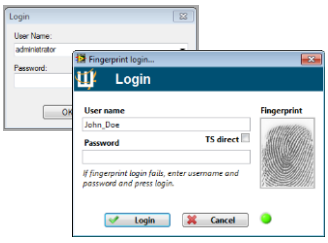
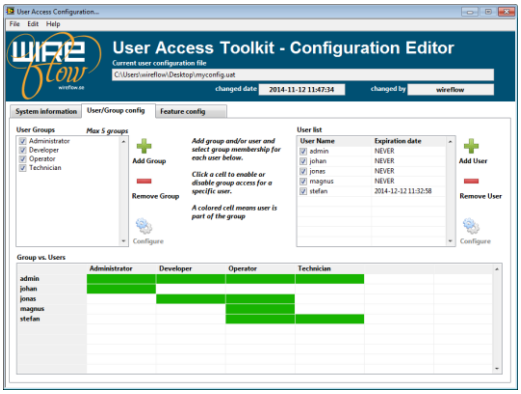
wireflow

AC0082-001, rev B

UAT - TestStand Integration User Manual





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Support information

Technical support and Product information

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Introduction

The WireFlow “UAT - TestStand Integration” product is a TestStand plugin that enables TestStand to use the WF-2111 fingerprint reader for authentication.

Users are managed using the User Access Toolkit management GUI.

Requirements

- LabVIEW runtime 2012 or higher
- Fingerprint reader (WF2111) + Windows Device driver
- TestStand

Quick Start

Once the UAT - TestStand Integration has been installed for the desired TestStand version, the standard TestStand login dialog is replaced by a fingerprint enabled dialog.

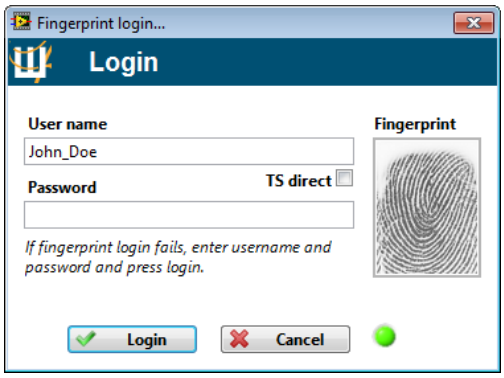


Figure 1. UAT-TestStand Login dialog

When the dialog, see Figure 1, is shown just place the finger on the fingerprint read and wait for the UAT to login the user in TestStand. If the fingerprint is not recognized, it is always possible to use the fallback of user name and password.

It is even possible to use TestStand defined users, in this case the TS direct checkbox must be checked. This means that the user name and password are passed directly to TestStand and never involves UAT.

The groups in UAT should match the groups that are defined in TestStand, and once the user is logged in he/she will get access rights according to the group membership in TestStand.

The installed UAT-TS applications can be found in the Windows start menu under “UAT-TestStand Integration”

TestStand Login

If the UAT TestStand integration add-on is installed it means that every time TestStand starts or whenever a login is invoked (from a sequence or from the TestStand menus), the UAT- TestStand Login dialog is shown instead of the standard TestStand dialog.

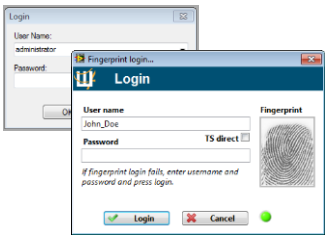


Figure 2. The standard TestStand dialog is replaced by the UAT dialog

This dialog connects to the UAT user database and uses this information to manage users in TestStand, as well as performing login when UAT successfully identifies the user.

NOTE: For the fingerprint to work it has to be enabled and activated for the users (described later in this document).

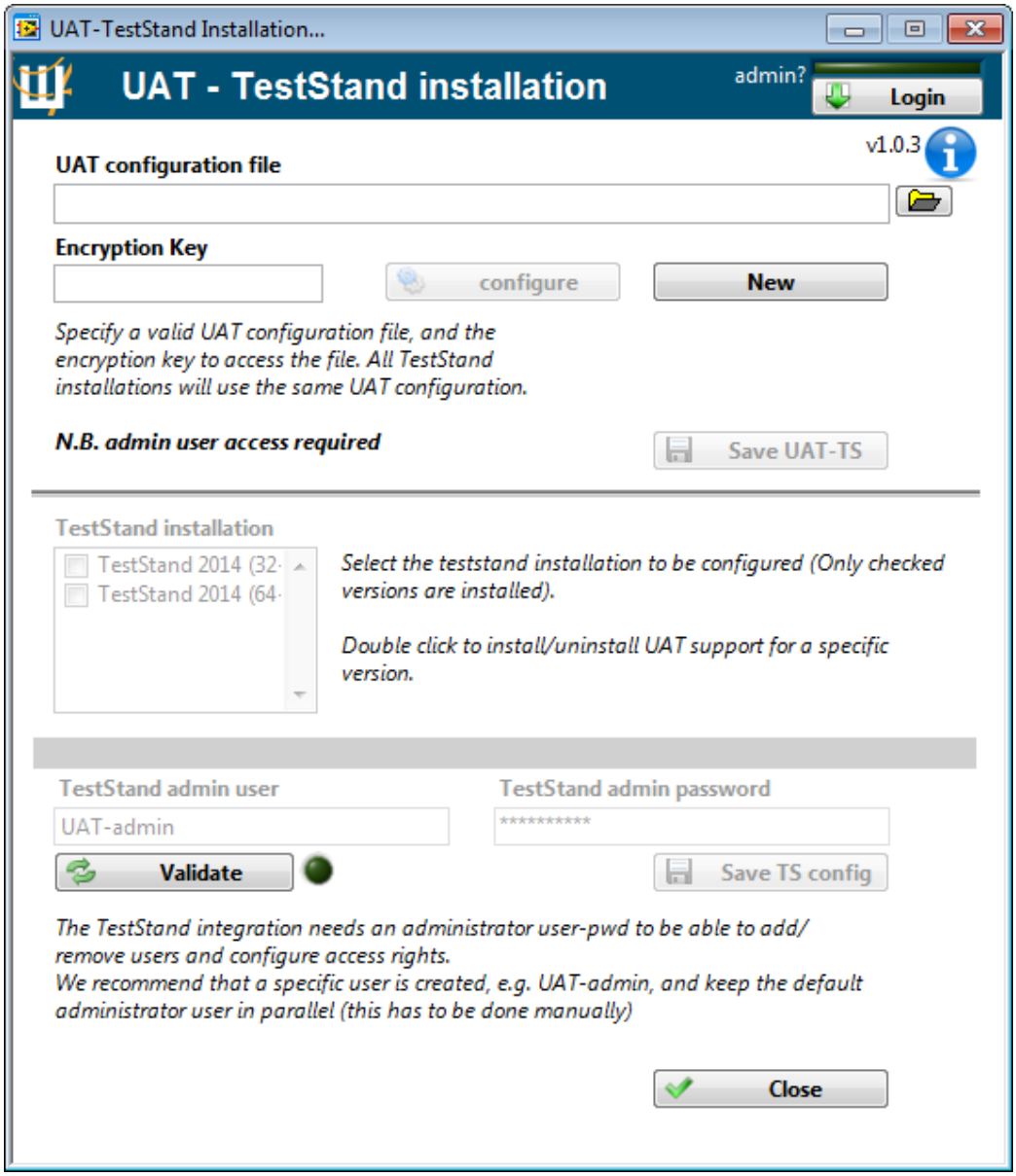
Installation

Step-by-step for first time installation

First time installation of the UAT – TestStand Integration is done using the supplied setup.exe. Run setup.exe and follow the instructions. Two applications are installed and can be accessed in the Windows start menu in the UAT-TS integration folder.

