



101-std-fea-017 Audit Trail (Entity Audit) Feature in Govern and GNA V6

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Version History

Version	Date	Modify By	Description
1.0	2016/07/27	Olusegun Olaniyan	Create document





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OVERVIEW

Govern is an application that manages sensitive data. If access is gained to this data, there can be grave repercussions associated with both authorized, and unauthorized access. As a result of this, it is necessary to have administrative features that will provide a trail of activity within the application. This is the function of the Audit Trail (Entity Audit) feature. With an audit trail report, administrators have a tool that will allow them to review user activity within the Govern application. Upon request an activity report may be generated, one that will provide information such as the following:

- Date of activity
- Username
- The type of action performed, e.g. Create, Update, and Delete.
- Which OpenForm was modified and so on...

Audit Trail Reports

The Audit Trail feature consists of Crystal Reports that can be further modified to suit the customized needs of user. Customization can include modification of the queries or subqueries that are used in populating the report. Further customization can through branding in the form of adding a logo; this can be performed by an administrator with knowledge and access to a licensed package of **Crystal Reports 2011** or greater.

There are currently two standard Audit Reports, one for **Govern** and the other for **GNA**. The difference between these reports is the tables that are queried.

Audit trail reports can be generated that track modifications made in Govern OpenForms, or in the GNA application. The Audit Trail is a standard report that is distributed with Govern. Setting up an audit trail requires granting access to the item feature in the Business Entity Designer (BED).

Happyville		Audit Trail Report		Action: All User: naiara Forn: bul Table: All Column: All	
Date	User	Action	Form	IP Address	Computer
19-Jul-2016 10:51 am	Naiara Fraga	Update	CAMA - Buildings	192.168.60.144	2ZQBCZ1
Attribute	Table	Column	Old Value	New Value	
Inactive Year	PC_LK_PARCEL_BLDG	INACTIVE_YEAR	9999	9998	
Date	User	Action	Form	IP Address	Computer
19-Jul-2016 10:51 am	Naiara Fraga	Create	CAMA - Buildings	192.168.60.144	2ZQBCZ1
Attribute Building ID Building Sequence	Table PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG	Column BLDG_ID BLDG_SEQ	Old Value	New Value 5007983	
Effective Year Inactive Year Parcel ID	PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG	EFFECTIVE_YEAR INACTIVE_YEAR P_ID		2017 9999 2370831	
Date	User	Action	Form	IP Address	Computer
19-Jul-2016 9:24 am	Naiara Fraga	Creale	CAMA - Buildings	192.168.60.144	2ZQBCZ1
Attribute Building ID Building Sequence Effective Year Inactive Year	Table PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG	Column BLDG_ID BLDG_SEQ EFFECTIVE_YEAR INACTIVE_YEAR P ID	Old Value	New Value 5007982 0 2017 9999 237083	
Date	User	Action	Form	IP Address	Computer
19-Jul-2016 9:14 am	Najara Fraga	Delete	CAMA - Buildings	192.168.60.144	2ZQBCZ1
Building D Building D Building Sequence Effective Year Inactive Year	Table PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG PC_LK_PARCEL_BLDG	Column BLDG_ID BLDG_SEQ EFFECTIVE_YEAR INACTIVE_YEAR P_ID	Oid Value 5007981 0 2017 9999 2370831	192.108.80.144 New Value	

Figure 1 - The Audit Trail Report





USER INTERFACE

Launching the Audit Report

Reports that have been added to a profile can be launched from the profile that they have been configured with through the Profile Editor in GNA. The Audit report is accessed through the **Reports Explorer** tab. This tab is presented, by default, as a tabbed pane located on the left hand side (LHS) of the Govern interface.



- 1. In Govern open the profile that has been configured with a report.
- 2. Select the Reports Explorer tab with a click to reveal the Reports that have been configured with the profile.
- 3. Click the Audit Trail configured Audit Trail report.



