

Consumer User Interface (CUI) Workflows for Adding Accounts

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ABOUT THIS GUIDE

This document provides workflow information for operations regarding adding accounts using AccountView Consumer User Interface (CUI), which is a part of the Morningstar® ByAllAccountsSM (BAA) aggregation service.

For each workflow, details are provided about:

- the test financial institution (FI) that can be used to demonstrate the scenario
- variations to the scenarios that may be demonstrated using different FIs
- possible major variations and customizations that can affect workflow
- typical errors

For lists of error conditions and messages, refer to [Appendix A: CUI Error Messages](#).

For a diagram of the overall workflow, refer to [Appendix B: Overall Workflow](#).

Related documentation

Detailed instructions about how to customize CUI are in the *Customizing AccountView Consumer User Interface (CUI)* guide at <http://www.byallaccounts.net/Manuals/Accountview/CustomizingConsumerUI.pdf>.

CUI WORKFLOWS FOR ADDING ACCOUNTS

Financial institutions (FIs) have different requirements for logging in to add accounts. For example, some use a login and password combination while others also require that questions be answered properly. This guide describes the following CUI workflows for adding accounts:


- Workflow 1: Add account - FI only requires a login and password
- Workflow 2: Add account - FI requires a single security question and answer (SQA)
- Workflow 3: Add account - FI requires an in-session activation code (ISAC)
- Workflow 4: Add account - Using an FI that is not currently supported
- Workflow 5: Add account using incorrect credentials
- Workflow 6: Add account using incorrect security answer

Financial Institutions (FIs) for workflows

BAA has test FIs that have specific requirements for logging in to add accounts. Some of the FIs listed here are used to demonstrate the workflows shown; others can be used to demonstrate variations as noted in the workflows.

Test FI	Description
<i>DataConnect Account Discovery/Credential Test FI 001 - No SQA</i>	Requires a login and password for account access.
<i>DataConnect Account Discovery/Credential Test FI 002 - SQA</i>	Requires an answer to a single security question (SQA).
<i>TEST: ByAllAccounts Demonstration FI #2 (SQA)</i>	Requires an answer to a single security question (SQA).

Test FI	Description
<i>DataConnect Account Discovery/Credential Test FI 0011 – Multiple Sequential SQA/Validate PW</i>	Requires answers to multiple questions, one at a time, and validates after receiving each answer.
<i>DataConnect Account Discovery/Credential Test FI 003 – Multiple SQA</i>	Requires answers to multiple questions but does not validate the answers until all of the answers have been received.
<i>TEST: ByAllAccounts Demonstration FI #3 (ISAC)</i>	Requires in-session activation code (ISAC) to log in, with the typical two-step process.
<i>DataConnect Activation Code Test 003 - Single Prompt</i>	Requires in-session activation code (ISAC) to login, with a single prompt.
<i>DataConnect Account Credential Test FI 001 - No SQA</i>	Does not support account discovery; requires an account number.
<i>DataConnect Account Credential Test FI 005 - Account Number 2 Field</i>	Does not support account discovery; requires two account numbers.
<i>DataConnect OAuth Test FI 002</i>	Requires OAuth authorization.

Note: When using a test FI, click the question mark  to the right of each field to see the credentials you need.

CUI CUSTOMIZATION MAY AFFECT EXPECTED RESULTS

Customization of the UI enables firms to adjust the look and feel and also to have certain features disabled, as described in the *Customizing AccountView Consumer User Interface (CUI)* guide at <http://www.byallaccounts.net/Manuals/Accountview/CustomizingConsumerUI.pdf>.

While some customizations strictly affect the look and feel of CUI, others affect functionality that is expected during these workflows. Some of the customizations are handled by customer-edited files; others are set on the firm-level at BAA. Specific customizations that affect workflows are noted in this guide.

When a feature is disabled, a step may be missing in the UI or the expected results may be different. Typically the steps shown in this guide assume that the options are turned on. When disabling a feature affects the workflow, the difference is noted with an explanation of the difference in the expected result.

Customization Notes

Specific customizations that may affect workflows are:

- Hide financial institution (FI) logos when selecting an FI
- Disable display of FI URL and searching for FI by URL
- Disable the workflow for requesting support for a new FI (set on the firm in general, not specific to CUI)

WORKFLOW 1: ADD ACCOUNT - FI ONLY REQUIRES A LOGIN AND PASSWORD

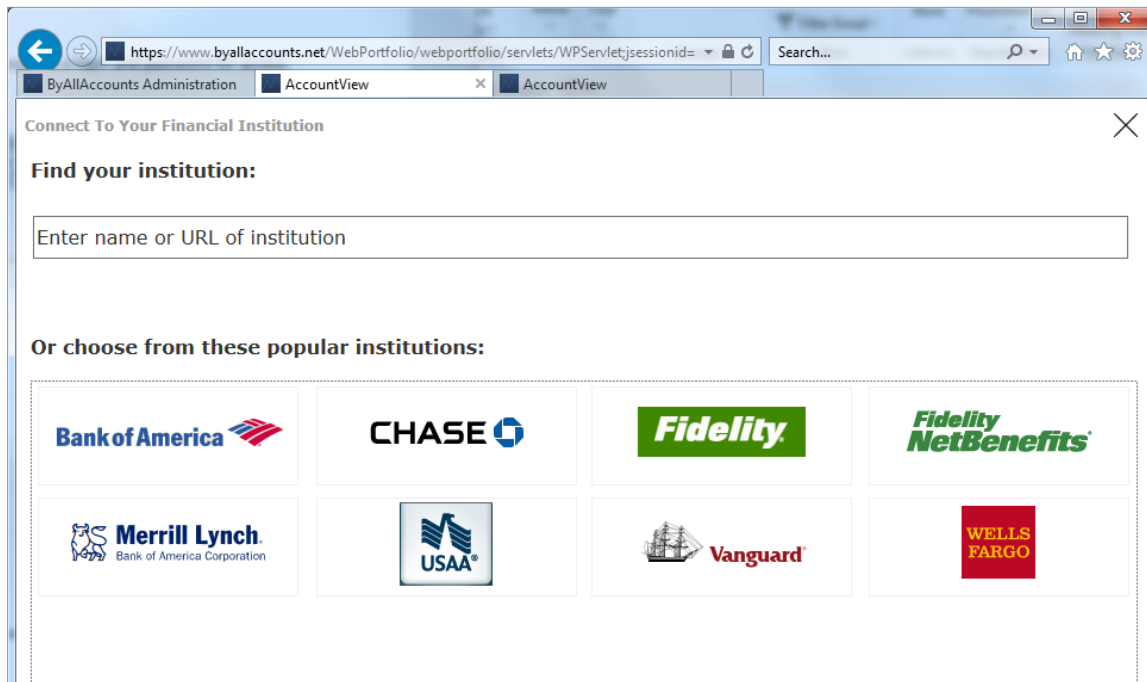
FI to use for workflow

DataConnect Account Discovery/Credential Test FI 001 - No SQA

This FI is used in the workflow shown; the FI only requires a login and password for account access.

Workflow

This workflow shows adding an account at a financial institution that only requires a login and password for access.

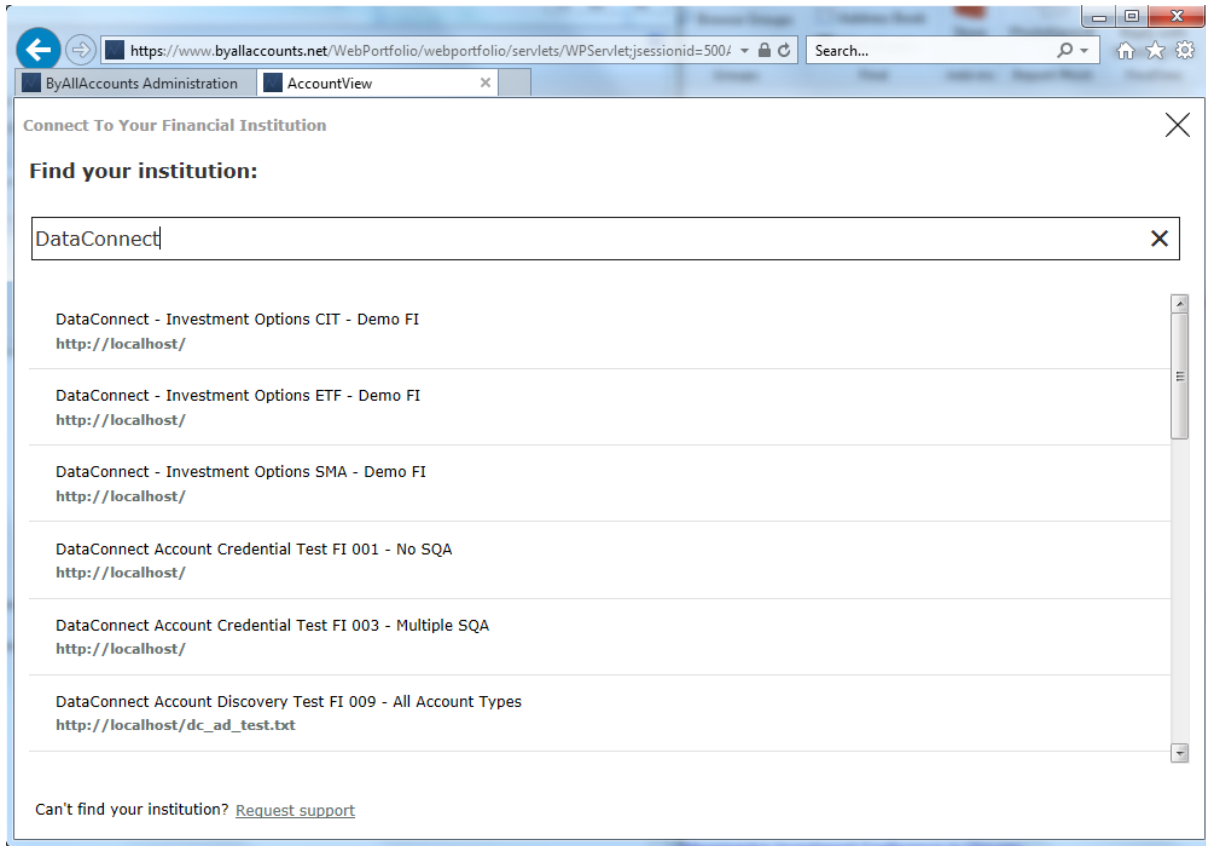


This screen shows the logos for the eight most popular FIs. The set is hard-coded.