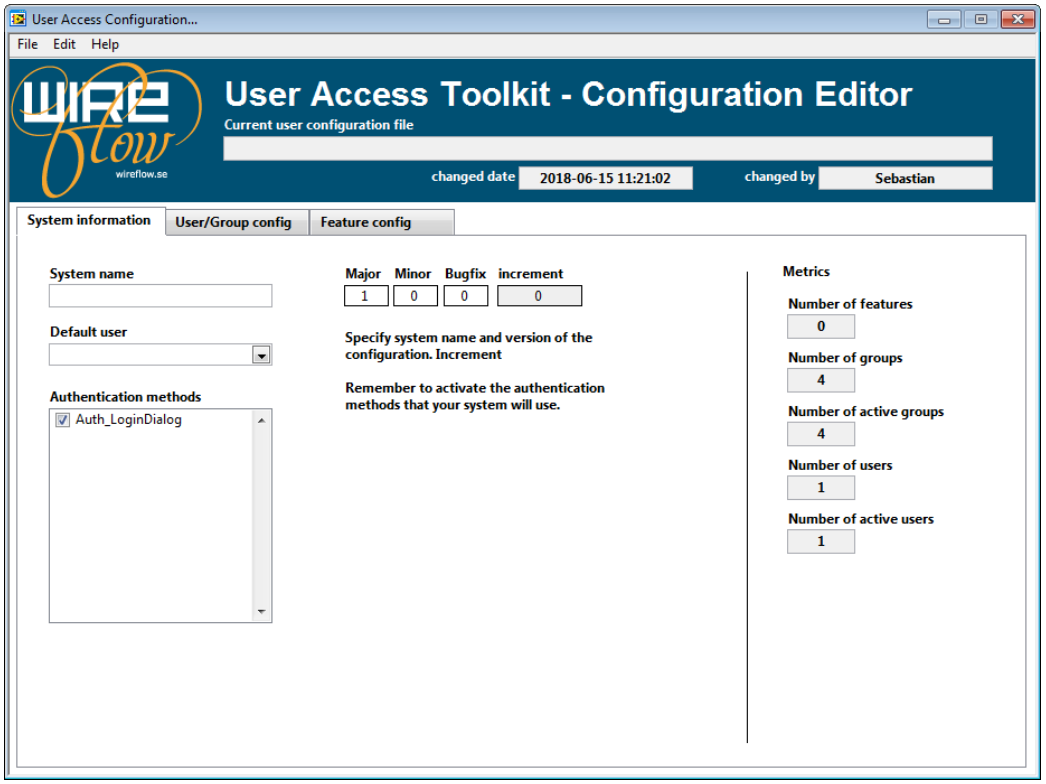
- UAT-TS_Installation
- UAT-TS_Configurator

Once the application is installed, the UAT-TS_Installation application pops up and lets the user do initial configuration of the system.

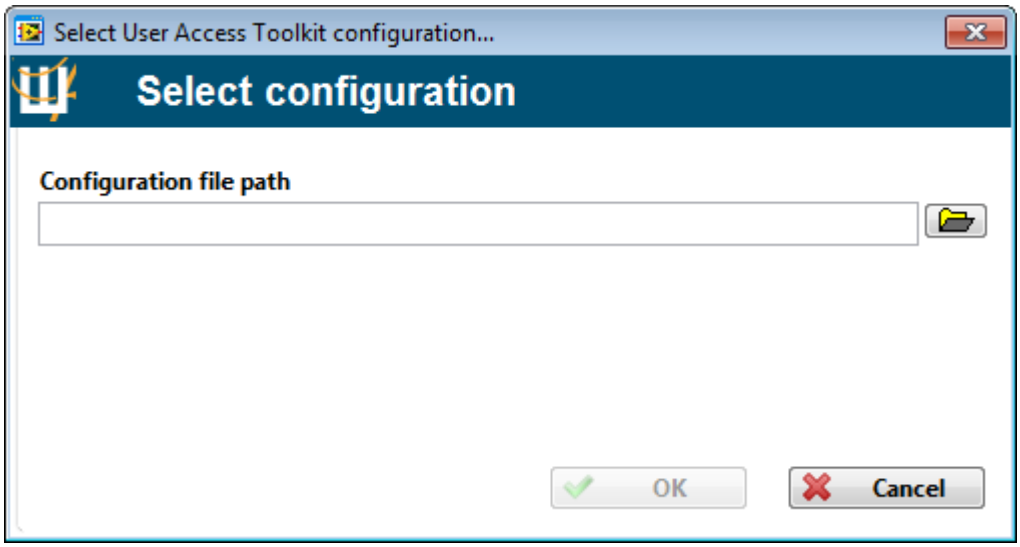


Click New to create a UAT configuration file. An encryption key dialog appears.

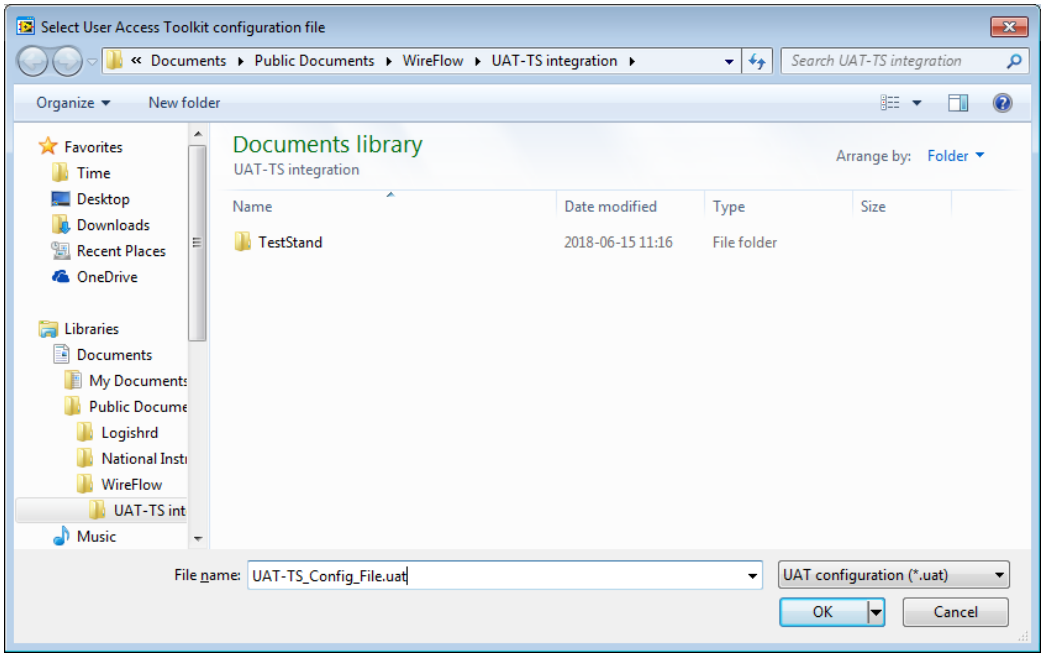
Write an encryption key twice and click OK. The User Access Toolkit – Configuration Editor appears.