Audit Trail report tabs

When the Audit Trail report is open there will be two tabs displayed, Parameter and Report.

Parameter tab – Under this tab are any parameters that will need to be configured prior to launching the report. For the audit report there are no additional parameters to enter.

Report tab – This is an embedded viewer to display the pages of the report.

To view the Audit Report results...

- 1. Return to the Parameter tab, click **Run** Report to start.
- Click **OK** to launch the Audit Report or **Cancel** to cancel.

Enter Parameter Values

The Enter Parameter Values form is displayed to allow you to enter the criteria for the audit query. Criteria include the following:

- From Date (Required) A click on the icon will display the current date by default, navigate to the date required, or enter the
- To Date (Required) This is a required field and must be entered or an error message is displayed.





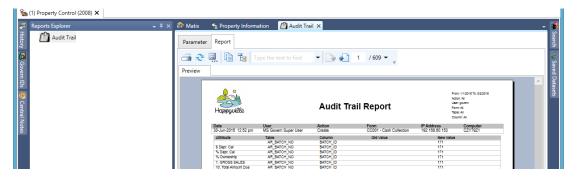


- Action Enter the type of action effected on the form that you are looking for...
 - 0 Create
 - 1 Update
 - o 2 Delete
 - **3** All; i.e. all three above actions. This is the default setting.
- **User** User Name; even a partial name will suffice as the report will look for even a portion of the name that was entered; e.g. entering "red" will bring up Fred, Frederick, Mildred, and so on.
- **Form** Provide a partial or complete name of the form that you are interested in. An empty parameter will result in querying all forms.
- **Table** Enter a partial or complete name of the table that you are interested in. An empty parameter will result in querying all tables.
- **Column** Type in a partial or complete name of the column that you are interested in. An empty parameter will result in querying all columns in the tables.

Fields that are Audited

Audit Report results display the following fields:

- **Date** This is date that the actions were performed.
- **User** Display of the username.
- Action This is the action performed through the form. Actions include:
 - Create (C)
 - Update (U)
 - o Delete (D)
- Form The form name, e.g. CAMA Buildings.
- IP Address Address that the actions were performed from, e.g. 192.168.220.155
- **Computer** This is the network name of the computer that the action was performed from; e.g. BIG DADDY24
- Attribute Name of the attribute affected, e.g. Building ID.
- Table The name of the table that was affected, e.g. PC LK PARCEL BLDG
- Column This is the column name affected, e.g. BLDG_ID
- Old Value The previously existing value; this may be empty is new data was entered.
- New Value This is the new value that was entered.







Security Setup

Audit Report Security

As always security concerns will exist as to who has access to the information that is displayed by the Audit Report. The Report Explorer is a securable component that can be restricted through the Govern

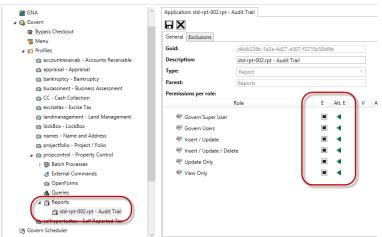
Security Manager (SM) application.

The path to the securable node is the SM is the following...

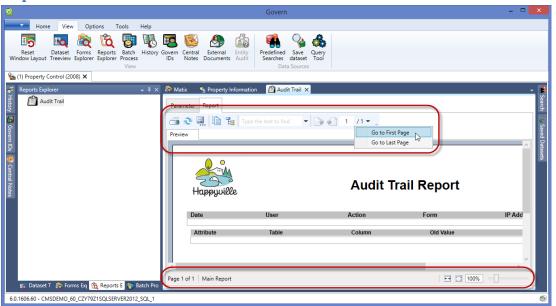
Applications > Govern > Profiles > profileName > Reports >

Audit_Trail_ReportName

NOTE: Refer to the Govern Security Manual user guide for details about securing nodes.



Report Viewer Interface



As indicated earlier, the report viewer is an embedded Crystal Report viewer with controls that allow the user to perform the following on report results.

