

Cognex Designer Advanced – User Control & Audit



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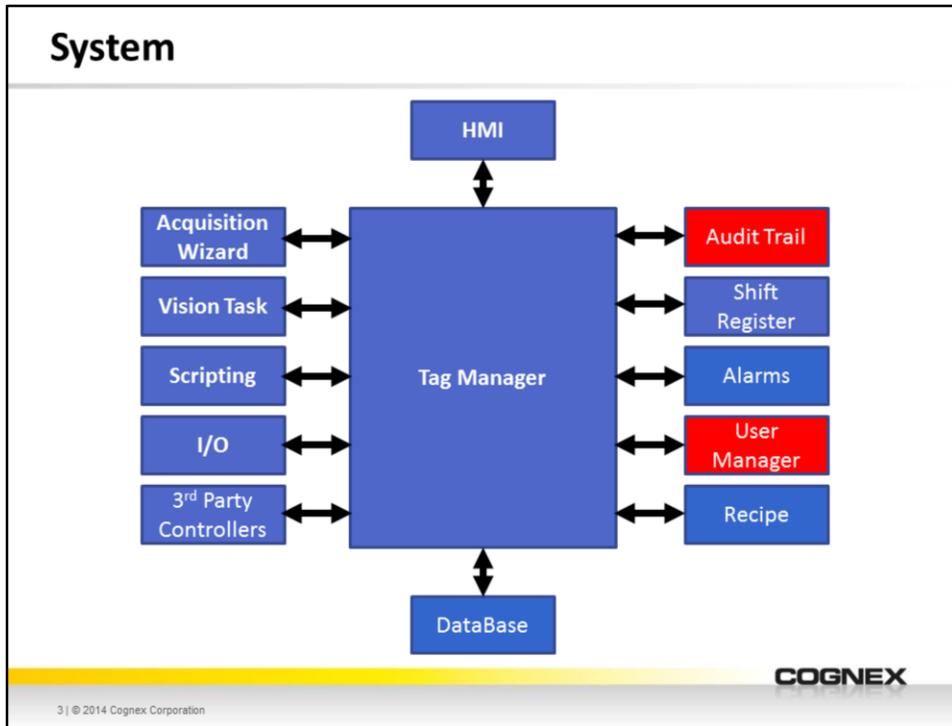
Objective

Cognex Designer Advanced – User Control & Audit

- Explore aspects of User Control
- Learn about the Inactivity Monitor
- Understand about the Audit Trail

❖ **Lab: Create some users and control the access to the system**

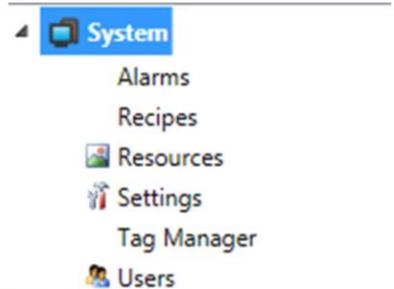
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Cognex Designer gives you the ability to use alarms, user access lists, and recipes through the use of Systems.

Systems

- **Alarms: Flags of issues in the program**
- **Recipes: Change Tag values**
- **Resources: Add images or video**
- **Settings: Miscellaneous Control , Audit trail**
- **Tag Manager: User Defined tags**
- **Users: User Management**



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System gives access to:

- Alarms: Flags of issues in the program
- Recipes: Different Tag values based off of a collection of saved values
- Resources: Ability to add images or video to the HMI
- Settings: Control over the program and audit trail
- Tag Manager: Access to the User Defined tags
- Users: Privileges based on set of given criteria

Users –Standard Mode

Ability to set Privileges

Explorer

- System
 - Alarms
 - Recipes
 - Resources
 - Settings
 - Tag Manager
 - Users**

User Configuration

Authentication Mode: Standard

Username	Password	CurrentAccessLevel	CanSaveImages	Department	TrustLevel
Admin		0	<input type="checkbox"/>		0
RobertG		0	<input type="checkbox"/>	Training	3
LeoD		0	<input checked="" type="checkbox"/>	Engineering	1
MiguelP		0	<input type="checkbox"/>	Management	5
Operator		0	<input checked="" type="checkbox"/>	Operations	10

Define User Properties

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Scripting access:

Users.Login(username, password)

Users.CurrentUsername

Users.CurrentAccessLevel

In Standard mode, the user can define any number of users and assign each an access level from (1 - Operator to 5 - Administrator).

To log on, a User can use:

Users.Login(username, password): Attempt to log in with a specified user name/password.

Once a user is logged in, The Users.CurrentUsername and Users.CurrentAccessLevel tags are updated for the newly logged in user.

