



QX Integration with Salesforce CRM

Abstract: Epygi has implemented integration of QX IP PBX with Salesforce CRM. This guide describes how to configure the QX IP PBX with Salesforce CRM and how to use the Epygi **CRM Connection** web application to control and automatically update the information for CRM contacts upon receiving inbound calls from customers on the QX IP PBX.

Document Revision History

| Revision | Date | Revision | Valid for Models | Valid for FW |
|----------|-----------|-----------------|-----------------------------|-------------------|
| 1.0 | 10-Jun-20 | Initial Release | Epygi IP PBXs of QX/UC line | 6.3.26 and higher |
| 1.1 | 08-Oct-20 | Updated | Epygi IP PBXs of QX/UC line | 6.3.26 and higher |

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1. Introduction

Epygi provides integration between the QX IP PBX and Salesforce CRM, implemented via the Epygi REST API for CRM. This integration allows to view, automatically create and update the information for Salesforce contacts upon receiving inbound calls from customers on the QX. It is achieved via the **Epygi CRM Connection for Salesforce** web application.

The CRM integration is a licensable feature for the QX, so a license key should be purchased to make the CRM integration functional on the QX on a simultaneously-connected user basis.

After license activation on the QX, the **CRM Users** configuration page and the **Epygi CRM Connection for Salesforce** web application will be accessible for QX users. Click the **Applications** → **Epygi CRM Connection** link from QX login page or enter the following line `http://xxx.xxx.xxx.xxx/crmconnect` in the address bar of the browser to open the Epygi

CRM Connection for Salesforce web application, where xxx.xxx.xxx.xxx is the IP address or host name of the QX.

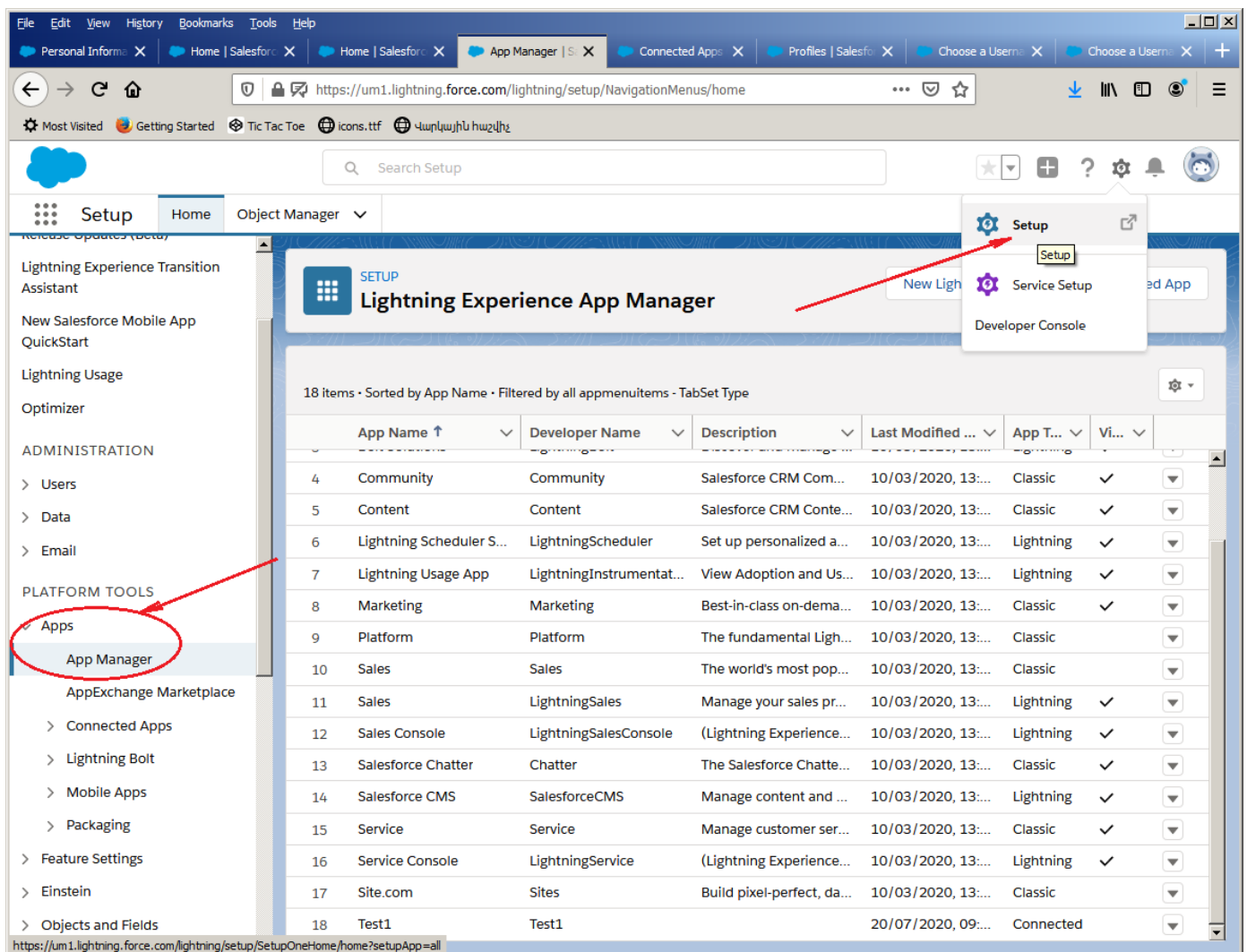
Please Note:

The described configuration is generic for all Epygi IP PBXs of QX and UC line, namely for QX20, QX50, QX200, QX500, QX3000, QX5000, QXISDN4+, ecQX and UC20, UC80(henceforth QX). The security issues are beyond the scope of this document. See the listed documents in References section to get more information on the security related issues for QX.

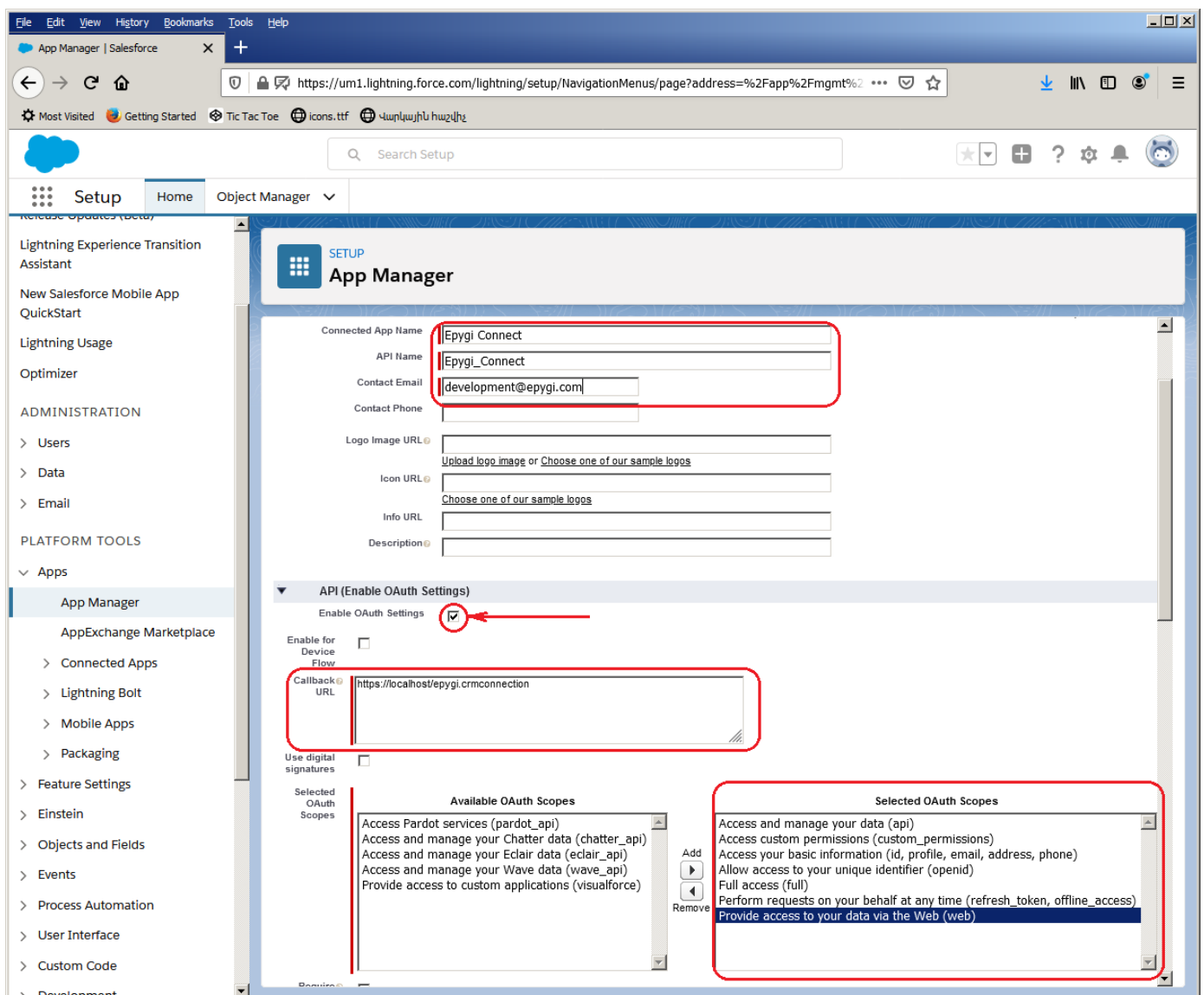
2. Salesforce Connected App Configuration.