Print – Click Print to display the Windows dialog to print the report to a configured device.





Refresh Report Data

Click "Yes" to use the current parameter values.

Click "No" to prompt for new parameter values.

<u>Y</u>es

<u>N</u>o

Regenerating a Report

Refresh – To **Refresh**, i.e. rerun the report, click Refresh. This will provide to option to rerun the audit query with the same parameters entered, or provide new parameters.

Export Report – Click **Export** to export the report to Adobe (c) .PDF format.

- **Copy** Click to copy to the Windows *Clipboard*.
- Toggle Side Panel This will display the
- Go to Previous / Next Page When you need to navigate to the previous page of the reports, click Go to Previous Page.
- Go to page Highlight the current page number and enter a specific page to jump to.

Displaying the Viewer area View...

Fit to Width – Click to display the report in full width of the viewer.

Full Page - This option will display the full width and height of the report in the current viewer area

Magnification (parameter and slider) – Manually enter a magnification value in the parameter, or use the slider on the immediate right of the parameter to adjust the size of the report.







CONFIGURATION

NOTE: Due to the similarity in the procedures for the Audit Trail (Entity Audit) feature for Govern and the Govern New Administration (GNA), the following configuration steps are used for both types of Audit Reports.

Pre-configuration Steps

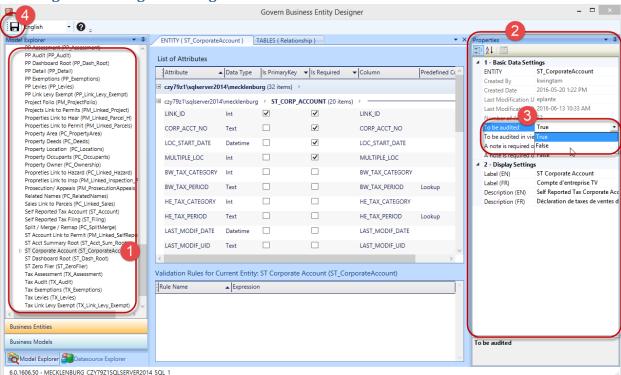
In order retrieve audit information on specific entity, said entity must be enabled. Enabling an entity is performed by setting a flag in the *Business Entity Designer* (**BED**). In the BED there are two flags that are associated with the audit feature.

Audit Flags

To be audited – Set this flag to generate a log entry if any one of the three following actions is performed by the user, **EDIT**, **INSERT**, or **DELETE**. This flag is by default set to TRUE.

To be audited in view mode – When a log is requested to determine if the selected entity is viewed by a user. *Typically this flag is set to FALSE*.

Enabling or Disabling Audit Flags



To enable or disable audit flags in the BED...

1. Launch the BED.





- 2. In the Model Explorer pane on *Left Hand Side* (LHS), click to select the entity that you would like enable or disable the audit trail entry for.
- 3. Locate the **Properties** pane on the *Right Hand Side* (RHS).
- 4. Under "1 Basic Data Settings" group, click on the To be audited flag and set it to TRUE to enable auditing, or FALSE to disable auditing.
- 5. Click **Save** to save the setting.

Once the flag has been set to Enabled (TRUE) or Disabled (FALSE), log entries

Where to Locate the Report

The Audit Trail report is a standard report, and as such can be located in the Reports folder of the deployment. With a standard installation the path is the following:

\\appServerName\[DeploymentRoot]\Deployments\Reports

Administrators should ensure that they are up to date with the latest version of the Govern OpenForm reference file. This file "DynamicSearchReference.XML". This file can be updated in *Govern New Administration* (GNA) with the Import Data From File utility.

