Field Permissions (v1.0)

By Olaf Nöhring
https://datenbank-projekt.de
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As AppGini (AG) in the current version 5.81 does not support field specific permissions, I decided to make a start.

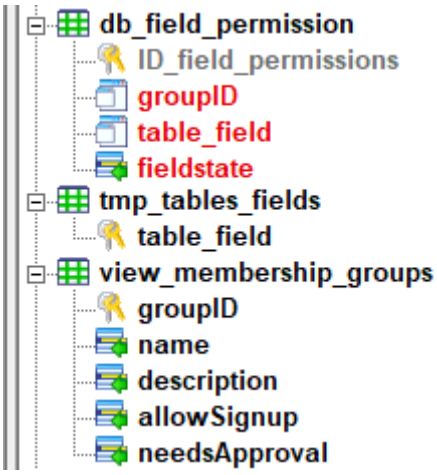
The following describes, how to implement field specific permissions in your own AG application. You can easily LOCK and HIDE fields for specific usergroups. Single users are not supported at this time.

Installation time: approx. 30 minutes (my guess)

This solution implements a frontend hiding and locking as well as a backend checking. If a users tries to cheat and fiddles around in the code of the page to change values he actually does not have access to (hidden/locked fields) the attempt to save the changes will fail.
Keep in mind, that certain fields might be autoupdated by your AG application (editingTimestamp, editorUsername). Make sure these fields are not locked/hidden from a user, otherwise he will not be able to change a record!

Important: This Field Permissions extension requires AppGini Helper! You need to buy AppGini Helper which can be obtained for small money from
https://www.bizzworxx.de/en/appgini-helper/
I decided to use Appgini Helper as it is a great script which supports all field types of AppGini and provides many new features to AppGini (AG Forum). Please take a look and support Jan Setzer (jsetzer) who is the programmer and great supporter of all users in the AppGini forum.

The following steps describe what to do. Your AG application will be extended by two tables and a view:



Step 1

Place the following files in your /hooks folder:

```
field_permission_base.php

field_permission_functions.php

field_permission_tmp.php
```

Step 2

Open the **each table where you want to use field permissions** in an editor and make the following adjustments in each table:

Step 2.1

Search for the ... **_init** function in that table.
Add this after the beginning of the function:

```
//Field Permissions Code
$_SESSION['field_permission_tablenam'] = $options->TableName;   //Field-
Permissions - for frontend check (and backend check)
$_SESSION['field_permission_tableID'] = $options->PrimaryKey;   //Field-
Permissions - backend check
```

Step 2.2a

Search for the ... **_footer** function in that table.
Look for the `switch ($contentType) {` command.
Above this `switch` add the command to include the code that locks and hides your fields.

```
//Field Permissions Code
include("hooks/field_permission_base.php");
```

Step 2.2b

In the `switch` you will find several `case` commands. You will probably want to make adjustments in the *tableview*, *detailview* and *tableview+detailview*: Give the variable $extraJS_field_permission back in your footer like this:

```
$footer = $extraJS_field_permission;
```

or, if you already have something there, you might want to concat it:

```
$footer = $extraJS_field_permission . $NoRecordSelectors . '<%%FOOTER%%>';
```

Step 2.3

Search for the ... **_before_update** function in that table (you might like to do this also in the _before_insert function, but be sure to check if your application still allows adding new records).
Add the following code **above** the `return $myReturnValue;` at the end of the function:

```
//Field-Permissions (Backend)
if ($myReturnValue === TRUE) {
      $myReturnValue = check_BE_field_permissions($data, $memberInfo, $_SESSI
ON['field_permission_tablenam'], $_SESSION['field_permission_tableID']);
}
```

Step 3

3.1 Create a VIEW in your database

Open your favorite MySQL tool (phpmyadmin, adminer) and run this SQL to create a view that is needed in the next step:

```
CREATE VIEW view_membership_groups AS SELECT * FROM membership_groups
```

Open your application in AG and create new tables (Step 3.2):

