# GRIN-Global – Administrator Webinar

Session 5 Topics:

Searches (cont'd)

Security / Ownership / Permissions

Triggers

martin reisinger, instructor

# Review

- Questions regarding any topics covered in the Previous Sessions

  - ???
  - Data view editing???
  - Table mapping???

# Indexed Searches
...what does the Search Engine (SE) Search?

C.  Words are also checked in any *full-text indexes*

   The DBA can index any text field, usually large fields such as Note fields

   The GG table **sys.fulltext.indexes** lists these fields

# How would you know what fields are indexed?

```
SELECT DISTINCT
    object_name(fic.[object_id])as
table_name,
    [name]
FROM
    sys.fulltext_index_columns fic
    INNER JOIN sys.columns c
        ON c.[object_id] = fic.[object_id]
        AND c.[column_id] = fic.[column_id]
```

# Example:  Fields Indexed at USDA GG

Showing 1 to 10 of 10 entries

| table_name ▲ | name |
|---|---|
| accession | note |
| accession_inv_name | plant_name |
| accession_ipr | ipr_number |
| accession_pedigree | description |
| accession_source | associated_species |
| accession_source | collector_verbatim_locality |
| accession_source | environment_description |
| taxonomy_common_name | name |
| taxonomy_common_name | simplified_name |
| taxonomy_species | name |

Showing 1 to 10 of 10 entries

# IW Quick Review

Use **Import Table Fields** –

A quick dump of the database fields & their default friendly names

# IW Quick  Review…   [CIP Crop Trait Wizard]

GRIN-Global Import Wizard v 1.10.3.0      — ☐ ✕

1. Choose Type of Data     2. **Specify Data**     3. View Results

localhost\sqlexpress     07 - Crop Trait (Characterization / Evaluation Descriptors)

*- Required Field     Load from file...

| | Crop * | Note | Category * | | Trait Name * | Trait Name | Trait Description | Is Peer Reviewed? * | Data Type * | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TOMATO | Contains data on ... | Environment... | ▼ | 24D | 2,4-D | TOLERANCE TO... | ☑ | Alpha/numeri... | ▼ |
| | TOMATO | Contains data on ... | Environment... | ▼ | 24D | 2,4-D | TOLERANCE TO... | ☑ | Alpha/numeri... | ▼ |
| | TOMATO | Contains data on ... | Production d... | ▼ | ACIDITY | TITRATABLE AC... | THE TITRATAB... | ☑ | Numeric des... | ▼ |
| | TOMATO | Contains data on ... | E... | ▼ | ALUMINUM | ALUMINUM SEN... | ALUMINUM CO... | ☑ | Alpha/numeri... | ▼ |
| | TOMATO | Contains data on ... | Production d... | ▼ | ASCORBACID | ASCORBIC ACID | AMOUNT OF AS... | ☑ | Numeric des... | ▼ |
| | TOMATO | Contains data on ... | Disease des... | ▼ | BACTCANKER | BACTERIAL CA... | RESISTANCE T... | ☑ | Alpha/numeri... | ▼ |
| | TOMATO | Contains data on ... | Disease des... | ▼ | BACTCANKER | BACTERIAL CA... | RESISTANCE T... | ☑ | Alpha/numeri... | ▼ |
| | TOMATO | Contains data on ... | Di... | | BACTSPECK | BACTERIAL SPE... | RESISTANCE T... | ☑ | Alpha/numeri... | |

Cancel        < Previous     Import

# Security Model

Two broad concepts must be understood:

1. ownership
2. permissions

# Security Model

Two broad concepts must be understood:

1. ownership
2. permissions

Also remember that the CT and the AT work in tandem

# Ownership:  It is true that…

- Every GG record has *only* **1 owner**

- In the CT, an owner can (A) transfer *ownership*

  (B) give *permission* to others to delete or update records
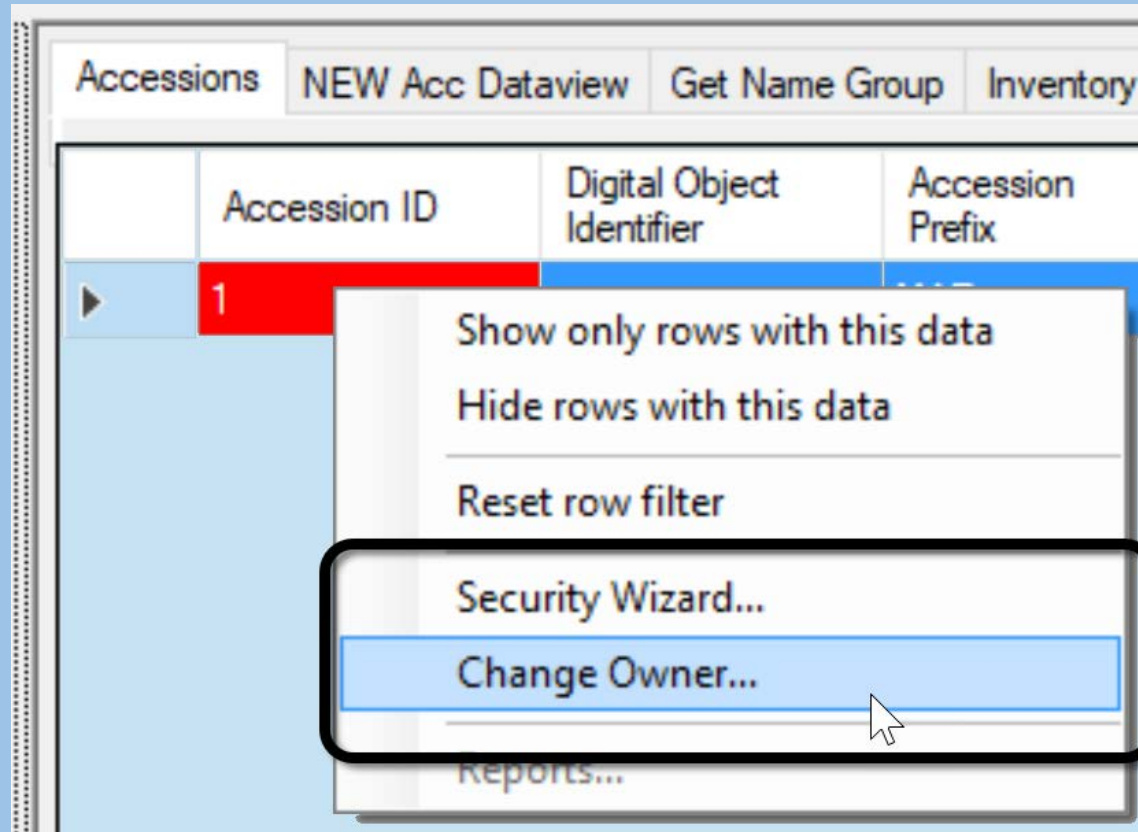


