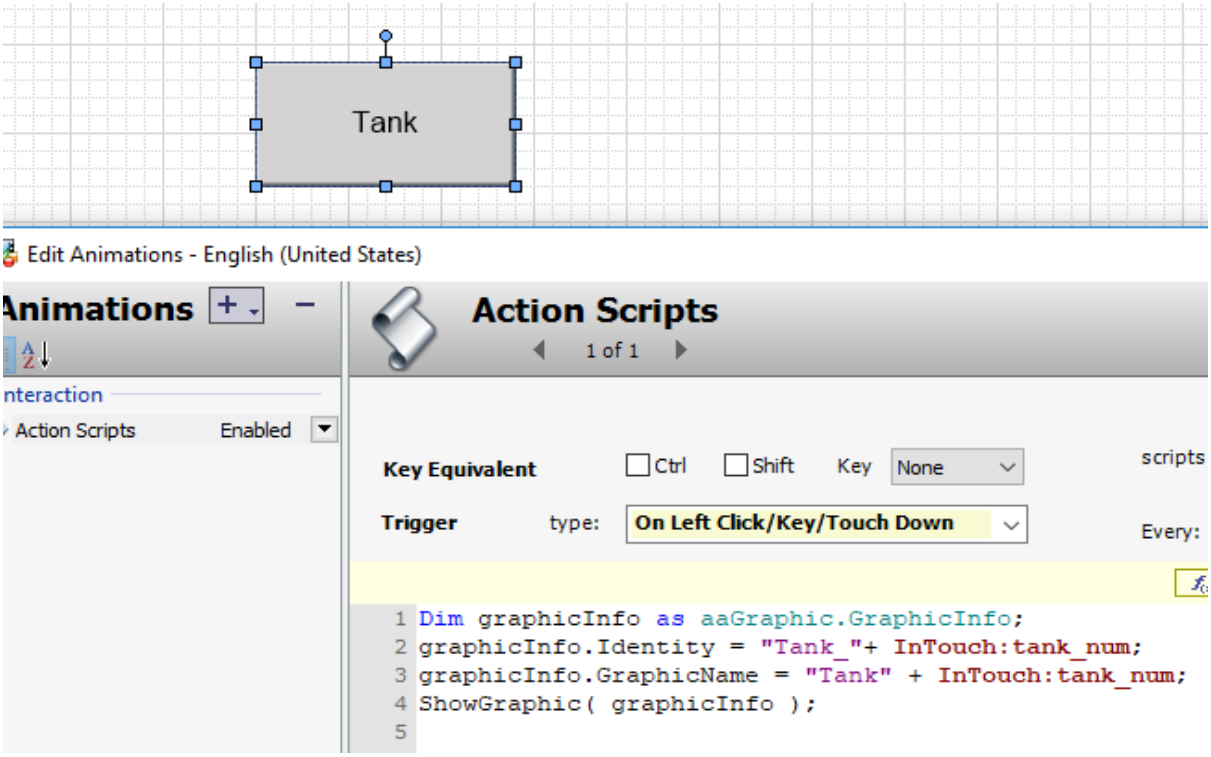


3. Check in runtime.



8.3.3 Call multiple instances of the same symbols

1. Write the show Graphic action script in Archestra Symbol.



Script : Dim graphicInfo as aaGraphic.GraphicInfo;

graphicInfo.Identity = "Tank_"+ InTouch:tank_num;

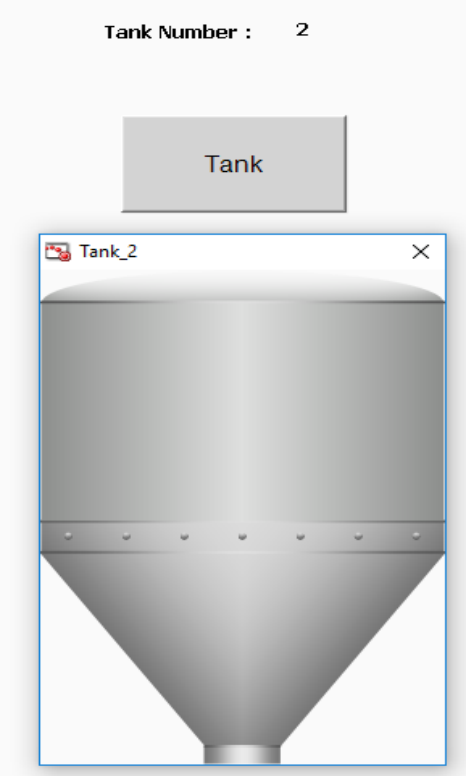
graphicInfo.GraphicName = "Tank" + InTouch:tank_num;

ShowGraphic(graphicInfo);

Where, Intouch: tank_num is integer tag defined in InTouch.

2. Save and close, and check in runtime.

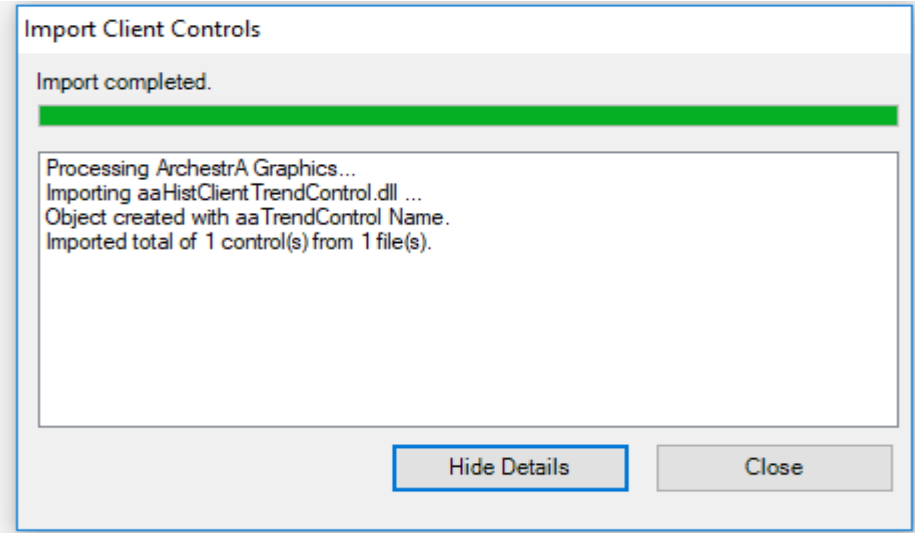
As we don't have tank0 it will show, graphic not available.



8.4 .NET Control

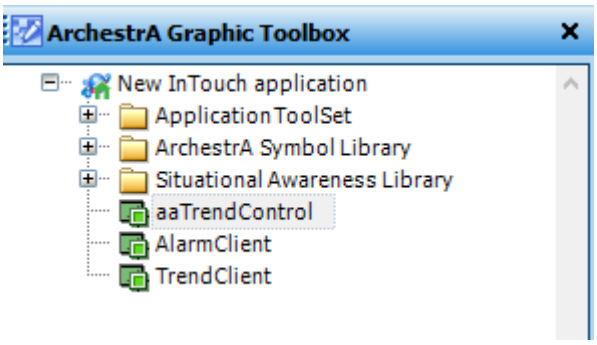
8.4.1 Import .Net client

8. Open Intouch application.
9. Go to file >import> client control.
10. Select the dll location and open.



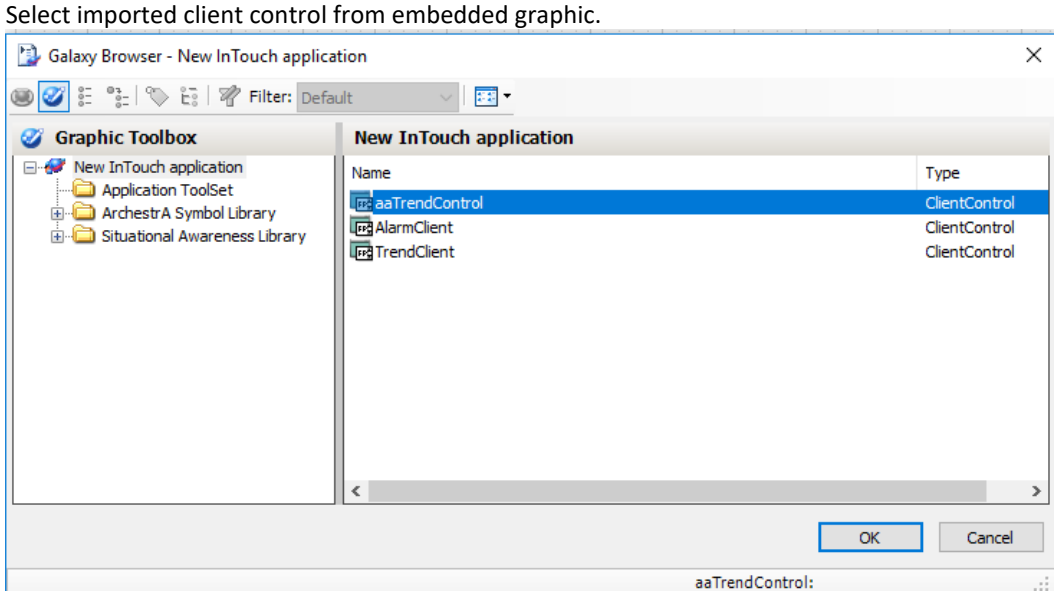
11. After Client control import completed, select close.

12. Check the client control in Archestra Graphic toolbox.

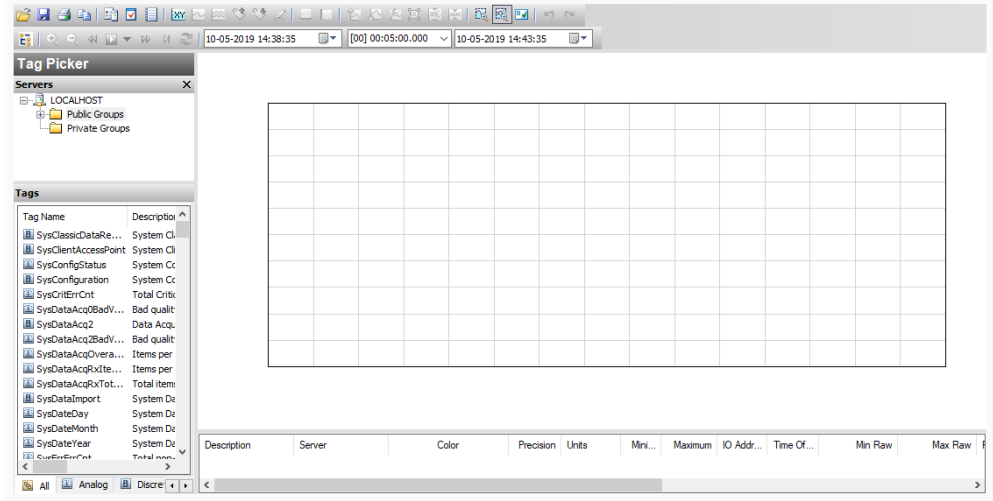


8.4.2 Create a new symbol using .Net controls

1. Open Intouch application.
2. Create a new symbol in ArchestrA Symbol Toolbox.
3. Go to symbol editor.
4. Select imported client control from embedded graphic.