Potential variations to this screen:

- Screen may not show logos of these popular FIs; whether they are shown or not is determined by customization.

1. Enter the name of the institution. As you start to type, the list shows FI names and URLs that contain what you type.



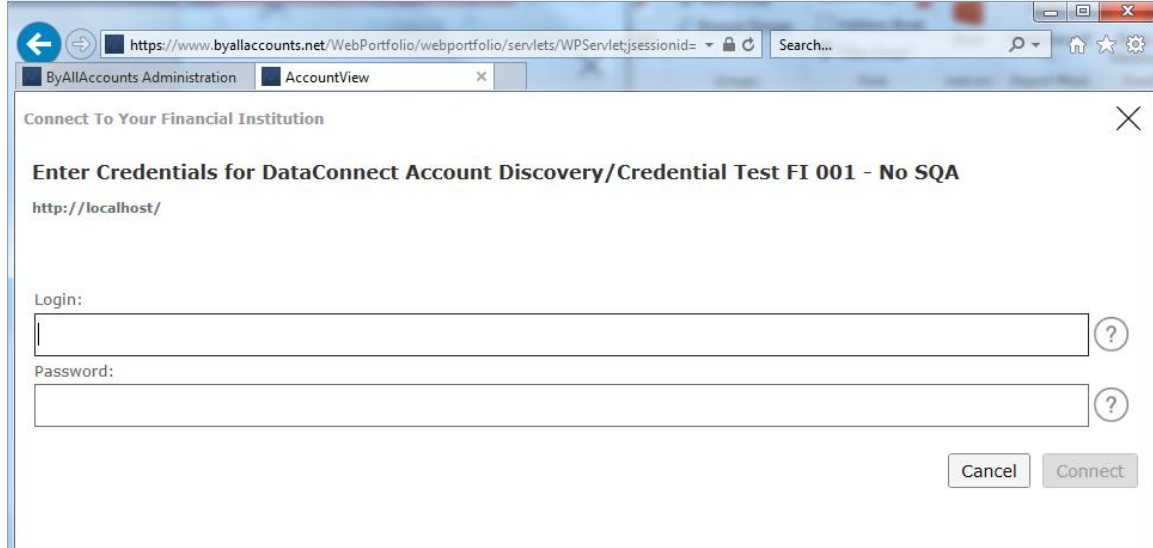
The approximately 15,000 FIs available are a subset of the BAA-supported FIs; they meet these criteria:

- FI is not 'Professional Access Only'
- FI supports the 'test credential' feature
- FI does not require a password change

Potential variations to this screen:

- URLs may not be shown; if they are not it is because they were shut off by customization.
- **Request support** text and link will not appear if the option for making FI Requests is disabled for the firm. Use of the feature is described in [Workflow 4: Add account - Using an FI that is not currently](#).

2. Select an FI that only requires a login name and password. For example, *DataConnect Account Discovery/Credential Test FI 001 - No SQA*.



The screenshot shows a web browser window with the URL <https://www.byallaccounts.net/WebPortfolio/webportfolio/servlets/WPServlet.jsessionid=>. The browser tabs are labeled 'ByAllAccounts Administration' and 'AccountView'. The main content area is titled 'Connect To Your Financial Institution' and contains the following text: 'Enter Credentials for DataConnect Account Discovery/Credential Test FI 001 - No SQA' and 'http://localhost/'. Below this, there are two input fields: 'Login:' and 'Password:'. Each field has a question mark icon to its right. At the bottom right, there are two buttons: 'Cancel' and 'Connect'.

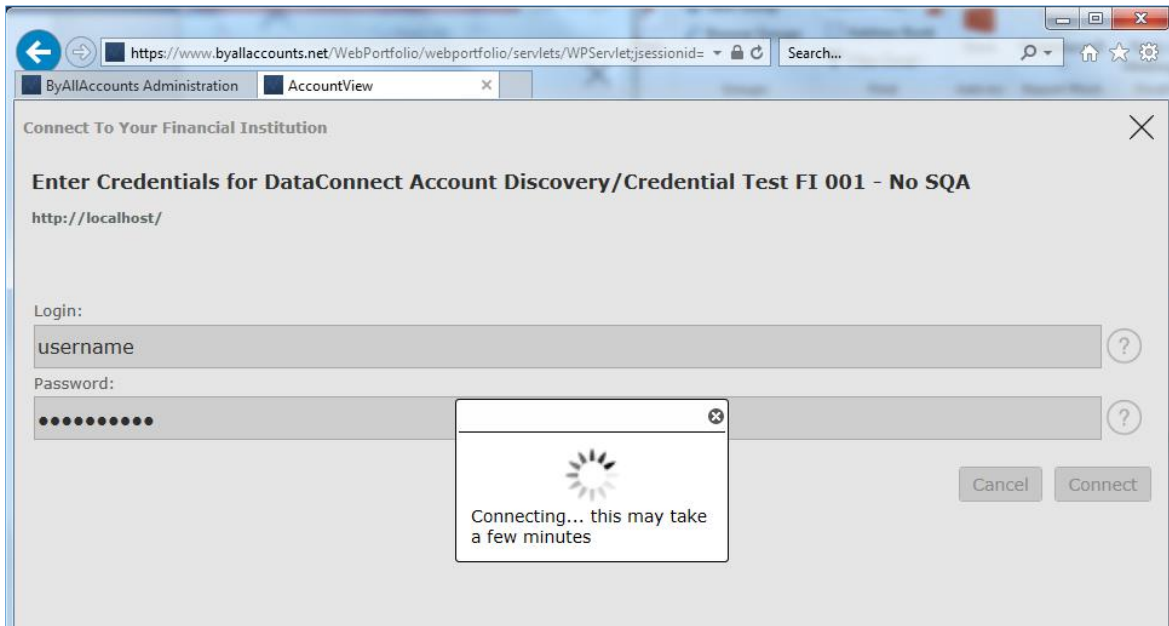
Tip: Click the question mark  to the right of each field to see the credentials you need to use for the test FI.

The required fields and their labels vary depending on what is required by the FI. This workflow shows a simple case with just a login and password, which are both required.

Other FIs may:

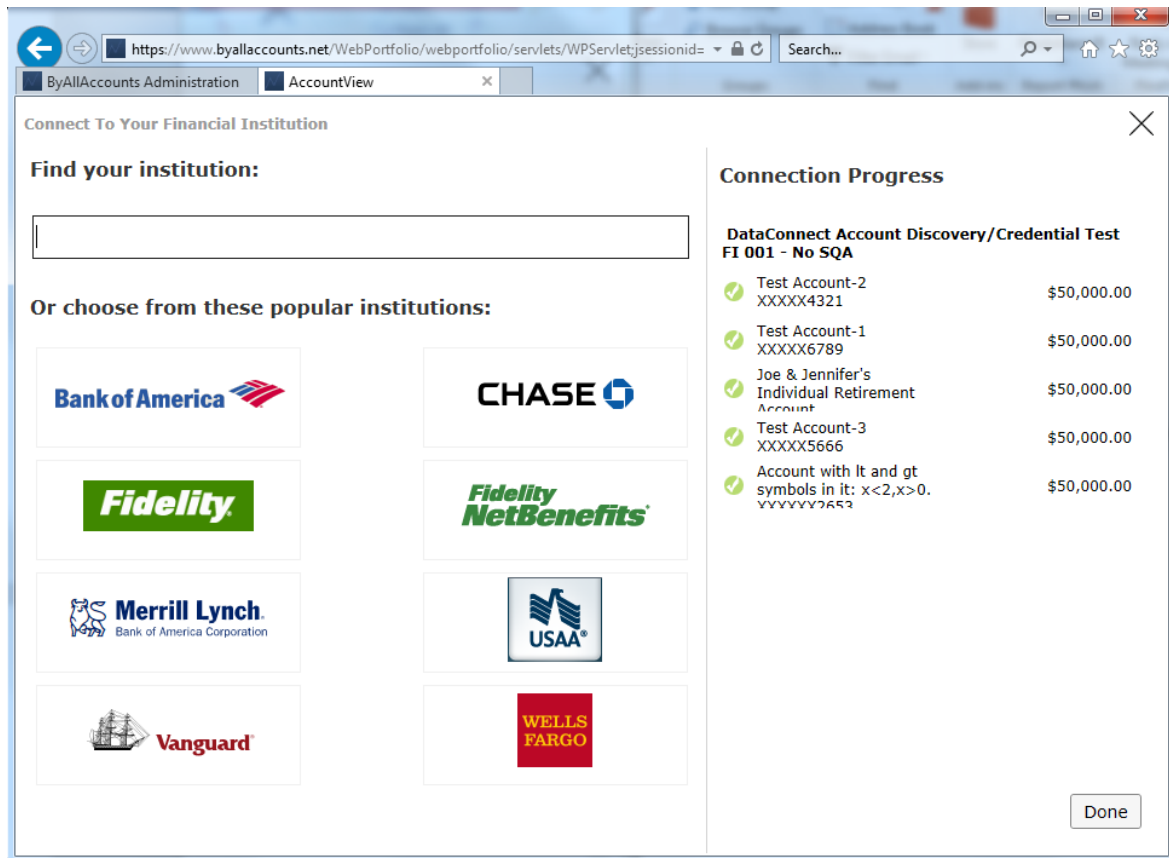
- Use different field labels.
- Require second login, indicated by an additional login field.
- Require a second password, indicated by an additional password field.
- Not support account discovery, and require an account number field.
(Can be demonstrated using *DataConnect Account Credential Test FI 001 - No SQA*.)
- Not support account discovery, and require two account number fields.
(Can be demonstrated using *DataConnect Account Credential Test FI 005 - Account Number 2 Field*.)