3.2 We need a “pseudo” table named view_membership_groups.

I am talking about pseudo because we have already created a view in the database with this name. Thus, when generating the application and running it the next time that table can not be created – “it” exists. But now we can use this pseudo table as source for a lookup field. So, go ahead and create such a table named **view_membership_groups** in AG.
Create the following fields in that table:

groupID (Integer, PK)

name (VarChar, Length 50, unique)

description (Rich (HTML area))

allowSignup (VarChar, Length 50)

needsApproval (VarChar, Length 50)

3.3 We need a temporary table which holds some values for later lookup (in the next table you will create):

Create a table named **tmp_tables_fields**
Add one field to that table:

table_field (VarChar, Length 200, PrimaryKey)

3.4 Now we need to create the table to define field permissions

Create a table **db_field_permission**
Add these fields:

ID_field_permissions (Integer, ReadOnly; PrimaryKey, AutoIncrement)

groupID (Integer, VarChar)

table_field (VarChar, Length 200, Required). Set this to **Lookup Field**! Choose as *Parent table* **tmp_tables_fields** and as *Parent caption field part 1* **table_field**.

fieldstate (VarChar, 50, Required). Set this to **Option List** and enter this as *List values*: **locked;;hidden**

Step 4

Generate once, so that the files in the hooks-folder will be created.

Step 5

Adjust /hooks/db_field_permission.php (created by generating your code)

Step 5.1

Open the file and add **directly after the opening** with **<?php** this code:

```
//Field Permissions Code
if (!function_exists('fill_tmp_tables_fields')) {
  include("hooks/field_permission_tmp.php");
}
```

This way we make sure the list of tables and fields you can choose from in this table is always regenerated when this file is accessed.

Step 5.2

Look for the function ..._**init** and

before the line `return TRUE;` add this line of code:

```
fill_tmp_tables_fields();
```