To be able to interoperate with Epygi products, Salesforce Connected App with OAuth needs to be preconfigured. For that:

1. Login to your Salesforce account, click on the gear icon on the top right-hand corner and select Setup. On the left-hand menu select PLATFORM TOOLS -> Apps -> App Manager:



- Salesforce uses “Connected App” to connect the platform with an external application (Epygi). It uses standard OAuth protocol to authenticate, and provide tokens to use with Salesforce APIs. So, click on the “New Connected App” button to register your App. In provided form, enter “Connected App Name” (for example, Epygi Connect) and “Contact Email”. Then check “Enable OAuth Settings” and enter “Callback URL” which is a URL associated with your client application. In some cases, this must be a real URL that the client’s web browser is redirected to, but in our context the URL isn’t used. However, since this a required field, you may use a value that identifies the Epygi application, such as <https://localhost/epygi.crmconnection>. After that select OAuth Scopes from the list:

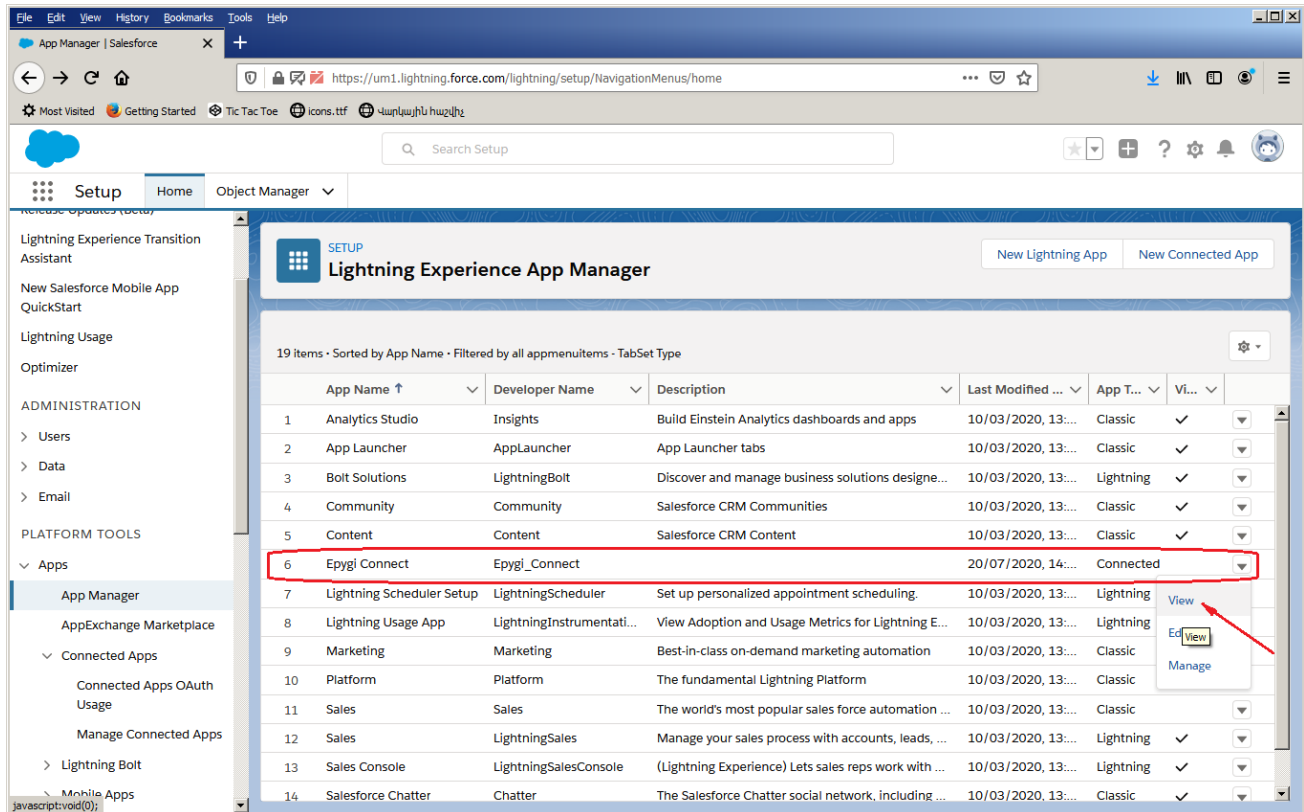


Epygi integration needs to have access to the following OAuth scopes:

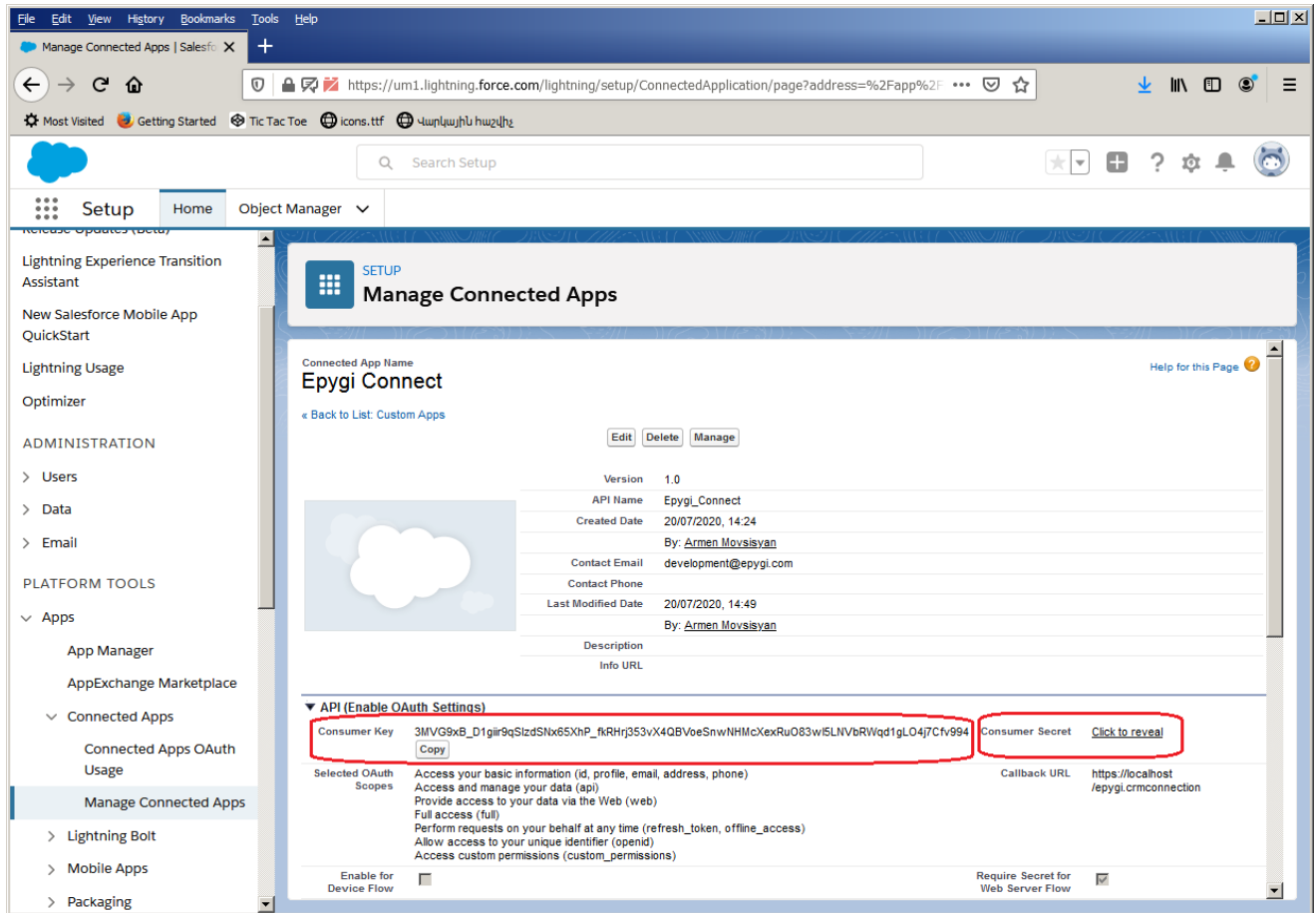
- Access and manage your data (api)
- Access custom permissions (custom permissions)
- Access your basic information (is, profile, email, address, phone)
- Allow access to your unique identifier (openid).
- Full Access (full)
- Perform requests on your behalf at any time (refresh_token, offline_access)
- Provide access to your data via the Web (web)

Finally click on the **Save** button to save your application settings.