5. Select ok.
6. Save and close.
7. Select that archestra symbola and frop it to windo and check in runtime.

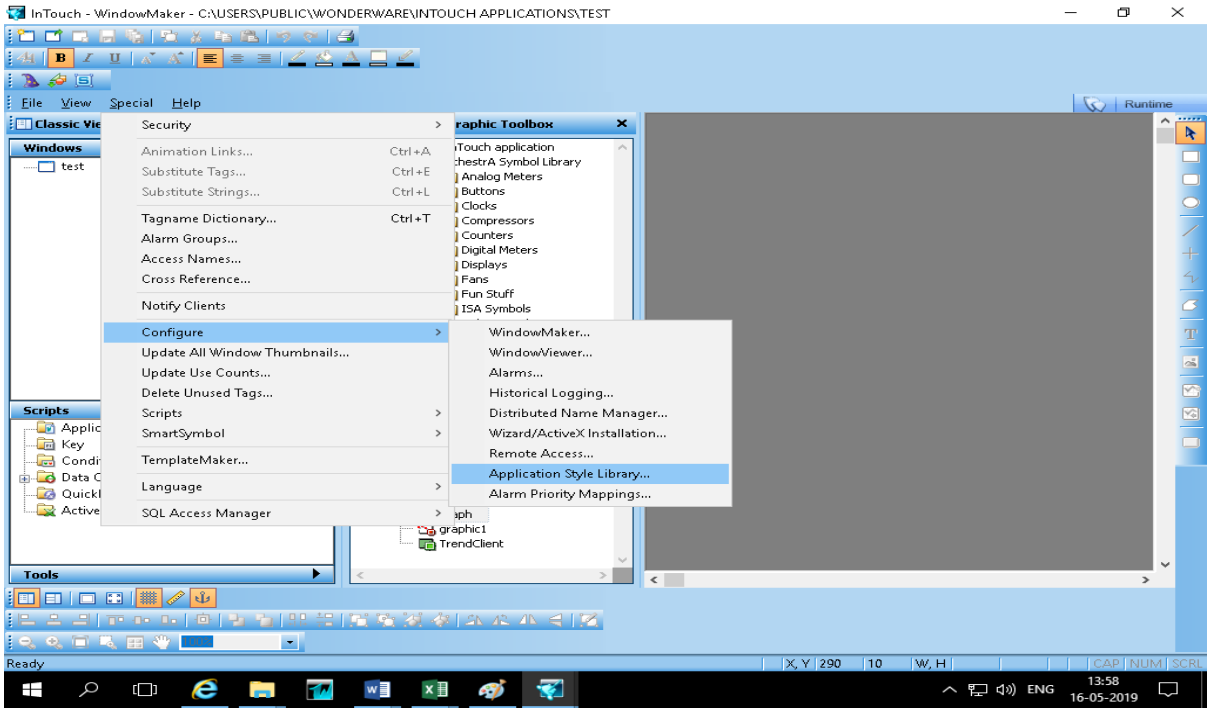


9.I/O Troubleshooting

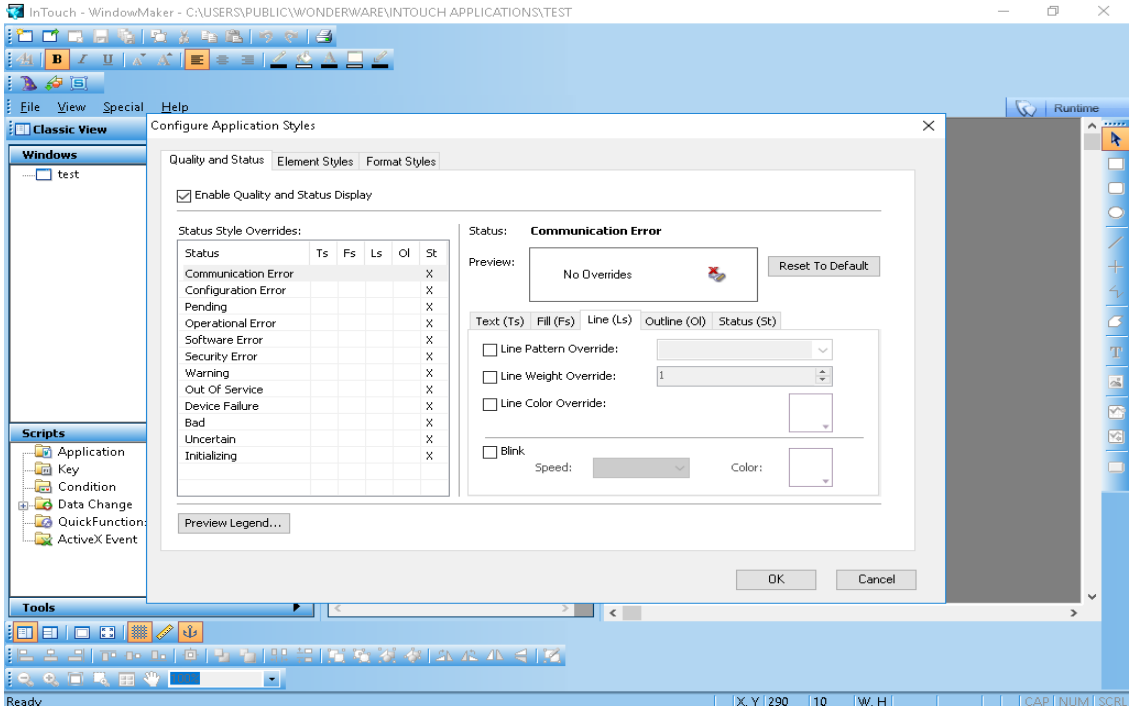
9.1 Graphical Overrides

9.1.1 Configure graphical overrides for your Galaxy

1. To configure graphical overrides go to special>configure>Application style library.



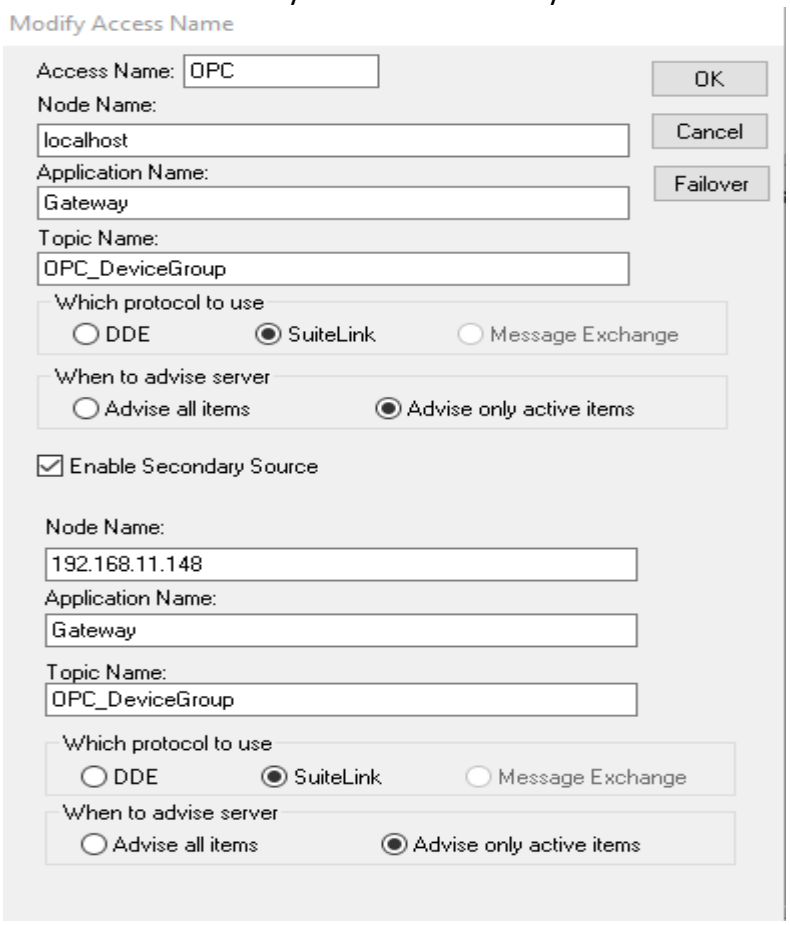
2. From here we can applied different graphical over rides as below.



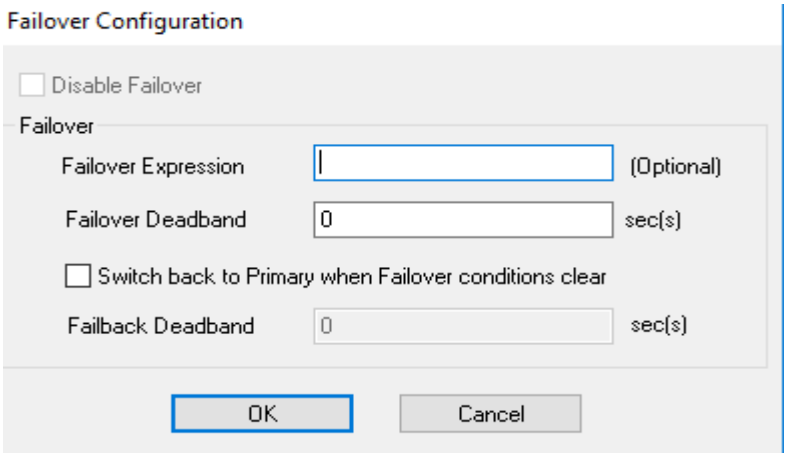
9.2 Working with Failover

9.2.1 Configure I/O failover

1. If needed, stop WindowViewer.
2. On the Special menu, click Access Names. The Access Names dialog box appears with a list of all defined Access Names.
3. Select the Access Name from the list to add a failover server.
4. Click Modify. The Modify Access Names dialog box appears.
5. Click Enable Secondary Source. The Modify Access Name dialog box expands.



