# Audit Trail Plugin


- Usages
- Abstract Class
    - org.joget.plugin.base.DefaultAuditTrailPlugin
        - Method Detail
            - Abstract Methods
                - execute
- Sample Usage
- Audit Trail Event
    - Workflow Process Related Events
    - Form Related Events
    - Organization Chart Related Events
- Plugin Properties Options
- Tutorials
- Related Community Plugins


## Usages

- The **Audit Trail Plugin** is triggered after an audit trail event to provide extra processing capabilities (e.g., capturing reporting data or user notification).
- Audit Trail Plugin can be set in Plugin Default Properties - Audit Trail.
- A usable Audit Trail Plugin must extend org.joget.plugin.base.DefaultAuditTrailPlugin abstract class.

## Abstract Class

### org.joget.plugin.base.DefaultAuditTrailPlugin

- Under wflow-plugin-base module
- Extended org.joget.plugin.base.ExtDefaultPlugin. Please refer to Plugin Base Abstract Class and Interface.
- Implemented org.joget.plugin.property.model.PropertyEditable. Please refer to Plugin Base Abstract Class and Interface.
- A base abstract class to develop a Audit Trail Plugin.

#### Method Detail

##### Abstract Methods

execute

```
public abstract java.lang.Object execute(java.util.Map props)
```

To execute the extra processing based on Audit Trail Event.

An org.joget.apps.app.model.AuditTrail object is passed as "auditTrail" property.

***Return*** is not used for now.

## Sample Usage

```
public Object execute(Map props) {
     AuditTrail auditTrail = (AuditTrail) props.get("auditTrail");
     if (auditTrail != null && auditTrail.getClazz().startsWith("org.joget.apps.form.dao.FormDataDaoImpl")) {
         String method = auditTrail.getMethod();

         if (method.equals("load")) {
             Class[] paramTypes = auditTrail.getParamTypes();
             Object[] params = auditTrail.getArgs();
             Object returnObject = auditTrail.getReturnObject();
             //do something
         }
     }
     return null;
 }
```

## Audit Trail Event

## Workflow Process Related Events

Please refer to WorkflowManager for extra information.

| Class | Method | ParamTypes | Params (Args) | Return |
|---|---|---|---|---|
| org.joget.workflow.model.service.WorkflowManagerImpl | activityAbort | java.lang.String, java.lang.String | processId, activityDefId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | activityStart | java.lang.String, java.lang.String, boolean | processId, activityDefId, abortRunningActivities | boolean |
| org.joget.workflow.model.service.WorkflowManagerImpl | activityVariable | java.lang.String, java.lang.String, java.lang.Object | activityInstanceId, variableId, variableValue | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | activityVariables | java.lang.String, java.util.Map | activityInstanceId, variables | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentAbort | java.lang.String | activityId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentComplete | java.lang.String | activityId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentComplete | java.lang.String, java.util.Map | activityId, variableMap | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentForceComplete | java.lang.String, java.lang.String, java.lang.String, java.lang.String | processDefId, processId, activityId, username | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentReassign | java.lang.String, java.lang.String, java.lang.String, java.lang.String, java.lang.String | processDefId, processId, activityId, username, replaceUser | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentReassignUser | java.lang.String | activityId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentVariable | java.lang.String, java.lang.String, java.lang.String | activityId, variableName, variableValue | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | assignmentVariables | java.lang.String, java.util.Map<java.lang.String, java.lang.String> | activityId, variableMap | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | processAbort | java.lang.String | processId | boolean |
| org.joget.workflow.model.service.WorkflowManagerImpl | processCompleted | java.lang.String | processId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | processCopyFromInstanceId | java.lang.String, java.lang.String, boolean | currentProcessId, newProcessDefId, abortCurrentProcess | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processCreateWithoutStart | java.lang.String | processDefId | java.lang.String |
| org.joget.workflow.model.service.WorkflowManagerImpl | processDeleteAndUnload | java.lang.String | packageId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | processDeleteAndUnloadVersion | java.lang.String, java.lang.String | packageId, version | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | processStart | java.lang.String | processDefId | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processStart | java.lang.String, java.util.Map<java.lang.String, java.lang.String> | processDefId, variables | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processStart | java.lang.String, java.util.Map<java.lang.String, java.lang.String>, java.lang.String | processDefId, variables, startProcUsername | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processStart | java.lang.String, java.lang.String, java.util.Map<java.lang.String, java.lang.String>, java.lang.String, java.lang.String, boolean | processDefId, processId, variables, startProcUsername, parentProcessId, startManually | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processStartWithInstanceId | java.lang.String, java.lang.String, java.util.Map<java.lang.String, java.lang.String> | processDefId, processId, variables | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processStartWithLinking | java.lang.String, java.util.Map<java.lang.String, java.lang.String>, java.lang.String, java.lang.String | processDefId, variables, startProcUsername, parentProcessId | org.joget.workflow.model.WorkflowProcessResult |
| org.joget.workflow.model.service.WorkflowManagerImpl | processUpload | java.lang.String, byte[] | packageId, processDefinitionData | java.lang.String |
| org.joget.workflow.model.service.WorkflowManagerImpl | processUploadWithoutUpdateMapping | java.lang.String, byte[] | packageId, processDefinitionData | java.lang.String |