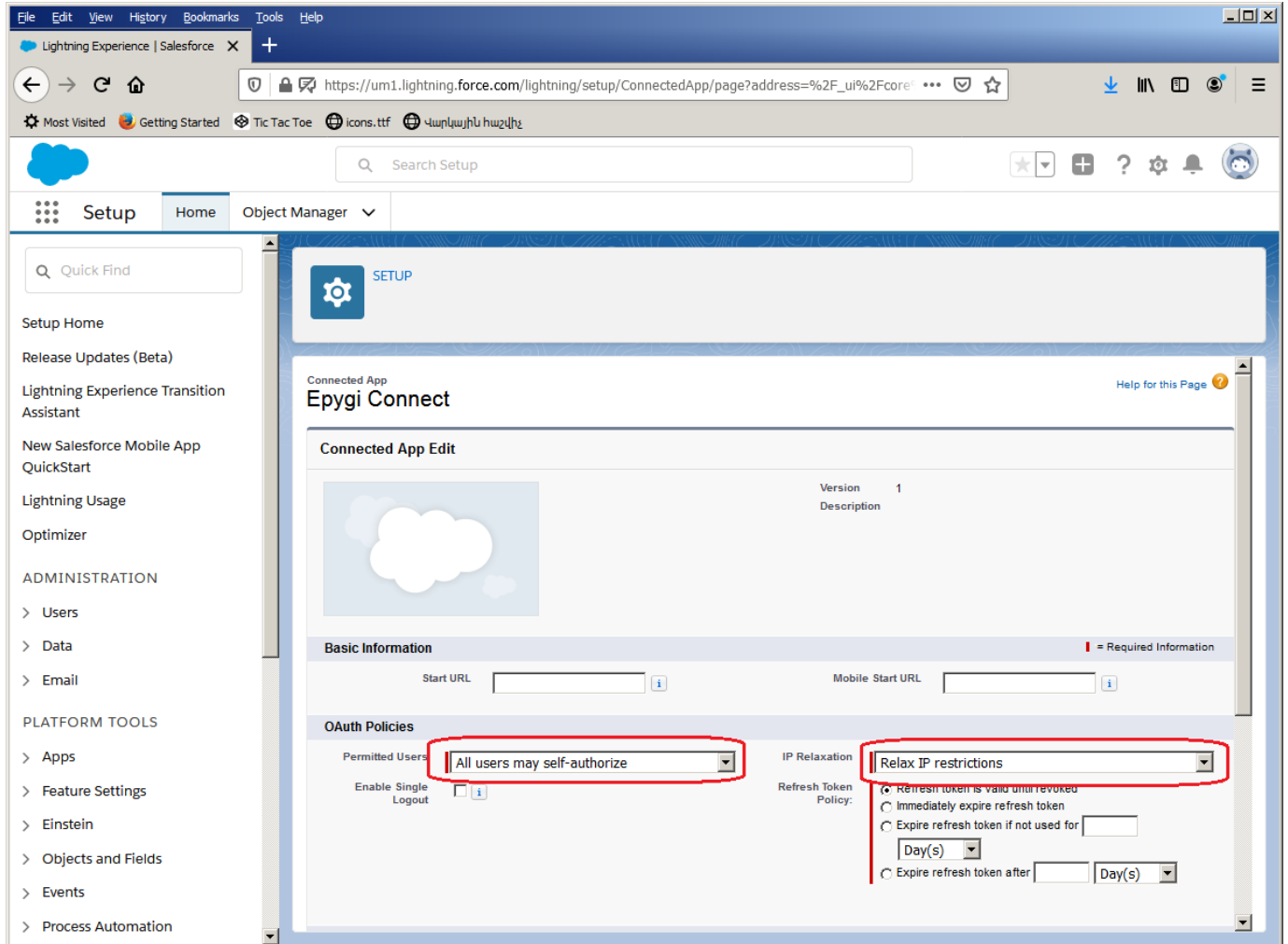
3) The App you have created will appear in **App Manager**, so click on **View** menu item to get some information you'll need in your future configuration:



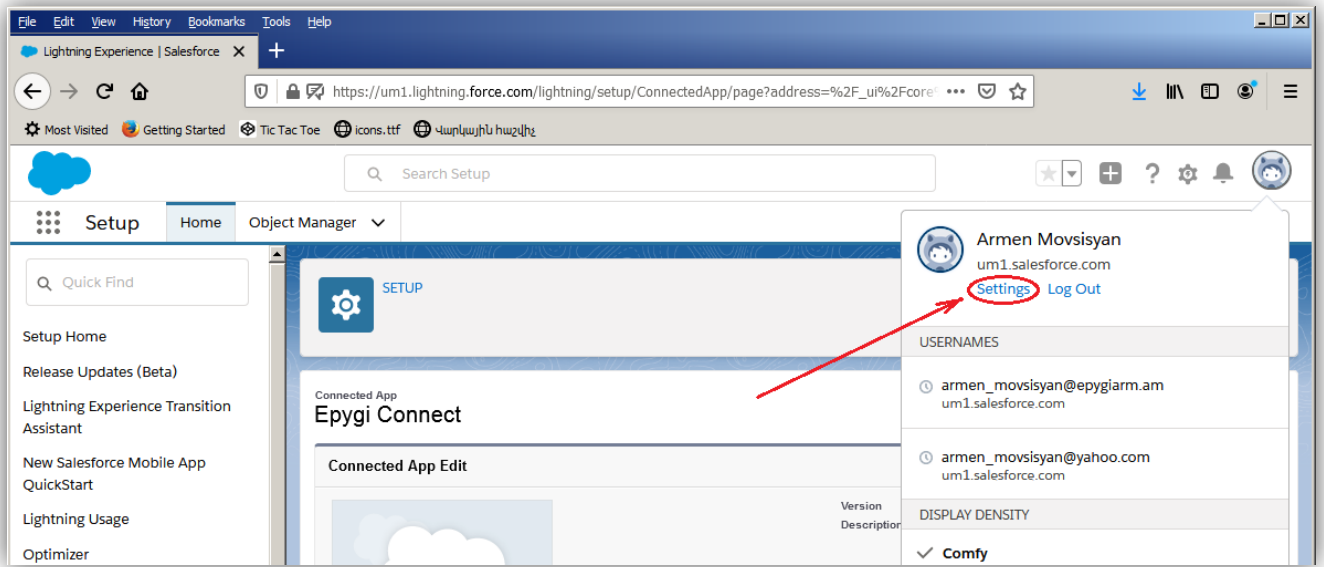
4) Clicking on **View** will cause “**Manage Connected Apps**” page to open, where you need to copy “**Consumer Key**” and (after “**Click to reveal**”) “**Consumer Secret**”. You will need this information as part of configuration settings in your QX CRM Connection. Epygi REST API will use these values to get authorization token in the authorization code flow.