6. Do the following:
   - In the Node Name box, type the node name of the secondary I/O Server.
   - In the Application Name box, type the program name of the secondary I/O Server program from which data will be acquired.
   - In the Topic Name box, type the topic name you want to access from the secondary I/O source.
   - In the which protocol to use area, select either DDE or SuiteLink as the secondary I/O Server communication protocol.
   - In the When to advise server area, select Advise all items or Advise only active items for the secondary I/O source.
7. Click Failover. The Failover Configuration dialog box appears.



8. Enter an optional failover expression or double-click in the Failover expression box to select a tag.
9. In the Failover Deadband box, type the length of the failover deadband in seconds.
10. Select Switch back to primary when Failover conditions clear if you want to enable switching from the secondary Access Name back to the primary Access Name after the failover condition clears. The default is to not switch back to the primary Access Name. If you select Switch back to primary when failover conditions clear, then the Fail-back Deadband option becomes selectable from the Failover Configuration dialog box.
11. From Failback Deadband, type the length of the failback deadband in seconds.
    The InTouch HMI triggers a failback to the primary Access Name after the expression and any associated I/O communication failure clear for the deadband period. When the expression is left blank or 0, the fail-back occurs as soon as the I/O communication failure condition clears.
12. Click OK to close the Failover Configuration dialog box.
13. Click OK to close the Modify Access Name dialog box.

9.2.2 Monitor I/O communications via scripting, Monitor the failover status via scripting

The **IOGetAccessNameStatus(**"AccessName", Mode**)** function is typically used in a script that determines the status of the secondary IO Source that is currently inactive. The operator runs the script to verify the status of the secondary connection before forcing a fail-over.

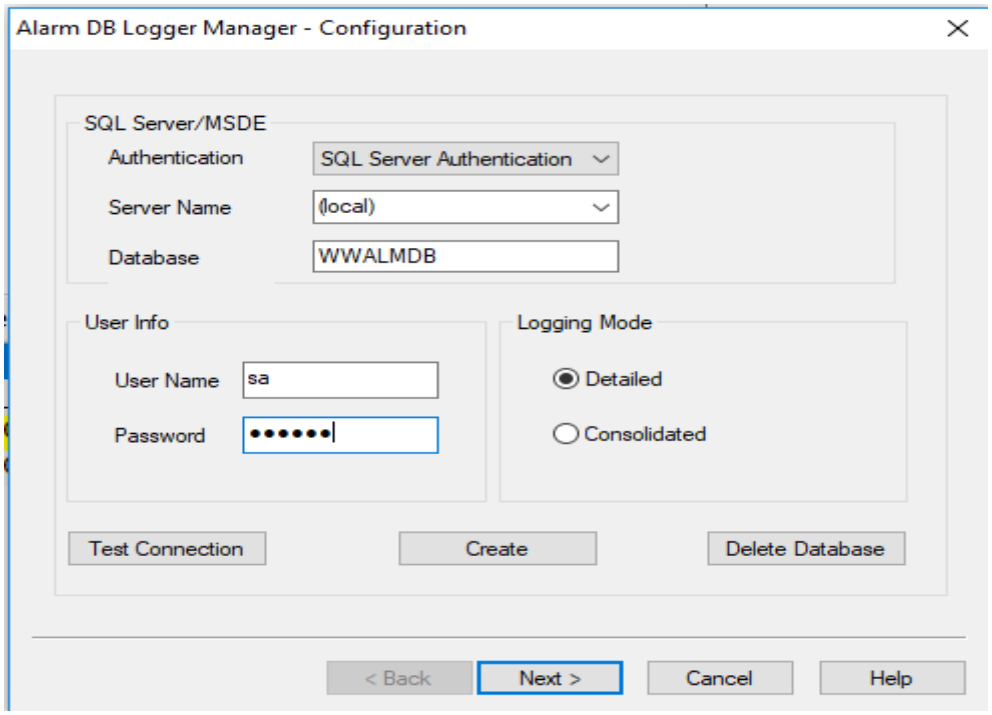
1. AccessName
   The existing Access Name for which to return the status.
2. Mode
   The value assigned to this argument determines what Access Name of the failover pair is queried about its current status.
   0 - Status of the active Access Name I/O source
   1 - Status of the Access Name primary I/O source
   2 - Status of the Access Name secondary I/O source
3. Results

Returned Value	Description
-1	There is a configuration error in the Access Name. Either the Access Name does not exist or the Access Name does not have a defined secondary I/O source.
0	The connection to the requested I/O source is not successful.
1	The connection to the requested I/O source is successful.

9.3 Alarm DB Logger

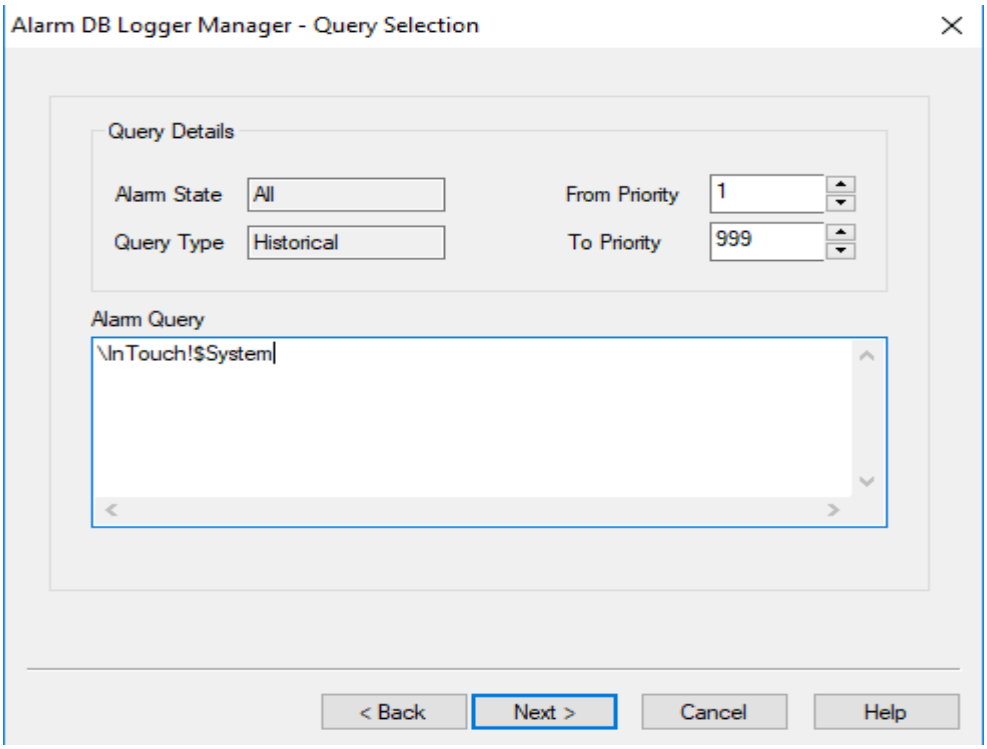
9.3.1 Enable and configure the Alarm DB Logger

8. Open InTouch application.
9. Go to tools >Applications>alarm DB Logger Manager.
10. Go to Settings.
11. Enter Authentication mode in Authentication Drop Down.
    Select Server name.
    Define Database name.
    In User Login, give Credential.
    Select Create.
    Select Logging Mode.
    (2. Click **Detailed** to store a separate record for each alarm condition (in alarm, acknowledged, and returned to normal).
    2. Click **Consolidated** to store all states of an alarm (in alarm, acknowledged, and returned to normal) in a single record with time stamps for each transition.)
    For testing, select Test connection.