Audit Report Configuration in GNA

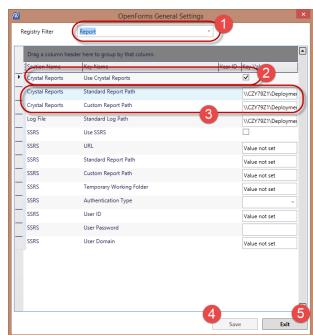
As with other Govern integrations, the Audit Trail Report can be configured through the Reports Editor in GNA. The Report Editor form is used to configure reports on an individual basis. These reports display query results found in the fields of tables within the data source. Reports are given access through the default connection key. If required, they may also be configured using an alternate connection key. As long as the alternate connection key has been defined in the Connection Key Management form, it will be available in the Alternate Connection Key list.

UNC Paths in the Govern System Registry

Prior to configuring the report, ensure that a UNC path has been set in the **OpenForms General Settings** form. It is in this form that a system option to use Crystal Reports is specified. In addition the UNC paths to Standard, and Custom report paths are specified. To verify your settings in the OpenForms General Settings form...

In the GNA Ribbon...

- 1. Click Parameters (tab) > General Settings Editor;
- 2. In the **OpenForms General Settings** form, Change the Registry Filter to **Reports**.
- 3. Click to select the Use Crystal Reports option.

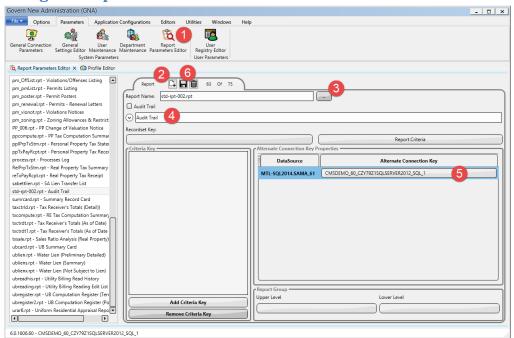






- 4. Complete the UNC paths for the following parameters; **Standard Report Path**, and **Custom Report Path**.
- 5. Click **Save** to save your paths and **Exit** to close and exit from the form.

Using the Report Parameters Editor



Next it will be necessary to configure the report in the **Report Parameters Editor**.

In the GNA ribbon...

1. Click Parameters (tab) > Report Parameters Editor;

NOTE: All available reports are read and will be scanned. Connection options to the database are by default specified as the current connection. During the initial scanning phase, if a report is determined to be invalid, i.e. incompatible, a warning is displayed in the form of a window with a list of the offending reports.

- 2. To create a new report setting, click the **Create a new item** icon.
- 3. Click the Ellipsis button to display the Report Selector; locate Audit Trail report (std-rpt-002.rpt)
- 4. Enter a name for the report, e.g. Audit Trail.
- 5. Next in the Alternate Connection Key (CK) Properties group, ensure that there is a connection specified for the database that the report will be querying. Although database connection parameters are set in the Govern DeployEZ™, they can be overridden on a report by report basis. If required, use the alternate connection key parameter to specify the Connection Key
- 6. To save the settings, on the Report tab, click **Save the current item**.

Refer to the GNA user quide for additional details on the topic of configuring reports.



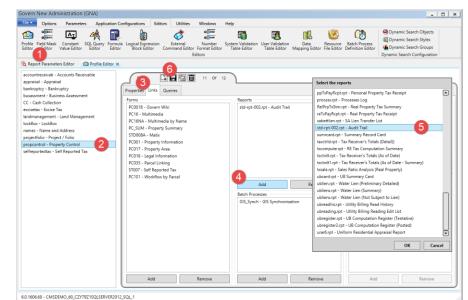


Configuring with the GNA Profile Editor

After the previous step of creating your report in the Report Parameters Editor, you can now add the report to a profile that can be accessed in Govern. Reports can be added to an OpenForms profile through the Profile Editor for access in Govern.

To add the report to a profile in the Govern New Administration (GNA)...

- On the GNA ribbon click Editors (tab) > Profile Editor.
- 2. Select the profile through which users can access the report.
- 3. In the Profile Editor, click *Links (tab)*.
- In the Reports group, click Add to display the Select the reports list of system reports.