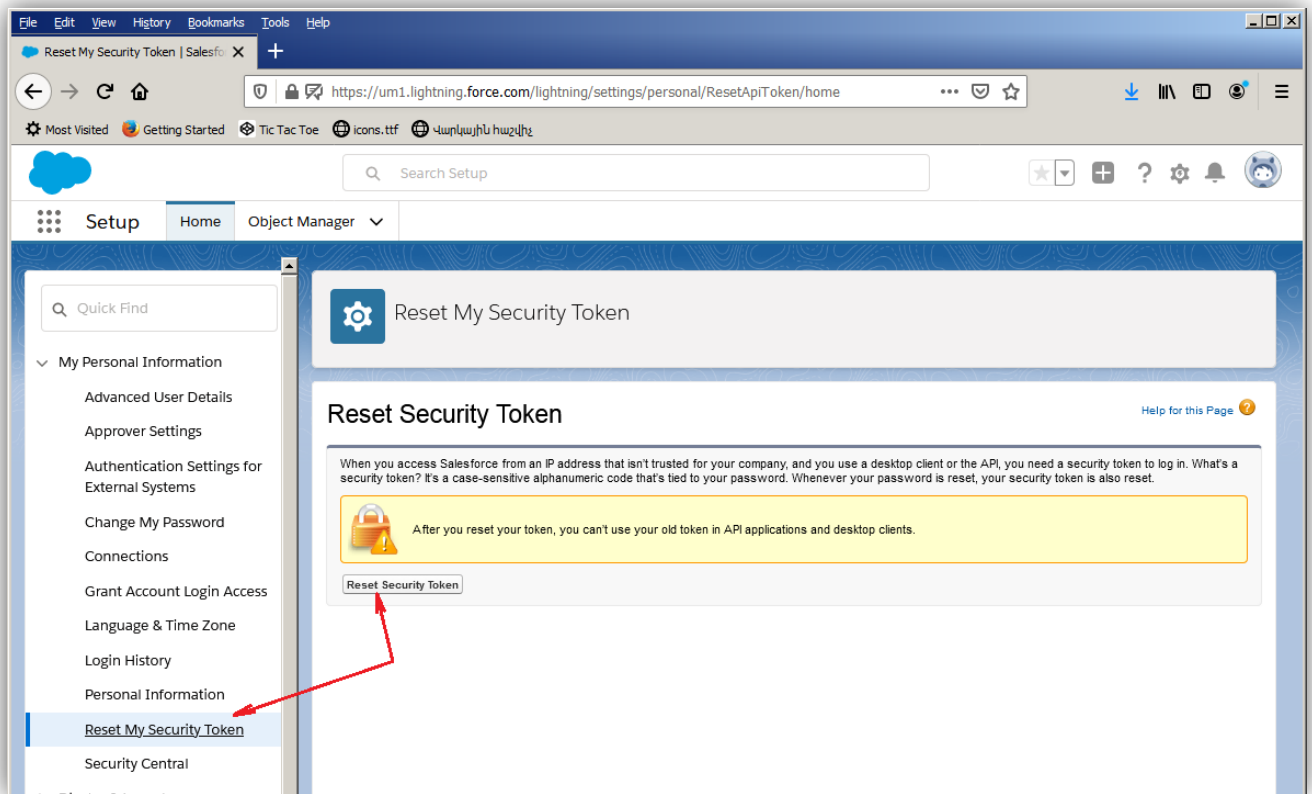
5) Click on “**Manage**” button at the top to Edit Policies. In “**OAuth Policies**” section set “**Permitted Users**” to “**All users may self-authorize**” and set “**IP Relaxation**” to “**Relax IP restrictions**”:



6) Finally, **Security Token** is the last parameter you need to establish the authentication flow. To get it, click on the profile icon at the top right-hand corner and then click on **Settings**:

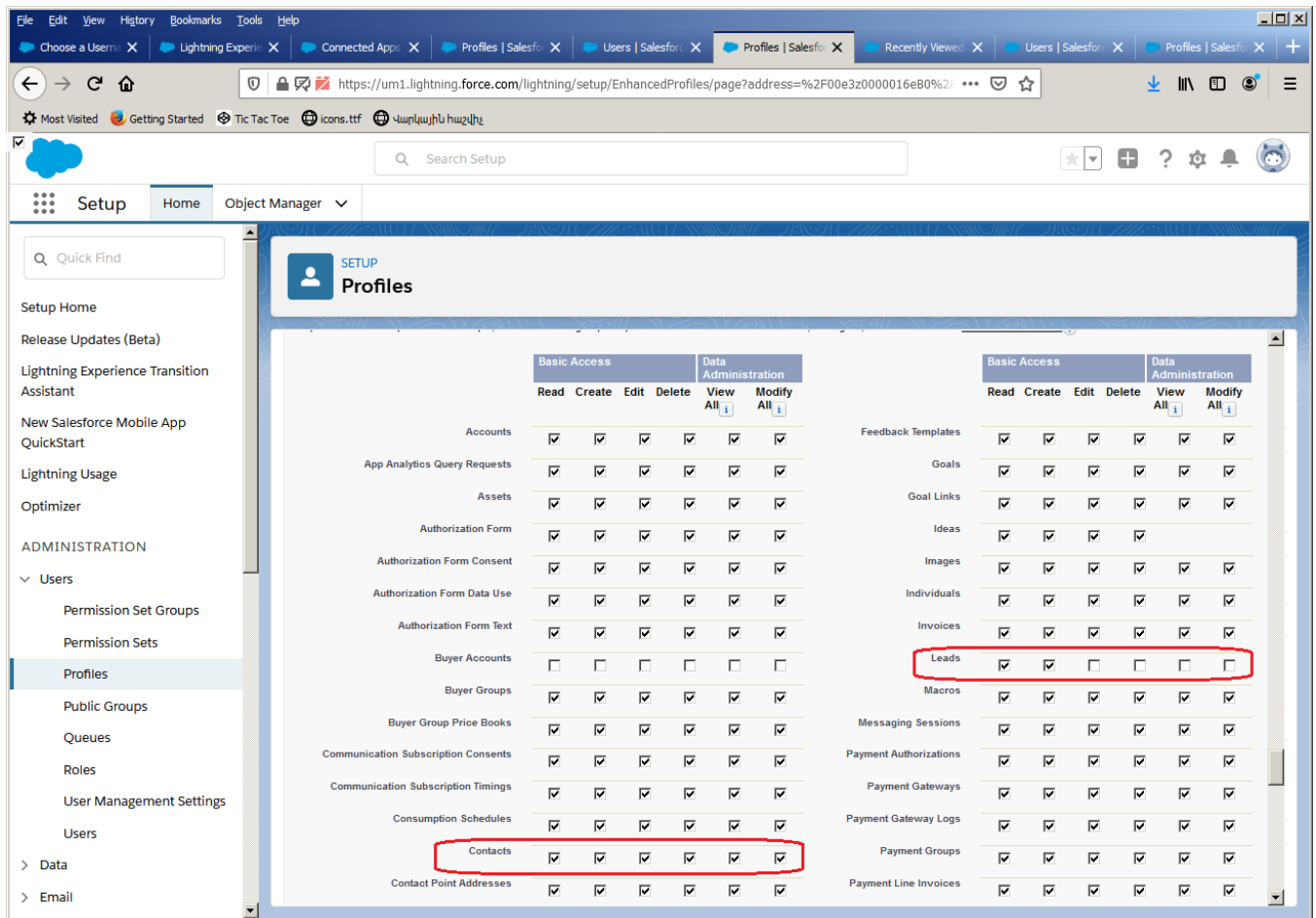


Select "Reset My Security Token" on the left-hand menu:



The **Security Token** will be emailed to you. Please keep it too to provide later for configuration of **CRM Connection**.

7) You will need a preconfigured Salesforce user account on behalf of which Epygi REST API will interact with Salesforce API. The access level of Epygi REST API endpoints to Salesforce resources directly depends on the permissions of that user account. To be able to view, create or update Salesforce Contacts/Leads from **CRM Connection** application, the profile of the Salesforce user needs to have Read, Create and Edit permissions for Contacts and Leads objects. To verify what Profile does the user belong to, and that Profile's permissions, in Salesforce CRM click on the gear icon, select **Setup**, then in left hand navigation menu select **ADMINISTRATION -> Users -> Users and ADMINISTRATION ->Users->Profiles**. In example below we see that user's profile has Read and Create permissions for Leads and all permissions for Contacts.



Epygi **CRM Connection** with the preconfigured Salesforce user account and with default basic settings will support the following main features:

- If the inbound calls from external numbers match a Contact or Lead in the CRM database, it will trigger the Contact/Lead pop-up in your **CRM Connection** application. You can then request to View or Edit/Update information for the Contact/Lead using the **View Contact Info** option.
- If the inbound call from an external number does not match any Contact/Lead, you can add caller as a new Contact or Lead using the **Add Contact** option.