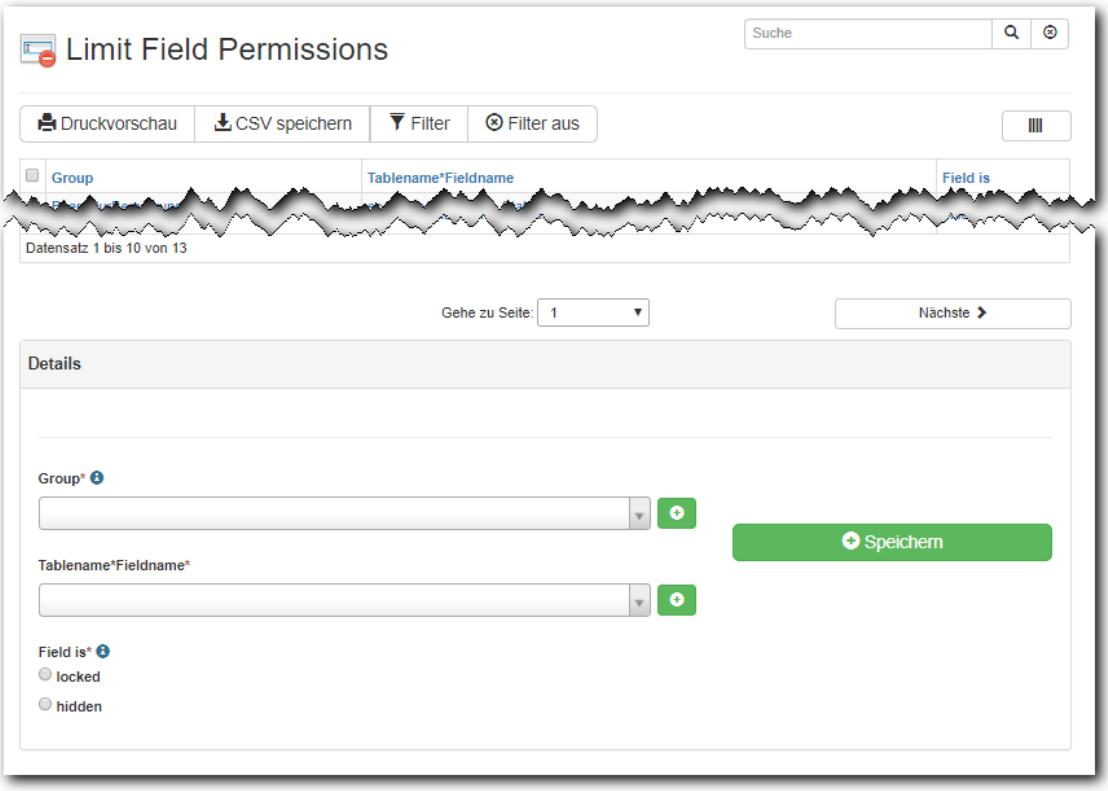
Extra Tip

You might want to set some index in your table using phpmyadmin or adminer: It's nice to have UNIQUE KEY for the combination of *groupID* and *table_field*.

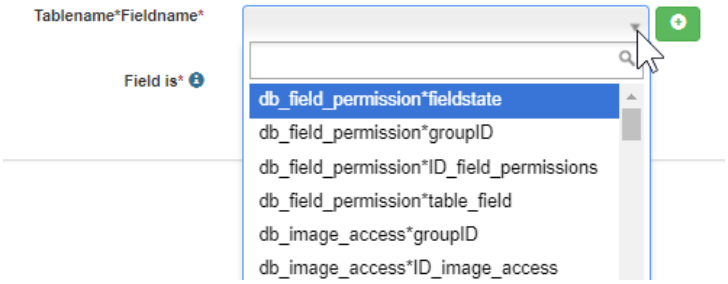
Ready Set Go

Now you should be ready to roll.

Now open your application and go to the db_field_permission table. It should look somehow like this:



The two lookup/dropdown fields give you access to all groups in your database and to all tables with all fields (format: tablename*fieldname).



You can simply choose the group whos access permissions you want to limit on a field basis. This assumes, that the groups actually have access to the tables where you limit field access to: If a group can not see a table you do not need to set anything. If a group can see, but not edit, you might want to set fields to hidden. If a group can not edit a table (AG admin settings) the group will not have this possibility at all – it does not matter what you set here.

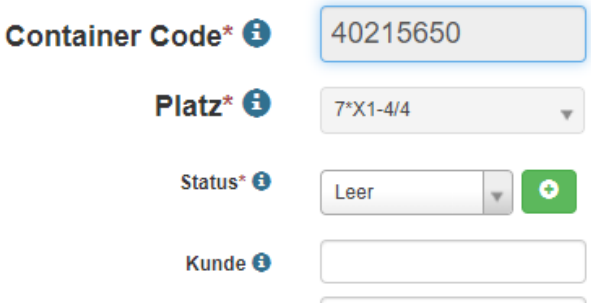
PS: The tablename*fieldname lookup list will be recreated everytime you access this table.

In Action

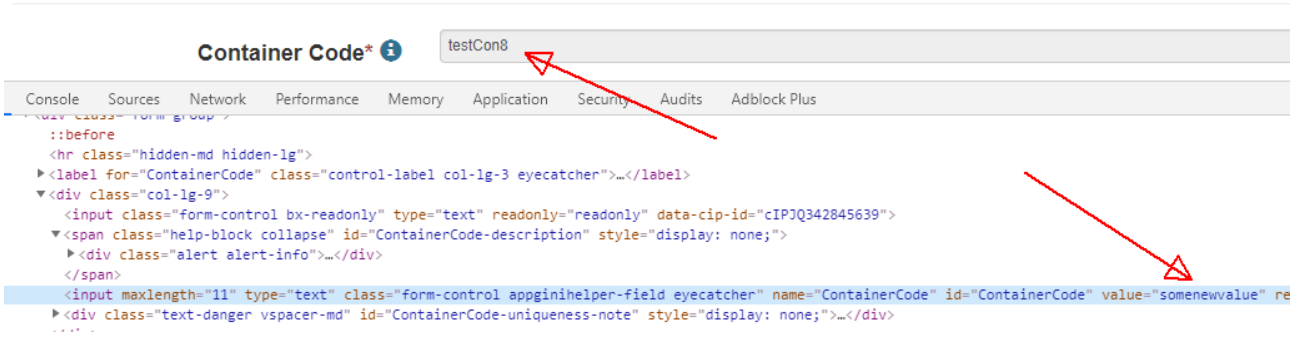
When the users opens a table (where his/her group has edit permissions to) the script will adjust the field display according to the settings made by you.