3. Enter the login and password and click **Connect** to test that the login credentials are valid.



Potential errors cases:

- Incorrect credentials or problems accessing the institution.
4. After a successful login, Consumer UI executes the account discovery, then the aggregation process, then shows the results.



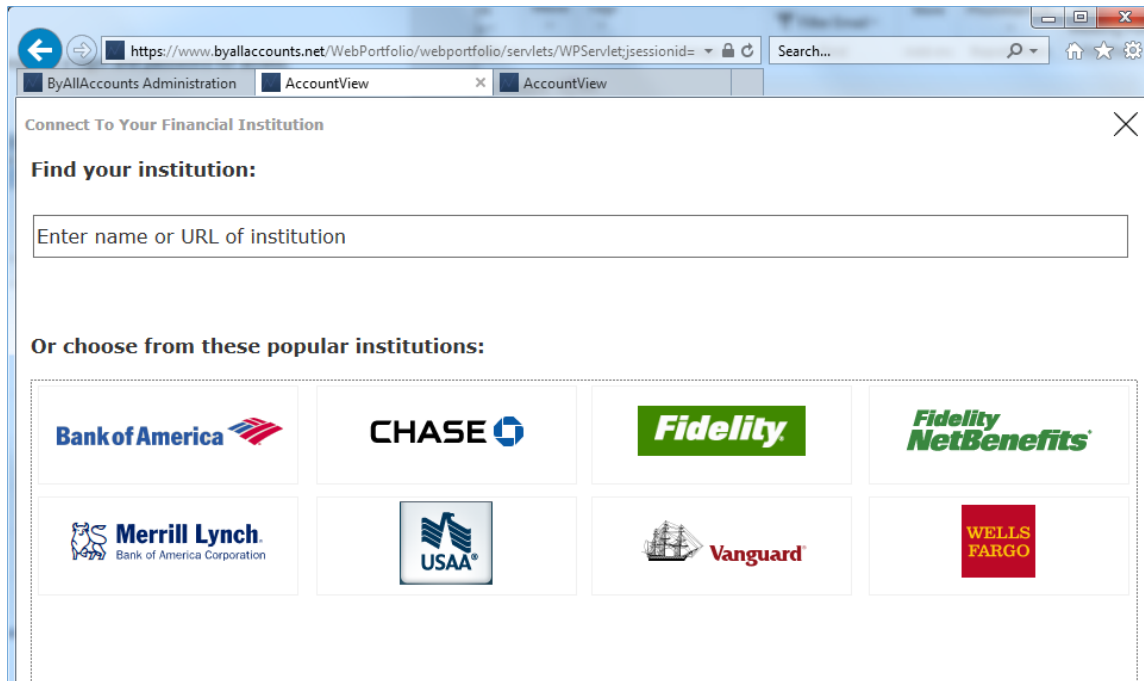
WORKFLOW 2: ADD ACCOUNT - FI REQUIRES A SINGLE SECURITY QUESTION AND ANSWER (SQA)

FI to use for workflow

DataConnect Account Discovery/Credential Test FI 002 – SQA
or *TEST: ByAllAccounts Demonstration FI #2 (SQA)*

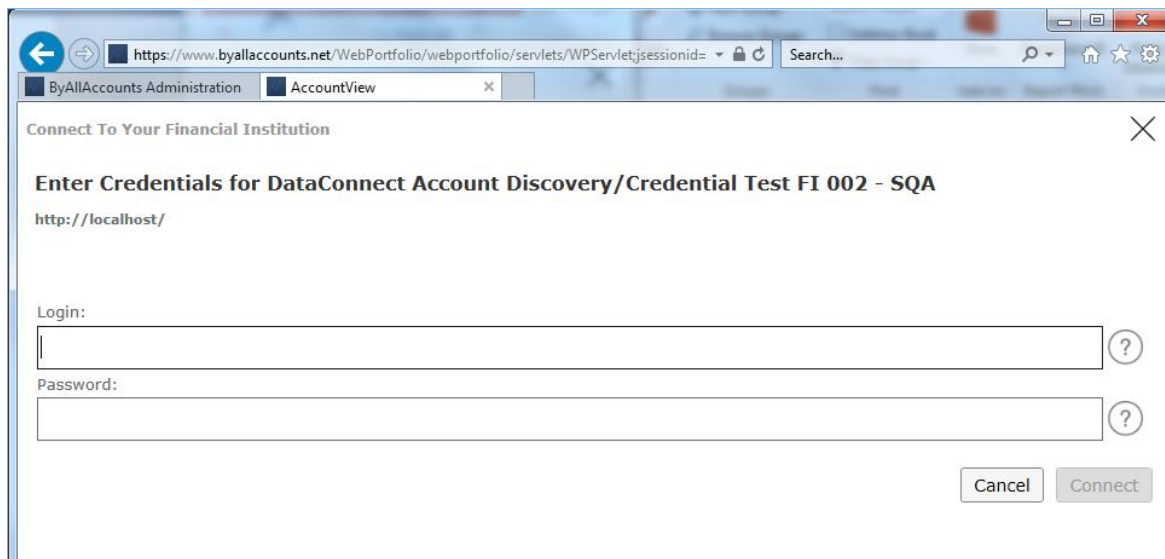
Workflow

This workflow shows adding an account at an FI that requires an answer to a single security question.



Note: Customizations that may affect the user interface on this screen and when finding the institution are described in [Workflow 1: Add account - FI only requires a login and password](#).

1. Select the FI that requires a login, password, and security answer. To demonstrate this workflow, select *TEST: ByAllAccounts Demonstration FI #2 (SQA)*.



Tip: Click the question mark  to the right of each field to see the credentials to use.

2. Enter the login and password then click **Connect** to test that the login credentials are valid.

The system specifies that more input is needed.



The test FI requires an answer to a single question.

Other FIs may have different requirements and ask additional questions in different ways. For example:

- FI requests answers to multiple questions with one-by-one validation; the SQA step displays multiple times with different questions, and validates after receiving each answer. (Can be demonstrated using *DataConnect Account Discovery/Credential Test FI 0011 - Multiple Sequential SQA/Validate PW.*)
- FI requests answers to multiple questions but does not validate the answers until all of the answers have been received. (Can be demonstrated using *DataConnect Account Discovery/Credential Test FI 003 - Multiple SQA.*)

3. Enter the answer (**Boston**) then click **Connect** to test that the answer is correct.

After a successful login Consumer UI executes the account discovery, then the aggregation process, then shows the results.

The screenshot shows a web browser window with the URL <https://www.byallaccounts.net/WebPortfolio/webportfolio/servlets/WPServlet;jsessionid=87B...>. The browser tabs include 'ByAllAccounts Administration' and 'AccountView'. The main content area is titled 'Connect To Your Financial Institution' and features a search bar under 'Find your institution:'. Below this, it says 'Or choose from these popular institutions:' and displays a grid of logos for Bank of America, CHASE, Fidelity, Fidelity NetBenefits, Merrill Lynch Bank of America Corporation, USAA, Vanguard, and WELLS FARGO. On the right side, a 'Connection Progress' panel shows the title 'DataConnect Account Discovery/Credential Test FI 002 - SQA' and a list of three test accounts: 'Test Account-1 XXXXX6789', 'Test Account-2 XXXXX4321', and 'Test Account-3 XXXXX5666'. A 'Done' button is located at the bottom right of the connection progress panel.

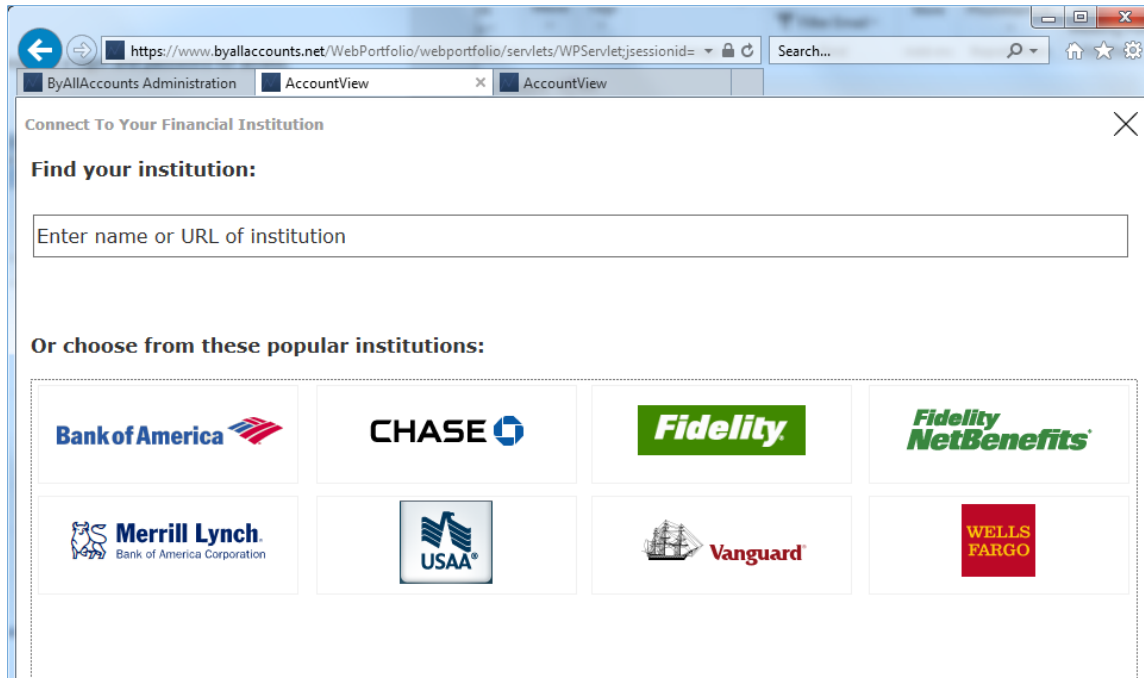
WORKFLOW 3: ADD ACCOUNT - FI REQUIRES AN IN-SESSION ACTIVATION CODE (ISAC)

