Migrating QlikView Section Access to Qlik Sense Server v1.0

Learning Guide

October 27, 2014

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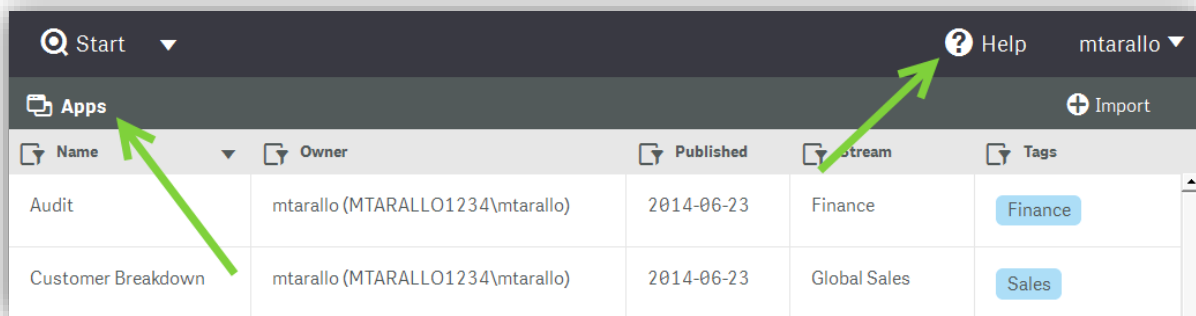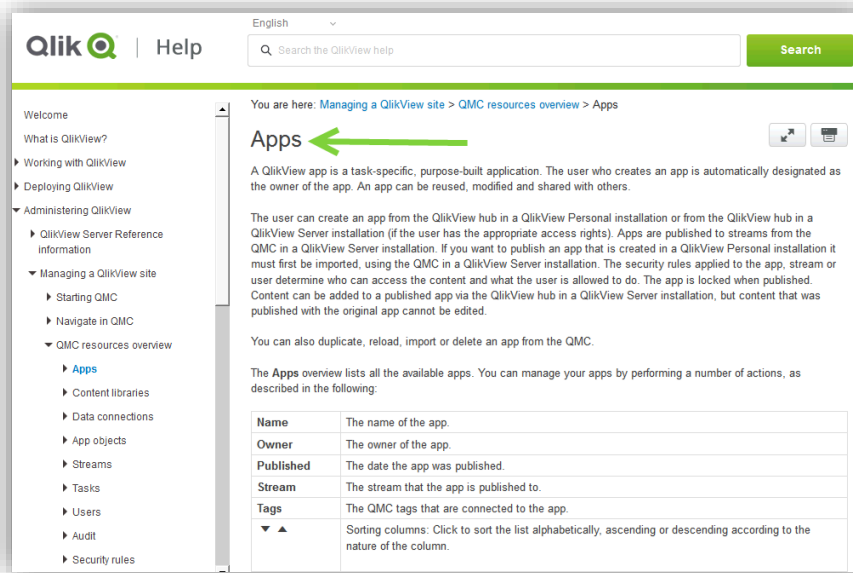# Introduction

Welcome to this overview on how to migrate an application in QlikView that contains a hidden script with Section Access code into a Qlik Sense server-based application. The steps outlined here cover release 1.0 of Qlik Sense and more than likely will change as updates and service releases occur within Qlik Sense.

If at any time you feel you need additional help, the context sensitive help link in the Sense (QMC or Hub) will bring you to our comprehensive online help center. When clicked, you will be taken directly to the help page that pertains to the subject area in which you are located within the QMC (or Hub).

Let's get started!

Conventions Used in this Document

- Text in default black denotes descriptive context.
- Text in *italics* or red denotes action(s) that you should follow.
- **Note:** Indicates additional context to enhance your understanding on the topic.