CT screen; user owns the highlighted record

# Ownership

Generally, in the CT, anyone can create a record in any table

*Usually the creator* becomes the owner &
the *only person* that can modify or update the record

# Ownership

The basic ownership model is that anyone can create a record in any table.

*Usually the creator* becomes the owner &
the *only person* that can modify or update the record.

…but *not always*.

# Ownership works in tandem with Permissions

Much of the security desired in GG may be set within the Curator Tool

…by the owner of the record,
     assigning *permissions* to other users

# CT Security Wizard



The user documentation is at
https://www.grin-global.org/docs/gg_security.docx

# Owners can also transfer ownership

# Ownership

However, some subsidiary tables have ownership that flows from a parent table.

Set up this way so that the owner of the important parent record would be able to also manage the subsidiary child tables

PARENT-OWNER

# Example: **accession action**'s owner is the owner of the related **accession** record

# Two examples where the user creates the record but does not own it

- crop observation records

- inventory records

# Crop Trait Observation

# Crop Trait Observation



When relationship type is "OWNER_PARENT," the record in the child table is owned by the owner of the parent record

# Inventory Records



The owner of the Maintenance Policy is the owner of the inventory record

# Why not have the Accession owner also own the Inventory record?

USDA set this up -- the owner of the Inventory Maintenance Policy owns the Inventory record,

so that their Ft. Collins site, where backup inventory is maintained, can control the respective inventory records at Ft. Collins