| | | | | |
|---|---|---|---|---|
| org.joget.workflow.model.service.WorkflowManagerImpl | processVariable | java.lang.String, java.lang.String, java.lang.Object | processInstanceId, variableId, variableValue | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | processVariables | java.lang.String, java.util.Map | processInstanceId, variables | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | reevaluateAssignmentsForActivity | java.lang.String | activityInstanceId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | reevaluateAssignmentsForProcess | java.lang.String | procInstanceId | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | reevaluateAssignmentsForProcesses | java.lang.String[] | procInstanceIds | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | reevaluateAssignmentsForUser | java.lang.String | username | void |
| org.joget.workflow.model.service.WorkflowManagerImpl | removeProcessInstance | java.lang.String | procInstanceId | void |
| org.joget.workflow.shark.WorkflowAssignmentManager | getDefaultAssignments | java.lang.String, java.lang.String, org.joget.workflow.model.WorkflowProcess | procInstanceId, activityInstanceId, processInstance | java.util.List<java.lang.String> |
| org.joget.workflow.shark.WorkflowToolActivityHandler | executeActivity | org.joget.workflow.model.WorkflowAssignment | workflowAssignment | void |
| org.joget.workflow.shark.WorkflowToolActivityHandler | executeTool | org.joget.workflow.model.WorkflowAssignment | workflowAssignment | void |
| org.joget.workflow.shark.WorkflowToolActivityHandler | executeToolCompleted | org.joget.workflow.model.WorkflowAssignment | workflowAssignment | void |

## Form Related Events

Please refer to FormDataDao for extra Information.

| Class | Method | ParamTypes | Params (Args) | Return |
|---|---|---|---|---|
| org.joget.apps.form.dao.FormDataDaoImpl | count | org.joget.apps.form.model.Form, java.lang.String, java.lang.Object[] | form, condition, params | java.lang.Long |
| org.joget.apps.form.dao.FormDataDaoImpl | count | java.lang.String, java.lang.String, java.lang.String, java.lang.Object[] | formDefId, tableName, condition, params | java.lang.Long |
| org.joget.apps.form.dao.FormDataDaoImpl | delete | org.joget.apps.form.model.Form, java.lang.String[] | form, primaryKeyValues | void |
| org.joget.apps.form.dao.FormDataDaoImpl | delete | java.lang.String, java.lang.String, java.lang.String[] | formDefId, tableName, primaryKeyValues | void |
| org.joget.apps.form.dao.FormDataDaoImpl | delete | java.lang.String, java.lang.String, org.joget.apps.form.model.FormRowSet | formDefId, tableName, rows | void |
| org.joget.apps.form.dao.FormDataDaoImpl | find | org.joget.apps.form.model.Form, java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | form, condition, params, sort, desc, start, rows | org.joget.apps.form.model.FormRowSet |
| org.joget.apps.form.dao.FormDataDaoImpl | find | java.lang.String, java.lang.String, java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | formDefId, tableName, condition, params, sort, desc, start, rows | org.joget.apps.form.model.FormRowSet |
| org.joget.apps.form.dao.FormDataDaoImpl | findPrimaryKey | org.joget.apps.form.model.Form, java.lang.String, java.lang.String | form, fieldName, value | java.lang.String |
| org.joget.apps.form.dao.FormDataDaoImpl | findPrimaryKey | java.lang.String, java.lang.String, java.lang.String, java.lang.String | formDefId, tableName, fieldName, value | java.lang.String |
| org.joget.apps.form.dao.FormDataDaoImpl | load | org.joget.apps.form.model.Form, java.lang.String | form, primaryKey | org.joget.apps.form.model.FormRow |
| org.joget.apps.form.dao.FormDataDaoImpl | load | java.lang.String, java.lang.String, java.lang.String | formDefId, tableName, primaryKey | org.joget.apps.form.model.FormRow |
| org.joget.apps.form.dao.FormDataDaoImpl | loadWithoutTransaction | org.joget.apps.form.model.Form, java.lang.String | form, primaryKey | org.joget.apps.form.model.FormRow |
| org.joget.apps.form.dao.FormDataDaoImpl | loadWithoutTransaction | java.lang.String, java.lang.String, java.lang.String | formDefId, tableName, primaryKey | org.joget.apps.form.model.FormRow |
| org.joget.apps.form.dao.FormDataDaoImpl | saveOrUpdate | org.joget.apps.form.model.Form, org.joget.apps.form.model.FormRowSet | form, rowSet | void |