Preparation

It is assumed you already have installed working, licensed instances of Qlik Sense Server v1.0, Qlik Sense Desktop v1.0, and QlikView Desktop v11.2 all accessible from your computer. Note that QlikView Server cannot be installed on the same physical computer as Qlik Sense Server. Also, Qlik Sense Desktop cannot be installed on a Windows Server operating system. If you do not have these products installed and available, please download and install the latest Qlik Sense and QlikView following the available documentation and other help materials.

Migrate the QlikView Application

Prepare the QlikView Application to be Migrated

- Create a backup copy of your QlikView application by coping the original .QVW file to a backup drive/directory of your choice.
- Open the QlikView application and proceed to the script editor.
- Access your Hidden Script containing the Section Access code
- Copy the script's entire Section Access contents from the Hidden Script tab into the beginning of the Main tab of the script (or a new tab if you prefer).
- Comment the entire Section Access code in this Main or new tab.

Hint: you can use /* ….. */ comment tags around the entire Section Access code to make it easier to uncomment the code later in Qlik Sense. This step is necessary because you will use Qlik Sense Desktop to convert the application to Qlik Sense and Qlik Sense Desktop cannot currently open a QlikView application with active Section Access code.

```
:  File  Edit  Insert  Tab  Tools  Help
Reload  Debug |      |        |   Tabs  Main

Section Access - Hidden  Main  Mapping Loads  Dimensions  Orders  Calendar  File Data  Sales Person  Budget

    1  /* COMMENTING OUT SECTION ACCESS CODE BEGIN...
    2
    3  // What is the scenario of users and level of access
    4  // Notice the USER access is not able to see the Year Salary field
    5  // however the USER id of manager is able to see that field
    6  SECTION Access;
    7  SecurityTable:
    8  LOAD * INLINE [
    9      ACCESS, USERID, PASSWORD, OMIT
   10      ADMIN, ADMINISTRATOR,   PASS
   11      USER,   USER1,    PASS, Year Salary
   12      USER,   USER2,    PASS, Year Salary
   13      USER,   MANAGER, PASS
   14  ];
   15
   16  // What row level data can the above users see
   17  // Shows Manager being able to access all offices
   18  //SECTION Application;
   19  //STAR is *;
   20  //SecurityData:
   21  //LOAD * INLINE [
   22  //USERID, OfficeCity
   23  //USER1,   Stockholm
   24  //USER2,   Lund
   25  //MANAGER, *
   26  //];
   27
   28  // Note in this scenario a Manager is able to access multiple offices (all but Seattle)
   29  // to demonstrate multi-values can be employed. User1 and User2 can only access specific offices.
   30  SECTION Application;
   31  //STAR is *;
   32  SecurityData:                    */ comment is placed after the Section Access code
   33  LOAD * INLINE [
   34  USERID, OfficeCity
   35  USER1,   Stockholm
   36  USER2,   Lund
   37  MANAGER, Stockholm
   38  MANAGER  Lund
```

- Once the copy is complete, remove the hidden script: File > Remove Hidden Script
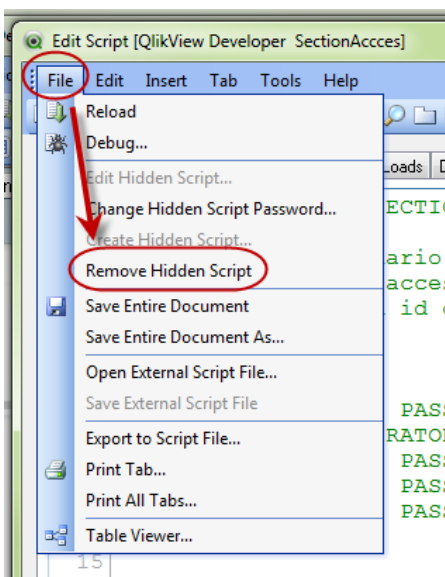
- Save the changes to the application.
- Finally, perform a Reload of the application to eliminate the Section Access from the app.
- Perform a final save of the application.
- Close and exit QlikView Desktop.