Note: All lookup fields will be locked once Ajax has finished.

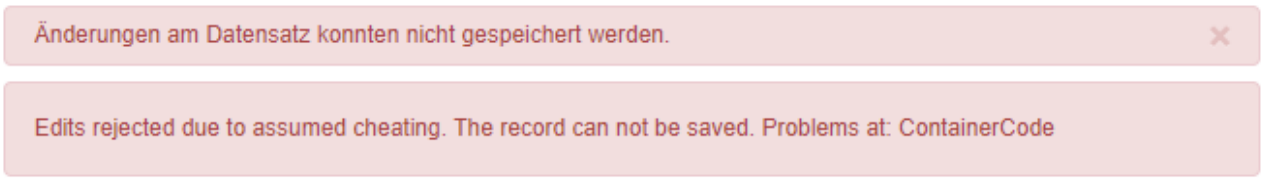
It looks like this: Container Code is locked, so is Platz, Status and Kunde have no extra permissions set.



If the users tries to cheat, the save edits command will not work. See next image: locked value of Container Code is *testCon8*, but the users tries to set it to *somenewvalue*.



If you want to have a custom error message, if the users tries to cheat on some hidden/locked values, please check my solution here https://forums.appgini.com/phpbb/viewtopic.php?f=7&t=1740&p=10906#p10906 . The first message is a basic AG message telling us, the record could not be changed. The Field-Permissions add-on will already generate a custom error message like the second, listing unexpected fields. Without my custom error forum post, this second message would not be displayed, only the first would.



Additional information: SQL for the table(s) and view(s)

```
SET NAMES utf8;
SET time_zone = '+00:00';
SET foreign_key_checks = 0;
SET sql_mode = 'NO_AUTO_VALUE_ON_ZERO';

DROP TABLE IF EXISTS `db_field_permission`;
CREATE TABLE `db_field_permission` (
  `ID_field_permissions` int(11) NOT NULL AUTO_INCREMENT,
  `groupID` int(11) NOT NULL,
  `table_field` varchar(200) NOT NULL,
  `fieldstate` varchar(50) NOT NULL DEFAULT 'No',
  PRIMARY KEY (`ID_field_permissions`),
  UNIQUE KEY `komni_groupID_table_field` (`groupID`,`table_field`),
  KEY `groupID` (`groupID`),
  KEY `table_field` (`table_field`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;


DROP TABLE IF EXISTS `tmp_tables_fields`;
CREATE TABLE `tmp_tables_fields` (
  `table_field` varchar(200) NOT NULL,
  PRIMARY KEY (`table_field`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;


DROP VIEW IF EXISTS `view_membership_groups`;
CREATE TABLE `view_membership_groups` (`groupID` int(10) unsigned, `name`
varchar(100), `description` text, `allowSignup` tinyint(4), `needsApproval`
tinyint(4));


DROP TABLE IF EXISTS `view_membership_groups`;
CREATE ALGORITHM=UNDEFINED SQL SECURITY DEFINER VIEW `view_membership_groups` AS
select `membership_groups`.`groupID` AS `groupID`,`membership_groups`.`name` AS
`name`,`membership_groups`.`description` AS
`description`,`membership_groups`.`allowSignup` AS
`allowSignup`,`membership_groups`.`needsApproval` AS `needsApproval` from
`membership_groups`;
```