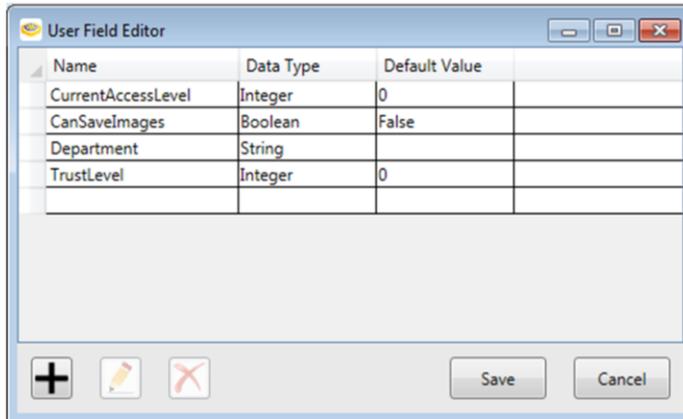
Users can be added and removed at runtime through the provided functions:

- Users.AddUser(username,password,accesslevel): Add a new user
- Users.DeleteUser(username): Remove a user
- Users.UserExists(username): Check if a user exists.

Add Fields

Default – CurrentAccessLevel

- Add additional fields / flags



Name	Data Type	Default Value
CurrentAccessLevel	Integer	0
CanSaveImages	Boolean	False
Department	String	
TrustLevel	Integer	0

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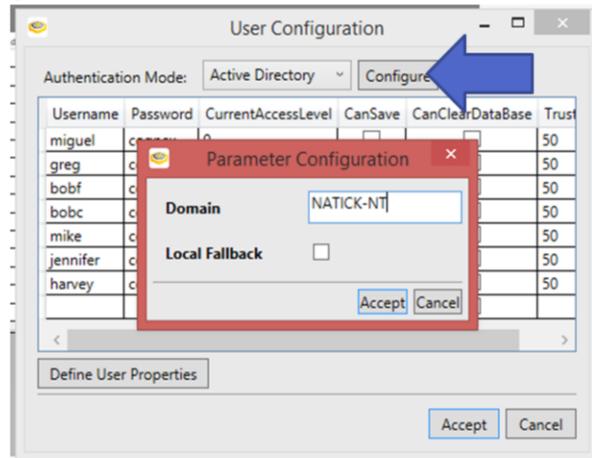
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The default field added to the User Field Editor is the CurrentAccessLevel parameter. It runs from access level 1 - Operator to 5 – Administrator.

You can add additional fields that will allow flexibility to the application such as whether the user is able to save or load a file, or even have access to various pages.

Active Directory

Use Corporate Data



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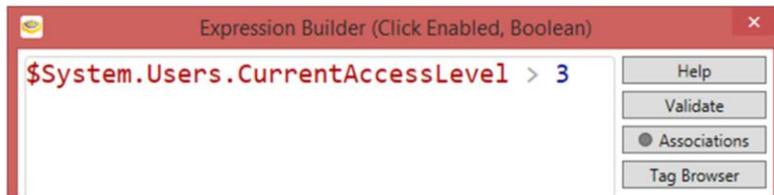
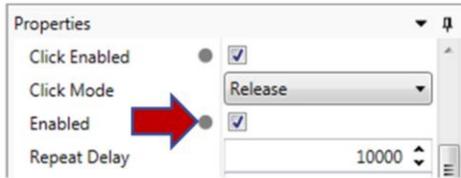
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When using Active Directory as the security mode, the user name and password will be checked against the domain.

The custom user fields will now attempt to read their data from the user's profile on the Active Directory server. The Name field is actually a property of the user's profile, so it will be automatically populated. The IsMemberOf keyword will iterate through the Active Directory's list of groups and check if the user is a member.

Edit Button for User Level

Show / Hide a Button



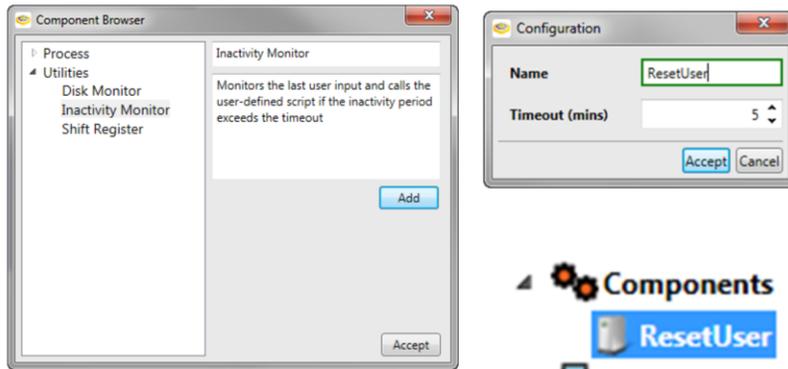
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By referencing the CurrentAccessLevel to the enable property of a button, you can hide or show the button given the user level of the person logged in. This may be a way to limit access to parameter settings to higher leveled users as opposed to everyone.