3. Epygi CRM Connection Configuration.

Login to your QX, go to the **Extensions** → **CRM Connect** → **CRM users** → **Add user** and fill in the fields below:

The screenshot shows a web browser window with the URL <https://192.168.24.31/crmusermgmt.cgi>. The page title is "Epygi QX50 - CRM Users - Add User". The navigation menu includes: QX50, Overview, Extensions, Dialing Directories, Conferences, Recordings, Receptionist, ACD, AOC, CRM Connect (highlighted), and Authorized Phones. The left sidebar lists: Dashboard, Setup, Extensions (highlighted), Interfaces, Telephony, Firewall, Network, Status, and Maintenance. The main content area is titled "CRM Connect Status" and "Web Authentication". It contains the following fields and options:

- Web Authentication:**
 - Access your CRM account from the web client.
 - Username:
 - Password:
 - Confirm Password:
- Monitored extensions:**
 - Extensions:
- Match CallerId's to a contact entry:**
 - Match at least N number of characters:
 - Match Exactly
- Customer Relationship Management:**
 - Select CRM:
- Connection Settings:**
 - Consumer Key:
 - Consumer Secret:
 - Username:
 - Password:
 - Security Token:
- CDR Reporting:**
 - Enable CDR Reporting

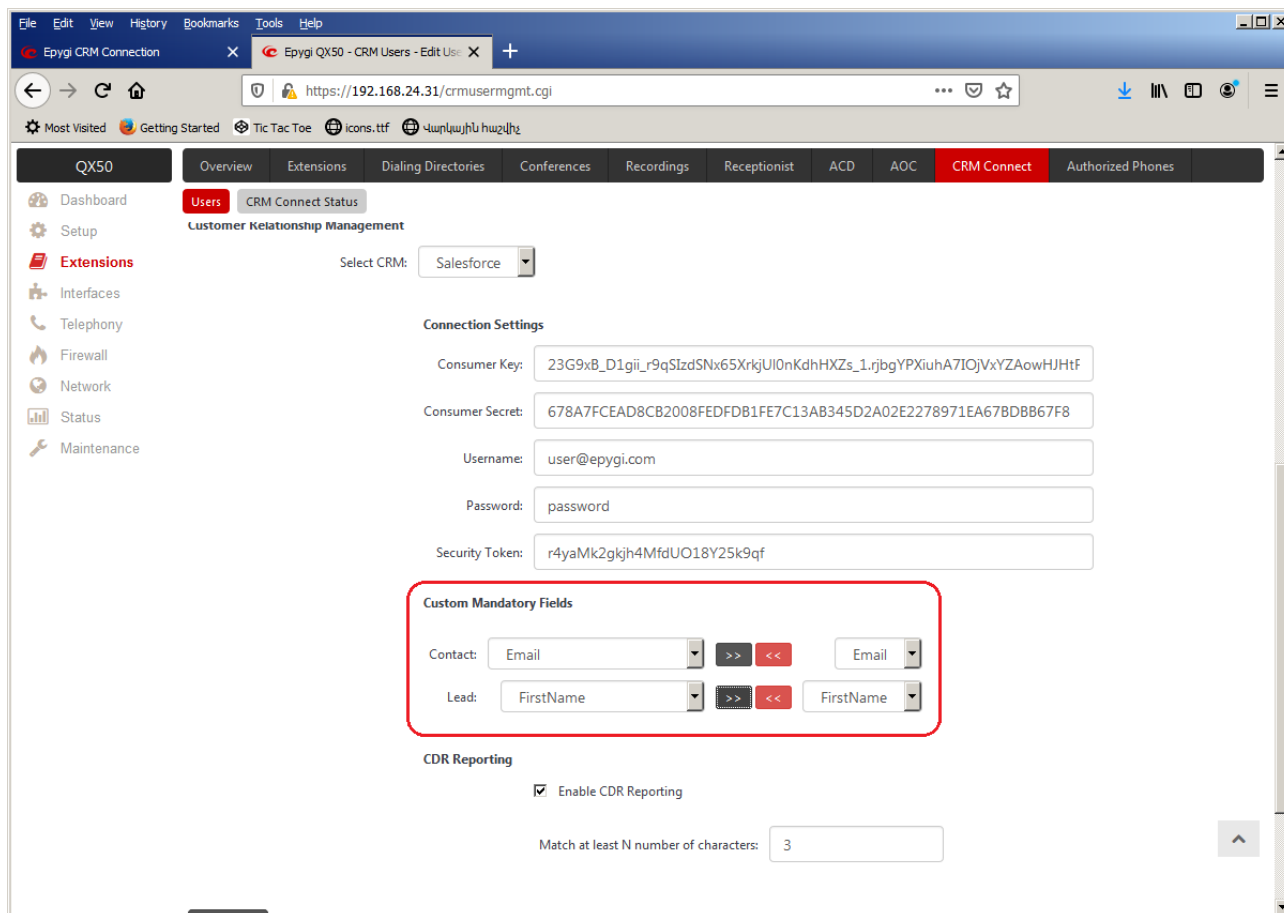
At the bottom, there is a field: Match at least N number of characters:

- **User:** the name of the user/agent that monitors inbound calls to QX via the **CRM Connection** web application.

- **Username and Password:** the web authentication parameters to be used by the user/agent to login to the **CRM Connection** web application.
- **Monitored Extensions:** inbound calls to these QX extensions will be monitored by the **CRM Connection** application.
- **Match at least N number of characters:** the minimal number of digits Epygi REST API will query Salesforce to match a Contact/Lead for **CRM Connection**. Queries with a smaller number of digits will be ignored, so no Salesforce records will be matched for **CRM Connection**.
- **Match Exactly:** if checked, only CRM records exactly matching the called phone number will be returned. Otherwise records with partially matched phone numbers will be returned.
- **Select CRM:** Set this value to Salesforce.
- **Consumer Key, Consumer Secret, Security Token:** Parameters provided by Salesforce Connected App, description of which you can find in “**Salesforce Connected App Configuration**” section.
- **Username and Password:** credentials of Salesforce user on behalf of which Epygi REST API will interact with Salesforce. Keep in mind that access level of **CRM Connection** application to Salesforce resources depends on permissions settings of that user.
- **CDR Reporting:**
 - Check **Enable CDR Reporting** if you want your QX Call Detail Records to be saved in Salesforce CRM.
 - **Match at least N number of characters:** To associate QX CDR with Salesforce data objects (Contact, Lead, Opportunity), CDR’s Caller Id or called number needs to **exactly match** the Salesforce record. If number of digits in Caller Id is less than this parameter, the CDR is still saved in Salesforce but is not associated with Salesforce data objects.

Custom Mandatory Fields.

After you save your newly created user account, you can edit it then, and at that time new fields will appear on user’s account screen: **Custom Mandatory Fields** for Contacts and Leads. To be able create/update Salesforce Contacts/Leads, Epygi **CRM Connection** needs information about required fields defined in your Salesforce CRM. Epygi REST API is smart enough to automatically determine those mandatory fields, which you see in your Salesforce CRM marked with red asterisk (*). However, if in Salesforce there are some custom validation rules or field accessibility settings applied, defining field as mandatory, which may not be detected by API, you need to define those custom mandatory fields manually. For that, from the list of Contact (or Lead) fields select those, which your Salesforce CRM requires to be filled when you create or update a record in your Salesforce CRM. This will form the list of **Custom Mandatory Fields**.



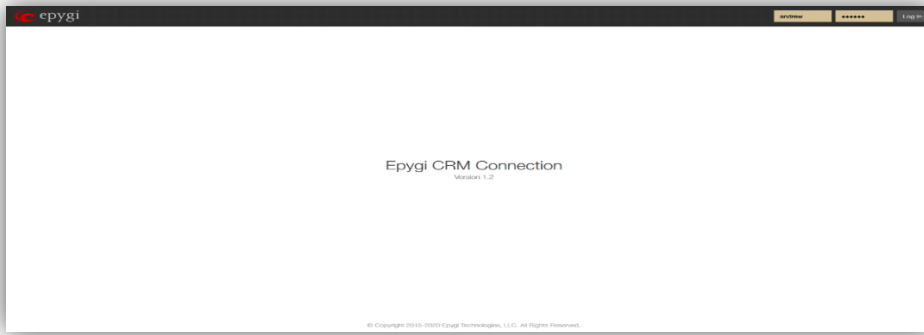
If you have multiple CRM Connection accounts linked to the multiple Salesforce users, you need to provide the same values of Consumer Key and Consumer Secret for all of them (because they all use the same Salesforce Connected App), and also the same set of Custom Mandatory Fields for all of them in CRM Connection GUI.