FI to use for workflow

*TEST: ByAllAccounts Demonstration FI #3 (ISAC)
or DataConnect Activation Code Test 001 - Typical Prompt*

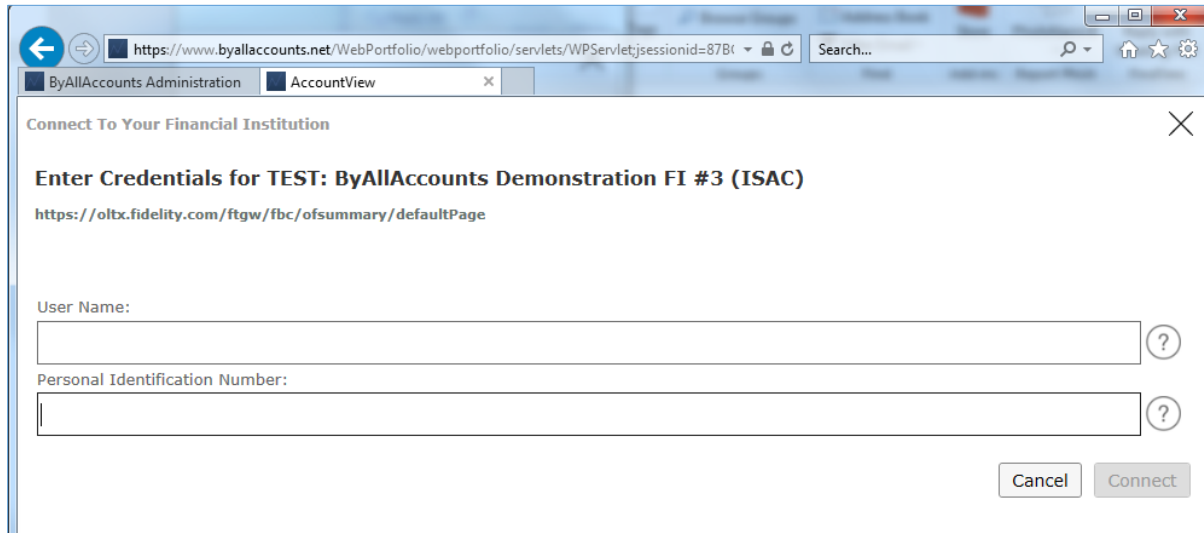
Workflow

This workflow demonstrates adding an account at an FI that requires a two-step in-session activation code (ISAC) process to log in.



Note: Customizations that may affect the user interface on this screen and when finding the institution are described in [Workflow 1: Add account - FI only requires a login and password](#)

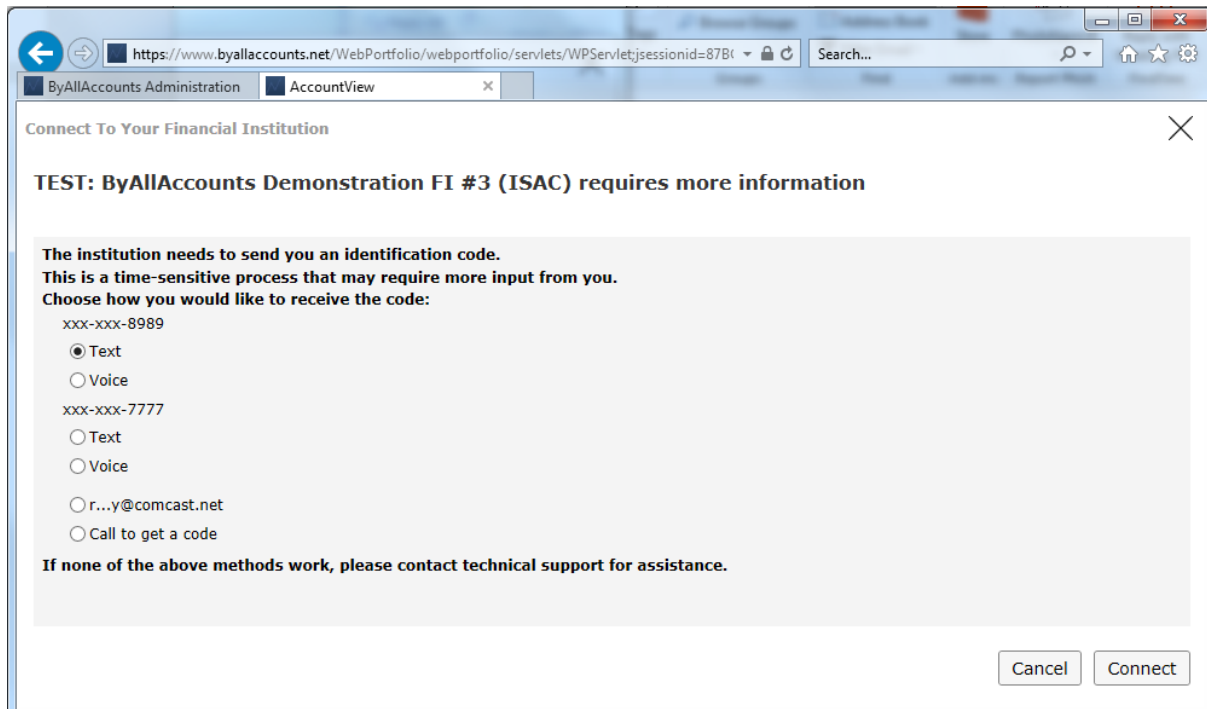
1. Choose an FI that requires an in-session activation code (ISAC) to login. For example, *TEST: ByAllAccounts Demonstration FI #3 (ISAC)*.



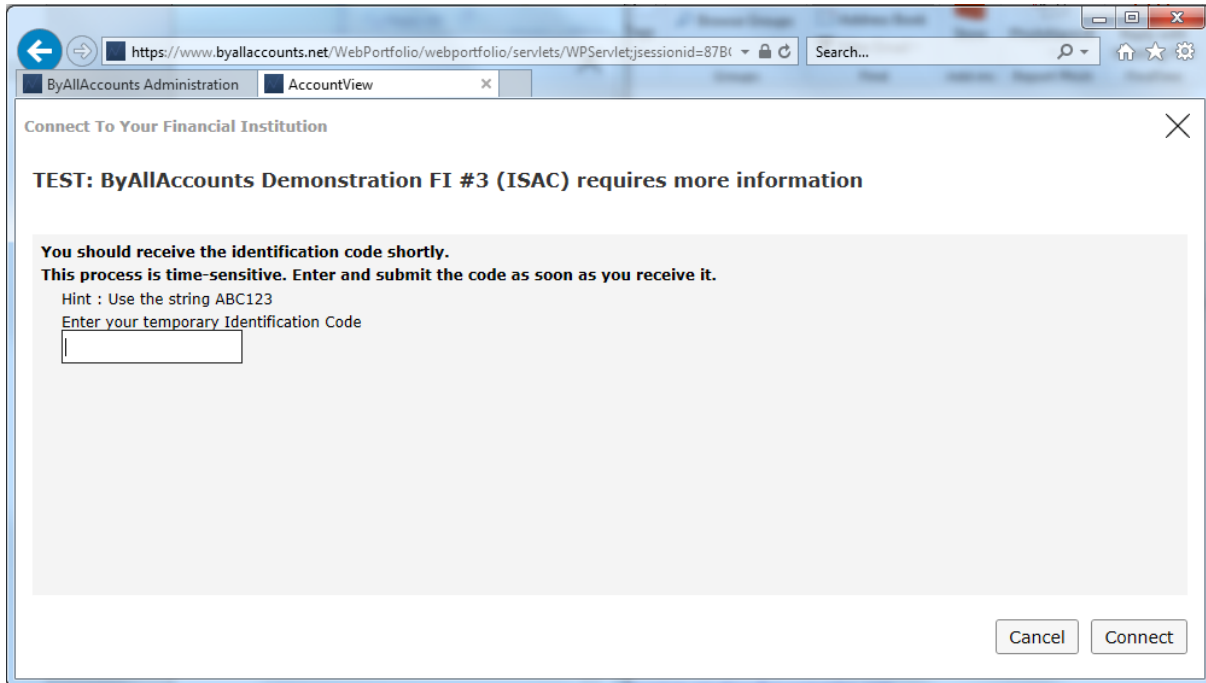
Note: Customizations that may affect the user interface on this screen and when finding the institution are described in [Workflow 1: Add account - FI only requires a login and password](#).

2. Enter the credentials (using the question mark  to find the test FI credentials) then click **Connect** to test that the login credentials are valid.

The system specifies that more input is needed, based on the FI's response to the credential input step.