# Inventory Ownership – Can You Change This?

Yes

# Inventory Records



The owner of the Maintenance Policy is the owner of the inventory record

# via Table Mapping
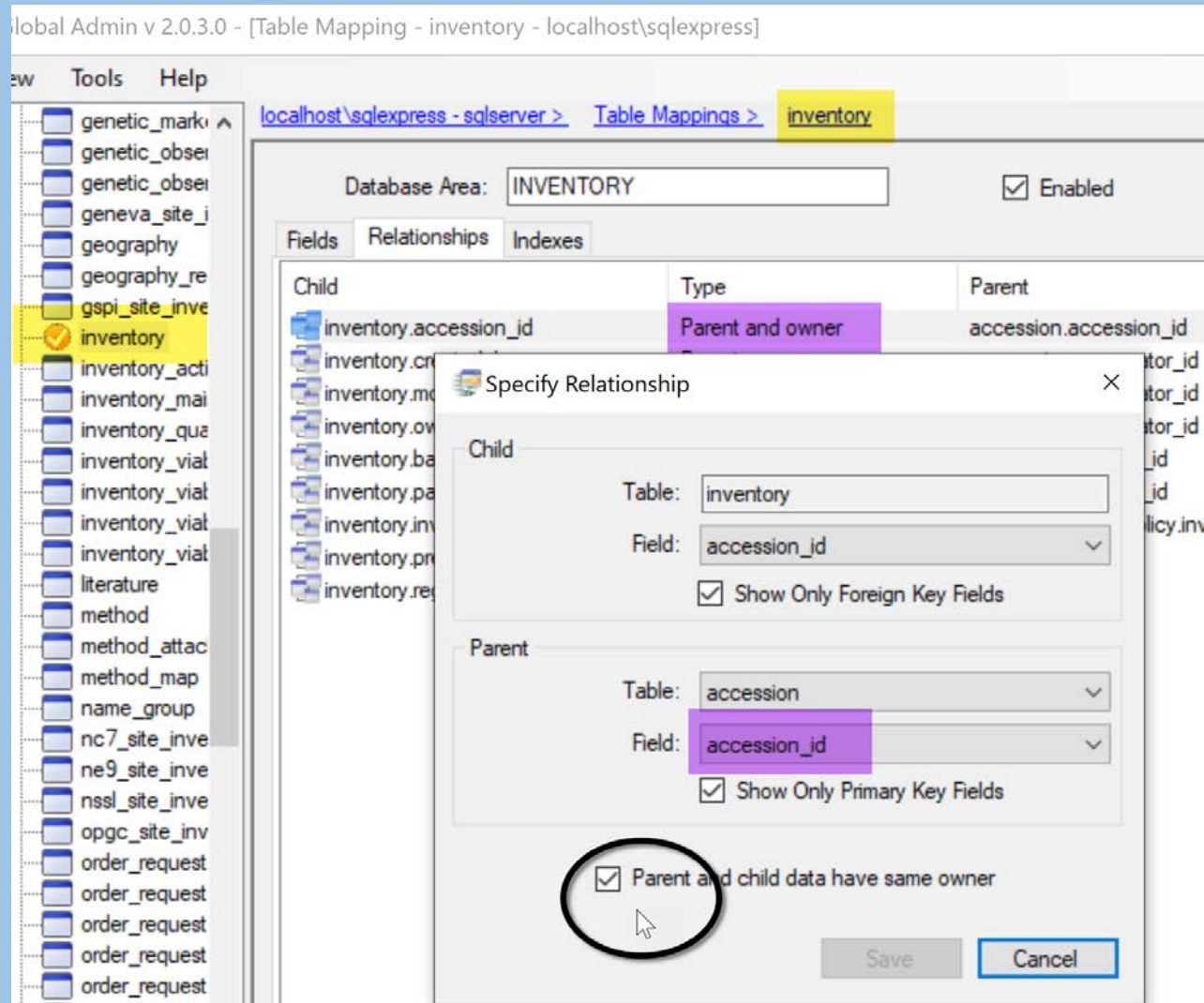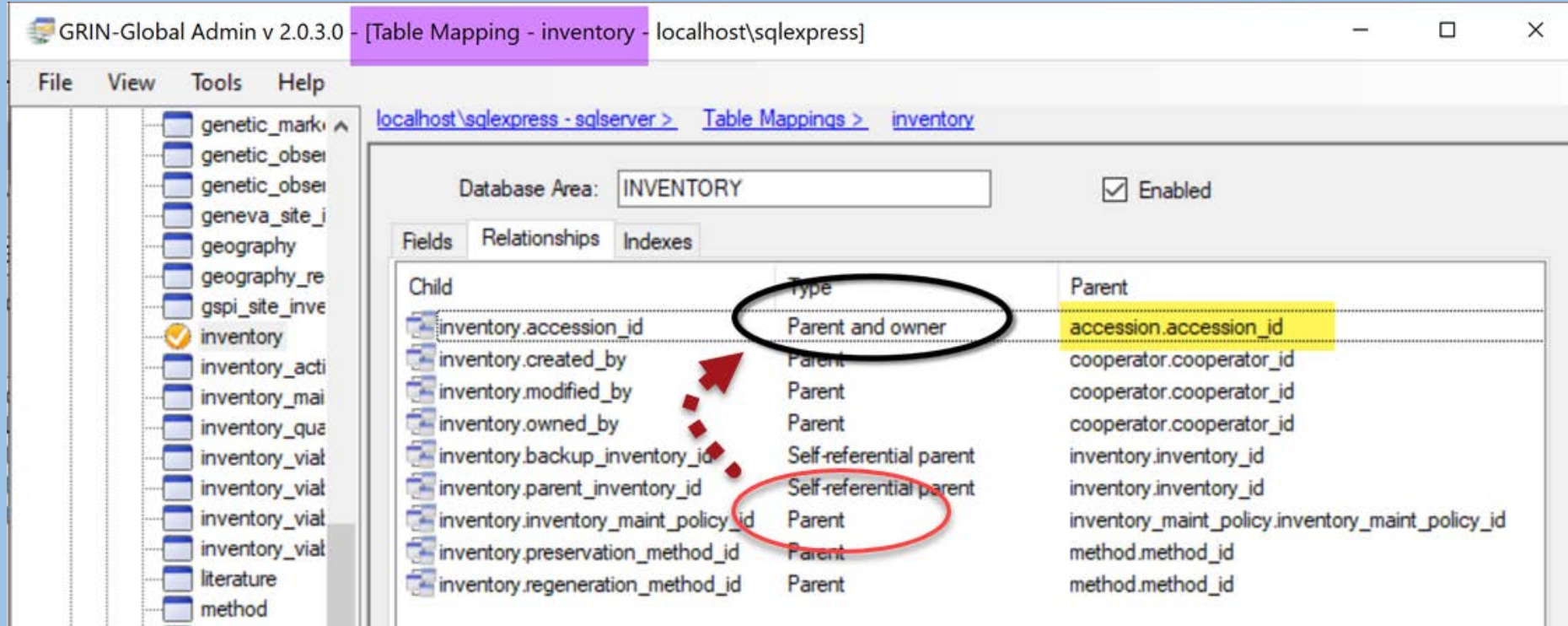
now the owner of the accession record
owns the inventory

New Inventory record is owned by the owner of the accession

# SQL for Listing OWNER-PARENT  Relationships

SELECT st1.table_name AS child, st2.table_name AS owner

FROM sys_table_relationship str

JOIN sys_table_field stf1 ON stf1.sys_table_field_id =  str.sys_table_field_id

JOIN sys_table st1 ON st1.sys_table_id = stf1.sys_table_id

JOIN sys_table_field stf2 ON stf2.sys_table_field_id = str.other_table_field_id

JOIN sys_table st2 ON st2.sys_table_id = stf2.sys_table_id
WHERE relationship_type_tag = 'OWNER_PARENT'

The OWNER-PARENT setting in the **sys_table_relationship** table indicates which table, if any, acts as the owning parent

# Can you change the Owner when the owner is no longer in the organization?

# Can you change the Owner when the owner is no longer in the organization?

Of course!

the Administrator is the ruler of the database

&  anyone in the Administrator Group

# Users, Groups, & Permissions

Permissions -- Who can do what to a record:

- Read
- Update
- Delete
- Create

# Users



2 users who should never be touched!

# Adding CT Users…

**Must complete…**
- User Name & Password

- Geography and Site codes

- Enabled (checkbox) allows CT login

- Active (checkbox) (if this user will be an active cooperator)

- Groups: CT Users

# Groups



The web application (Public Website) allows a user to be anonymous. That account is the "**guest**" account. It should never be a member of the **CT Users** or **Administrators** groups.