| | | | | |
|---|---|---|---|---|
| org.joget.apps.form.dao.FormDataDaoImpl | saveOrUpdate | java.lang.String, java.lang.String, org.joget.apps.form.model.FormRowSet | formDefId, tableName, rowSet | void |
| org.joget.apps.form.dao.FormDataDaoImpl | updateSchema | org.joget.apps.form.model.Form, org.joget.apps.form.model.FormRowSet | form, rowSet | void |
| org.joget.apps.form.dao.FormDataDaoImpl | updateSchema | java.lang.String, java.lang.String, org.joget.apps.form.model.FormRowSet | formDefId, tableName, rowSet | void |

## Organization Chart Related Events

| Class | Method | ParamTypes | Params (Args) | Return |
|---|---|---|---|---|
| org.joget.apps.app.web.SessionListener | logout | java.lang.String | username | boolean |
| org.joget.apps.workflow.security.WorkflowAuthenticationProvider | authenticate | java.lang.String | username | boolean |
| org.joget.apps.workflow.security.WorkflowHttpAuthProcessingFilter | authenticate | java.lang.String | username | boolean |
| org.joget.directory.dao.DepartmentDaoImpl | addDepartment | org.joget.directory.model.Department | department | java.lang.Boolean |
| org.joget.directory.dao.DepartmentDaoImpl | countDepartments | java.lang.String, java.lang.Object[] | condition, params | java.lang.Long |
| org.joget.directory.dao.DepartmentDaoImpl | deleteDepartment | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.DepartmentDaoImpl | findDepartments | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | condition, params, sort, desc, start, rows | java.util.Collection<org.joget.directory.model.Department> |
| org.joget.directory.dao.DepartmentDaoImpl | updateDepartment | org.joget.directory.model.Department | department | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | addEmployment | org.joget.directory.model.Employment | employment | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | assignUserAsDepartmentHOD | java.lang.String, java.lang.String | userId, departmentId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | assignUserReportTo | java.lang.String, java.lang.String | userId, reportToUserId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | assignUserToDepartment | java.lang.String, java.lang.String | userId, departmentId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | assignUserToGrade | java.lang.String, java.lang.String | userId, gradeId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | assignUserToOrganization | java.lang.String, java.lang.String | userId, organizationId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | countEmployments | java.lang.String, java.lang.Object[] | condition, params | java.lang.Long |
| org.joget.directory.dao.EmploymentDaoImpl | deleteEmployment | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | findEmployments | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | condition, params, sort, desc, start, rows | java.util.Collection<org.joget.directory.model.Employment> |
| org.joget.directory.dao.EmploymentDaoImpl | unassignUserAsDepartmentHOD | java.lang.String, java.lang.String | userId, departmentId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | updateEmployment | org.joget.directory.model.Employment | employment | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | unassignUserFromDepartment | java.lang.String, java.lang.String | userId, departmentId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | unassignUserFromGrade | java.lang.String, java.lang.String | userId, gradeId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | unassignUserFromOrganization | java.lang.String, java.lang.String | userId, organizationId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentDaoImpl | unassignUserReportTo | java.lang.String | userId | java.lang.Boolean |
| org.joget.directory.dao.EmploymentReportToDaoImpl | addEmploymentReportTo | org.joget.directory.model.EmploymentReportTo | reportTo | java.lang.Boolean |
| org.joget.directory.dao.EmploymentReportToDaoImpl | deleteEmploymentReportTo | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.EmploymentReportToDaoImpl | updateEmploymentReportTo | org.joget.directory.model.EmploymentReportTo | reportTo | java.lang.Boolean |
| org.joget.directory.dao.GradeDaoImpl | addGrade | org.joget.directory.model.Grade | grade | java.lang.Boolean |
| org.joget.directory.dao.GradeDaoImpl | countGrades | java.lang.String, java.lang.Object[] | condition, params | java.lang.Long |
| org.joget.directory.dao.GradeDaoImpl | deleteGrade | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.GradeDaoImpl | findGrades | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | condition, params, sort, desc, start, rows | java.util.Collection<org.joget.directory.model.Grade> |