3. Choose method of receiving code and click **Connect** to continue login process.

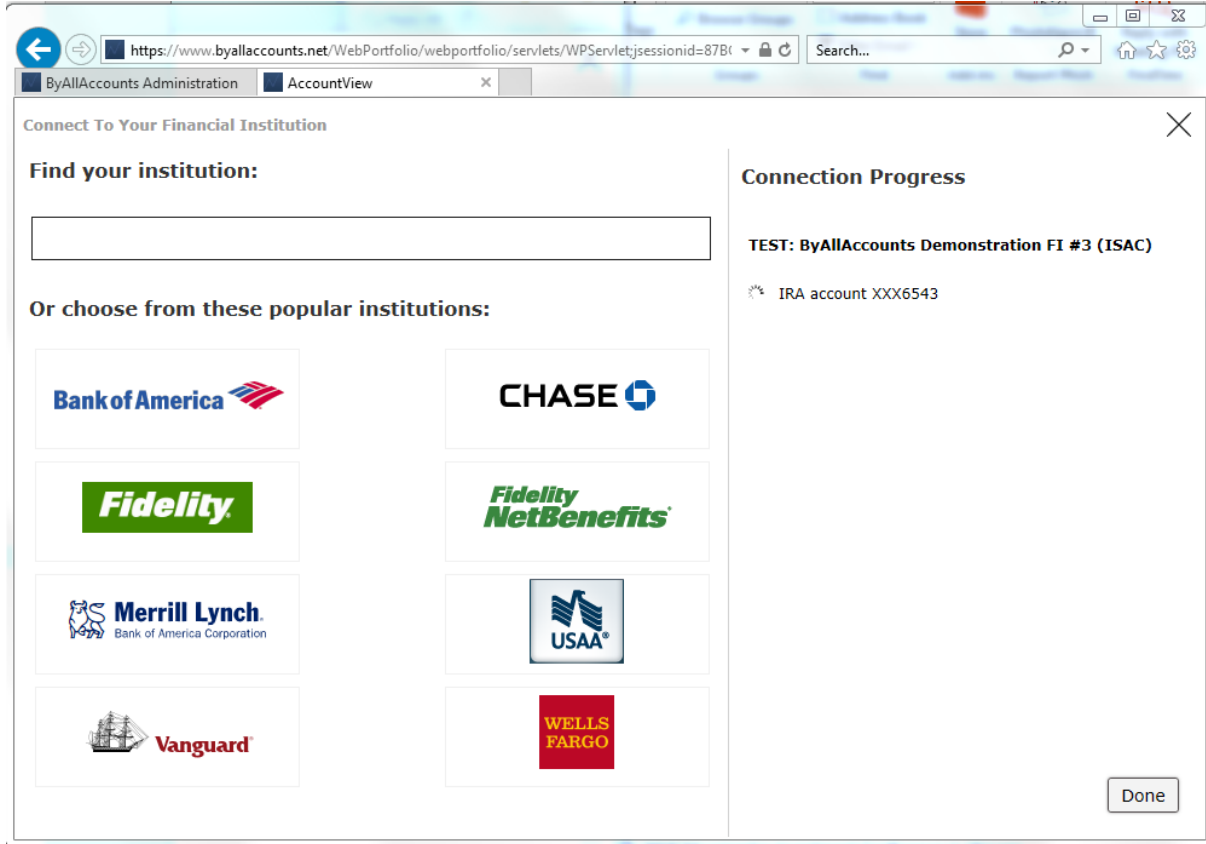


This is a typical workflow for ISAC. It shows an FI that requires a two-step process: the user chooses where to send the code (step 3) and enters it (step 4).

Other FIs may have other requirements. For example:

- A single prompt page. (Can be demonstrated using *DataConnect Activation Code Test 003 - Single Prompt.*)
 - A repeating cycle of requests for information from the user and submitting user responses until the FI no longer asks for more input.
4. Enter code provided by FI (displayed as a Hint in the dialog for testing purposes) then click **Connect** to test that code is correct.

After a successful login Consumer UI executes the account discovery, then the aggregation process, then shows the results.



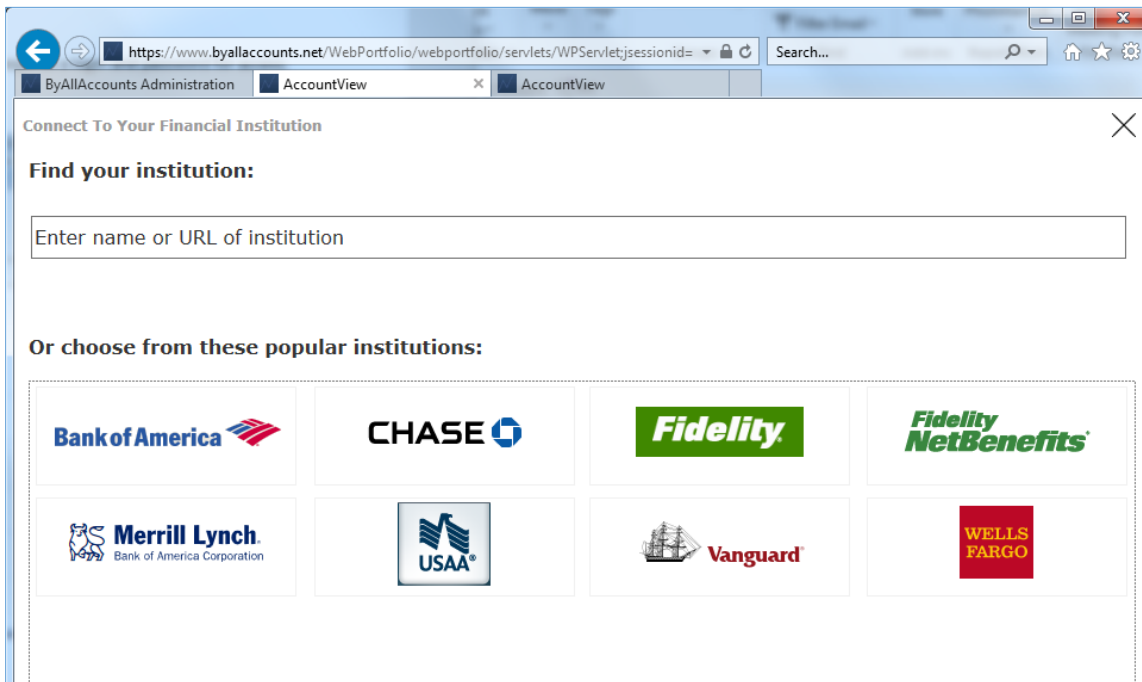
WORKFLOW 4: ADD ACCOUNT - USING AN FI THAT IS NOT CURRENTLY SUPPORTED

FI to use for workflow

None

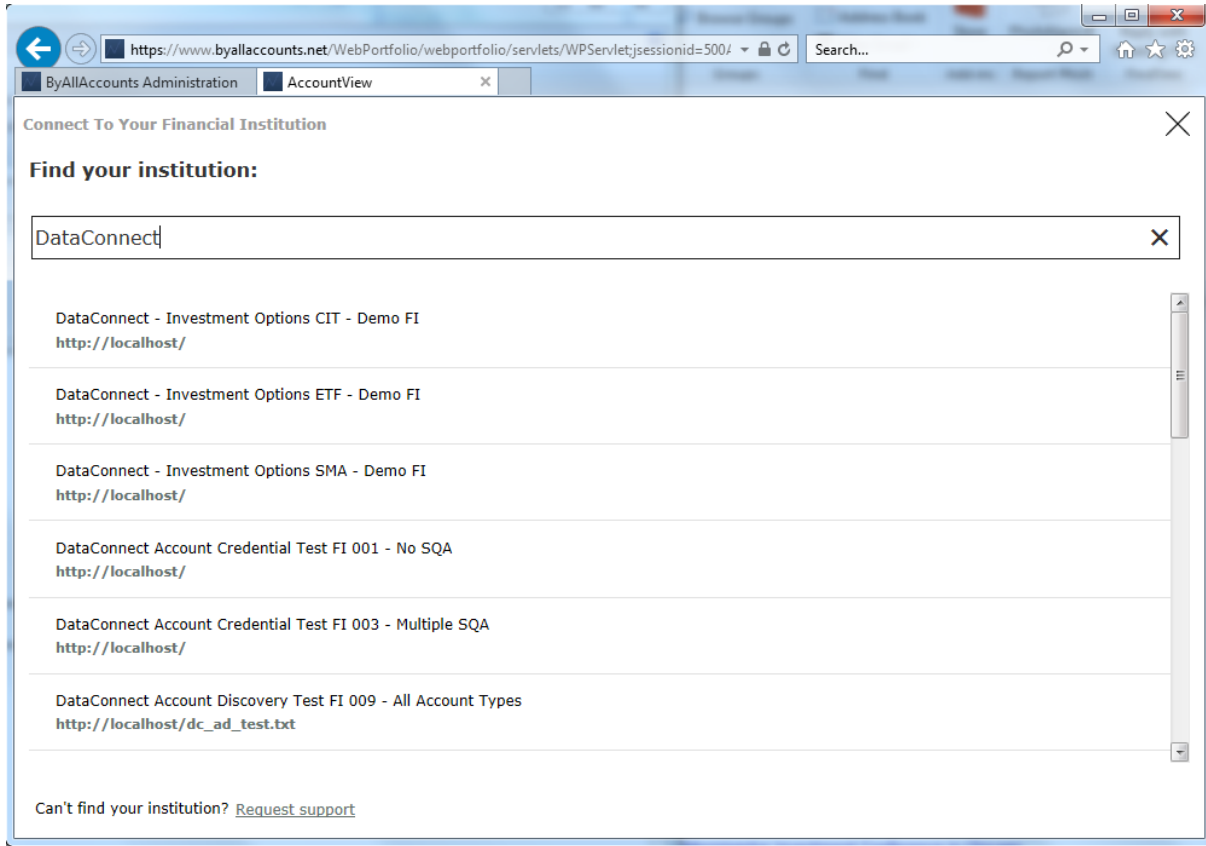
Workflow

This workflow shows adding an account for an FI that is not currently included in the list of approximately 15,000 institutions.