4. How to use the CRM Connection

Epygi's CRM Connection is a web application integrated with Epygi REST API for CRM, designed to support the CRM users to control and monitor incoming calling sessions on QX and update the Salesforce contacts.

Click the **Application** → **Epygi CRM Connection** link from QX login page or enter the following line <http://xxx.xxx.xxx.xxx/crmconnect/#!/login> in the address bar of the browser, where **xxx.xxx.xxx.xxx** is the IP address or host name of the QX.

Login to **CRM Connection** using the [web authentication](#) credentials for the CRM user.

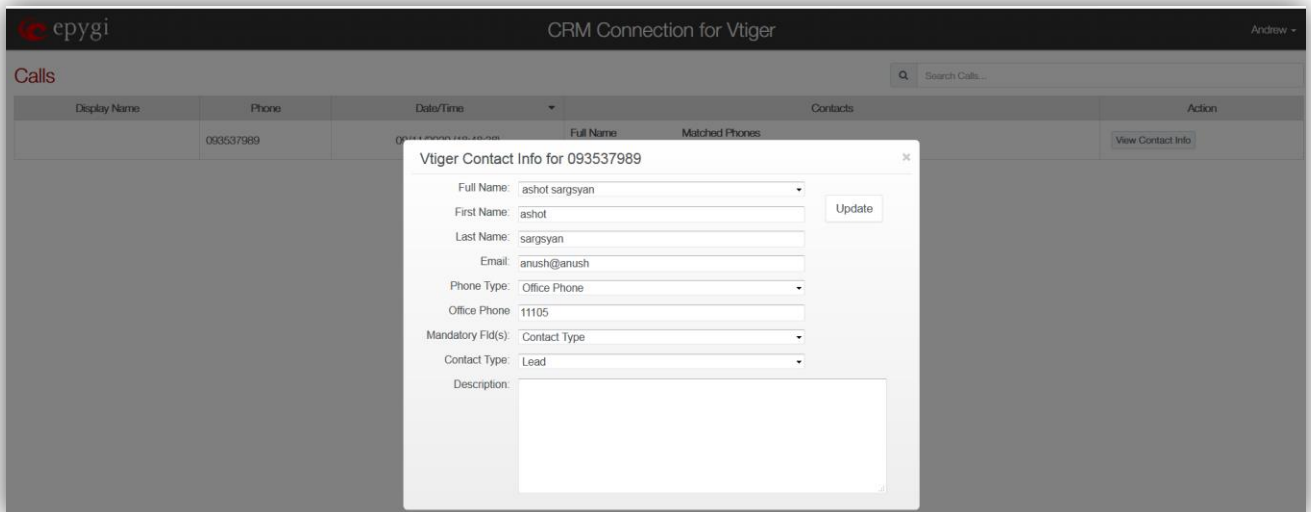


When the QX receives an inbound call to one of the monitored extensions, it checks the Salesforce CRM system to look up the contact name.

- If not found, the **CRM Connection** will indicate the inbound caller as a **no match**; the CRM user can now add it as a new contact.



- If found, the name of the contact is displayed in the **CRM Connection**. The CRM user then has a choice to view all available information for the contact using the **View Contact Info** button, as well as, update that information in the **Update** window.



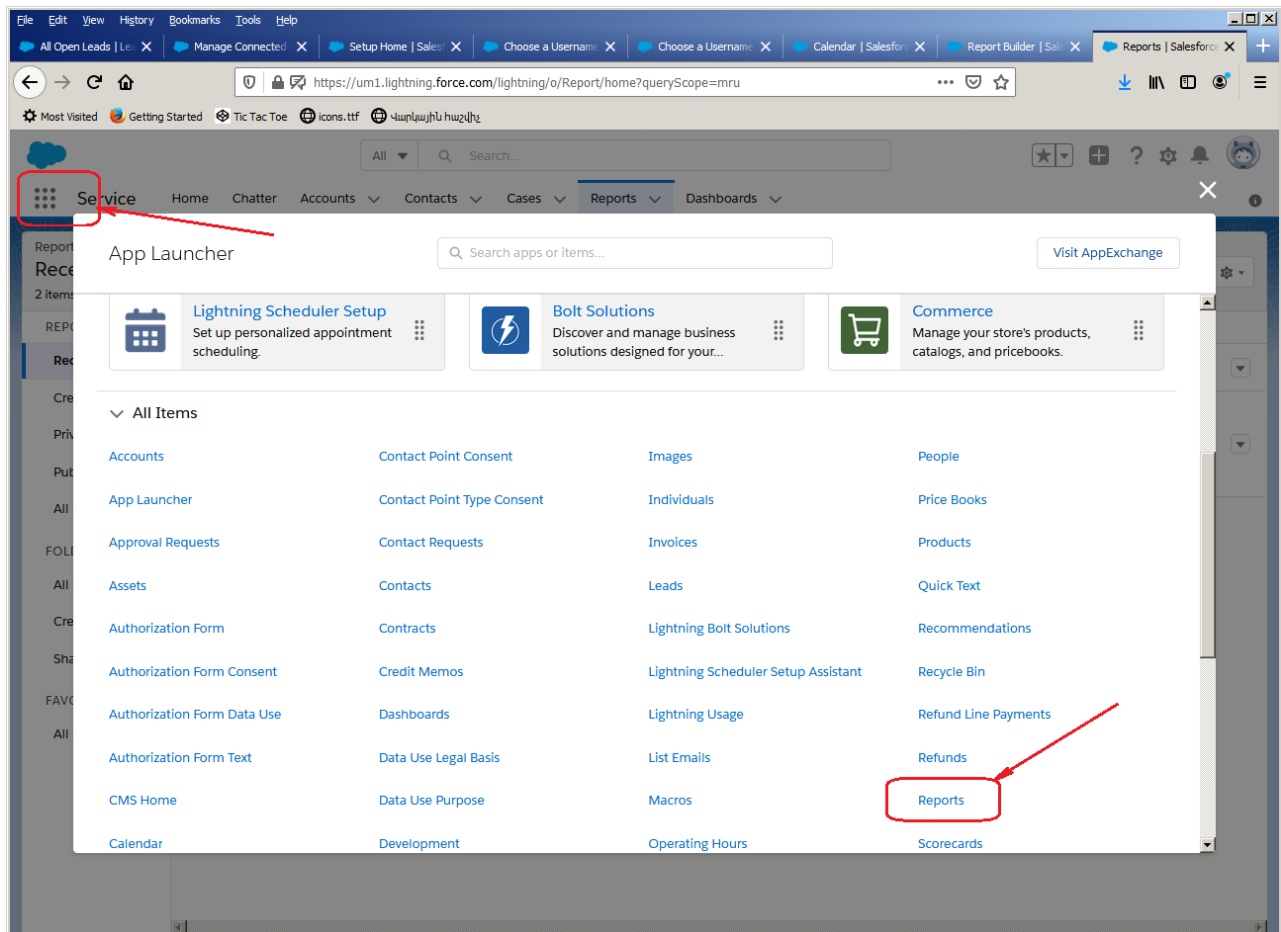
5. CDR Reporting

If appropriate settings are set in QX CRM Connect, Call Detail Records (CDR) data are automatically inserted into the Salesforce activities list.