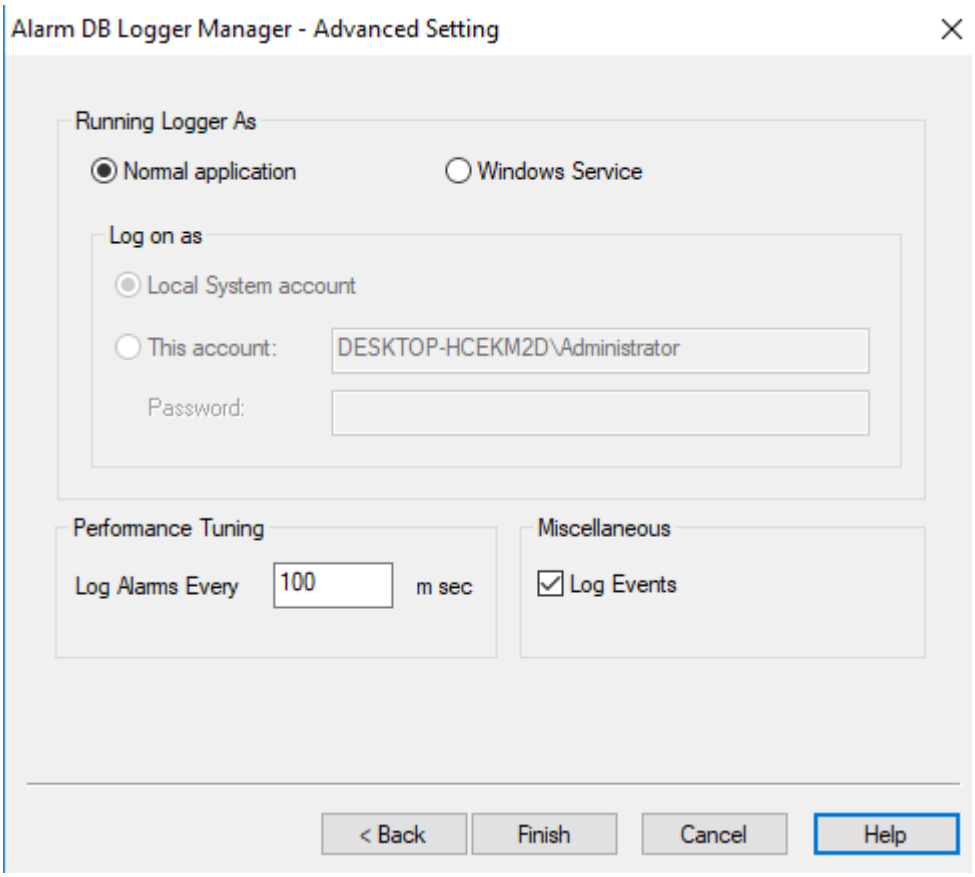


12. Select next.

13. Define Query to retrieve the data base on alarm Group.

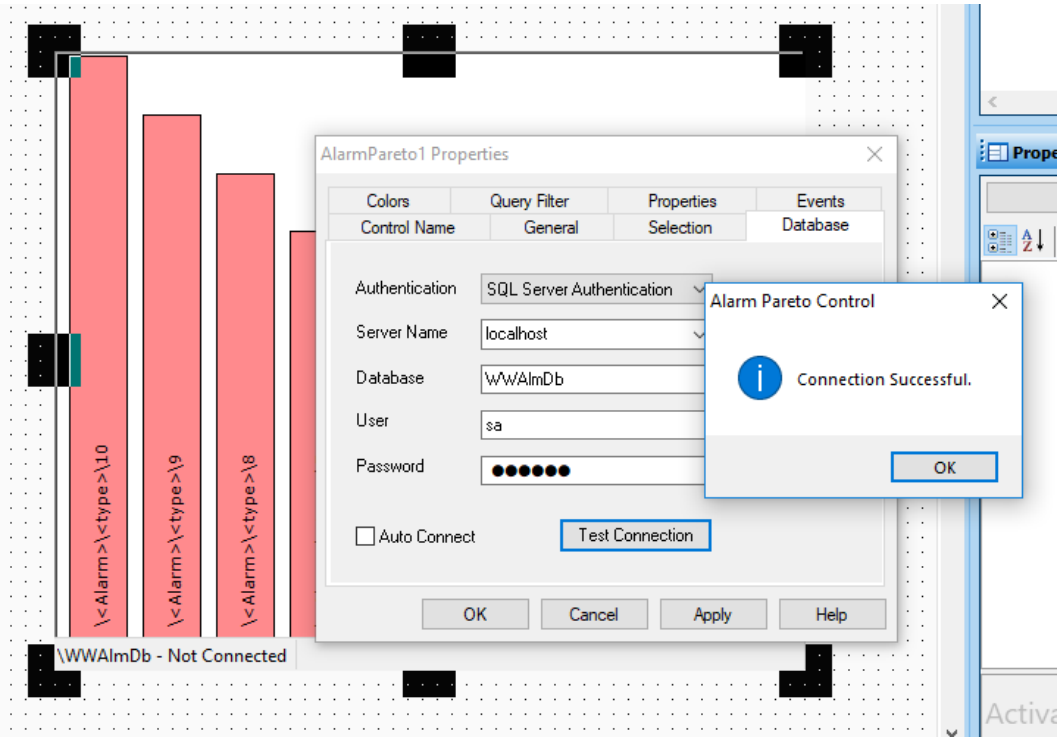


14. Define to turn Alarm DB Logger Manager As windows service or the Application.



9.3.2 Working with the Alarm Pareto Control

1. Open InTouch application.
2. Open Window.
3. Go to wizard>Active X controls>Alarm Pareto.
4. Select ok and put it on window.



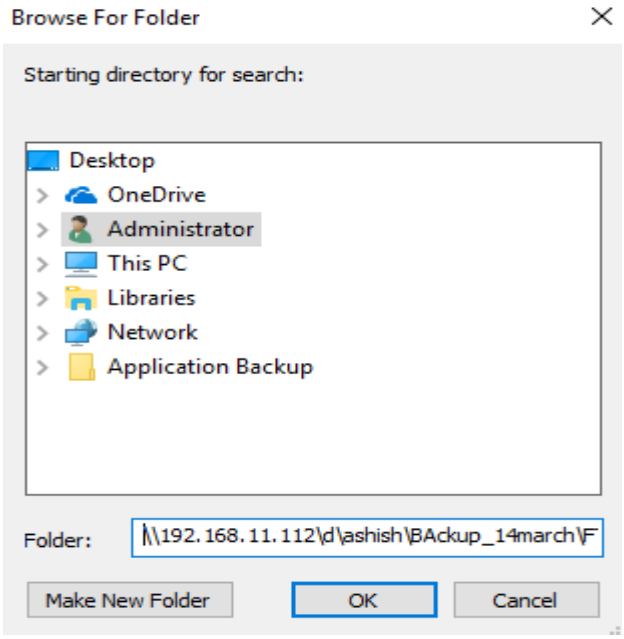
5. In database Define alarm database, and check test connection.

10 . Tag Servers

10.1 Tag Server and Tag Provider

10.1.1 Connect to the remote application

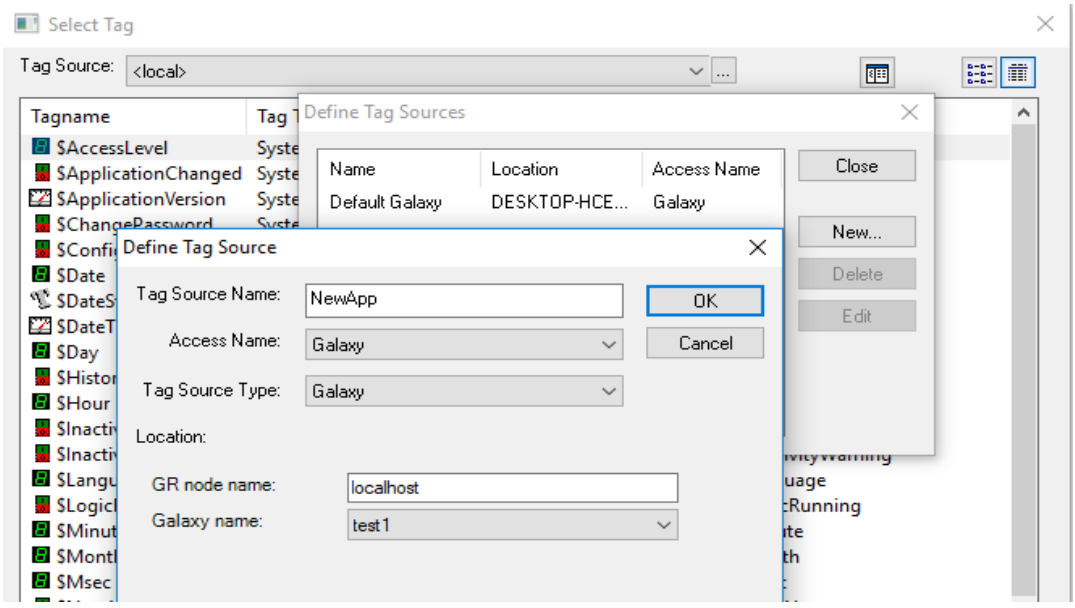
15. Open Intouch application manager.
16. Go to Find.
17. Select the location of remote application.



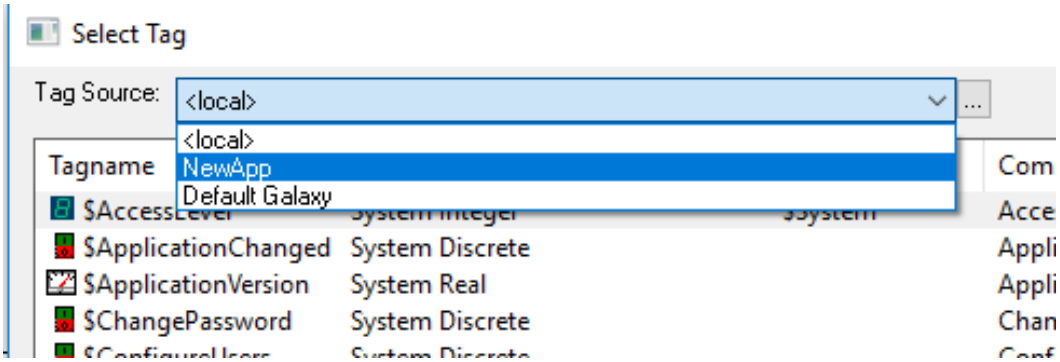
18. Select ok.

10.1.2 Configure the tag provider, Link to the tag server tags, Build an interface to the tag server application

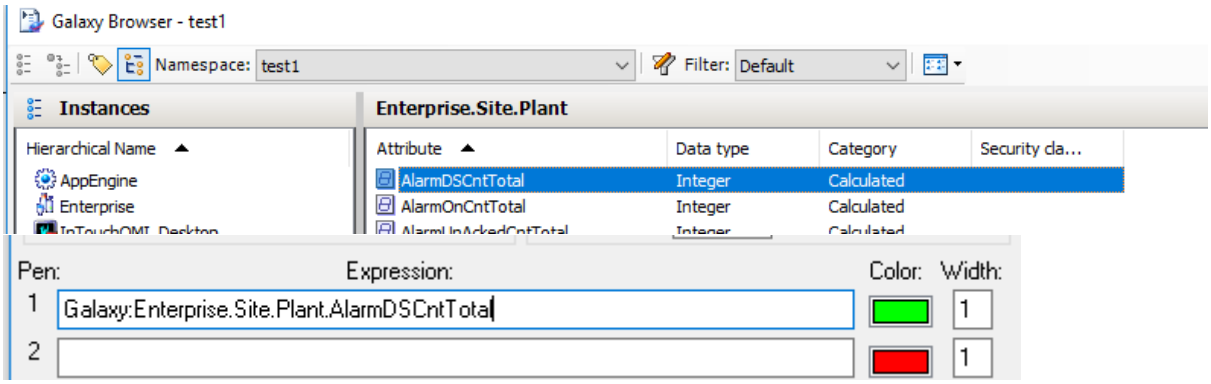
1. Open intouch application.
2. Take real time trend.
3. Double click on pen selection.
4. Browse Tag source.