Convert the QlikView Application into Qlik Sense

While there are several ways to get your QlikView app into Qlik Sense (including drag/drop), the following steps are the easiest approach to follow:

- Copy the QlikView application file (.QVW file) you just edited from it's source directory to the Qlik Sense Desktop App directory on your local laptop (C:\Users\<your userid>\Documents\Qlik\Sense\Apps)
- Open Qlik Sense Desktop and you will see the QlikView application listed in the hub with "(qvw)" annotation in the title.

Security_Sense_Final (qvw)
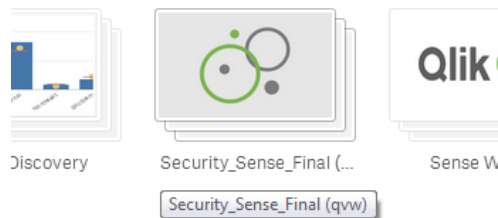
- Open the QVW application in Qlik Sense Desktop

    Note: In order to convert the QVW into Qlik Sense, you will have to make a change to the application to cause a "save" action to occur. Just opening and closing the QVW in Qlik Sense without making any changes will not convert the application to a Qlik Sense .QVF file.

    o Add a blank sheet or make any other change to the application to force a "save" action and save the application.

    Note: the original QVW file still exists in the Qlik Sense Apps directory, but with a .backup extension.

- Copy the converted .QVF file from the Qlik Sense Desktop Apps directory to any accessible directory on your Qlik Sense server machine.
- Access your Qlik Sense server machine.
- Login to the Qlik Management Console (QMC), https://<hostname>/qmc and select Apps.

Note: For the remainder of this paper, for the sake of simplicity, we will assume that you login to the Qlik Sense QMC as an administrator so you have full access rights to edit applications, create and publish to streams etc.
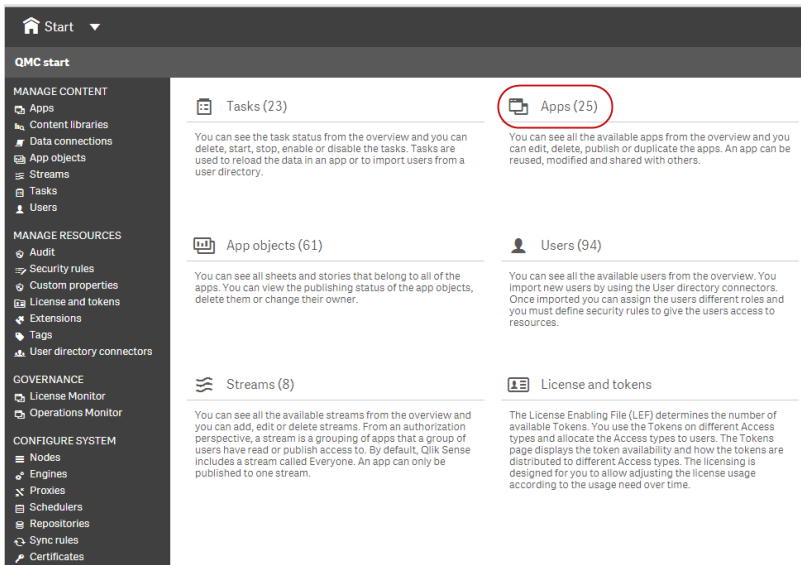
- Click the **+Import** button (upper left hand corner) and browse to the drive/directory where you copied the QVF from Qlik Sense Desktop and select the .QVF file.
- Click the Import button on the dialog screen to import the application into Qlik Sense Server.