Automatically Resetting User

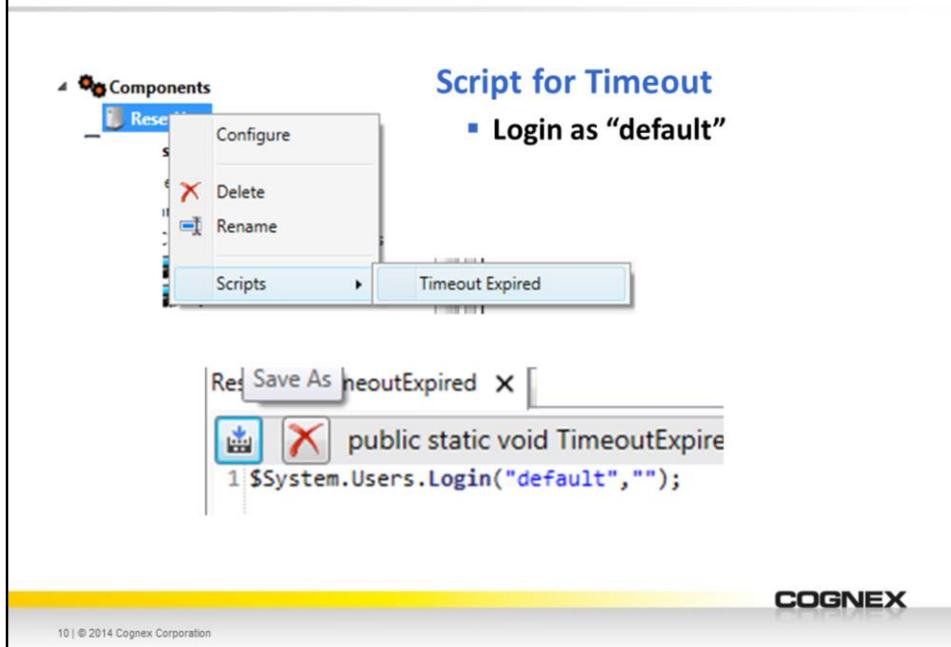
Use of the Inactivity Monitor with User



We can now use the Inactivity Monitor Component to reset the user if no action user input has taken place in the application.

Create a new Inactivity Monitor by selecting Components in the Explorer list. Select the desired inactivity period.

Timeout Expired Script



Script for Timeout

- Login as "default"

```
Res Save As neoutExpired X  
public static void TimeoutExpire  
1 $System.Users.Login("default", "");
```

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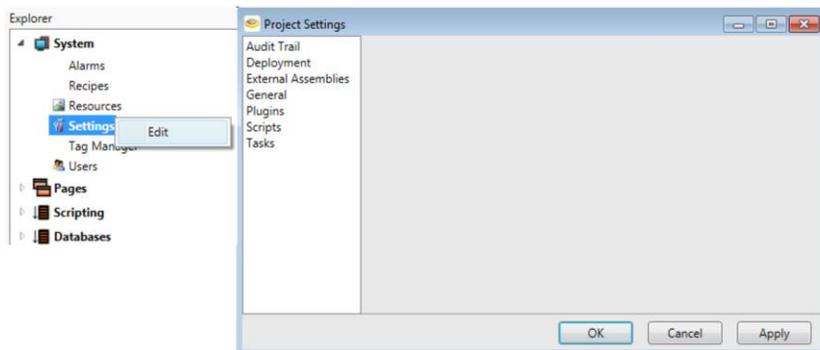
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In the Script for the Timeout Expired, add code that logs in a user ("default" in this case with no password) so that the system cannot be accidentally left in Admin mode if the administrator walks away and accidentally forgets to log out.