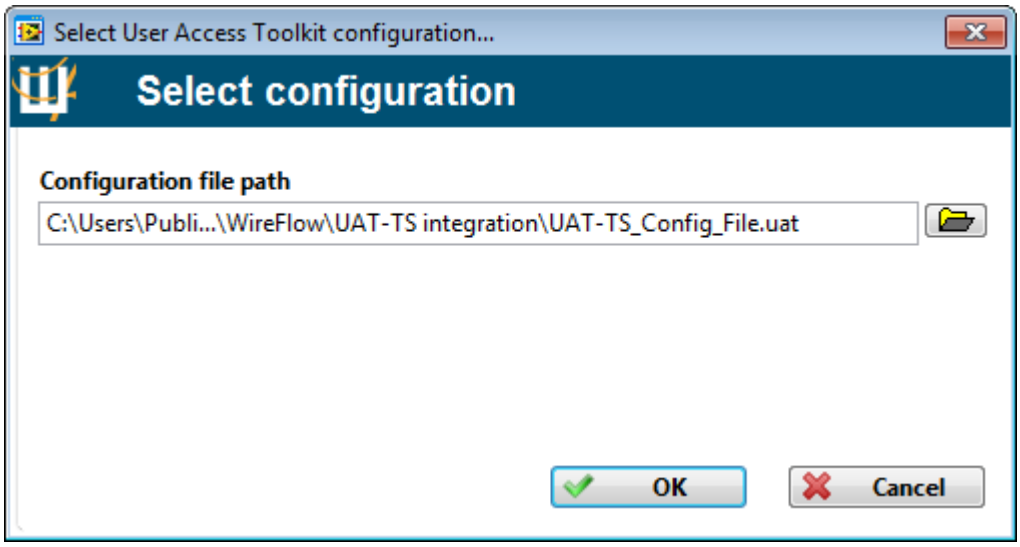
Click File – Save. A configuration file path dialog appears.



Click the open button to specify a new filename (.uat).



Click OK.

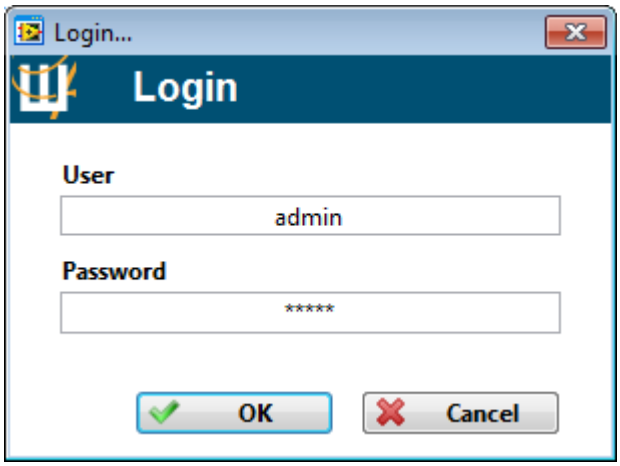


Click OK.

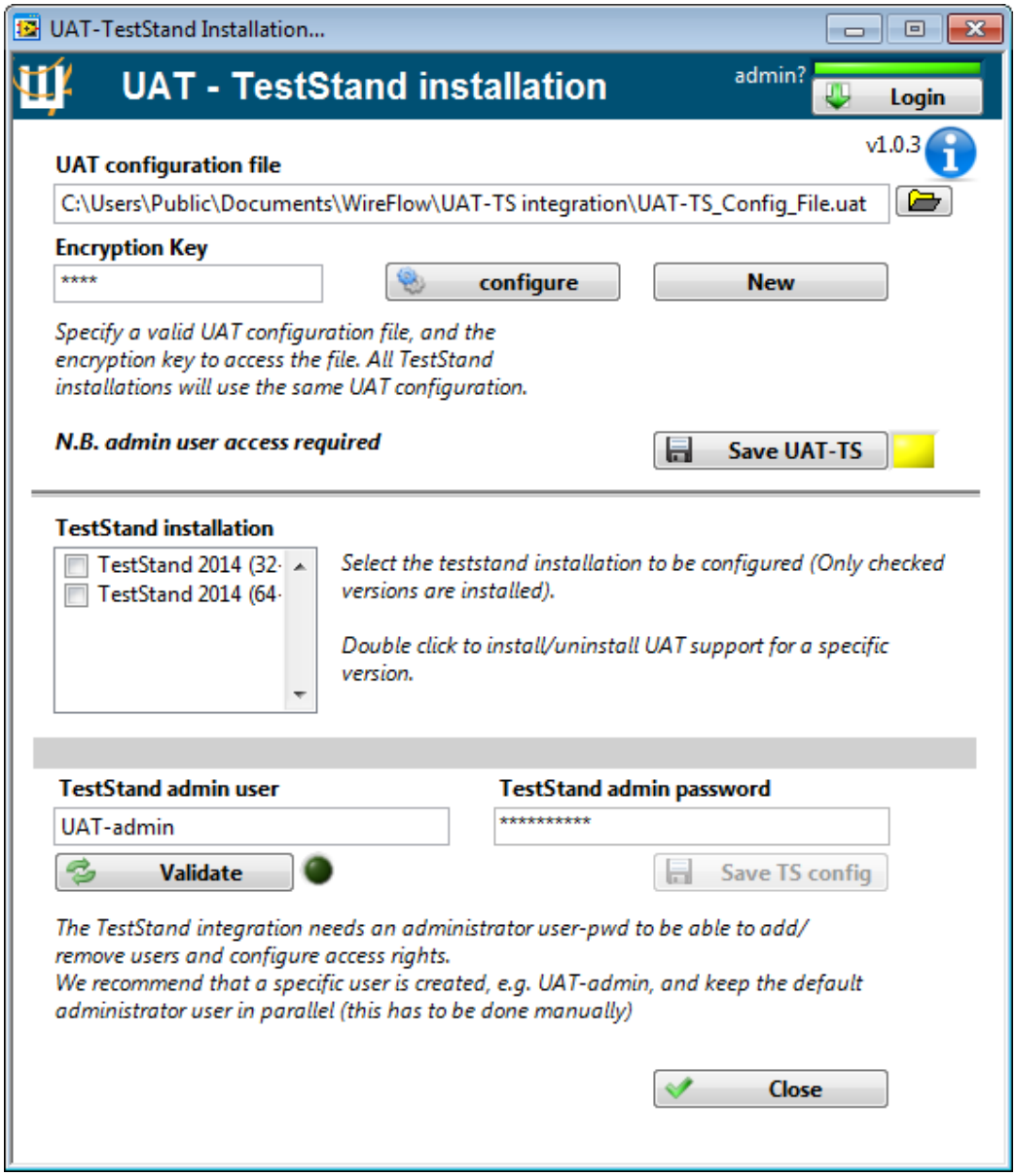
Optional: add or manage the groups and users. You can return at any time using the configure button or the UAT-TS_Configurator application.