  Note: Unlike Qlik Sense Desktop, which just uses a local file system for app storage, this import process is necessary because Qlik Sense server utilizes an underlying repository (not just the file system) to store information about the application. Since this allows information about an application to be centrally stored and administered, application(s) can easily be replicated across various other server nodes, across different geographies, if necessary.
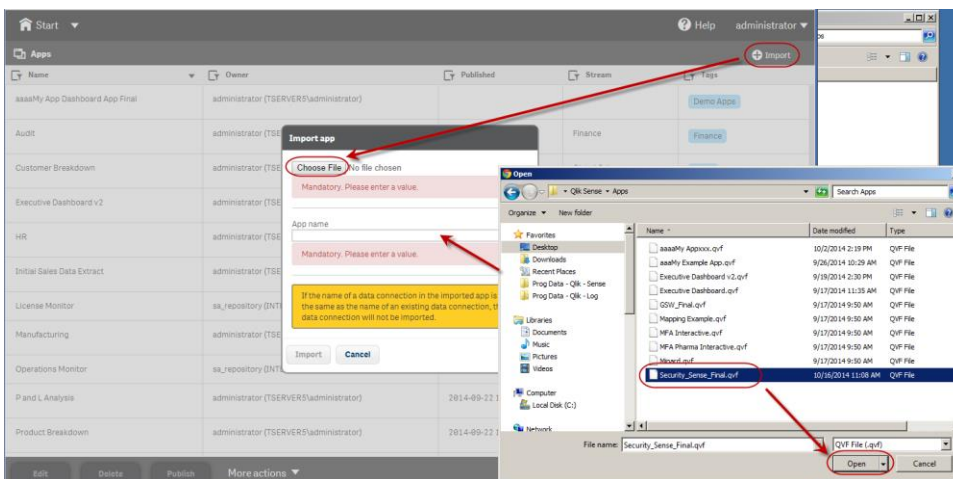
- Depending upon the size of the application, this may take a few minutes to complete.

Reconnect and Reload the Data Sources for the Application

Once the application has been imported into Qlik Sense server, all of the apps data connections will need to be tested so you can successfully perform a reload action. A reload will be required when you reactivate your Section Access code. You will have to create the app's data source connections to satisfy the various Load statements. In addition, you may need to copy the actual data source files (Excel, CSV,

QVD etc) to the server machine and/or create appropriate ODBC/OLEDB etc. connections to any databases that need to be referenced. Always create System DSNs in ODBC, not User DSNs when creating any new DB connection(s).

Hint: To assist in this data connection creation, create the data connections for each of your Load statements and use the wizard to generate the new Load statement that references the Qlik Sense data connection. You can just modify the original Load statements data source code by copy and pasting this generated code (the "lib" statement) into your existing Load statements. Be sure to delete the generated Load statements when done.

Delving into this step in any more detail is beyond the scope of this paper. Therefore, from this point forward, we will assume the application's data can be successfully accessed and the overall application can be reloaded as a prelude to re-activating the Section Access security.

Create a Backup

Once the Qlik Sense app can be successfully reloaded, you should create a backup of the application in case the Section Access updates you enter cause the application to no longer be accessible.

- Login (if you are not logged in already) to the QMC and select the application in the Apps list
- Select More Actions.
- Select the Export option and save the .QVF file to any drive/ directory. This file can be re-imported in case anything goes wrong with the updates to your Section Access script.
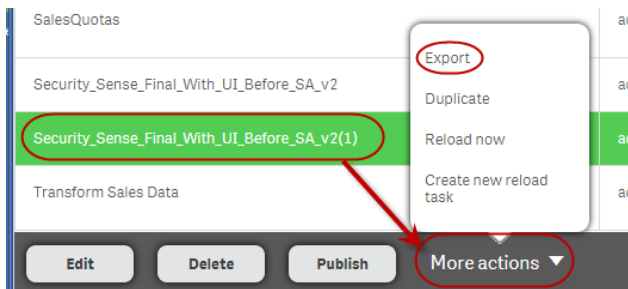
Now you are ready to re-activate and test the Section Access portion of your script.