# Permissions – 2 types – created by:

1. fellow CT users for other CT users

2. the GG Admin

# Permissions Created by a User

Using the Curator Tool's Security Wizard…

    a record owner…

        defines access for records which she owns

            to other CT users

# CT Security Wizard



The user documentation is at

https://www.grin-global.org/docs/gg_security.docx

# Permissions Created by a User

Using the Curator Tool's Security Wizard…

a record owner…

defines access for records which she owns

to other CT users

CT user security policies are usually adequate for most of an organization's security needs

# Debugging: Permissions issues:
# Review Policies Created by Users

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# Review Policies Created by Users

# AT: Review Permission Policies Created by Users

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# System Permissions

Defined by the Administrator using the AT;

aren't restricted to rows owned by a single user

can allow rights to all rows in a table
(or even all tables)

can allow access to all rows owned by users from a
particular site

# Permissions, Groups, & Users

1. Create a permission
2. Create a group
   - assign permissions to the group
   - assign users to the group


- A permission can be used in multiple groups
- A group can have multiple permissions and multiple users
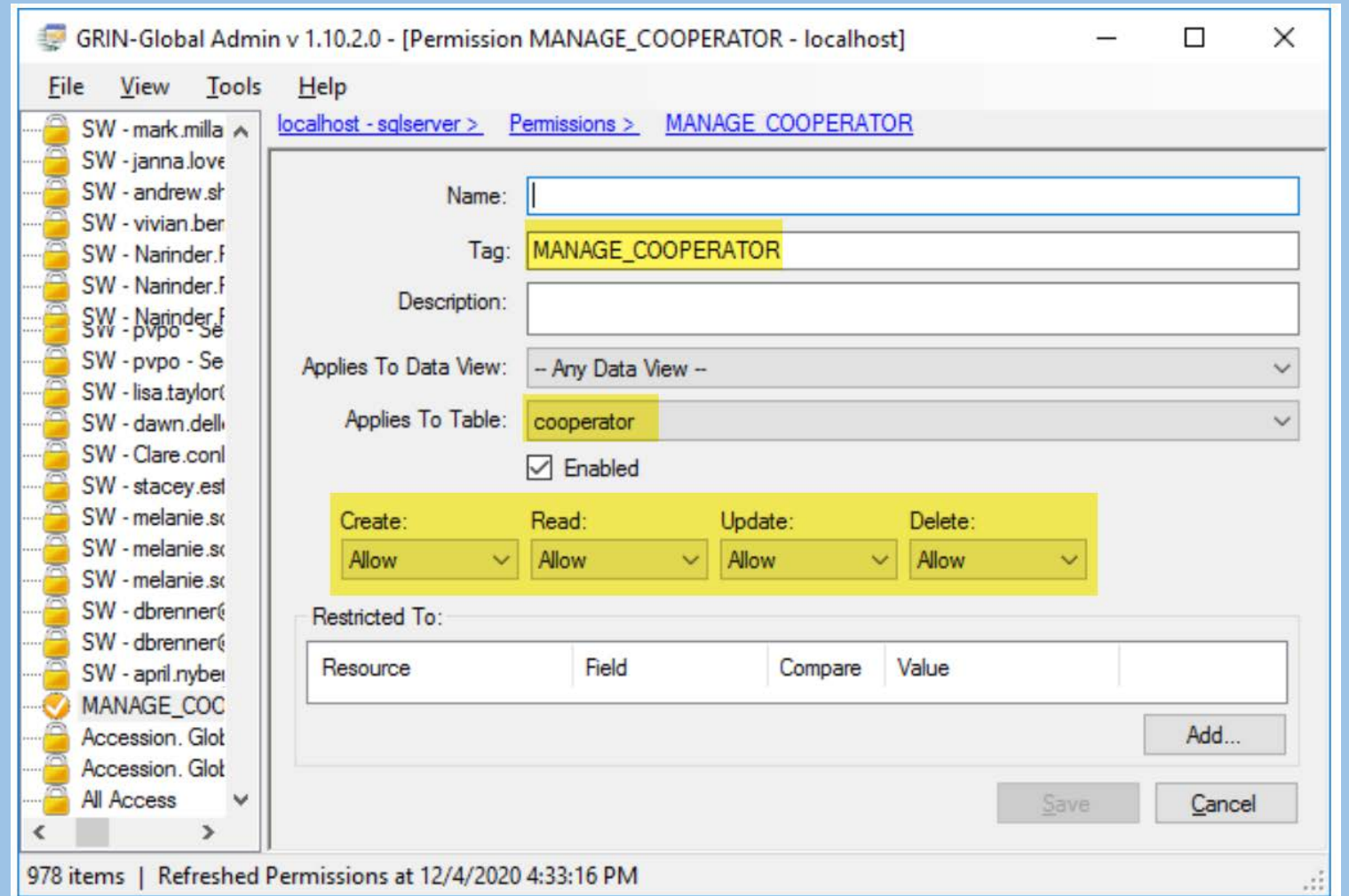
# Ex. 1: Allowing Access to a Table