5. Define the access name , tag source, Gr node and Galaxy name.
6. Select ok.
7. Now select tag source.



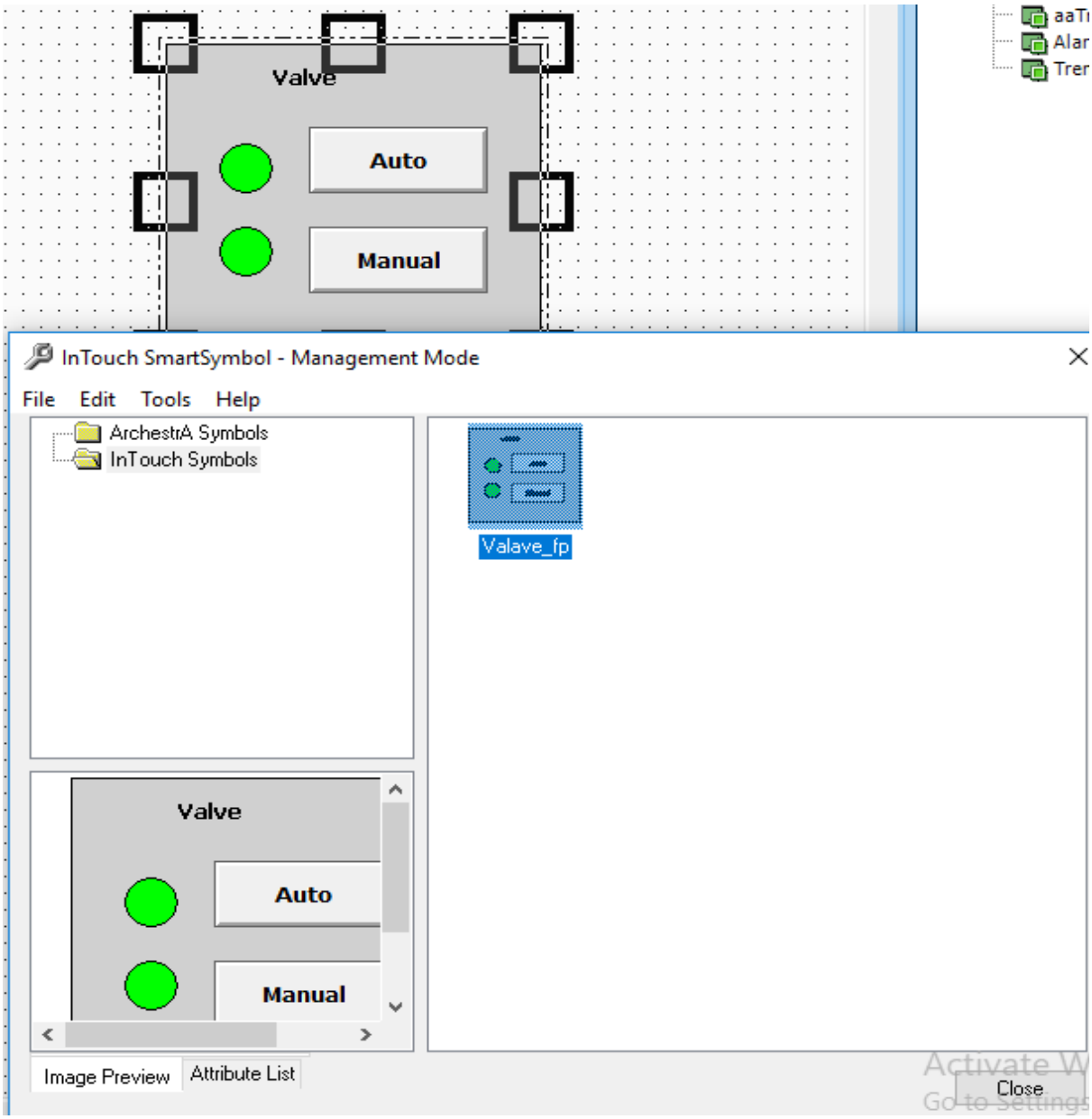
8. Select tag from Galaxy tag source.



11. Miscellaneous

11.1Smart Symbol

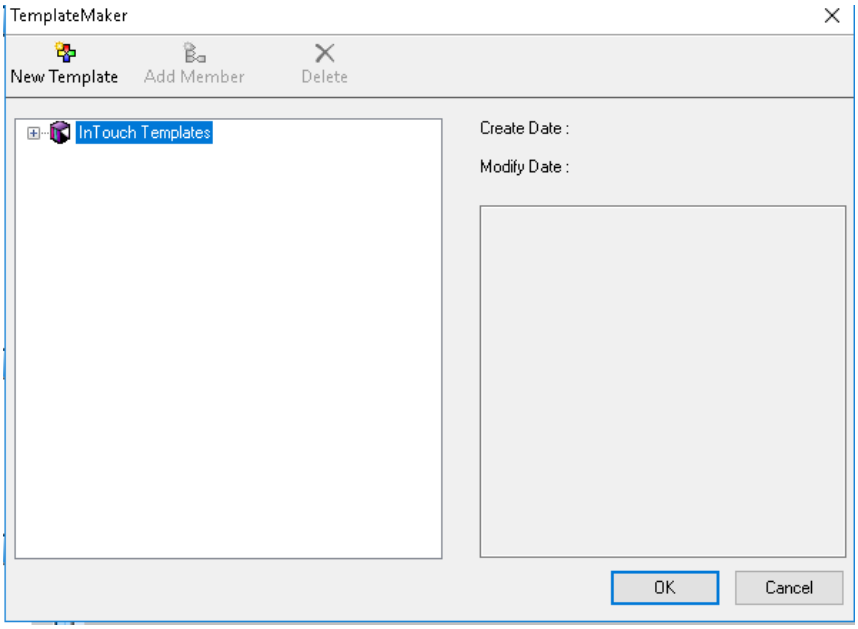
1. Open Intouch application.
2. Create a new window.
3. Create a make graphic of which you want to make smart symbol.
4. Select that graphic/graphics and right click.
5. Go to smart symbol>generate smart symbol.



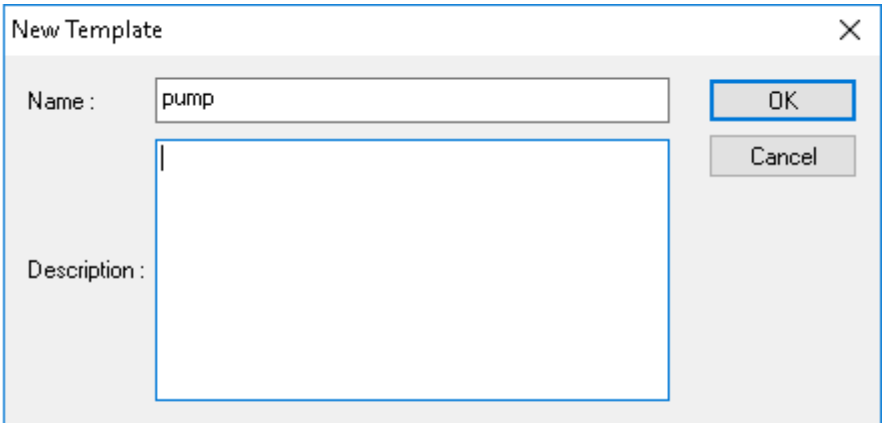
19. RENAME AND CLOSE.

11.2 Super Tag

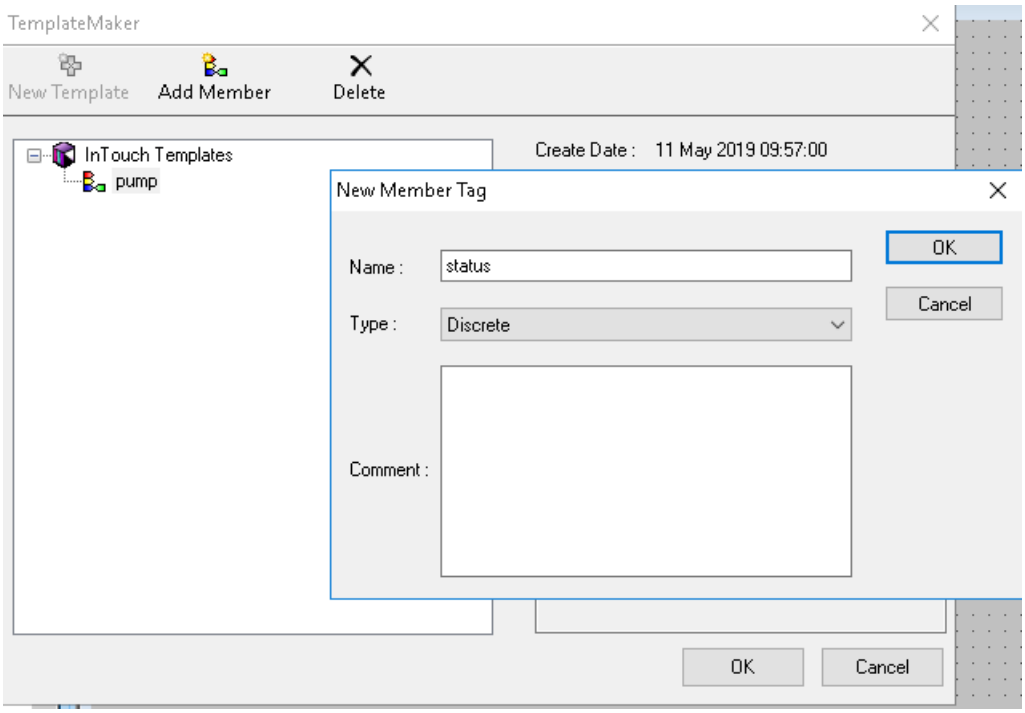
1. On the Special menu, click Template Maker. The template Maker dialog box appears.



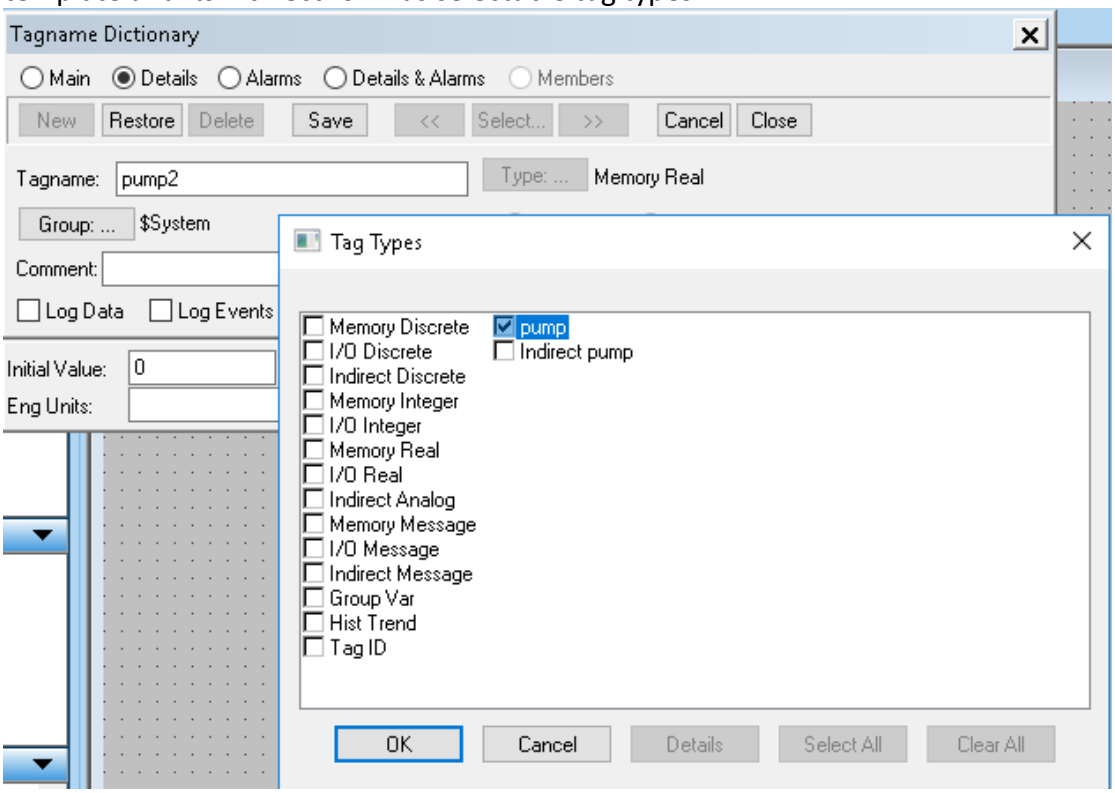
2. Click New Template. The New Template dialog box appears.