Close the window to return to UAT-T_Installation. An encryption key dialog appears.

Enter the encryption key that you created earlier. Click OK. A login dialog appears.

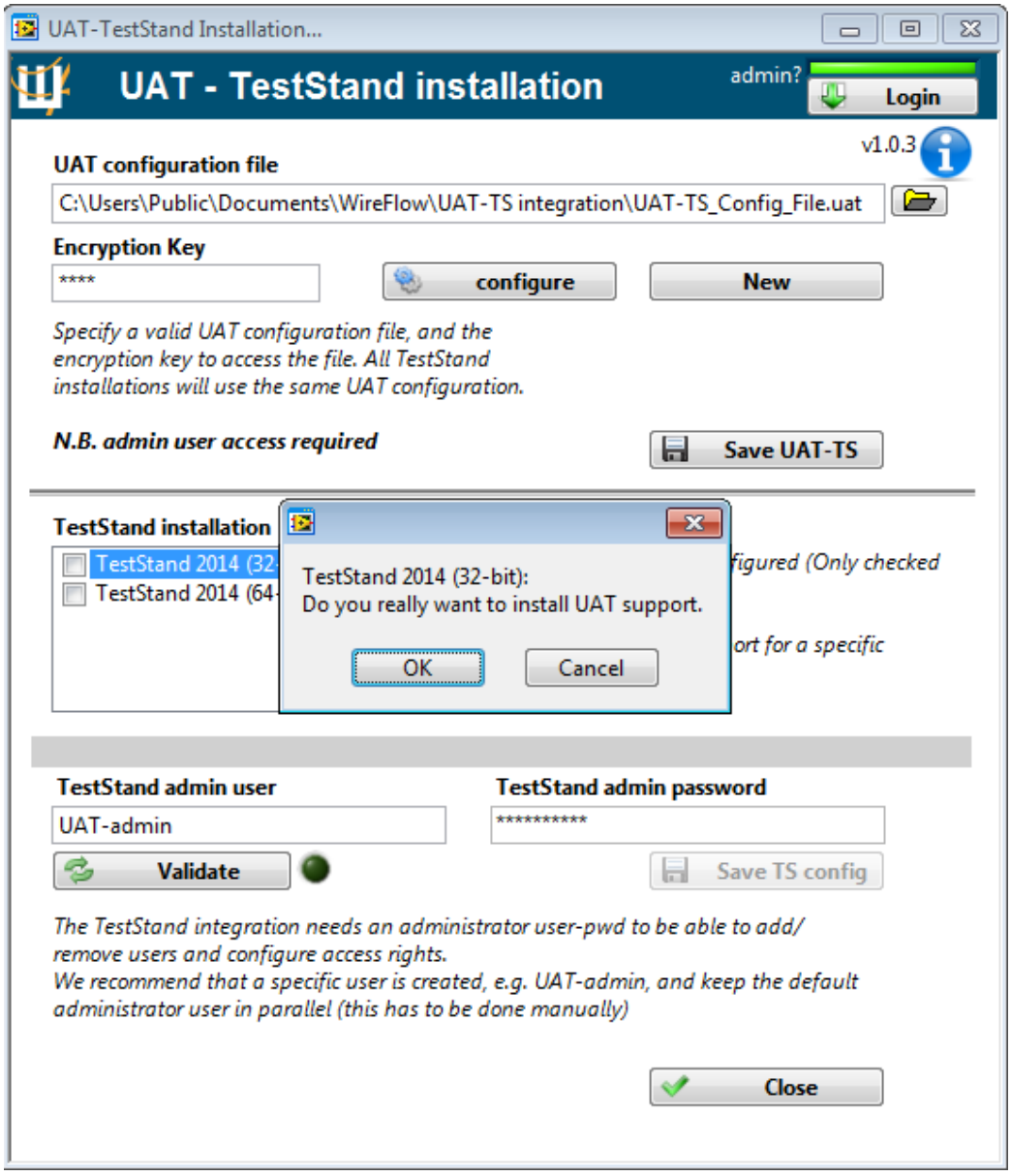


Enter the user and password. The default user/pass is admin/admin. Click OK. The UAT-TS_Installation window appears.