- 5. Click to select the Audit Trail report and click OK.
- 6. Save the changes to the form; click the **Save the current item** icon on the tab.

After this step the Audit Trail Report is ready to be launched in the OpenForm.





APPENDIX

Tables

As there are two Audit Trail reports, Govern, and GNA, there are two sets of tables that are used to store the information related to their activity.

Govern Audit Trail

The following tables are queried for Govern:

- USR_AUDIT_OPENFORMS
 - o AUDIT_ID
 - o AUDIT_ACTION
 - o ENTITY_ID
 - o FORM_CODE
 - o USER_ID
 - AUDIT_DATE
 - IP_ADDRESS
 - SOURCE COMPUTER NAME
 - o REMOTE_COMPUTER_NAME
- USR_AUDIT_OPENFORMS_CHANGE
 - o AUDIT_ID
 - o ATTRIBUTE_ID
 - o TABLE_NAME
 - COLUMN_NAME
 - o OLD_VALUE
 - NEW_VALUE
- USR_AUDIT_OPENFORMS_KEY
 - o AUDIT_ID
 - ATTRIBUTE_ID
 - o KEY_NAME
 - KEY_VALUE
 - IS_PRIMARY_KEY

GNA Audit Trail

The following tables are queried for the Govern New Administration (GNA)

- USR_ADM_AUDIT_TRANS One record for each save
 - o AUDIT_TRANS_ID
 - LAST_MODIF_UID
 - LAST_MODIF_DATE
 - IP_ADDRESS
 - SOURCE_COMPUTER_NAME





- REMOTE_COMPUTER_NAME
- USR_ADM_AUDIT_RECORD One record for each table included in a save
 - AUDIT_RECORD_ID
 - o AUDIT_TRANS_ID
 - o TABLE NAME
 - RECORD_ID
 - MODIF TYPE
 - RECORD_DESCRIPTION
- USR_ADM_AUDIT_FIELD One record for each field, only when a modification
 - AUDIT_FIELD_ID
 - AUDIT_RECORD_ID
 - FIELD_NAME
 - OLD_VALUE
 - NEW VALUE

Audit Trail Queries

The following are the queries that are used for populating the Audit Trail report for Govern and GNA. Note the columns that are referenced, e.g. NAME, AUDIT_ACTION, IP_ADDRESS, COLUMN_NAME, TABLE_NAME, and so on.

Govern

```
MTL-SOL2014
SELECT DISTINCT "USR AUDIT OPENFORMS". "AUDIT DATE", "USR USERFILE". "NAME",
"USR AUDIT OPENFORMS"."AUDIT ACTION", "USR AUDIT OPENFORMS"."IP ADDRESS",
"USR AUDIT OPENFORMS". "SOURCE COMPUTER NAME", "USR AUDIT OPENFORMS". "AUDIT ID",
"V VT USER FORM". "SHORT DESC EN", "USR AUDIT OPENFORMS CHANGE". "TABLE NAME",
"USR AUDIT OPENFORMS CHANGE". "COLUMN NAME",
"USR AUDIT OPENFORMS CHANGE"."ATTRIBUTE ID", "USR AUDIT OPENFORMS CHANGE"."OLD VALUE",
"USR AUDIT OPENFORMS CHANGE". "NEW VALUE"
FROM (("SAMA_61"."dbo"."USR_AUDIT_OPENFORMS" "USR_AUDIT_OPENFORMS" INNER JOIN "SAMA_61"."dbo"."USR_USERFILE" "USR_USERFILE" ON
"USR_AUDIT_OPENFORMS"."USER_ID"="USR_USERFILE"."USR_ID") INNER JOIN
"SAMA_61"."dbo"."USR_AUDIT_OPENFORMS_CHANGE" "USR_AUDIT_OPENFORMS_CHANGE" ON
"USR AUDIT OPENFORMS"."AUDIT_ID"="USR_AUDIT_OPENFORMS_CHANGE"."AUDIT_ID") INNER JOIN
"SAMA 61". "dbo". "V VT USER FORM" "V VT USER FORM" ON
"USR AUDIT OPENFORMS". "FORM CODE"="V VT USER FORM". "CODE"
WHERE "USR_AUDIT_OPENFORMS"."AUDIT ACTION">=0 AND
("USR AUDIT OPENFORMS"."AUDIT DATE">={ts '2015-07-19 00:00:00'} AND
"USR AUDIT OPENFORMS"."AUDIT DATE"<{ts '2016-08-01 00:00:00'}) AND
"V VT USER FORM". "SHORT DESC EN" LIKE '%%' AND "USR USERFILE". "NAME" LIKE '%g%' AND
"USR AUDIT OPENFORMS CHANGE". "TABLE NAME" LIKE '8ma%' AND
"USR AUDIT OPENFORMS CHANGE"."COLUMN NAME" LIKE '%%'
ORDER BY "USR AUDIT OPENFORMS". "AUDIT ID" DESC
MTL-SQL2014
SELECT DISTINCT "V VT USER BE ATTRIBUTE". "SHORT DESC EN",
"V VT USER BE ATTRIBUTE"."CODE"
```