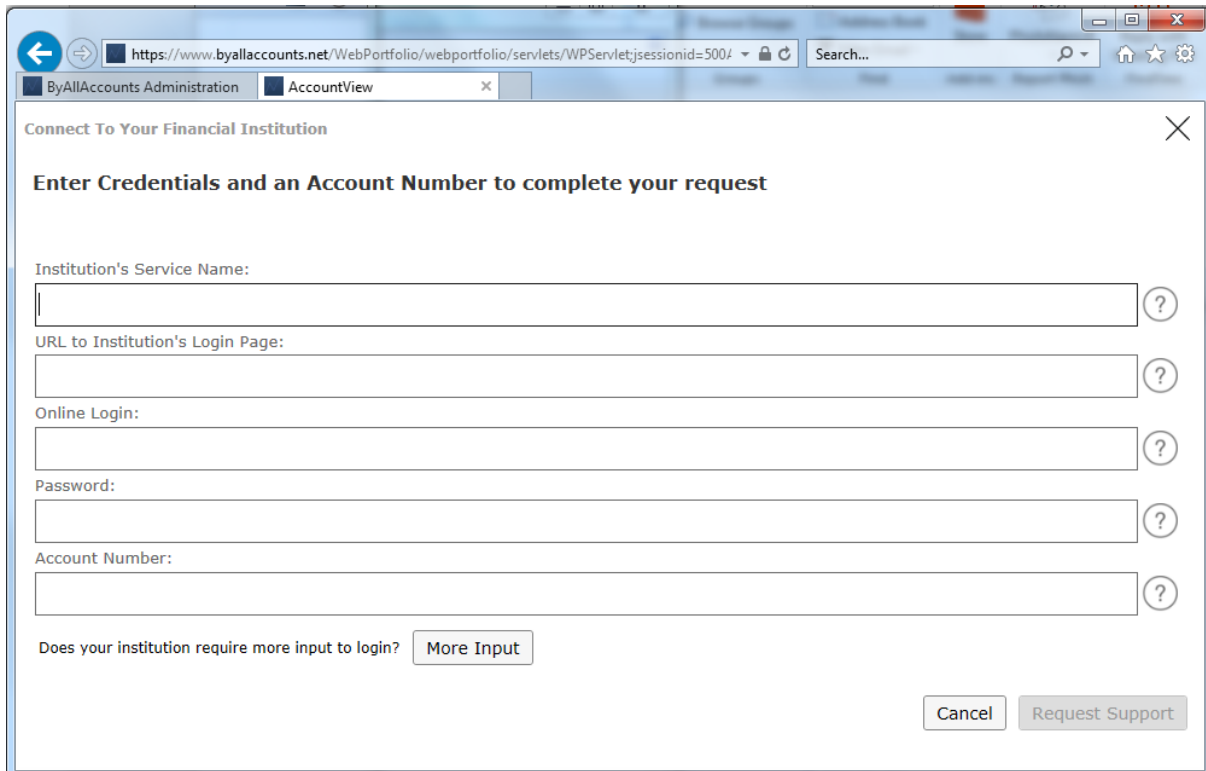


Note: Customizations that may affect the user interface on this screen and when finding the institution are described in [Workflow 1: Add account - FI only requires a login and password](#).

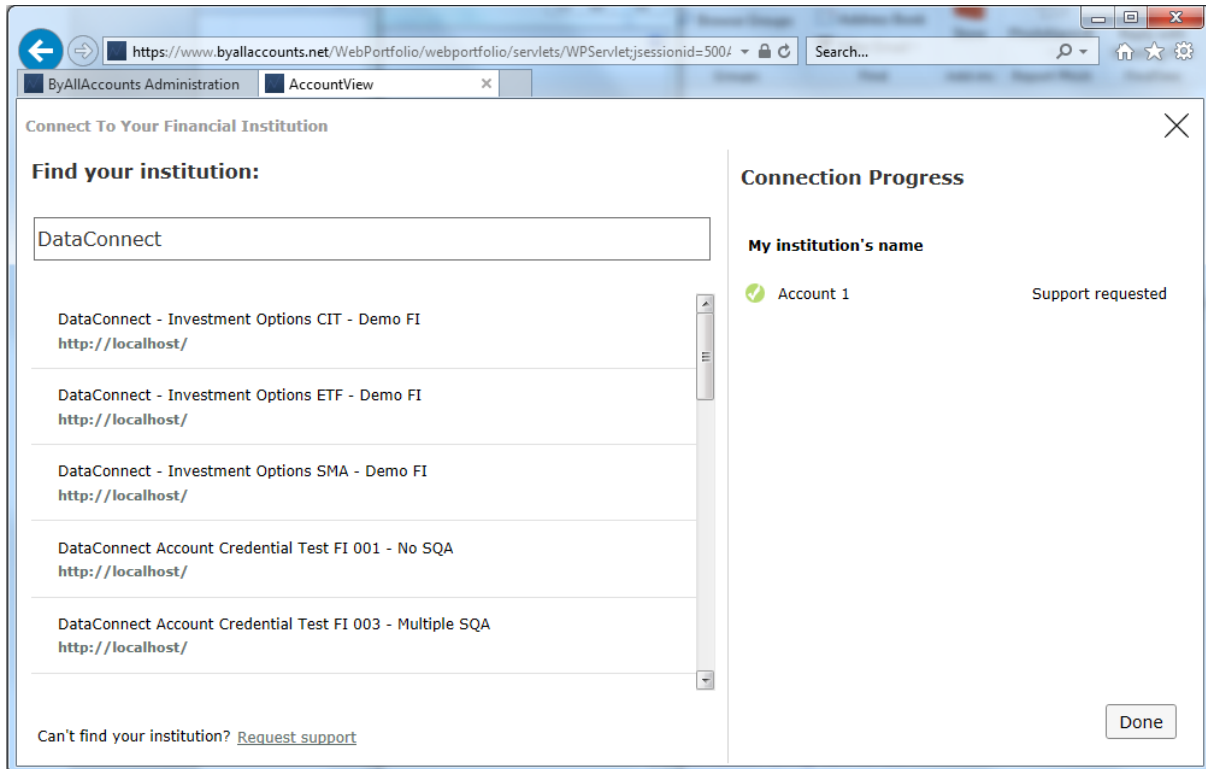
1. Start to type anything.



2. Select the **Request support** link.



3. Enter the institution information, the credential information, and the account number. Then click **Request Support** to add the account to the system.



WORKFLOW 5: ADD ACCOUNT USING INCORRECT CREDENTIALS

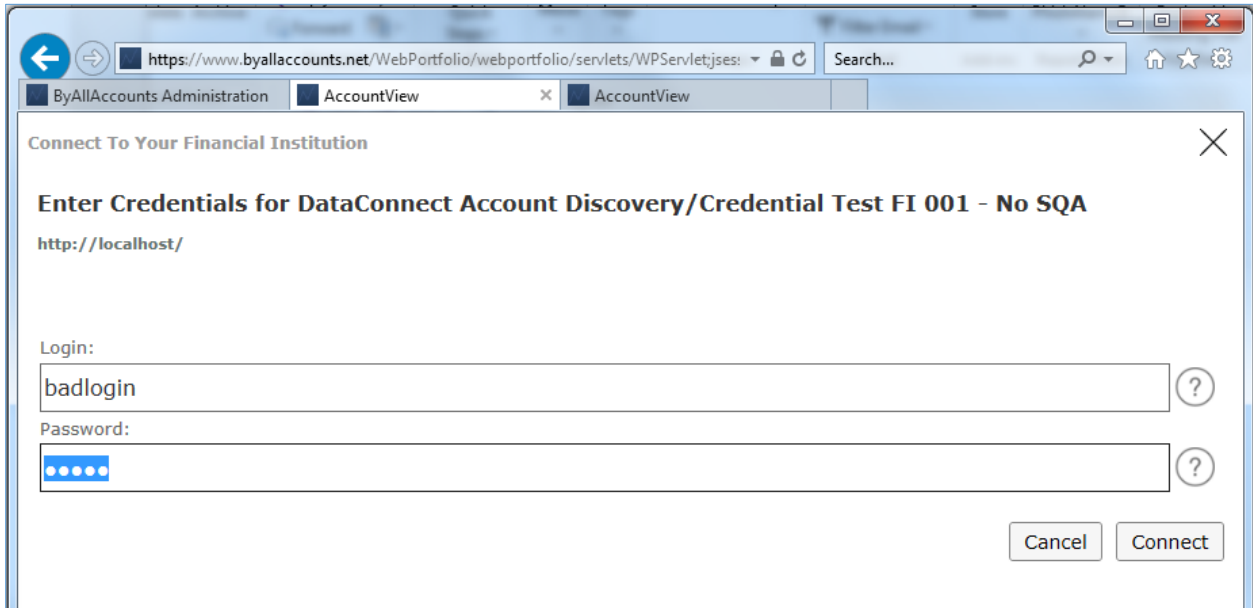
FI to use for workflow

Any FI

Workflow

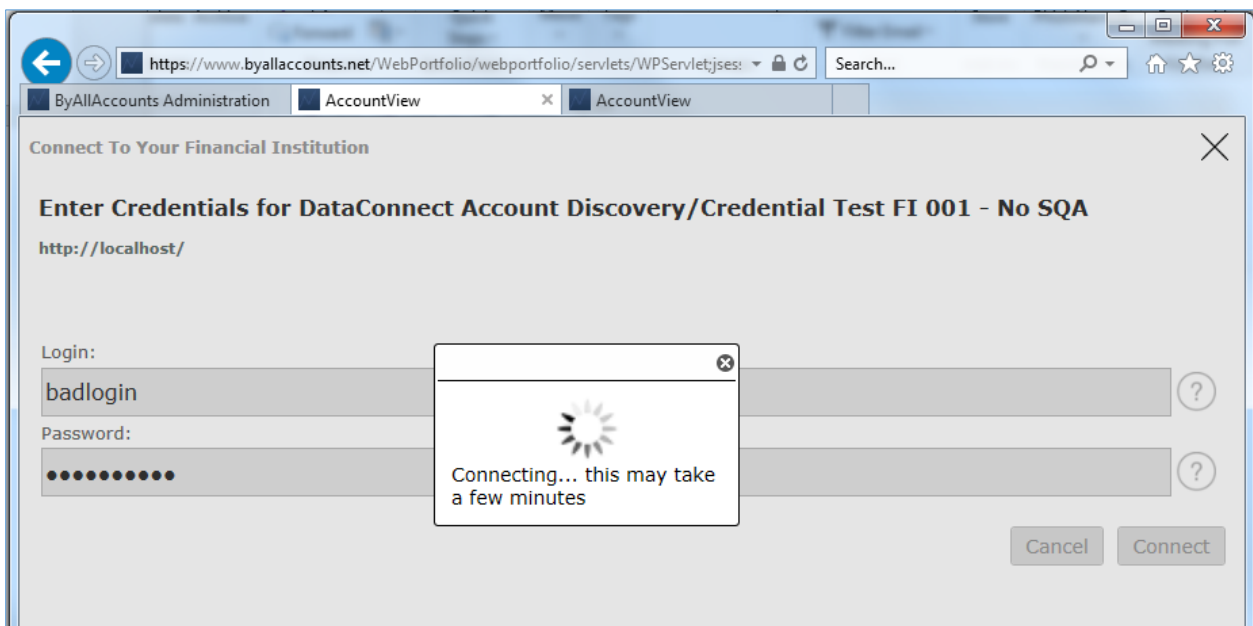
This workflow shows what happens when you try to add an account using incorrect account credentials.

