
EntityFramework.Guardian Documentation

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EntityFramework.Guardian is a extension point for Entity Framework DbContext in order to implement Database Security by hooking database operations.

It enables the following features in your applications:

Build-in Interfaces

Build-in entity interfaces for implementing database security

Database Operations Hooking system

Centralized mechanism for hooking database operations

General Security

Restrict/grant access by entity type and access type*

Row-Level Security

Restrict/grant access by row identifier and access type*

Column-Level Security

Restrict/grant access by column names and access type*

Customization

Many aspect of EntityFrameowrk.Guardian can be customized to fit **your** needs.

access types : *get, add, update, delete*

6.1 Big Picture

6.1.1 What is problem?

In some kind of applications we need to restrict access to specific tables and/or rows and/or columns based on some context (e.g. User Permissions, Application Permissions and so on).

And there is no build-in way or some kind of library to implement such kind of things in **application layer**.

6.1.2 How we solve this?

We introduce EntityFramework.Guardian. This solution allows you to implement database security in easy and **right** way.

Guardian introduces access types:

Also Guardian introduces set of interfaces for implementing entitites that are presenting permissions that are linked to entity type, row and columns.

Here is simple entity interface that presents permission that is linked to entity type.

Guardian set two guards for Modifing and Retrieving operations:

- Retrieve (*get*) guard is set in ObjectContext.ObjectMaterialized event.
- Modify (*add, update, delete*) guard is set in ObjectContext.SavingChanges event.

General part of guardian is *GuardianKernel*. This object holds following components:

- *Guards* - ModifyGuard and RetrieveGuard, these guards invoke defined policies
- *Policies* - Policies define set of rules to be applied to entities and permissions
- PermissionsService - Service for retrieving general and row level permissions.
- EntityKeyProvider - Service for returning string representation of passed entity identificator

All these components are configurable.

6.2 Installation

Guardian is separated in two packages:

- **EntityFramework.Guardian** - include everything needed for guardian (including dependency to EntityFramework.Guardian.Entities)
- **EntityFramework.Guardian.Entities** - include all permission entity interfaces

Install [NuGet Guardian package](#) from Package Manager Console:

```
PM> Install-Package EntityFramework.Guardian
```

If you want only interfaces of permission entities (in case your entities are in separate project) you can install [NuGet Entities package](#) from Package Manager Console:

```
PM> Install-Package EntityFramework.Guardian.Entities
```

It includes only interfaces to permission entities.

6.3 Configuration

6.4 Guardian Kernel

6.5 Hooking System

6.6 Guards

6.7 Policies

6.8 Misc