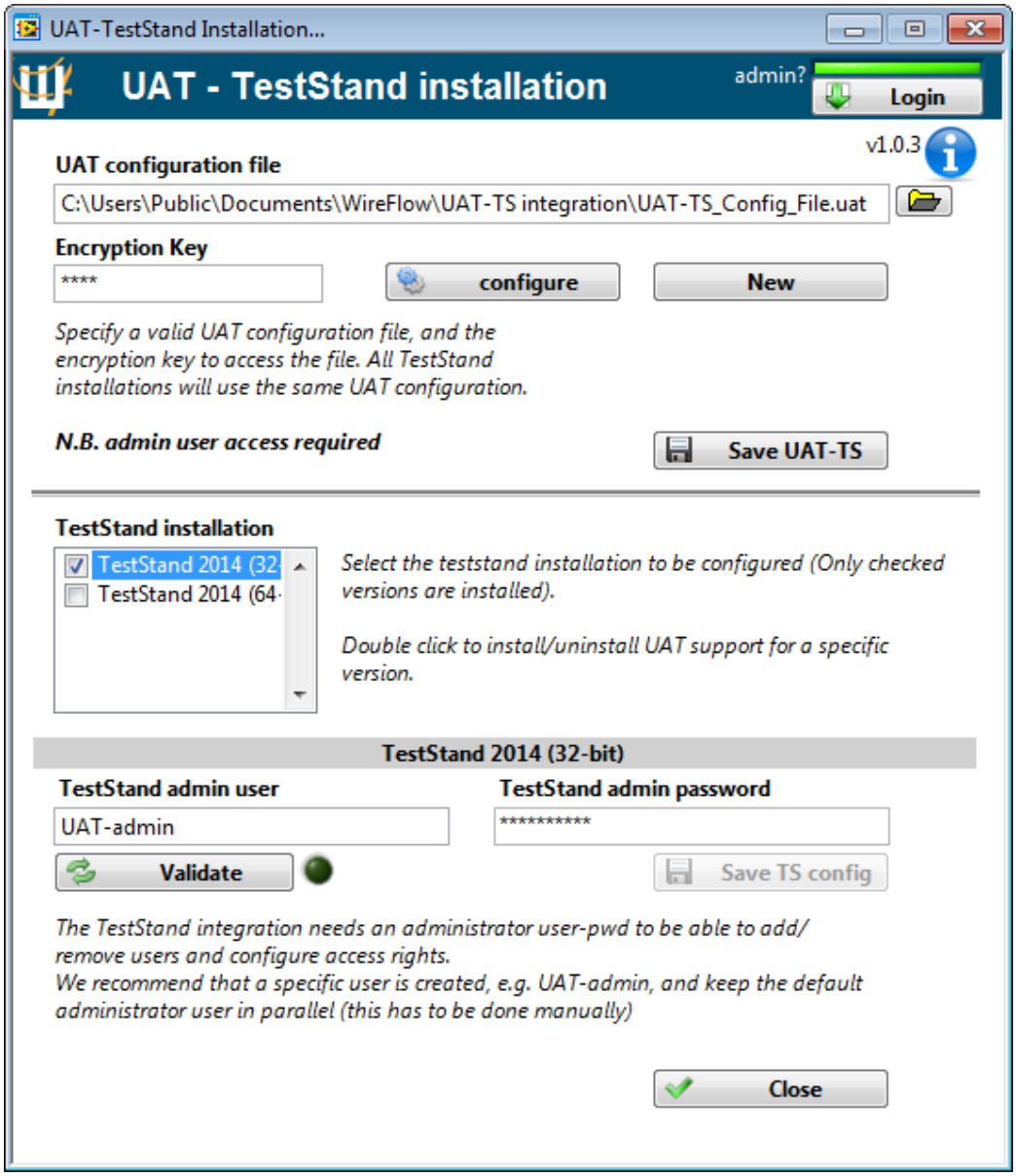


Click Save UAT-TS to save the User Access Toolkit connection to TestStand.

Double-click on a TestStand version in the TestStand installation list to install UAT support for that TestStand version. A confirmation dialog appears.

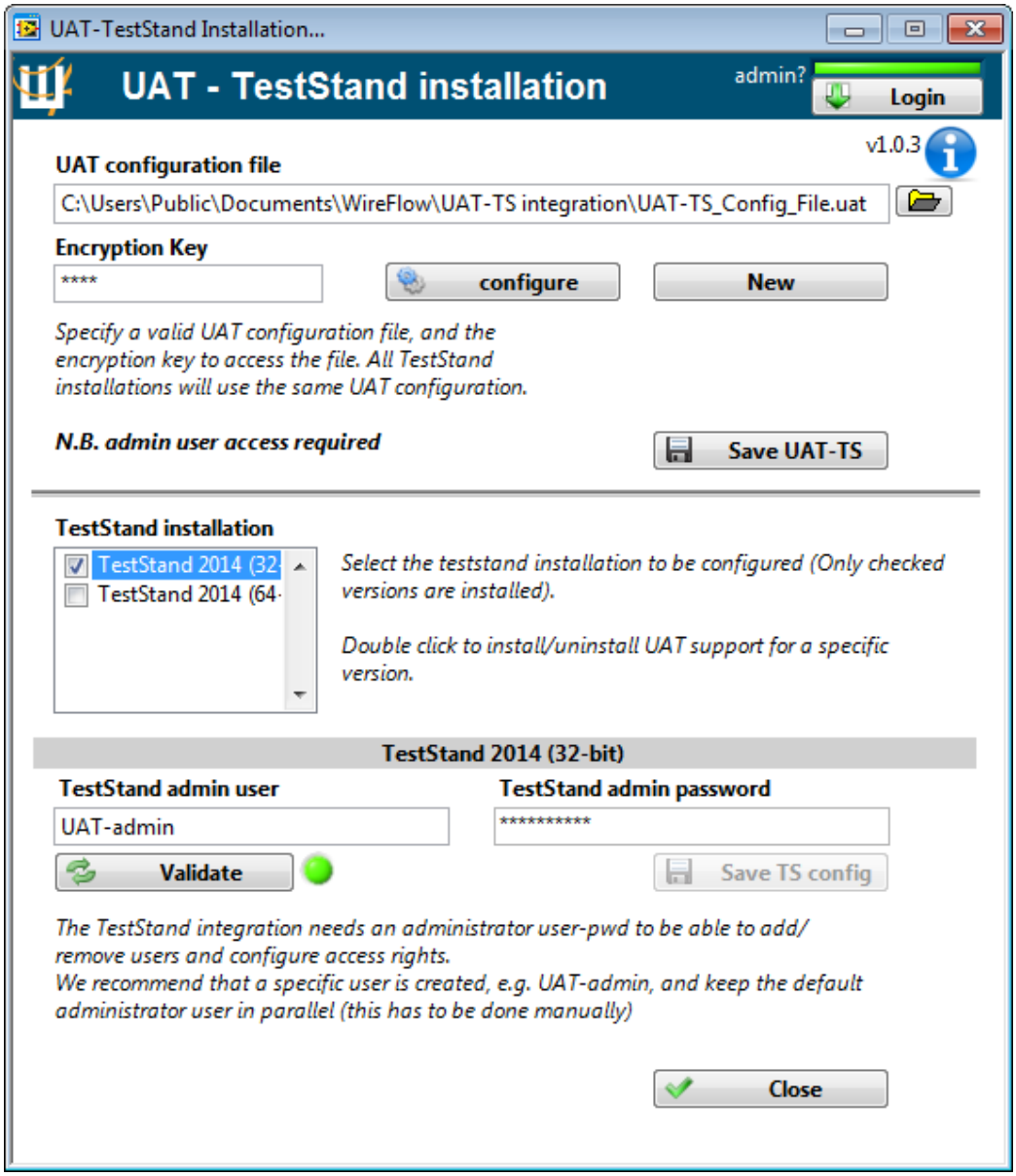


Click OK to confirm and return.