The following permission allows complete access to the cooperator table:
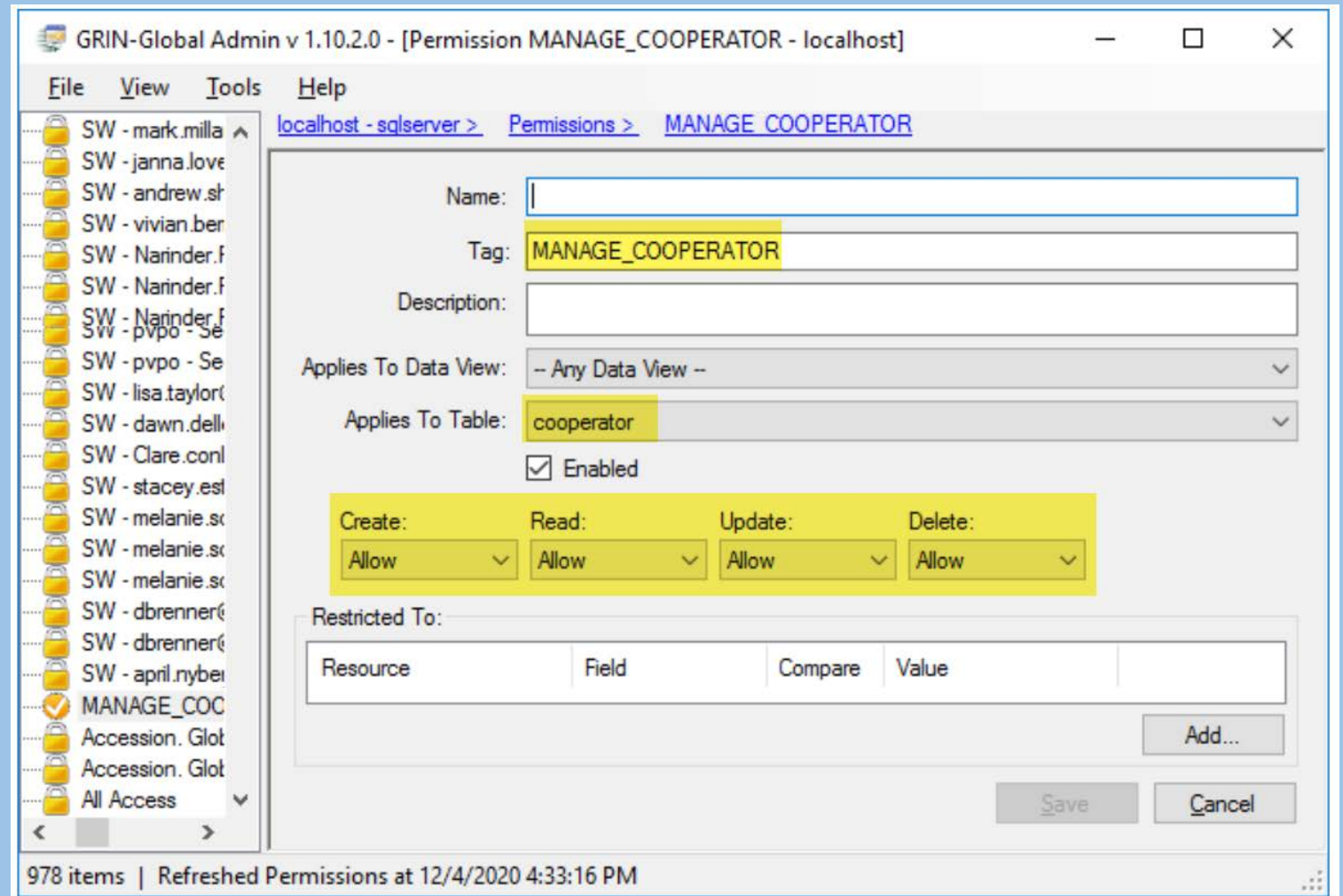
# Allowing Access to a Table

Key points:

- **Applies To Table:** field is set

- **Update** and **Delete** are allowed

- **Restricted To:** leave empty

# Allowing Access to a Table

Notes:

- the setting "**Data View**" isn't supported

- **Name** & **Description** are optional, but help document your permissions

- leave the **Enabled** checkbox *enabled*
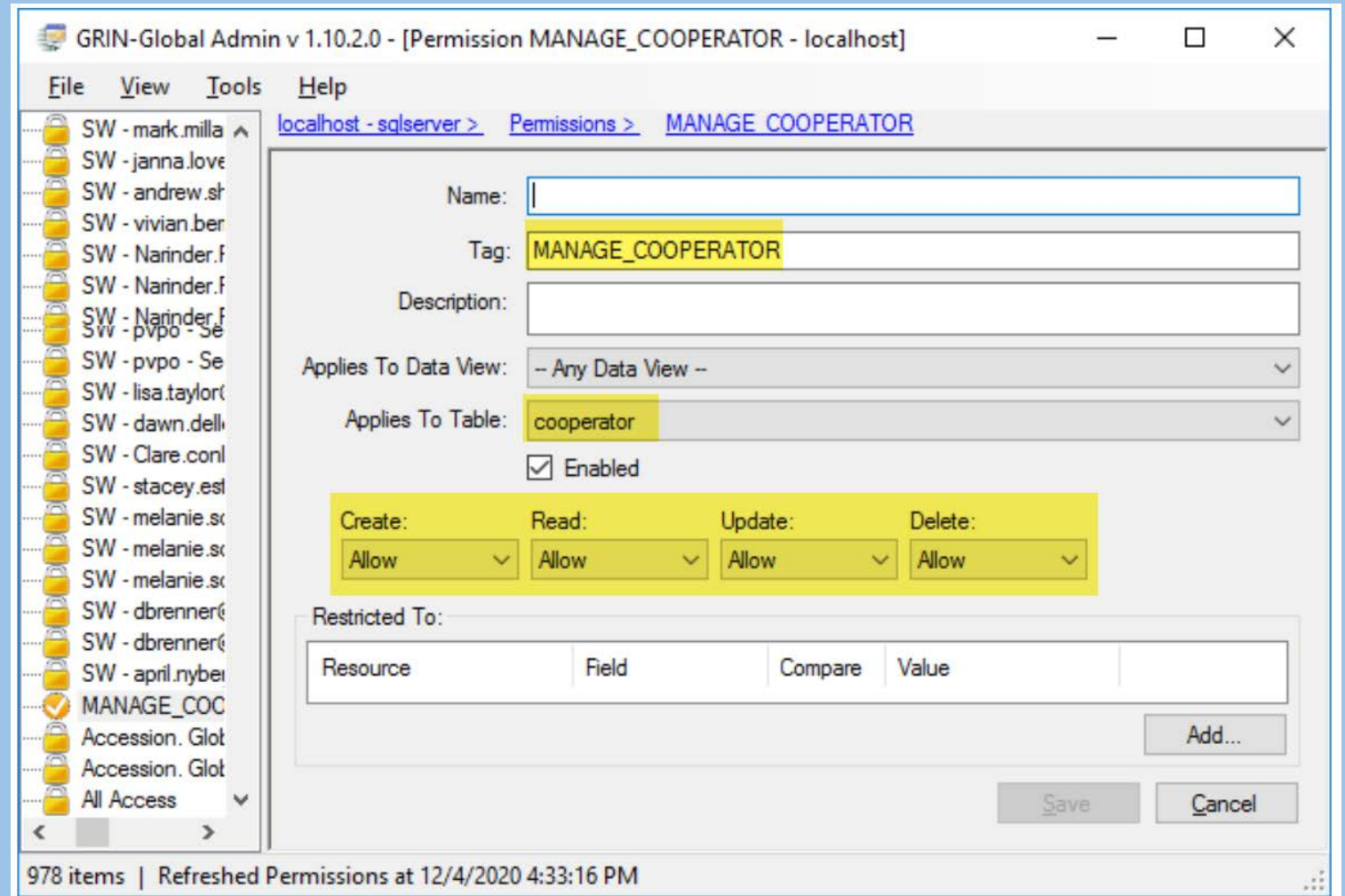
# Ex. 2: Allowing all access for a site's records