1. Choose any FI.

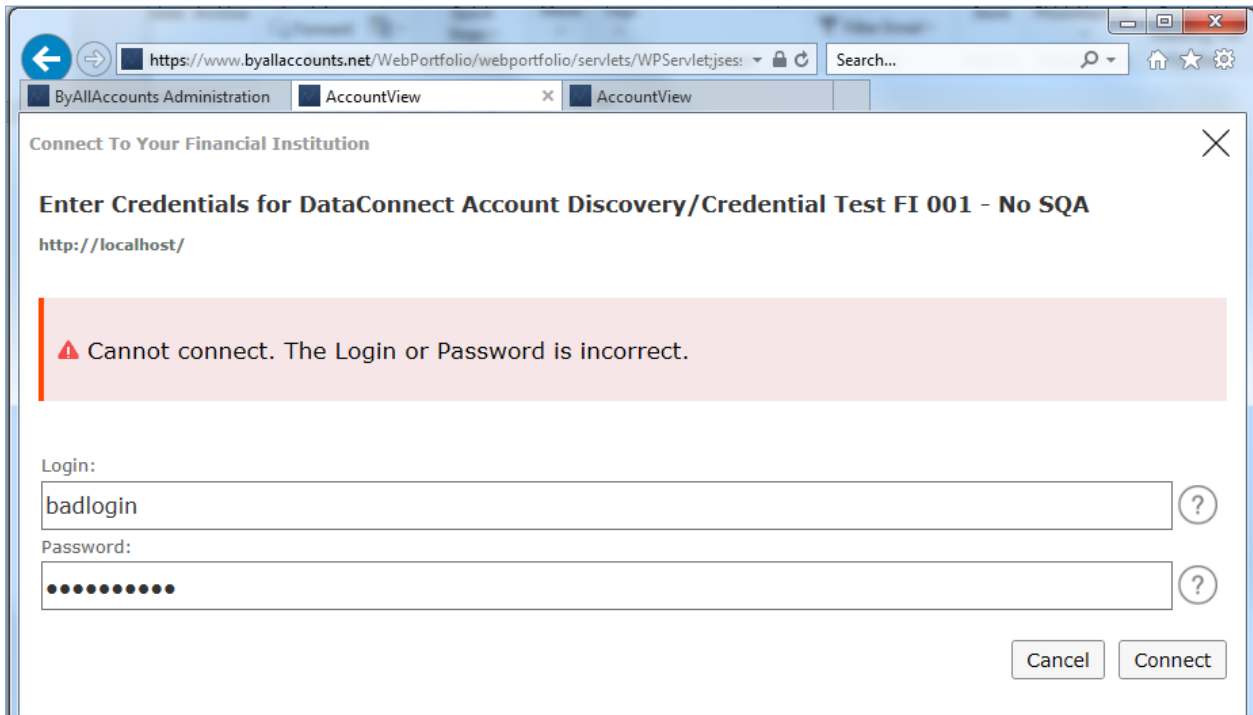


The FI may have different required credential fields.

2. Type in a bad credentials then click **Connect**.



The system displays an error.



3. User must correct credentials or cancel.

WORKFLOW 6: ADD ACCOUNT USING INCORRECT SECURITY ANSWER FOR SOA

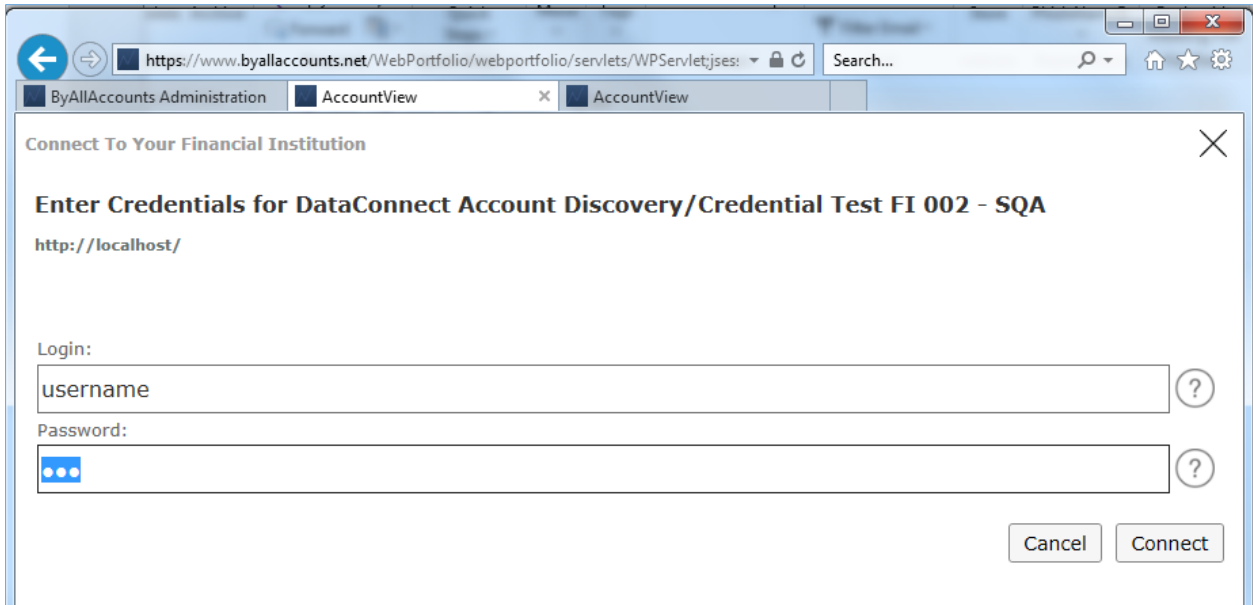
FI to use for workflow

DataConnect Account Discovery/Credential Test FI 002 - SQA

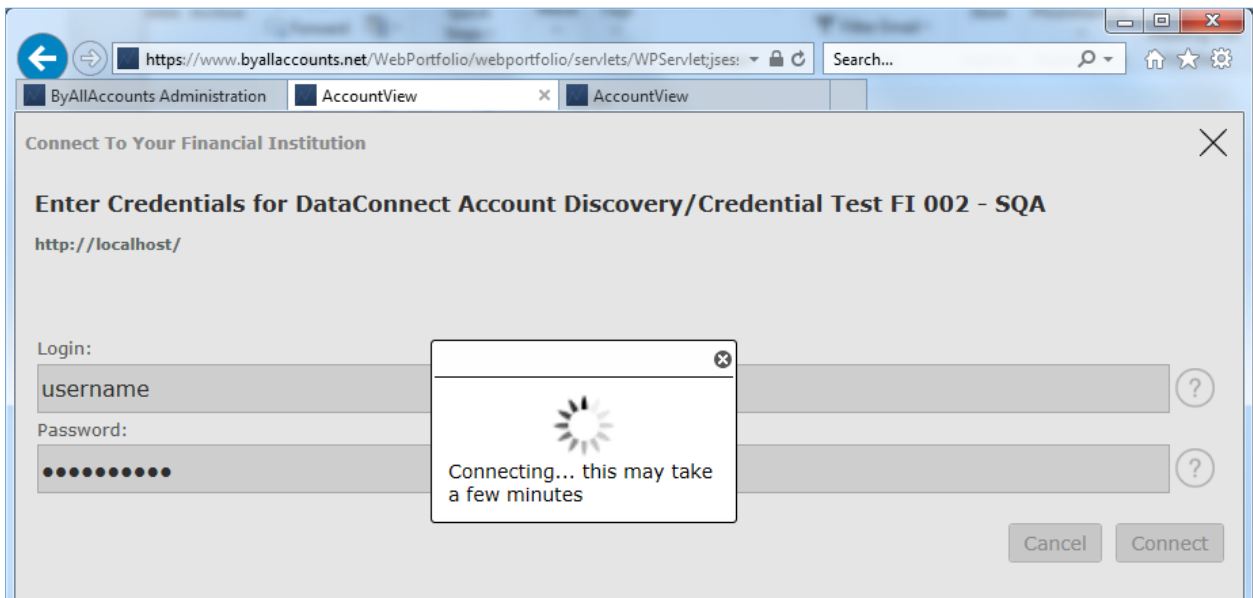
Workflow

This workflow demonstrates what happens when you enter an incorrect security answer.