| | | | | |
|---|---|---|---|---|
| org.joget.directory.dao.GradeDaoImpl | updateGrade | org.joget.directory.model.Grade | grade | java.lang.Boolean |
| org.joget.directory.dao.GroupDaoImpl | addGroup | org.joget.directory.model.Group | group | java.lang.Boolean |
| org.joget.directory.dao.GroupDaoImpl | countGroups | java.lang.String, java.lang.Object[] | condition, params | java.lang.Long |
| org.joget.directory.dao.GroupDaoImpl | deleteGroup | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.GroupDaoImpl | findGroups | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | condition, params, sort, desc, start, rows | java.util.Collection<org.joget.directory.model.Group> |
| org.joget.directory.dao.GroupDaoImpl | updateGroup | org.joget.directory.model.Group | group | java.lang.Boolean |
| org.joget.directory.dao.OrganizationDaoImpl | addOrganization | org.joget.directory.model.Organization | organization | java.lang.Boolean |
| org.joget.directory.dao.OrganizationDaoImpl | countOrganizations | java.lang.String, java.lang.Object[] | condition, params | java.lang.Long |
| org.joget.directory.dao.OrganizationDaoImpl | deleteOrganization | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.OrganizationDaoImpl | findOrganizations | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | condition, params, sort, desc, start, rows | java.util.Collection<org.joget.directory.model.Organization> |
| org.joget.directory.dao.OrganizationDaoImpl | updateOrganization | org.joget.directory.model.Organization | organization | java.lang.Boolean |
| org.joget.directory.dao.RoleDaoImpl | addRole | org.joget.directory.model.Role | role | java.lang.Boolean |
| org.joget.directory.dao.RoleDaoImpl | countRoles | java.lang.String, java.lang.Object[] | condition, params | java.lang.Long |
| org.joget.directory.dao.RoleDaoImpl | deleteRole | java.lang.String | id | java.lang.Boolean |
| org.joget.directory.dao.RoleDaoImpl | findRoles | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | condition, params, sort, desc, start, rows | java.util.Collection<org.joget.directory.model.Role> |
| org.joget.directory.dao.RoleDaoImpl | updateRole | org.joget.directory.model.Role | role | java.lang.Boolean |
| org.joget.directory.dao.UserDaoImpl | addUser | org.joget.directory.model.User | user | java.lang.Boolean |
| org.joget.directory.dao.UserDaoImpl | assignUserToGroup | java.lang.String, java.lang.String | username, groupId | java.lang.Boolean |
| org.joget.directory.dao.UserDaoImpl | countUsers | java.lang.String, java.lang.Object[] | | java.lang.Long |
| org.joget.directory.dao.UserDaoImpl | deleteUser | java.lang.String | username | java.lang.Boolean |
| org.joget.directory.dao.UserDaoImpl | findUsers | java.lang.String, java.lang.Object[], java.lang.String, java.lang.Boolean, java.lang.Integer, java.lang.Integer | | java.util.Collection<org.joget.directory.model.User> |
| org.joget.directory.dao.UserDaoImpl | unassignUserFromGroup | java.lang.String, java.lang.String | username, groupId | java.lang.Boolean |
| org.joget.directory.dao.UserDaoImpl | updateUser | org.joget.directory.model.User | user | java.lang.Boolean |
| org.joget.directory.dao.UserDaoImpl | updateUserEmploymentInfo | java.lang.String, org.joget.directory.model.Employment | username, info | java.lang.Boolean |

## Plugin Properties Options

- Please refer to Plugin Properties Options for more information.

## Tutorials

- Guideline for developing a plugin
- How to develop a Slack Notification plugin

## Related Community Plugins

- **Process Data Collector**
  org.joget.apps.app.lib.ProcessDataCollectorAuditTrail (wflow-core)
- **User Notification**
  org.joget.apps.app.lib.UserNotificationAuditTrail (wflow-core)