Reactivate Application's Section Access

While a complete discussion of Section Access is beyond the scope of this paper, the following resources might be useful to gain a more detailed understanding of this important topic:

- **Basic** - http://community.qlik.com/blogs/qlikviewdesignblog/2014/05/26/section-access
- **Multiple Fields** - http://community.qlik.com/blogs/qlikviewdesignblog/2014/06/02/data-reduction-using-multiple-fields
- **Reduction Explanation** - http://community.qlik.com/blogs/qlikviewdesignblog/2014/06/09/methods-for-data-reduction .

The best way to illustrate Section Access is through an example. While this code will undoubtedly differ from your application, we offer this code as a typical example. Before getting into details, as a caveat, in an actual production implementation of Section Access, you would *never* use INLINE Load statements to incorporate data into Section Access. You would access external data sources such as a database or QVDs. Inline Loads are use here to make this example easier to understand.

These are the access rules behind the Section Access example we use in this document:

- There are several different userids that are used in this example with the following access rules:
    - **Administrator** – has access to all data and all fields
    - **Manager** – has access only to data related to Europe, but can see all fields
    - **User1** – can only see data related to the north of Sweden and cannot see the value of Year Salary field.
    - **User2** – can only see data related to the south of Sweden and cannot see the value of Year Salary field.
    - **User3** – can only see data related to the north of France and cannot see the value of Year Salary field.
    - **User4** – can only see data related to the south of France and cannot see the value of Year Salary field.

    Note: Be sure to import your userid(s) you will be using with your application into your Qlik Sense server using User Directory Connection feature in the QMC.

- The field in the data model that will be used to determine what "row" of data a user can view is **OfficeCity.** This field is also referred to as the "reduction" field. The values of this field are:
    - Lund, Stockholm, Paris, Nice, and Seattle

To satisfy the above rules, the Section Access code is composed of two portions: Section Access and Section Application:

- **Section Access** contains the user information, access categorization (data reduction), and any individual field to omit from viewing, in this example, Year Salary.
- **Section Application** contains data to correlate the access categorization of the user with the actual field and field values in the data model:

```
SECTION Access;
SecurityTable:
LOAD * INLINE [
    ACCESS, USERID, REGION_CATEGORY, OMIT
    USER,   TSERVER5\ADMINISTRATOR, ,
    USER,   TSERVER5\USER1, SWEDEN_NORTH,   YEAR SALARY
    … more user data …
    USER,   TSERVER5\MANAGER, MGR_EUROPE,
];
SECTION Application;
SecurityData:
LOAD * INLINE [
    REGION_CATEGORY, OfficeCity
```

```
SWEDEN_NORTH,   Stockholm
SWEDEN_SOUTH,   Lund
FRANCE_NORTH,   Paris
FRANCE_SOUTH,   Nice
MGR_EUROPE,     Lund
MGR_EUROPE,     Stockholm
MGR_EUROPE,     Paris
MGR_EUROPE,     Nice ];
```

To explain the above scenario, for **Section Access**:

- **ACCESS** – keyword should always be USER (in all upper case). All users should be of this type when accessing documents via the server. If your code includes ADMIN as a value under ACCESS, change it to USER.
- **USERID** – keyword with the user domain\userid (in all upper case).

   Note: All userids and passwords must already be accessible in the Qlik Sense server using the user directory connectors and connection to the appropriate authentication mechanism (LDAP, Active Directory etc.) within the QMC. The value in this column needs to correlate to actual users imported into your Qlik Sense server from NTLM, Active Directory, LDAP etc. See http://community.qlik.com/docs/DOC-7351 for an excellent overview of this feature.

   Note: You could also use the keyword **GROUP** rather than **USERID** to tie this access information to groups within your authentication provider rather than use specific userids. Please refer to the Qlik Sense documentation for more details.