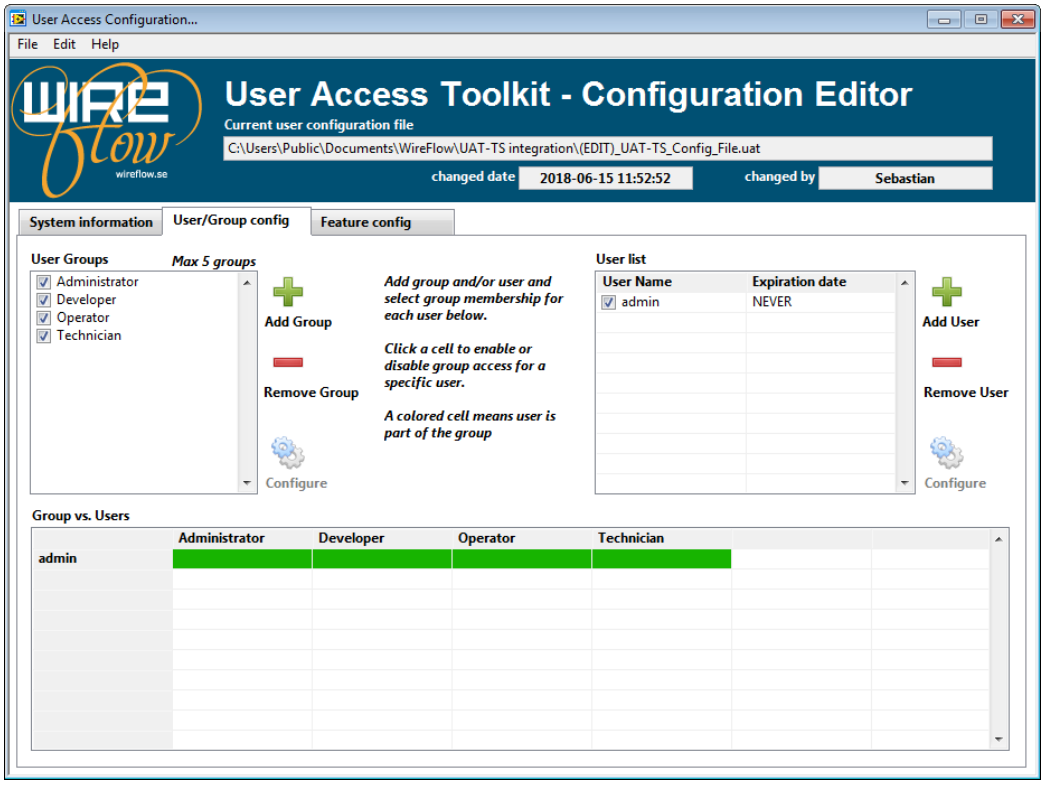
Click Validate to validate the default UAT-admin TestStand user.

The Boolean indicator lights up to indicate success.

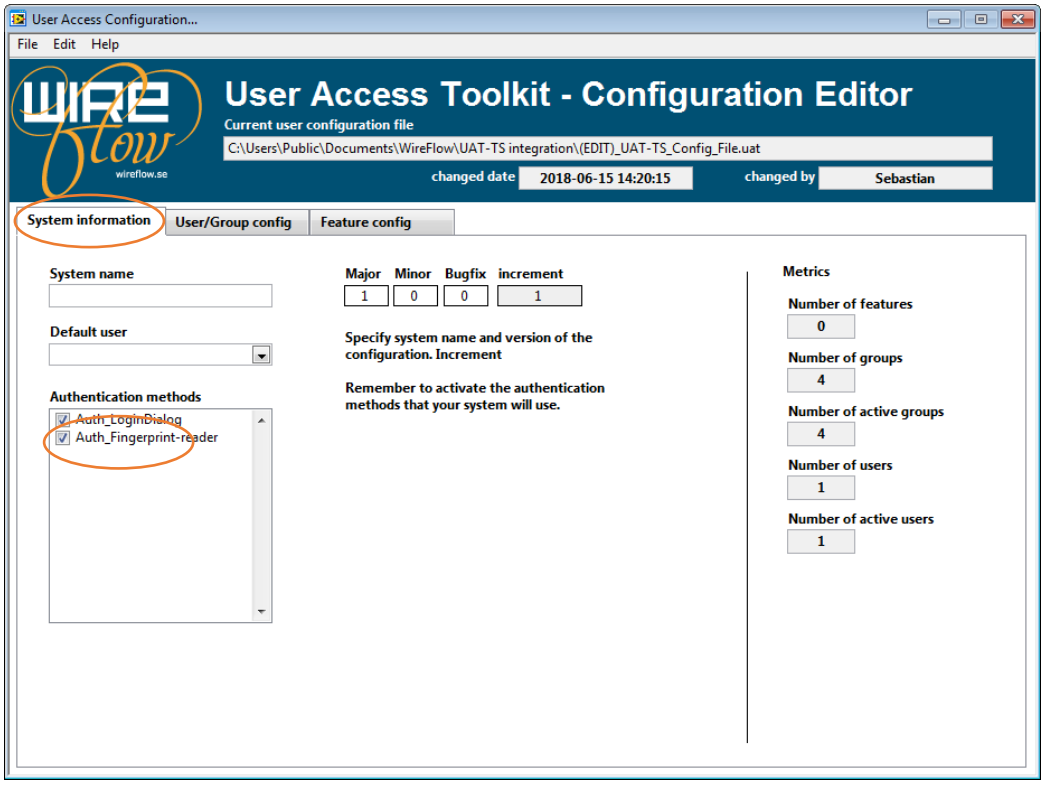


Step-by-step to enroll a user with fingerprints

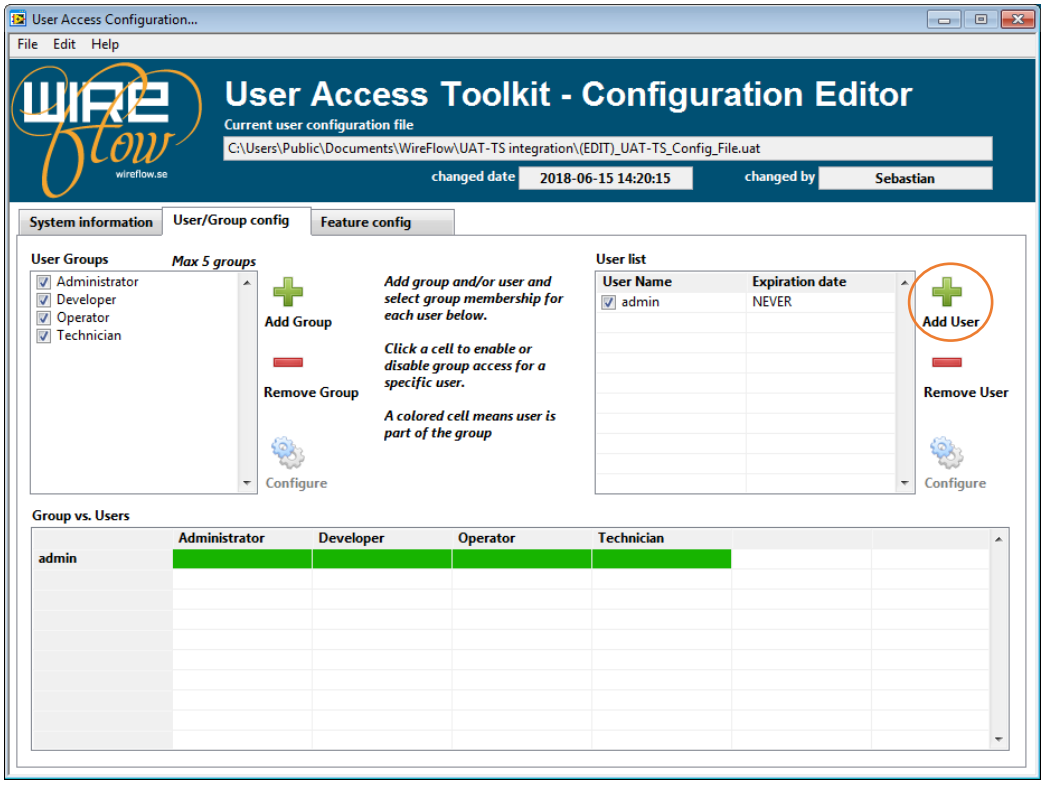
Click configure to open the User Access Toolkit.