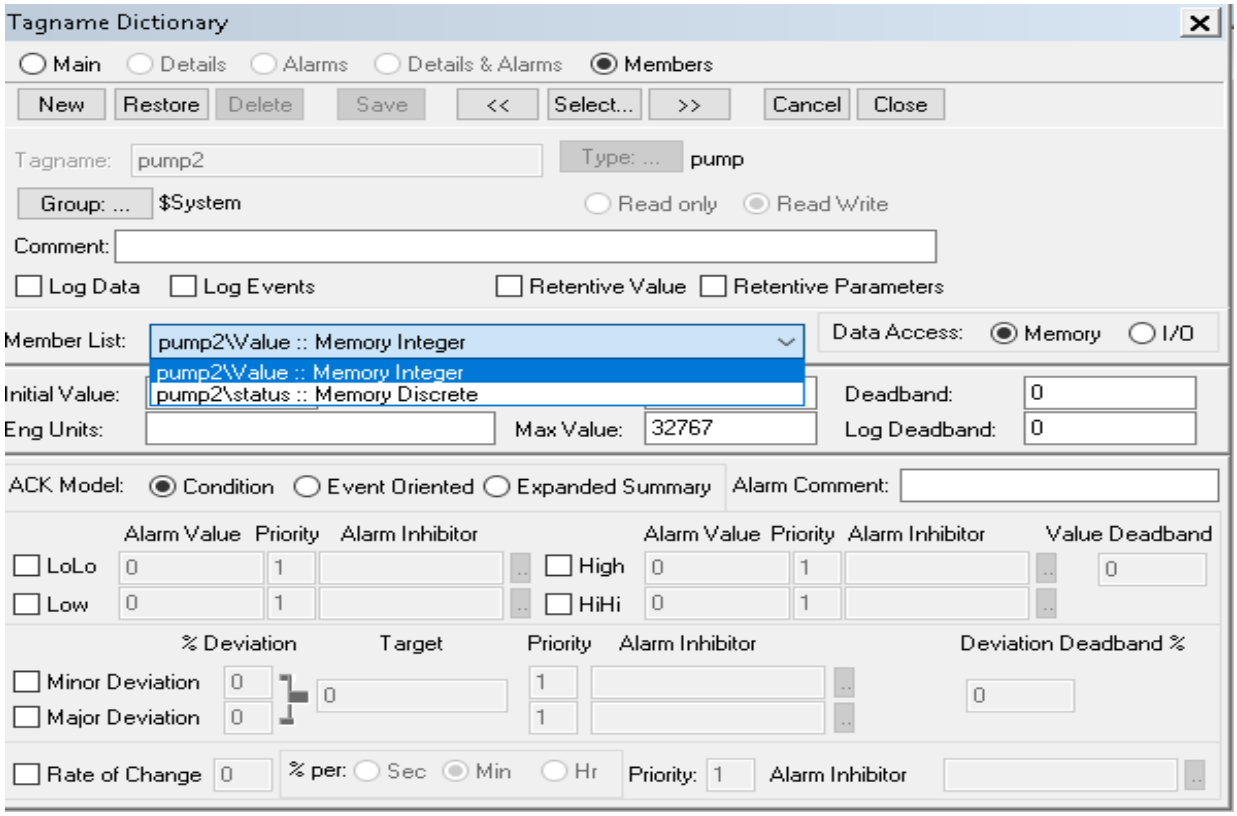
3. Enter a unique name for the Super Tag template in the Name box.
4. Optionally, type a comment that describes the template in the Description box.
5. Click OK. The Template Maker dialog box appears again with the new template listed in the window. The Add Member and Delete buttons are active after a template is added.
6. Click Add Member to show the New Member Tag dialog box.



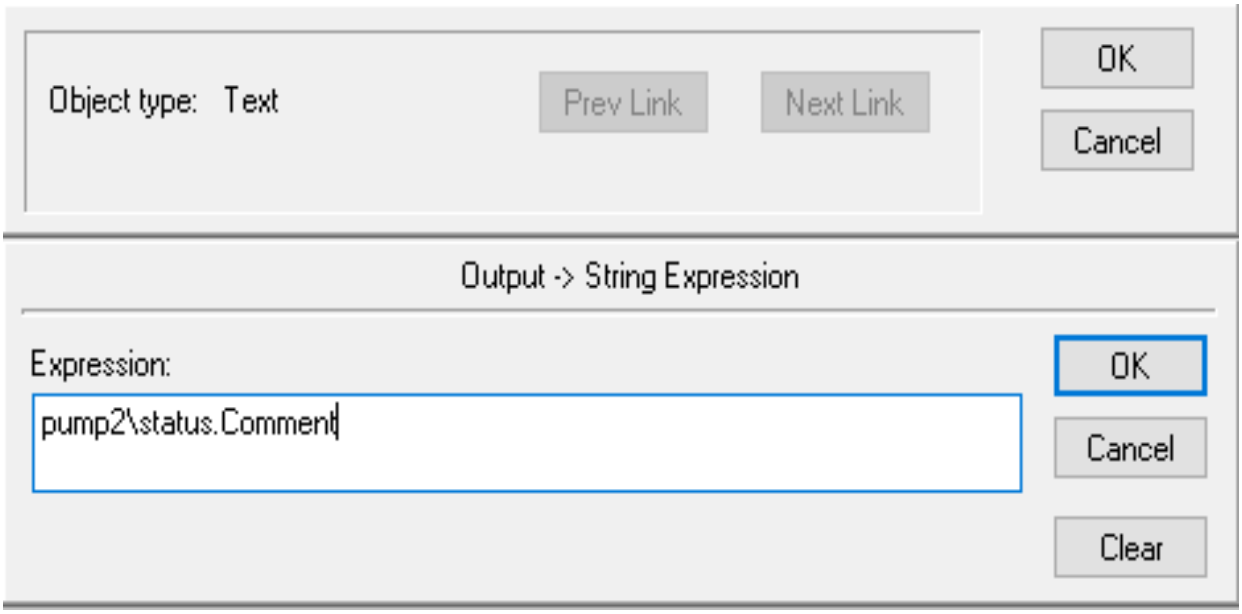
7. Here we add status and value as new members.
8. After creating a Super Tag template, the Tag Types dialog box shows both the Super Tag template and its indirect form as selectable tag types.



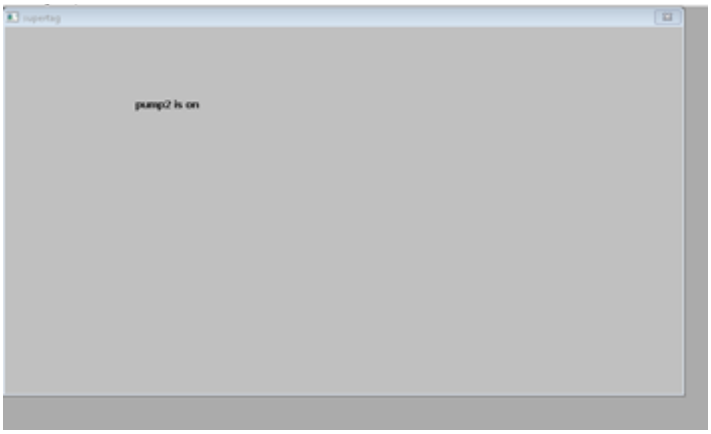
9. After selecting this pump type we can select members of it from members list.