# Steps: New permission… select the site table

# Steps… add the restriction for the site_id

# Steps… change **Applies To -- Any Table –** Edit the **Update / Delete** permissions ; Save

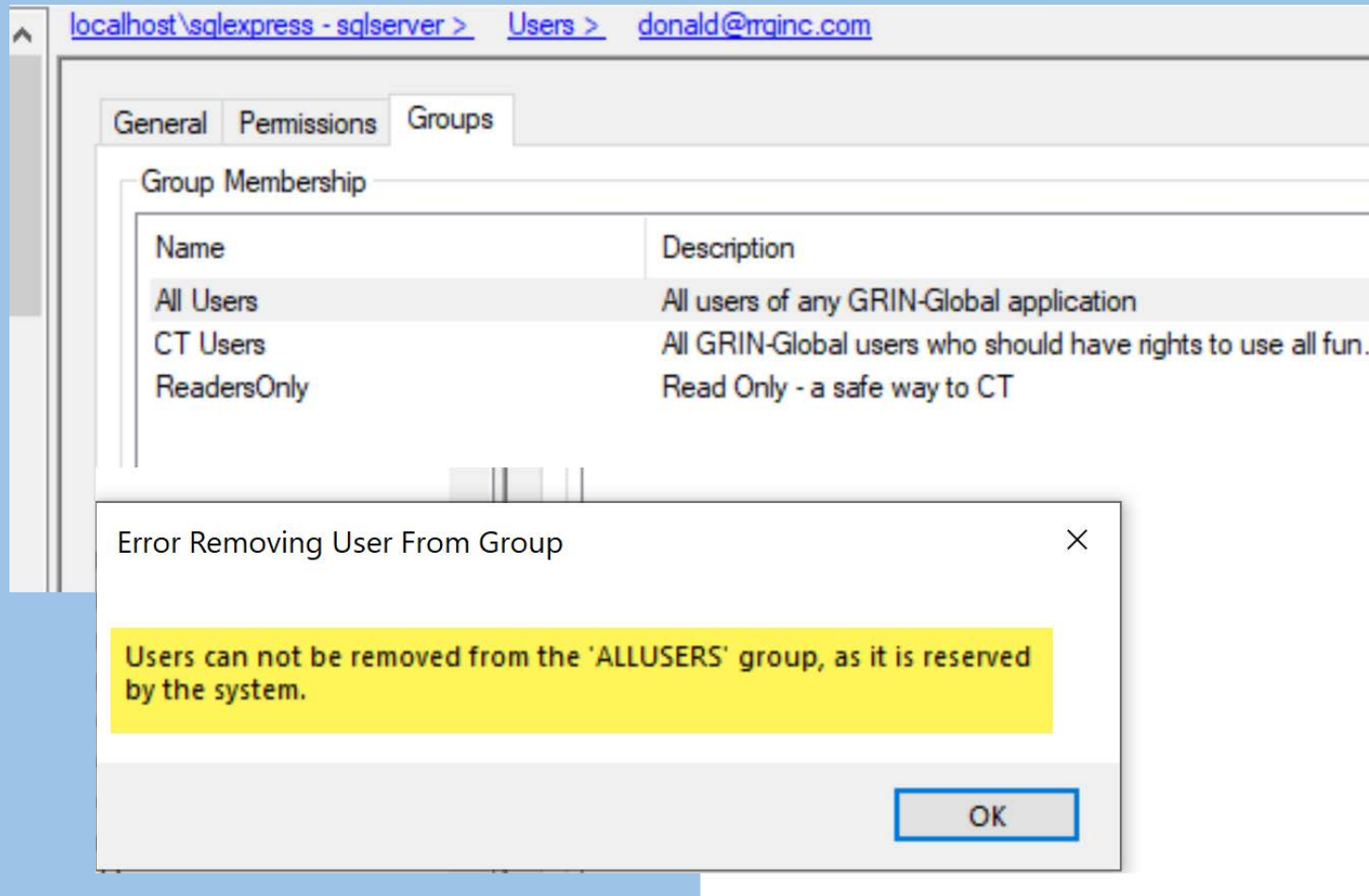# Ex. 3: Read Permission Only for Users
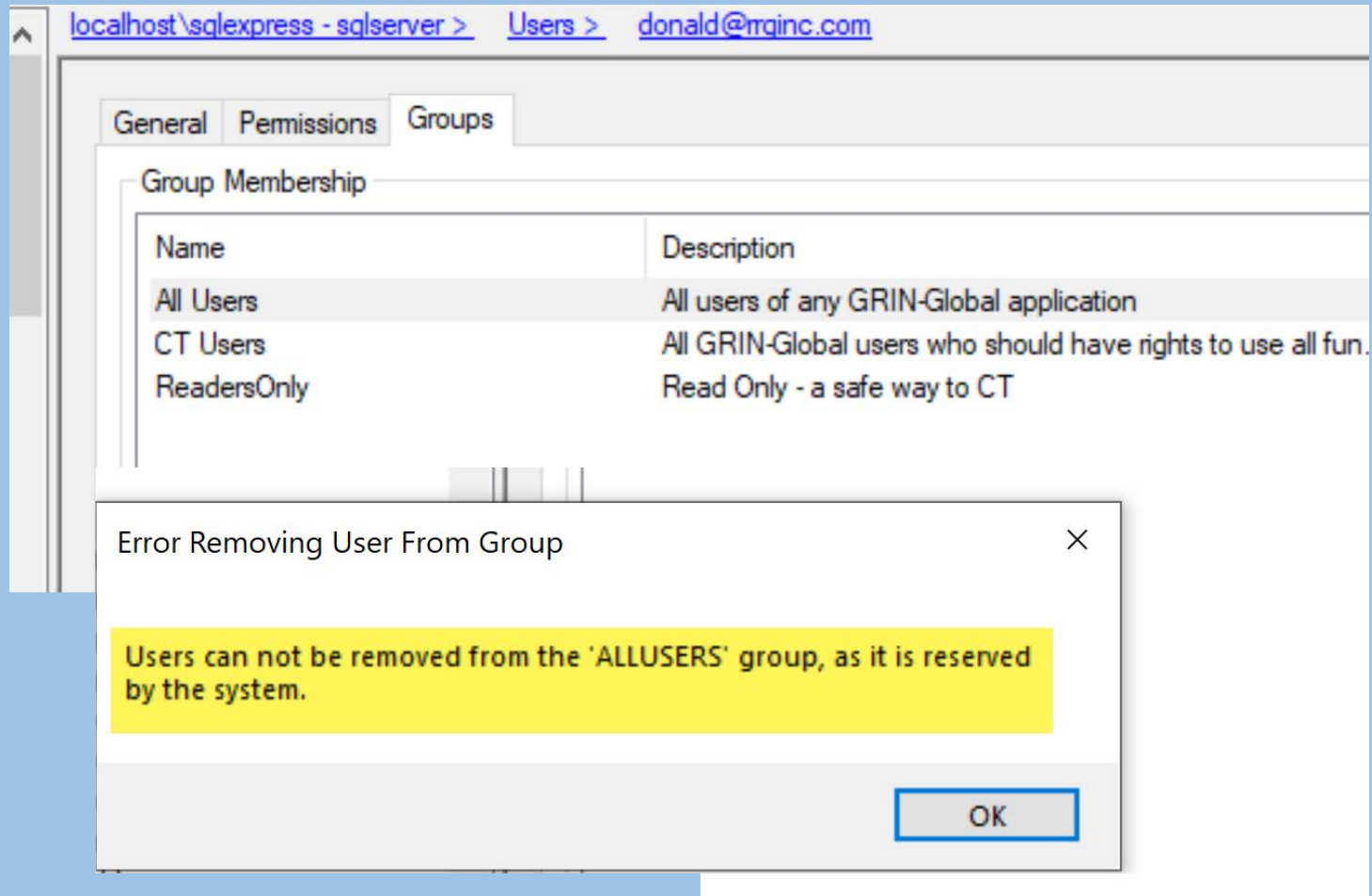
# Ex. 3: Read Permission Only for Users