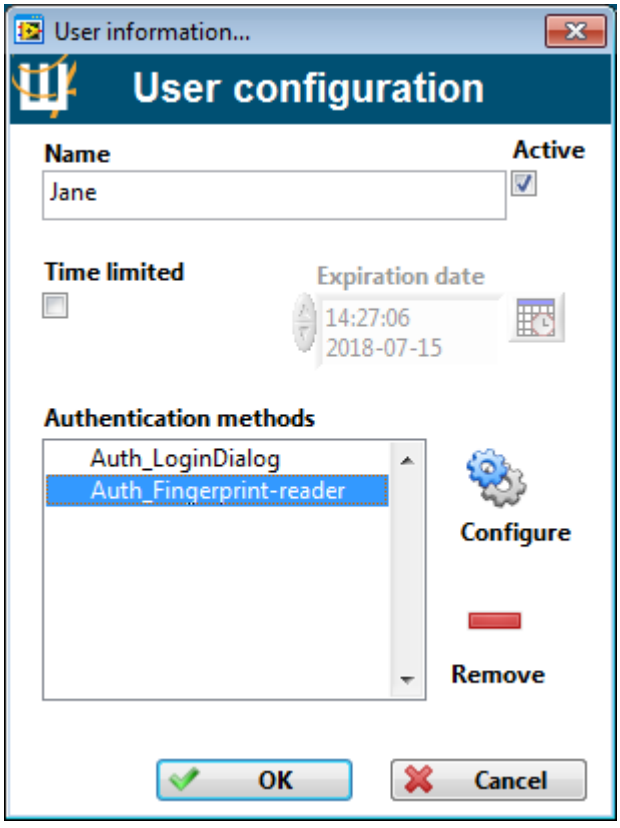
Click the System information tab and make sure that Auth_Fingerprint-reader is checked.



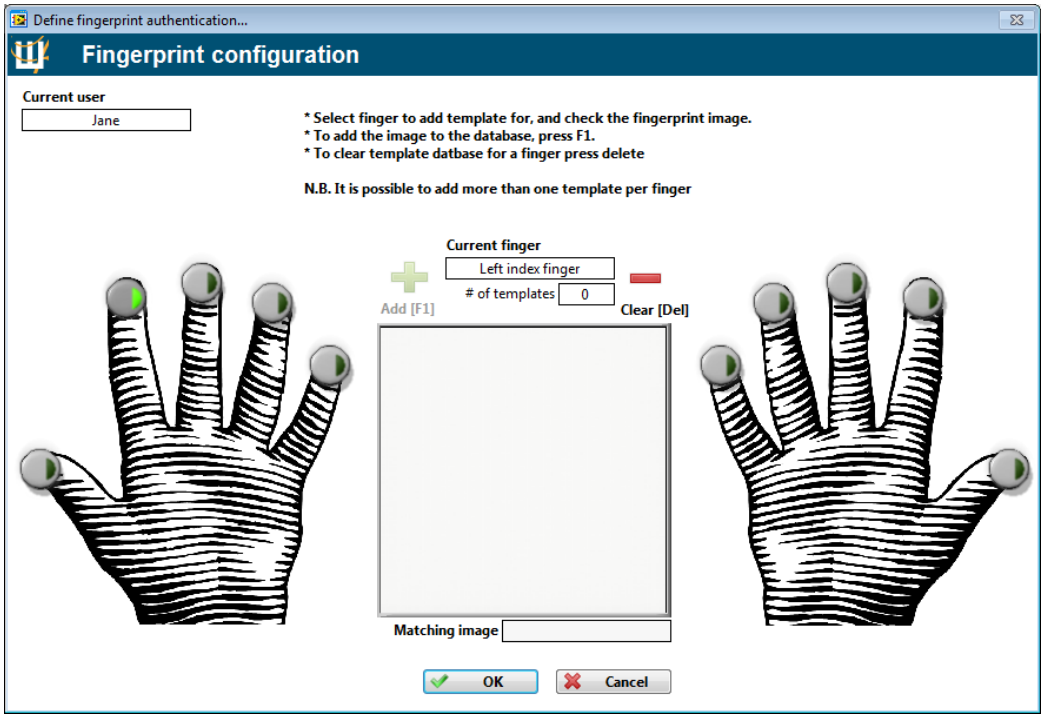
Go to the User/Group config tab and click add User.