10. Here we take one pump2 tag and select its member status and take its comment field.

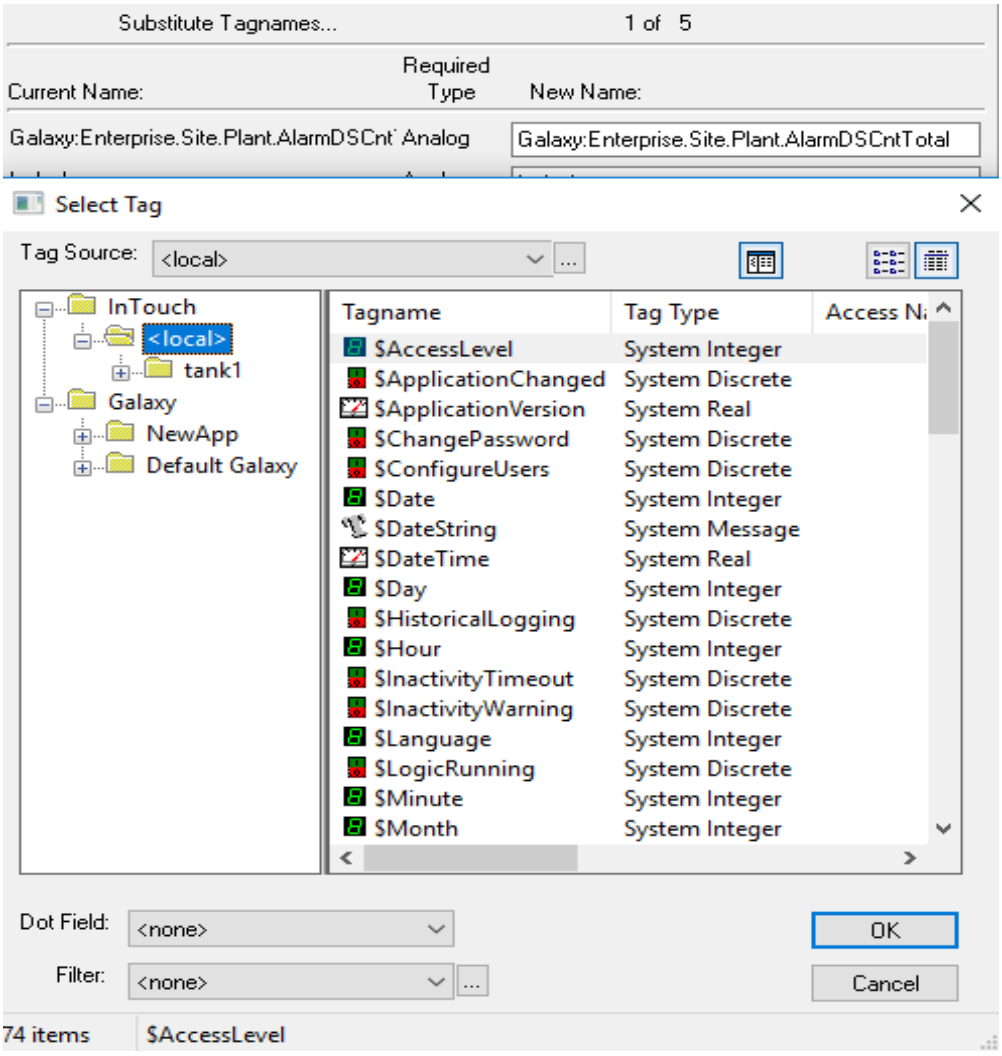


11. So in run time we can see the comment of pump2 status.

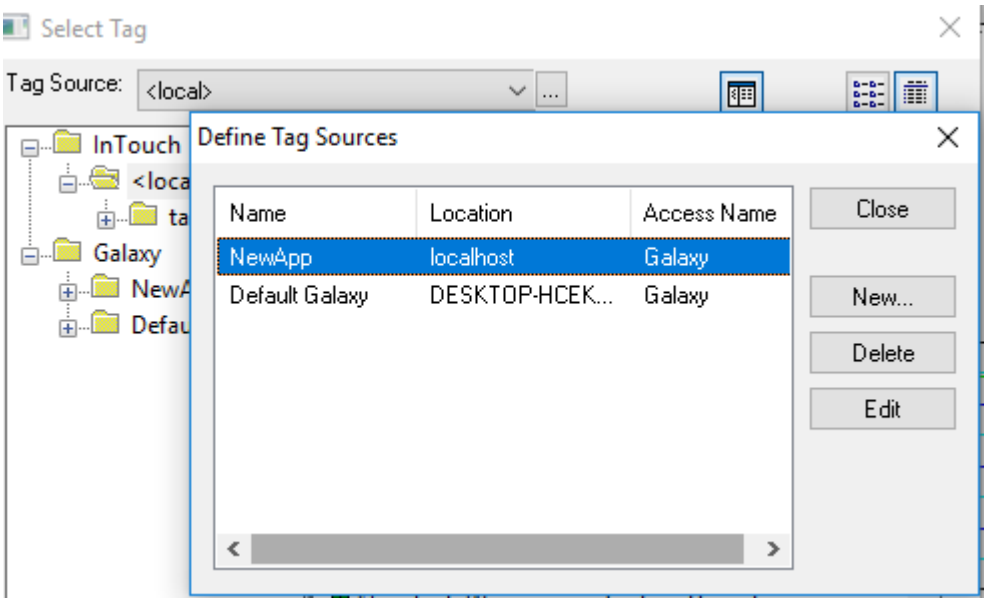


11.3 Remote Reference

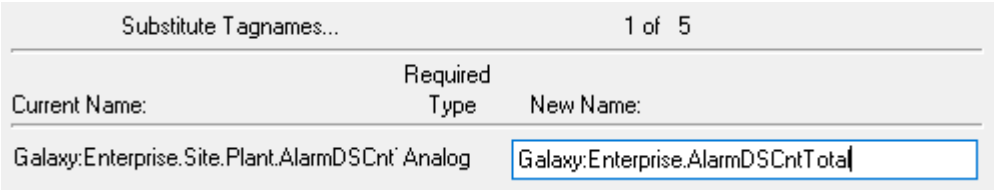
1. Open Intouch application.
2. Open window.
3. Select object defined with animation.
4. Go to Special Substitute tags.
5. Double click on tag that you want to convert remote reference.



6. If you want to create new access point, select browse >new.



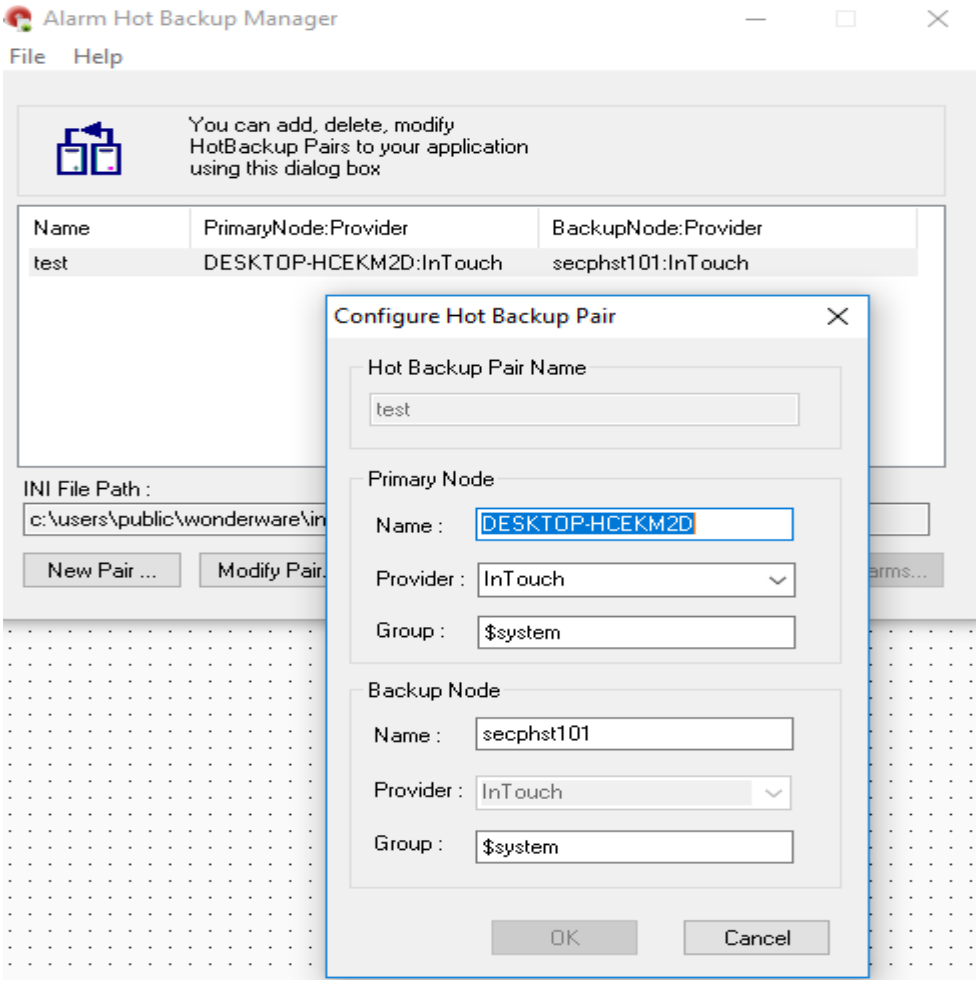
7. Select tag from select tag and select ok.



11.4 Alarm Hot Backup

1. The hot backup provides a single name (hot backup pair name) that points to two alarm providers, the primary and the backup (the hot backup pair). The InTouch HMI alarm consumers can reference this single hot backup pair name and retrieve alarms from either the primary or the backup alarm provider.
2. If both provider nodes are operating normally, the alarm consumer receives alarm data from the primary provider. If the primary provider fails, however, the alarm consumer receives alarm data from the backup instead.
3. To configure, open InTouch application.
4. Go to tools >applications>AlarmHotBackup Manager.
5. Create new pair.

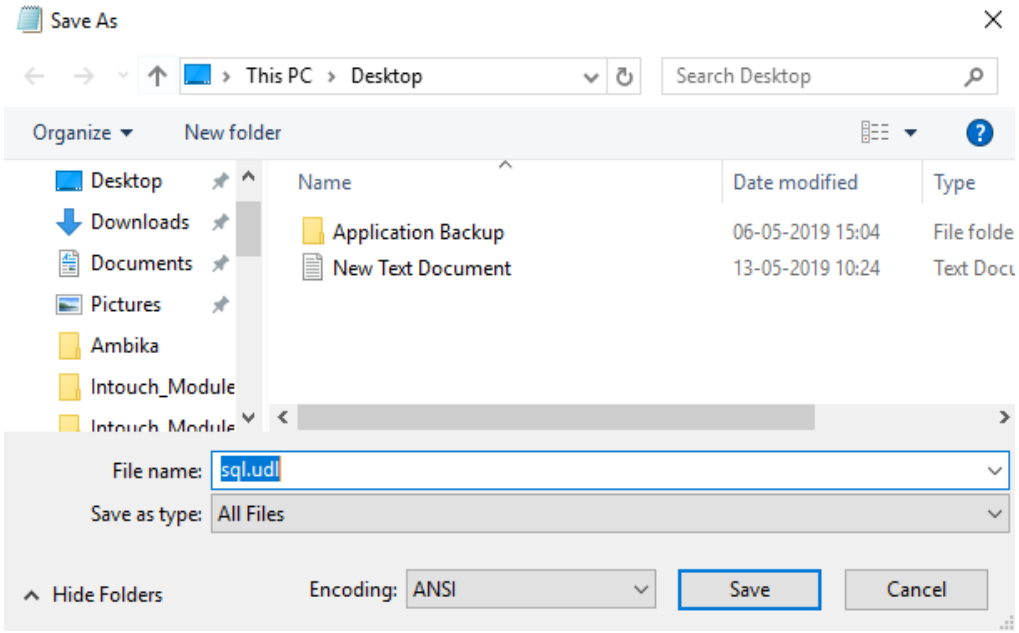
6. Provide Primary and Secondary node, Provider and alarm group.