GNA

```
SELECT DISTINCT "USR USERFILE". "NAME", "USR ADM AUDIT TRANS". "LAST MODIF DATE",
"USR ADM AUDIT TRANS". "SOURCE COMPUTER NAME", "USR ADM AUDIT TRANS". "AUDIT TRANS ID",
"USR_ADM_AUDIT_RECORD"."AUDIT_TRANS_ID", "USR_ADM_AUDIT_TRANS"."IP_ADDRESS",
"USR_ADM_AUDIT_RECORD"."TABLE_NAME", "USR_ADM_AUDIT_RECORD"."MODIF_TYPE",
"USR_ADM_AUDIT_FIELD"."FIELD_NAME", "USR_ADM_AUDIT_FIELD"."OLD_VALUE",
"USR ADM AUDIT FIELD". "NEW VALUE"
FROM ("SAMA_61"."dbo"."USR_ADM_AUDIT_FIELD" "USR_ADM_AUDIT_FIELD" INNER JOIN "SAMA_61"."dbo"."USR_ADM_AUDIT_RECORD" "USR_ADM_AUDIT_RECORD" ON
"USR ADM AUDIT FIELD"."AUDIT RECORD ID"="USR ADM AUDIT RECORD"."AUDIT RECORD ID")
INNER JOIN "SAMA 61"."dbo"."USR ADM AUDIT TRANS" "USR ADM AUDIT TRANS" ON
"USR_ADM_AUDIT_RECORD"."AUDIT_TRANS_ID"="USR_ADM_AUDIT_TRANS"."AUDIT_TRANS_ID") INNER
JOIN "SAMA 61". "dbo". "USR USERFILE" "USR USERFILE" ON
"USR ADM AUDIT TRANS"."LAST MODIF UID"="USR USERFILE"."USR ID"
WHERE "USR ADM AUDIT RECORD". "MODIF TYPE">=0 AND
("USR ADM AUDIT TRANS"."LAST MODIF DATE">={ts '2016-07-21 00:00:00'} AND
"USR_ADM_AUDIT_TRANS"."LAST_MODIF_DATE"<{ts '2016-07-23 00:00:00'}) AND
"USR_USERFILE"."NAME" LIKE '%na%' AND "USR_ADM_AUDIT_RECORD"."TABLE_NAME" LIKE '%%'
AND "USR_ADM_AUDIT_FIELD"."FIELD_NAME" LIKE '%%'
ORDER BY "USR_ADM_AUDIT_RECORD". "AUDIT_TRANS_ID" DESC,
"USR ADM AUDIT TRANS"."AUDIT TRANS ID" DESC
```