Not possible?

[tbd]

# Security Settings

Security is enabled by default

*Perhaps* change to "true" when initially loading data

# Data Triggers

- Overview – What are They?
- Where are They?
- SQL to List
- Enabling / Disabling
- How to Review Source Code

# Data Triggers - What are they?

Triggers:

"discrete programming code that execute in response to certain conditions or events or certain values stored in a database table."

# Data Triggers - What are they?

a mechanism for developers to

connect with the middle tier
(used for reading and writing data)

add custom business logic

typically "RowSaving" - executed before each row is saved (checking for certain conditions before allowing a database update)
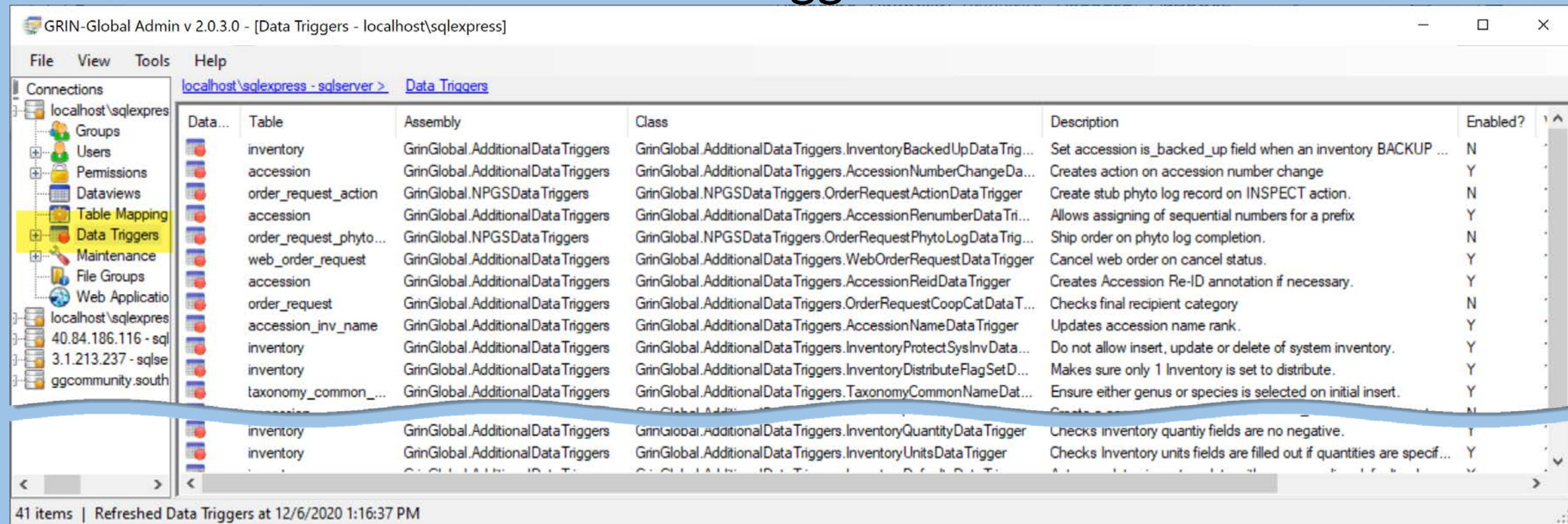
# Data Triggers - What are they?