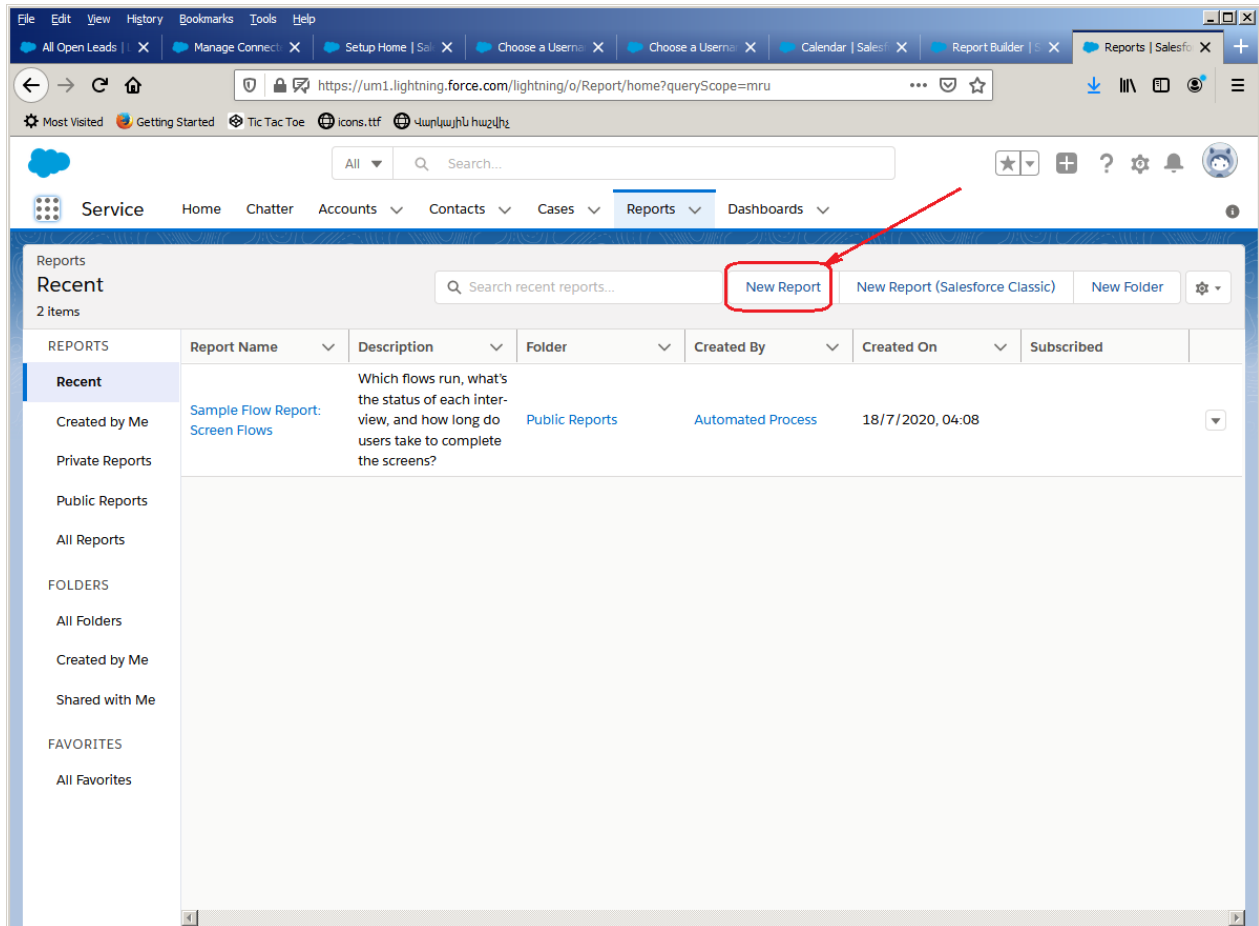
If the CDR Caller Id or number called **exactly matches** an existing phone number in Salesforce data objects (Contact, Lead, Opportunity), CDR data are automatically associated with that data objects.

6. Salesforce Configuration to view CDR reports

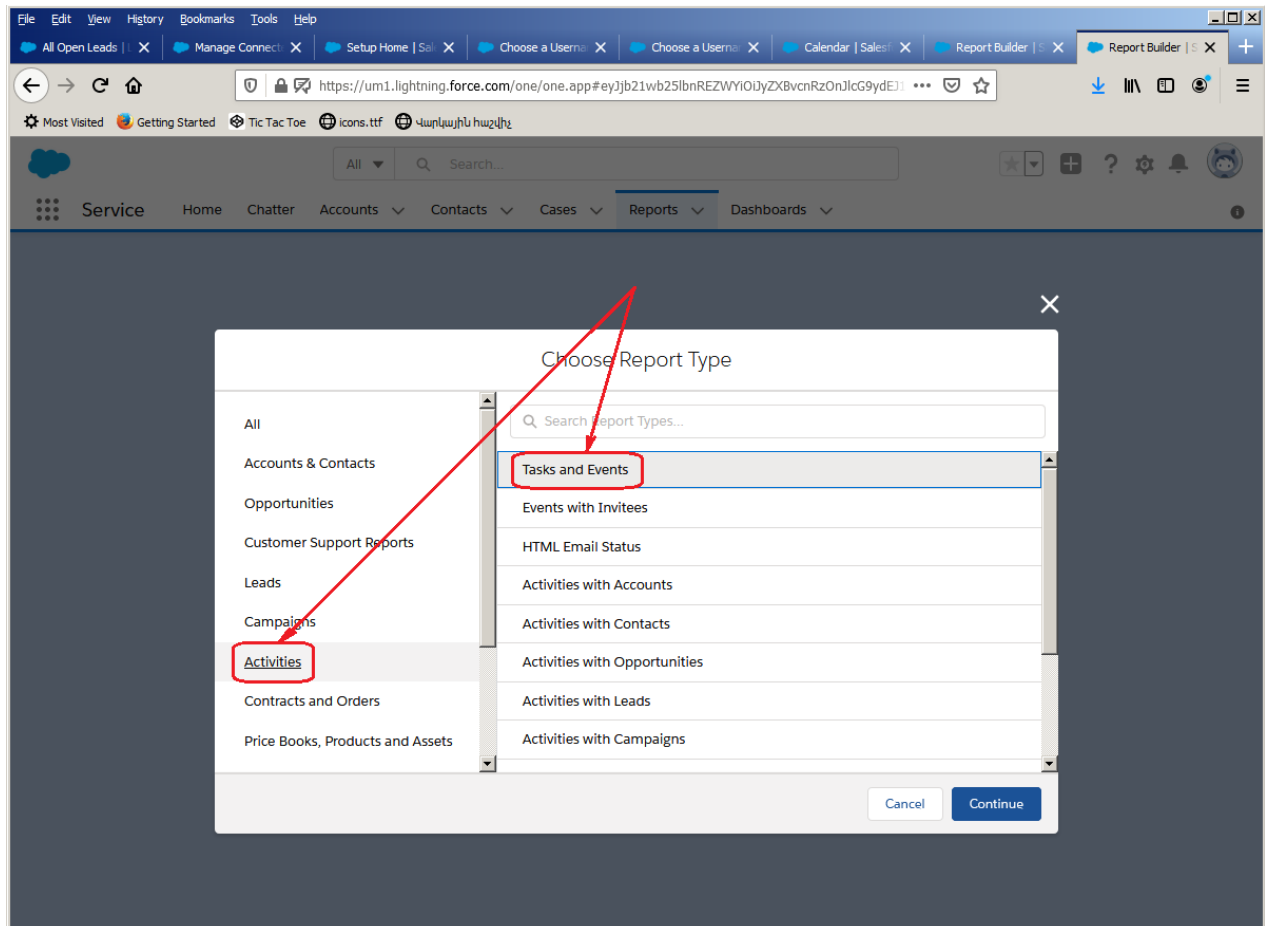
1) Login to your Salesforce account, click on **Salesforce app launcher** and navigate to “Reports”:



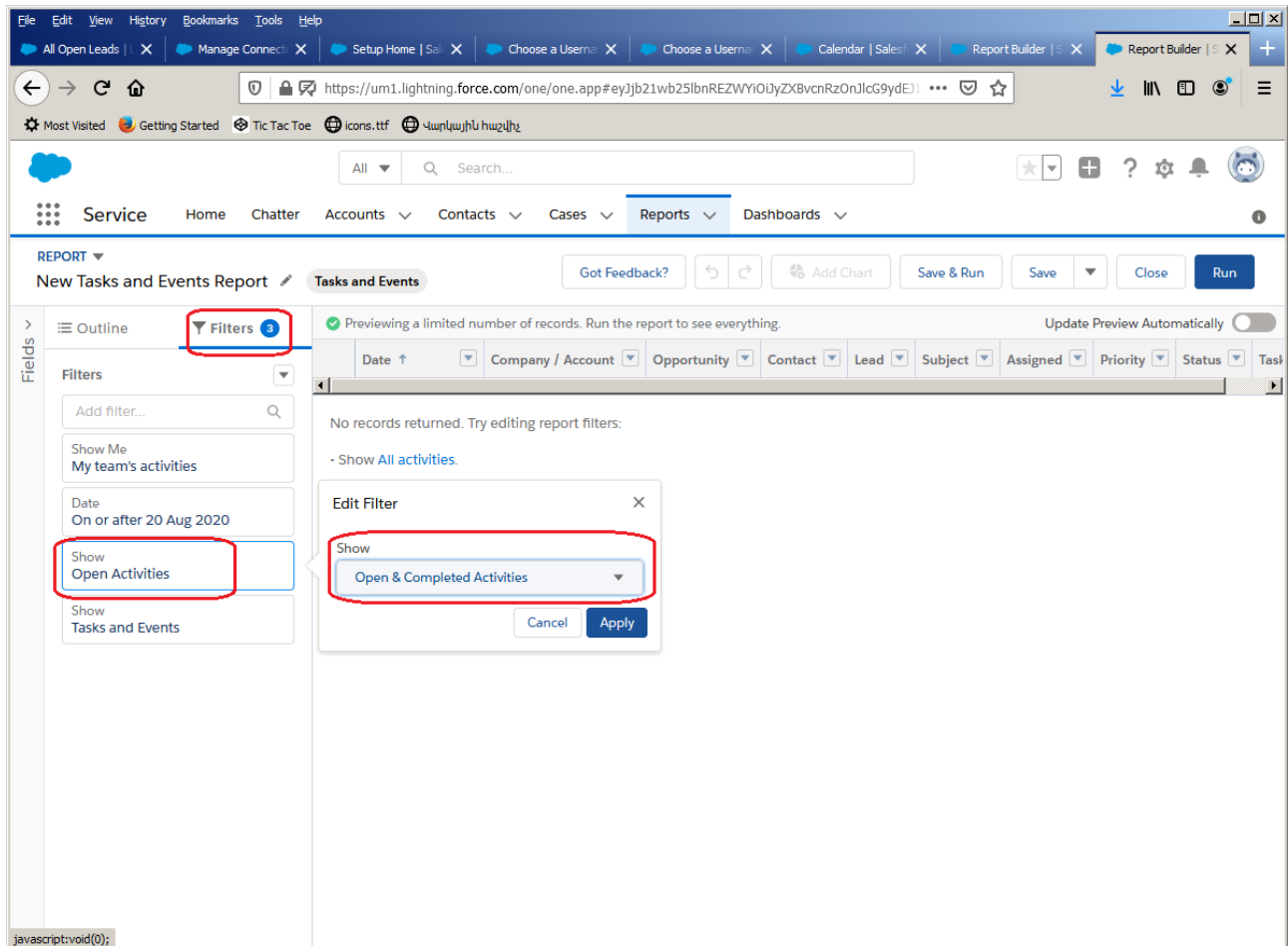
2) Start creating a new report by clicking on “New Report” link:



3) On pop-up dialogue choose “Activities” and then “Tasks and Events” report type. Then click on “Continue”.



4) Click on “Filters” tab, then on “Show”, and select “Open & Completed Activities” from drop-down:



Click on “Apply” button.

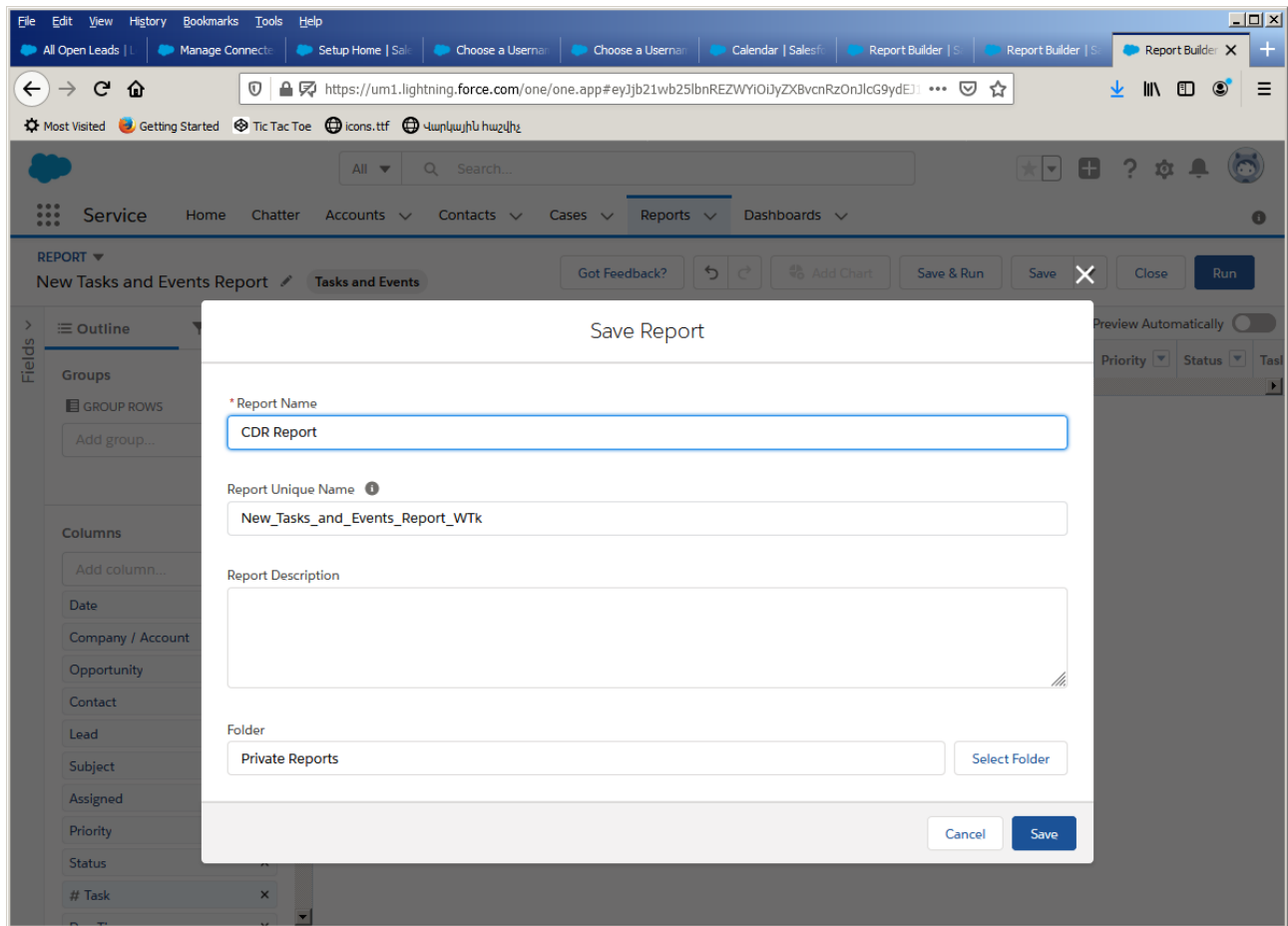
5) On the “Preview” window a list of calls will be shown. Remove “Task”, “Priority” and “Status” columns, and add “Due Time” and “Duration (minutes)”.

The screenshot shows the Salesforce Report Builder interface. The report is titled "New Tasks and Events Report" and is in "Preview" mode. The columns displayed in the report are: Date, Due Time, Company / Account, Contact, Lead, Opportunity, Subject, Assigned, and Duration (minutes). The report data includes several rows of call records.

| Date | Due Time | Company / Account | Contact | Lead | Opportunity | Subject | Assigned | Duration (minutes) |
|------------|----------|-------------------------------------|-------------|------|-------------|--|-----------------|--------------------|
| 14/08/2020 | 20:58 | - | - | - | - | Epygi QX50 Successful incoming call from 8182232400 to 330 | Armen Movsisyan | 3 |
| 18/08/2020 | 19:54 | - | - | - | - | Epygi QX50 Successful outgoing call from 8182232400 to 250 | Armen Movsisyan | 10 |
| 18/08/2020 | 20:06 | Burlington Textiles Corp of America | Jack Rogers | - | - | Epygi QX50 Successful outgoing call from 106 to 8182324765 | Armen Movsisyan | 10 |
| 18/08/2020 | 20:06 | Burlington Textiles Corp of America | Jack Rogers | - | - | Epygi QX50 Unsuccessful outgoing call from 230 to 8189119002 | Armen Movsisyan | 0 |
| 18/08/2020 | 20:06 | Burlington Textiles Corp of America | Jack Rogers | - | - | Epygi QX50 Unsuccessful outgoing call from 106 to 8189119002 | Armen Movsisyan | 0 |
| 19/08/2020 | 12:52 | Burlington Textiles Corp of America | Jack Rogers | - | - | Epygi QX50 Unsuccessful outgoing call from | Armen Movsisyan | 0 |

Click on “Refresh” link and then on “Save” button.

6) In the “Save Report” dialogue input Report Name and save it:



Now if you need to look at Call Detail Records, you can navigate to “Reports” and click on the created report.

7. References

Refer to the below-listed resources to get more details about the configuration settings used in this guide at the Epygi Support Portal:

- Manual-II: Administration Guide for QX IP PBXs
- Manual-III: User Guide for QX IP PBXs
- Call Routing on QX IP PBXs
- Preventing Unauthorized Calls on QX IP PBXs
- Users Rights Management on QX IP PBXs

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