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### EFC Audit

### Introduction

Audit trail will be enabled in database and API level. All change requests will be recorded in database with user details and time value.

Create a database for storing Audit details. Say the database EFCAudit, and create a table called AuditLogs with fields Id, data (content is an xml file which contain username, time and action carried out ie Added/Modified, Current value and original value) and Time (When changes done). An example for the generated xml file is as follows: The user named exp performed a modification operation on database ie changed the FirstName TestUpdate2 the original value to TestUpdate3 the new value on the date 11-03-2015 at 16.44.

#### Sample XML

<audit

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.tempuri.org/ef/audit/2.0">

<username>exp</username> 🡪> Performed by which User

<date>2015-03-11T16:44:17.8670164+05:30</date> 🡪 Date and time on which the event fired

<entities>

<entity>

<action>Modified</action> 🡪>Type of Action Performed

<type>EFC.Sample.Auditing.Services.Data.EmployeeData</type>

<keys>

<key>

<name>Id</name>

<type>System.Int32</type>

<value xsi:type="xsd:int">1</value>

</key>

</keys>

<properties>

<property>

<name>FirstName</name>

<type>System.String</type>

<current xsi:type="xsd:string">Testupdate3</current> 🡪>Notified the Current value

<original xsi:type="xsd:string">Testupdate2</original> 🡪>Notified the Original value

</property>

</properties>

</entity>

</entities>

</audit>

### Configuration Part:

1. Set the Connection String to gain access to data sources. Provide the Data Source name ie address of instance of SQL Server to which to connect. Set the Initial Catalog as your audit database name. ie EFCAudit. If SQL Server is Windows Authenticated then no username and password, if it is SQL Server authenticated then provide username and password.

<instance type="string" name="AuditModelContainer" value="metadata=res://\*/Logging.Data.AuditModel.csdl|res://\*/Logging.Data.AuditModel.ssdl|res://\*/Logging.Data.AuditModel.msl;provider=System.Data.SqlClient;provider connection string=&quot;data source=.\SQLEXPRESS;initial catalog=EFCAudit;integrated security=True;MultipleActiveResultSets=True;App=EntityFramework&quot;" />

1. Set the flag instance type as bool and value to **True**, if the value is false then auditing will not perform.

<instance type="bool" name="IsAuditEnabled" value="true"/>

This will provide the information about auditing is globally on or off.

1. Do the Audit service mapping

<type type=" EFC.Components.Logging.IAuditService, EFC.Components" mapTo="EFC.Common.Service.AuditService, EFC.Common.Service" />

EFC is the Auditing Repository base class.

### Services Part:

1. Create Partial Class for the Tables ie EmployeeData entity.
2. Create an Interface in Services. Contracts say IEmployeeService which have an Add() method.
3. In the Application Service provide the definition for Add() method. It have a SaveChangesWithAudit() method call. This call is to avoid selective add. This call will hook up with the save changes.

public EmployeeData AddEmployee(EmployeeData employee)

{

var added = EmployeeDataRepository.Add(employee);

this.SaveChangesWithAudit();

return added;

}

1. Program’s Entry point is at **AuditTrailBootstrapper**.

AuditTrailBootStrapper.Initialize();

AuditTrailBootstrapper is a class with a static method called **Initialize**().