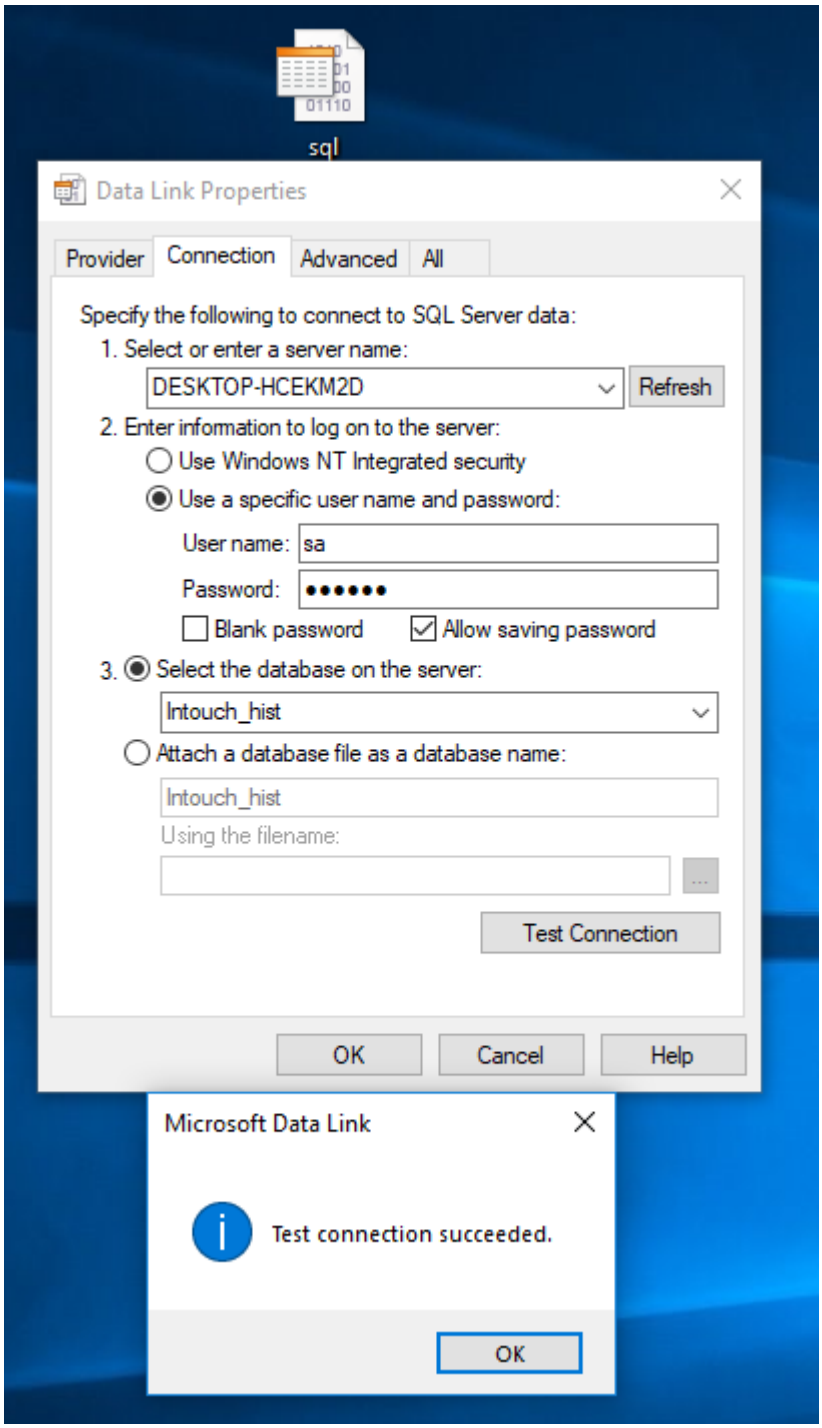
7. Save it.

11.5 Bind To

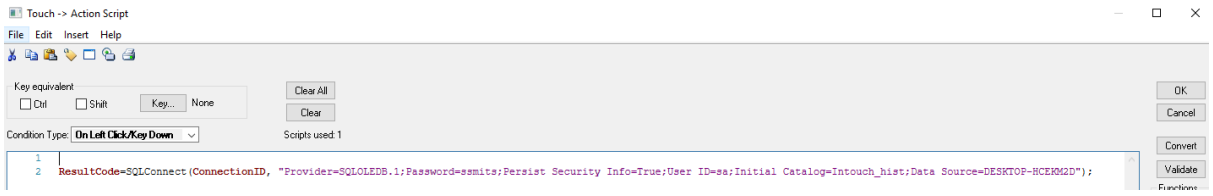
1. Create a new text file.
2. Save file as .udl.



3. Open that uld file and provide the detail.



4. Open that Copy the provider string.
5. Take button on window to connect sql.

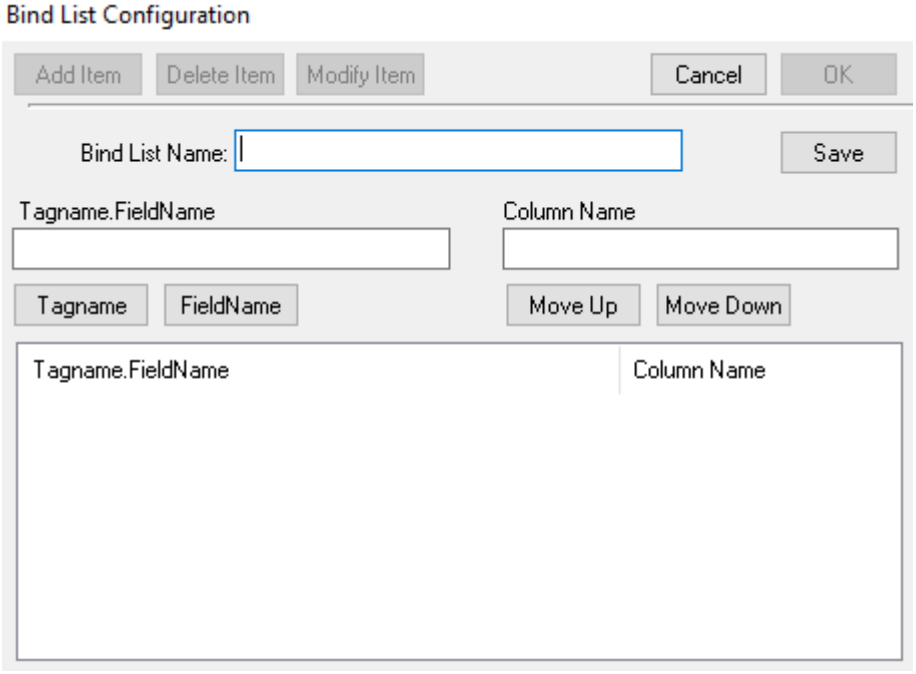


ResultCode=SQLConnect(ConnectionID, "Provider=SQLOLEDB.1;Password=ssmits;Persist Security Info=True;User ID=sa;Initial Catalog=Intouch_hist;Data Source=DESKTOP-HCEKM2D");

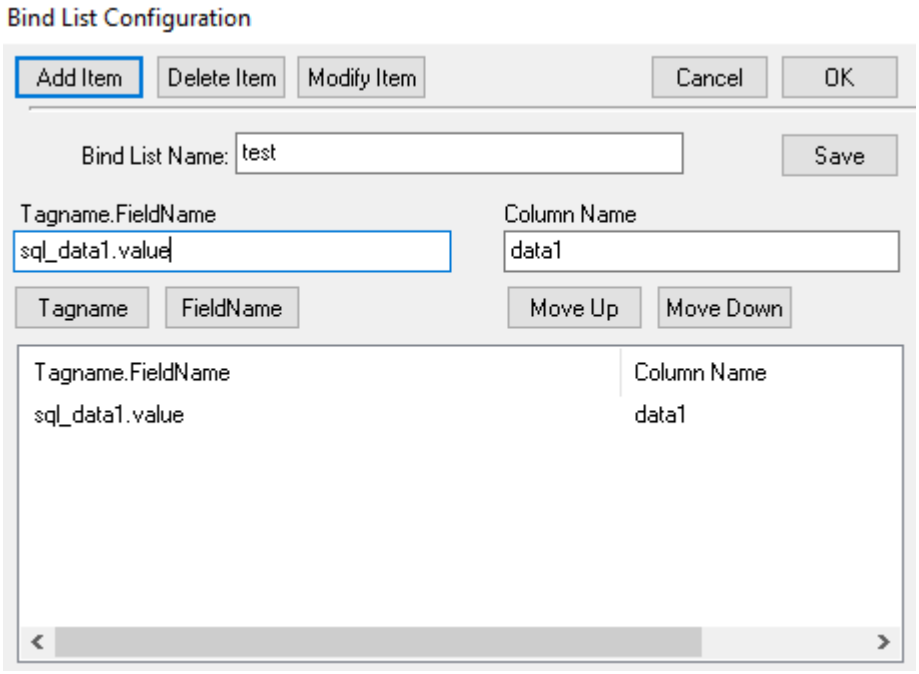
Where,

ConnectionID = Name of a memory integer tag that holds the number (ID) assigned by the SQLConnect () function to each database connection.

6. For creating bind list, go to tools>sql access manager>bind list.



7. Define bind list name, tagname & its dot field and column name from database defined in connection string.

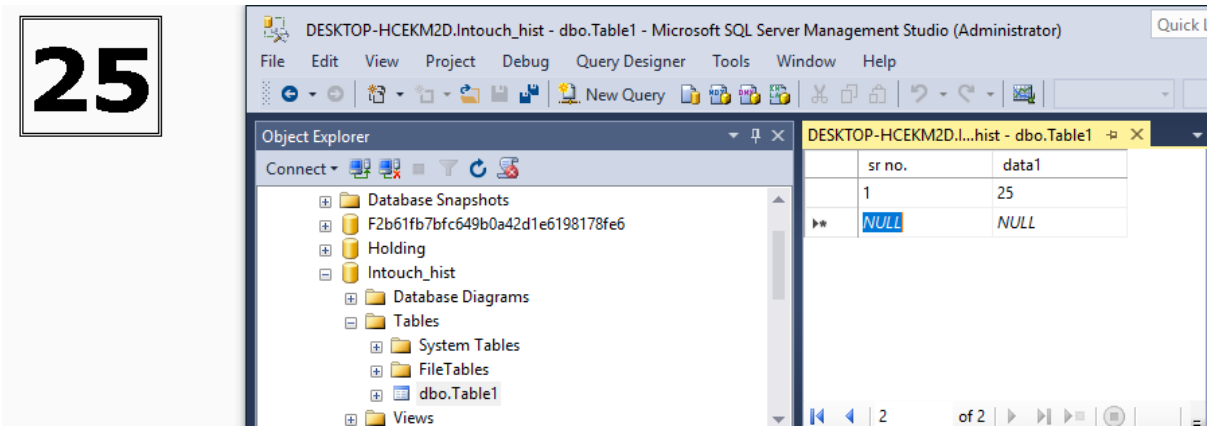


8. Save and ok.
9. Now to insert data in sql, define a script.

ResultCode1=SQLInsert(ConnectionID,"table1","test");

Where , ConnectionID= Name of a memory integer tag that holds the number (ID) assigned by the SQLConnect() function to each database connection,

Table1= Name of the database table you want to access,

Test= Defines which InTouch tags are used and which database columns they are associated with.

10. Check in runtime.