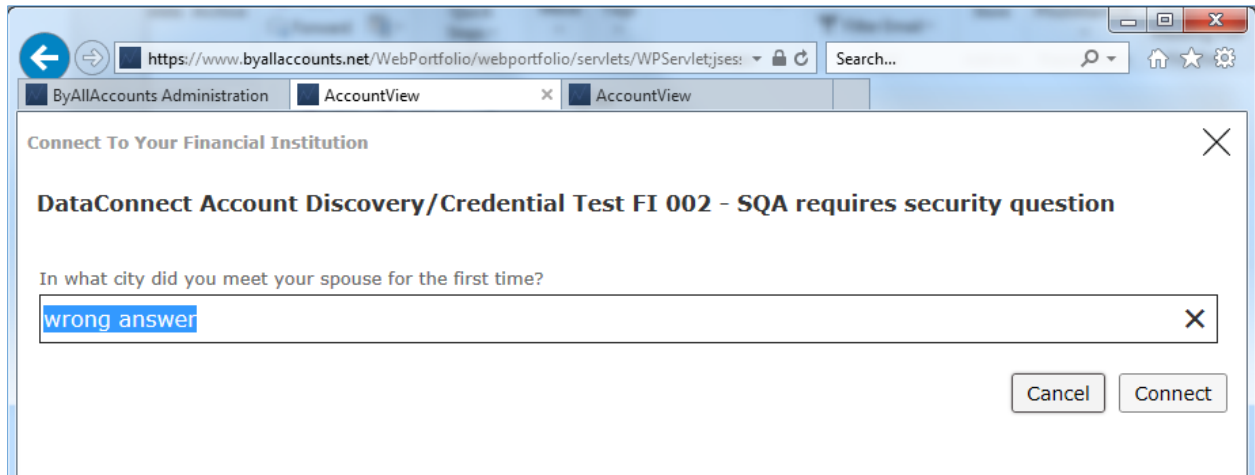
1. Choose an FI that requires a security question and answer. For example, *DataConnect Account Discovery/Credential Test FI 002 – SQA*.



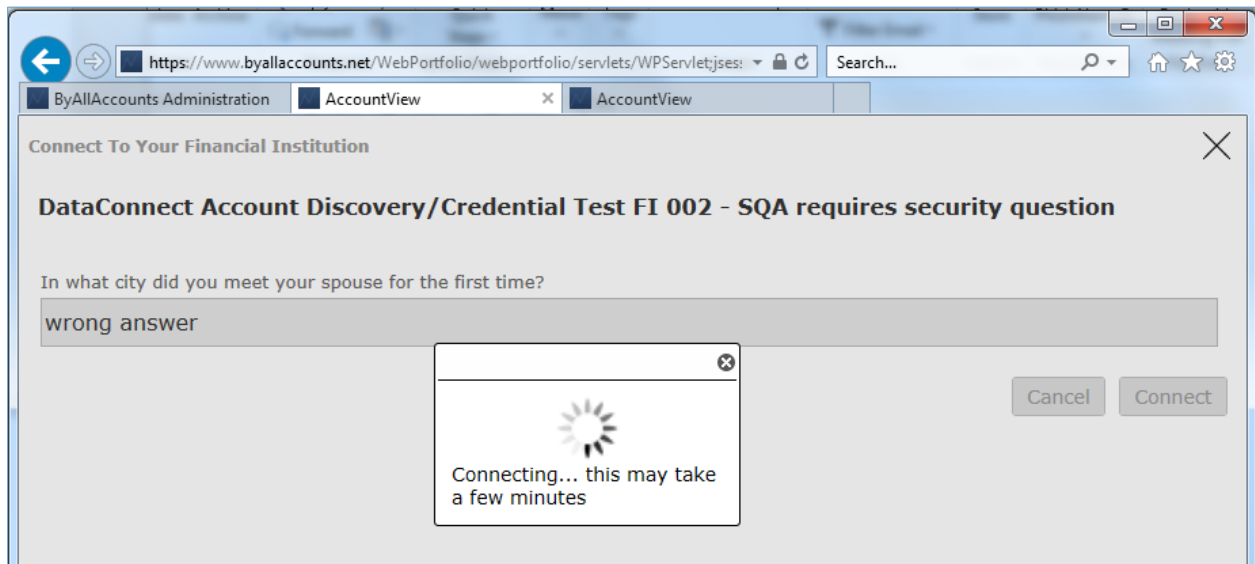
2. Enter the credentials (using the question mark  to find the test FI credentials) then click **Connect**.



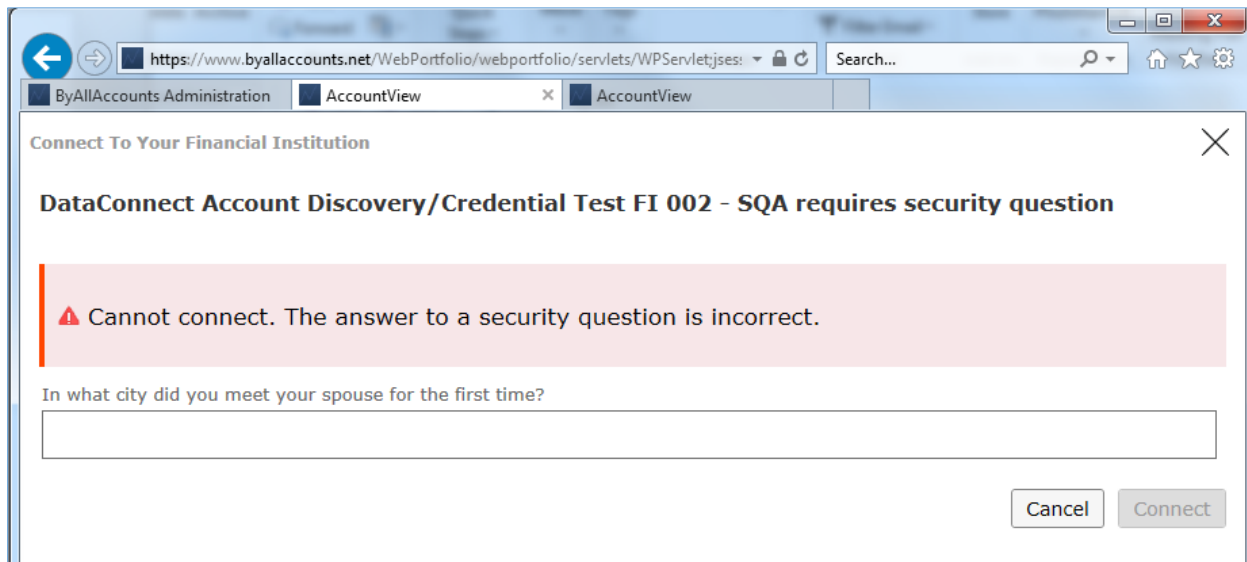
After the initial connection completes, you are prompted to answer a security question.



3. Type in the wrong answer and click **Connect**.



Because the answer was wrong, the connection cannot complete and the system produces an error message.



4. User must provide correct answer or cancel.

Appendix A: CUI ERROR MESSAGES

This appendix lists the error messages that can be generated by AccountView Consumer User Interface (CUI) and the reason for each. In some cases, the comparable production error code is shown.

Possible CUI messages during Add or Edit for an account

Error Case during Add or Edit Account	Error Message on CUI connection page	Short Error Message for 'Connection Progress' table at end of Add operation
Connection failed because FI does not support Test Credential.	Cannot verify credentials due to institution limitation.	Institution limitation
Connection failed because FI does not support Account Discovery.	Credentials verified but unable to discover accounts at this institution.	Institution limitation
Connection failed to find any accounts. (During Add Account only.)	No accounts found at this institution.	Accounts not found
Connection failed with a non-1007 error (system failure during login, account discovery, or account creation).	We are having trouble accessing this institution. Please check back later.	We failed, check later
Connection failed with a 1007 error when connecting on the login and password page. User needs to change input.	Cannot connect. The <login> or <password> is incorrect. Note: <login> and <password> replaced with the financial institution's own terminology.	Incorrect credentials
Connection failed with 1007 error when connecting on the security question and answer (SQA) page. User needs to change input.	Cannot connect. The answer to the security question is incorrect.	Incorrect credentials
Connection failed with 1007 error when connecting on the "in session activation code" (ISAC) page. User cannot change input so only option is to cancel and start over.	Cannot connect. The information you provided is incorrect.	Incorrect credentials

Persistent messages for static state of an account in BAA CUI

State of Account	Error Message displayed in CUI main view
Credential is missing the login and/or password.	<p>Cannot connect. Missing <login> and/or <password>.</p> <p>Note: <login>, <password>, and <activation code> are replaced with the financial institution's own terminology.</p>
Error code is 1007: Due to bad login, password, security question and answer (SQA), or in session activation code (ISAC).	<p>One of the following based on the FI's support:</p> <ul style="list-style-type: none"> ▪ Cannot connect. The <login> or <password> is incorrect. ▪ Cannot connect. The <login>, <password>, or answer to a security question, or <activation code> is incorrect. ▪ Cannot connect. The <login>, <password>, or <activation code> is incorrect. ▪ Cannot connect. The <login>, <password>, answer to a security question, or <activation code> is incorrect. <p>Note: <login>, <password>, and <activation code> are replaced with the financial institution's own terminology.</p>
Error code is not 1007 (failed to login or failed to find accounts or failed account creation or failed aggregation).	We are having trouble accessing this institution. Please check back later.
No error code: No connection has been attempted on the credential because FI does not support test credential (created by advisor in AccountView).	Cannot verify credentials due to institution limitation.
No error code: No connection has been attempted on the credential because no connect performed (created by advisor in AccountView).	No connection attempt made yet.
Error code is 1006 but no accounts on the credential because FI does not support account discovery.	Institution requires manual account setup.
<p>Institution is a FI request and has all necessary data (FI name, FI URL, login, password, and account number).</p> <p>Note: Message is available for firms that allow advisors or clients to make FI requests.</p>	Institution is not yet supported.
Institution is a FI request and does not have all necessary data (created by advisor in AccountView).	Institution is not yet supported. A login, password, and account number are required before support can be processed.

Note: Message is available for firms that allow advisors or clients to make FI requests.	
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Appendix B: OVERALL WORKFLOW