Many triggers are installed automatically during the GG installation

These triggers may be *enabled* or *disabled,* to match the needs of the organization

# Data Triggers List

A GG administrator can list the triggers within GG's Admin Tool

# Trigger Details

# SQL for Listing Triggers

SELECT fully_qualified_class_name,
d.is_enabled,table_name,title,description

FROM sys_datatrigger d

JOIN sys_datatrigger_lang l

ON l.sys_datatrigger_id = d.sys_datatrigger_id

JOIN sys_table t

ON t.sys_table_id=d.sys_table_id

ORDER BY table_name

# Can You See What the Trigger Code Is?

Yes. The triggers are all in the Git repository in the AdditionalDataTriggers project.

See:

https://gitlab.com/GRIN-Global/GRIN-Global-server/-/tree/master/GrinGlobal.AdditionalDataTriggers

# GitLab GG Triggers

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using GrinGlobal.Interface.DataTriggers;

namespace GrinGlobal.AdditionalDataTriggers {
    public class AccessionActionDataTrigger : TableDataTriggerAdapter {

        public override void TableRowSaving(ISaveDataTriggerArgs args) {
            if (args.SaveMode == SaveMode.Insert || args.SaveMode == SaveMode.Update) {
                var helper = args.Helper;

                // 1) Completed date must be >= started date
                if (helper.AllFieldsExist("started_date", "completed_date") && !helper.IsValueEmpty("started_date") && !helper.IsValu
                    DateTime started = Convert.ToDateTime(helper.GetValue("started_date", null, true));
                    DateTime completed = Convert.ToDateTime(helper.GetValue("completed_date", null, true));
                    if (completed < started) {
                        args.Cancel("Completed date must be after started date.");
                    }
```

File: AccessionActionDataTrigger.cs — 1.51 KB — Edit — Web IDE

There is one trigger file for each table, in some cases containing multiple triggers. Each trigger has its own **class** section.

# Not for the weak of heart…
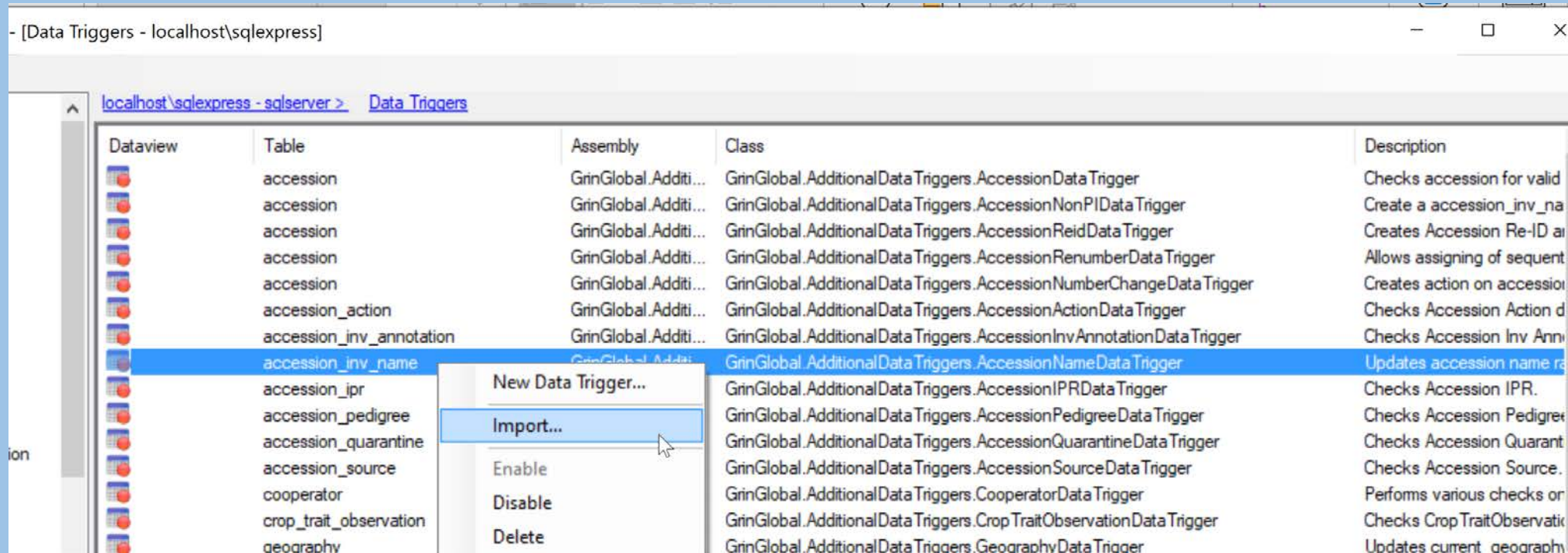
# Questions?

# Marty Reisinger

- [mar@rrginc.com](mailto:mar@rrginc.com)
- 410 790 8649
- Skype: live:mar_3510