Settings – Audit Trail

Project Setting:

- Track Changes
- Define directory paths and project dlls
- Enable / disable plug-ins



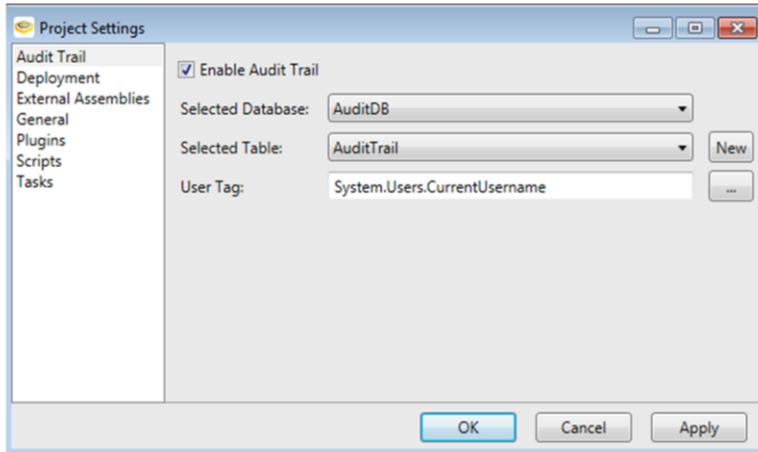
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- Audit Trail can be used to monitor changes in the application and environment
- General allows user to user to define directory paths as well as passwords to the project
- Plugins shows which controls are available and being used. Is currently ReadOnly though I thic it will go back to being selectable.
- Scripts allows user to add other dlls to be used at the project level as opposed to just the individual script level
- Tasks allows you to state the garbage collecting (GC) frequency of the thread. It is set to 5 by default.

AuditTrail

Enable Auditing



The screenshot shows a 'Project Settings' dialog box with a sidebar on the left containing the following items: Audit Trail, Deployment, External Assemblies, General, Plugins, Scripts, and Tasks. The 'Audit Trail' item is selected. The main area of the dialog contains the following controls:

- Enable Audit Trail
- Selected Database: AuditDB (dropdown menu)
- Selected Table: AuditTrail (dropdown menu) with a 'New' button to its right.
- User Tag: System.Users.CurrentUsername (text field) with a '...' button to its right.

At the bottom of the dialog are three buttons: OK, Cancel, and Apply.

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The Audit Trail is able to be enabled or disabled through the checkbox.

- Selected Database: Created to hold the information coming from the Audit Trail
- Selected Table: The particular table in the database to be used for the Audit Trail – New Table just for Audit can be created by selecting “New”
- User Tag: The base tag that it is monitoring

Database

AuditTrail Table

Name	DataType
Timestamp	DateTime
Username	String
Action	String
Message	String

Data can be added via script:

```
$System.AuditTrail.Log("Message", "Action");
```

```
public static void ChangeLanguage(string Argument)  
1 $param.SelectedLanguage = Argument;  
2 $System.AuditTrail.Log("Language changed to " + Argument, "System change");
```

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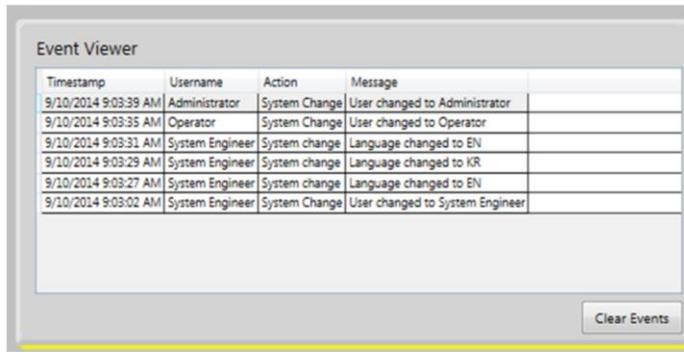
The box shows the different values being pulled into the database for the auditing.

Data can also be added programmatically by calling
\$System.AuditTrail.Log("Message", "Action").

When writing to the Audit Trail, time and user will always be captured. You need to add the message and action type.

Display the Audit Trail

Use a Table to Display the Query on the HMI pages



The screenshot shows a window titled "Event Viewer" containing a table with the following data:

Timestamp	Username	Action	Message
9/10/2014 9:03:39 AM	Administrator	System Change	User changed to Administrator
9/10/2014 9:03:35 AM	Operator	System Change	User changed to Operator
9/10/2014 9:03:31 AM	System Engineer	System change	Language changed to EN
9/10/2014 9:03:29 AM	System Engineer	System change	Language changed to KR
9/10/2014 9:03:27 AM	System Engineer	System change	Language changed to EN
9/10/2014 9:03:02 AM	System Engineer	System Change	User changed to System Engineer

Below the table is a "Clear Events" button.

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Create a query for the AuditTrail table and the results can be viewed in the HMI using a table.

Summary

User Control & Audit

- Discovered aspects of User Control
- Explored the Inactivity Monitor
- Learned about the Audit Trail

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