   Note: There is no PASSWORD keyword in this example that may have been brought over from your QlikView Desktop application. Since the QlikView app with this option was not running in a server environment, this information was required to generate a login prompt for a userid and password. Since we are running this application within the Qlik Sense Server environment, the login process is already being handled by the browser accessing the server. The PASSWORD column must be removed from your Section Access if it exists.

- **REGION_CATEGORY** – this can be any *label* (in all upper case) that makes sense to your application. It is simply used to relate the user to a particular field and field value in your data model. You could have used the word "COUNTRY" or "CITY" as long as that matched with what is contained in **Section Application**.
- **OMIT** – keyword (in all uppercase) that identifies fields in a record that a user should not be able to view even though they can view the rest of the record.

Section Application correlates the *label* in **Section Access** associated to a particular user, with field and values in the actual data model within the Qlik Sense app:

- **REGION_CATEGORY** – (all upper case) this field name should match the label used in Section Access. Both the title of the label and its column contents should be in all upper case.

- **OfficeCity** – this identifies the fieldname and values (both can be in mixed case) in the data model used to determine whether a user can see the particular record. The data for these fields is listed below:
  - **User1** can only see records where the value of **OfficeCity = Stockholm. User2** can only see records where the value of **OfficeCity = Lund** etc.
  - **Manager** can see any data where **OfficeCity = Stockholm or Lund or Paris or Nice**. Since there is no value for OMIT, Manager can also see the value for the **Year Salary** field.
  - **Administrator** has a **blank** value for REGION_CATEGORY and OMIT. That means this user can see **all** records and **all** fields.

Here is the final, documented example of the entire Section Access code:

```
/*************** BEGIN SECTION ACCESS CODE ******************/
//
// This scenario demonstrates the following acccess rules:
//  - Administrator can see all data
//  - User1 can only see data related to Stockholm, User2 can only see data related to Lund etc.
//  - User1-4 cannot see the "Year Salary" field.
//  - Manager can see 4 out of the complete set of Office Cities and can see the "Year Salary" field.
//
// Some items to note:
// - OfficeCity is a field that is referred to in the documentation as a "reduction" field.
// - The blank value for OFFICECITY for the Administrator means that user can see any and all data
//   regardless of OfficeCity values in a record.
// - In Sense Server, there is no ADMIN value for the ACCESS user type column. It is only USER.
// - You could use the GROUP keyword tied to groups in your authentication provider instead of
//   specific USERIDs
// - The TSERVER5\ domain qualifier for a userid is only required if there are multiple domains
//   where the same userid could exist. Replace this value with your own domain value if required.
SECTION Access;
SecurityTable:
LOAD * INLINE [
    ACCESS, USERID, REGION_CATEGORY, OMIT
    USER,  TSERVER5\ADMINISTRATOR, ,
    USER,  TSERVER5\USER1, SWEDEN_NORTH,  YEAR SALARY
    USER,  TSERVER5\USER2, SWEDEN_SOUTH, YEAR SALARY
    USER,  TSERVER5\USER3, FRANCE_NORTH, YEAR SALARY
    USER,  TSERVER5\USER4, FRANCE_SOUTH, YEAR SALARY
    USER,  TSERVER5\MANAGER, MGR_EUROPE,
];
```

```
// This section correlates all cap "REGION_CATEGORY" in Section Access to actual OfficeCity values
// that occur in the data model. Note the column values can be upper and lower case.
// Furthermore, the MGR_EUROPE value illustrates how you can correlate a specific subset of
// OfficeCity values to a particular login. In other words, the MANAGER userid can see only 4 specific
// cities in Europe. But, Administrator can see all cities in the data.
SECTION Application;
SecurityData:
LOAD * INLINE [
  REGION_CATEGORY, OfficeCity
  SWEDEN_NORTH,  Stockholm
  SWEDEN_SOUTH,  Lund
  FRANCE_NORTH,  Paris
  FRANCE_SOUTH,  Nice
  MGR_EUROPE,    Lund
  MGR_EUROPE,    Stockholm
  MGR_EUROPE,    Paris
  MGR_EUROPE,    Nice
];


/***************END OF SECTION ACCESS *******************/
```

To activate your Section Access code:

- Make any required changes (such as change ADMIN to USER, remove PASSWORD column add your userid(s) etc.)
- Uncomment the Section Access code.
- As a precaution, copy/paste your section access code changes into a text editor and save this to a file to serve as a backup in case you need to re-import the application due to a failure in your access logic.
- Save the script.
- Perform a reload of the application.
- Perform a final Save of the application if necessary.
- Exit the Qlik Sense hub and your browser.

Publish the App and Test Your Results

At this point, you should test your results by logging into the application under the various userids to validate your application access. To accomplish this, you need to make the application available to all users, not just the QMC administrator (Administrator in this example, the owner of the application). Follow these steps:

- Login to the QMC as an administrator
- Select the Apps option
- Select the application you have been working on and select the Publish button
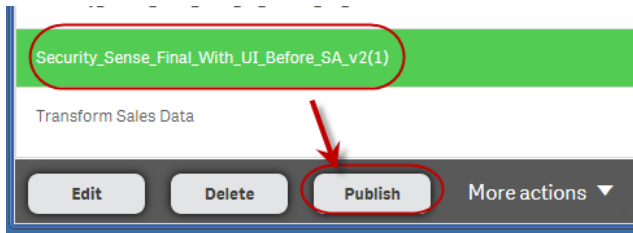
- Publish the application to the **Everyone** stream for testing purposes. This is a built-in stream that any user may access. If you have a specific stream you have created for your application and your users have access, you can certainly use that stream.
    - If you already have the app in the stream you can check the option to Replace existing app and select the app to replace.
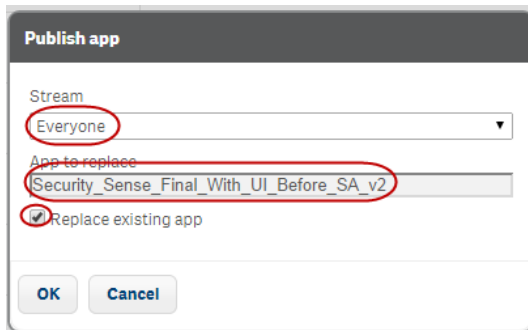
- Exit the QMC
- Login as the various users you wish to test using the Hub to make sure your Section Access is working properly. You may have to exit the browser each time to force a new login prompt for a different user.

Fix Any Section Access Issues

Hopefully, your changes to Section Access were successful. However, repeat these steps as necessary.

- If your app fails to open with an "**Access Denied**" message regardless of what userid(s) you use to login, something has gone wrong with your access code making your app inaccessible. You will have to import the backup copy of your app and re-apply your changes:
    - Login to the QMC as administrator and re-import the app from the backup you created earlier.
    - Open the app using the Hub and edit the script.
    - Copy/paste your Section Access script code from the text file you created earlier as a backup in the prior step back into the script editor for the app.
    - Make any corrections/changes to the Section Access code to fix the access issue.
    - Save your Section access changes into your external text backup file.
    - Perform a reload of the app to reflect the Section Access changes.
    - Save the script and app and exit the hub.
    - Republish the app and re-test. Repeat these steps as necessary.
- If your tests fail, but you are able to access and run the app:
    - Create an editable copy of the app back into your My Work stream by accessing the QMC and select Apps:

- From the apps list, select the App in the Everyone Stream
- Select More Actions -> Duplicate. This will create a working copy of the app in your My Work area.

Note the original version of the app remains active in the Everyone stream.

- o Access the app in the Hub and edit the app as needed (making any necessary backups).
- o Perform an app reload and save any changes as necessary
- o Exit the Hub
- o Access the QMC to re-publish the app following the same steps listed in the prior steps above. Optionally, you can overwrite original app in the Everyone stream.
- o Re-test the app under the various users using the Hub.