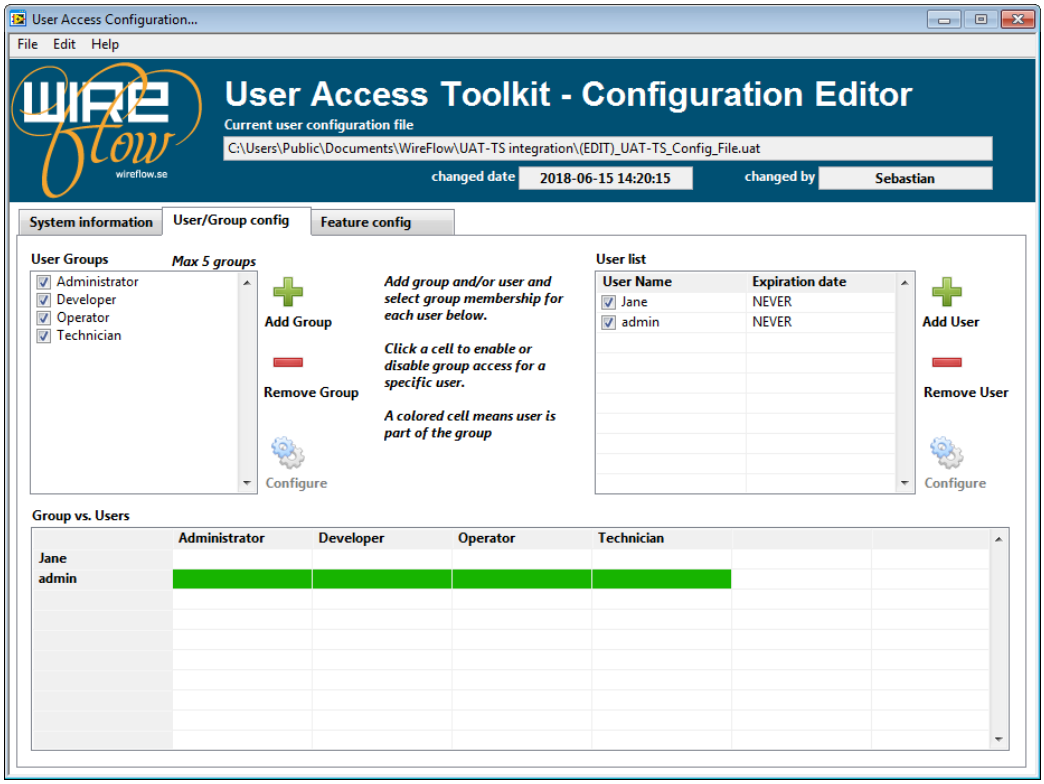
The User configuration dialog appears. Write a name, select Auth_Fingerprint-reader and click Configure.



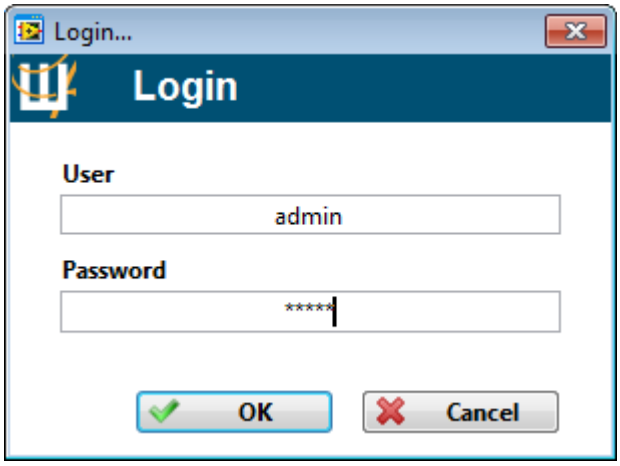
The fingerprint configuration dialog appears.



Place a finger on the fingerprint reader, click Add [F1] and then OK. Click OK again go get back to the user access toolkit main screen. Note the new user in the user list.



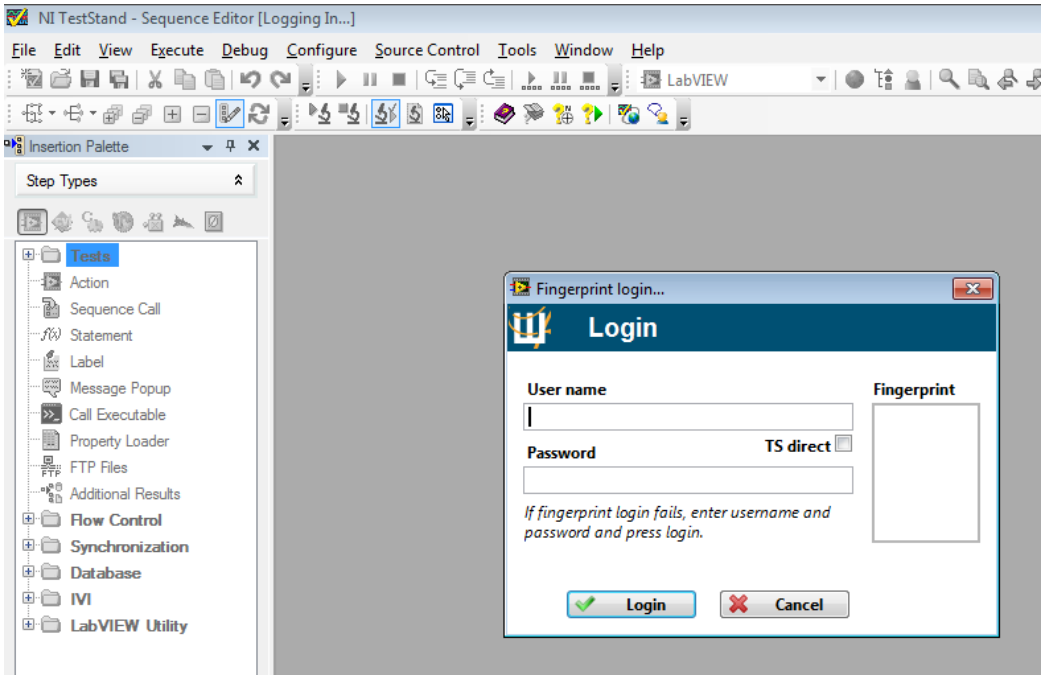
Click File – Save. Close the window. A login dialog appears.



Enter the user and password (default admin/admin) and click OK to return to UAT-TS_Installation. Click Save UAT-TS to save the User Access Toolkit connection to TestStand.

Click Close to exit the application.

Open TestStand.



Place the finger on the fingerprint reader to log in.

UAT configuration

The top section in the GUI is used to setup the UAT connection, and contains the following items.

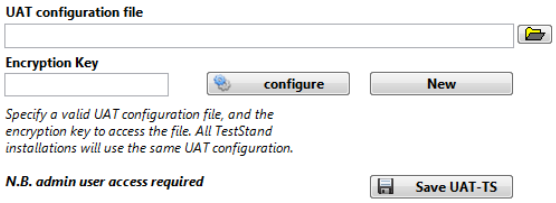


Figure 3. UAT configuration

- UAT configuration file
  - Specifies the UAT configuration to be used. This can be placed on a network share to use the same user configuration on several test stations. At runtime each test station uses a local cached copy of this file.
- Encryption key
  - The key used to access the UAT configuration file (the file is encrypted).
- Configure
  - Open the UAT configuration GUI for configuration
  - Requires an admin user (according to the UAT configuration) to be able to edit configuration (default user/password the first time UAT –TS is installed is admin/admin).
- New
  - If we install the UAT-TS for the very first time we have to create a new UAT configuration (default admin/password is admin/admin).
- Save UAT-TS
  - Updates this test station configuration with info about location of UAT configuration and Keys.

TestStand installation

Next Section in the GUI is the TestStand installation.

Figure 4. List of TestStand installations

This section lists all config folders detected for different TestStand versions, and by double clicking on an item UAT – TestStand integration can be enabled/disabled for a specific TestStand version (indicated by a checkmark).

TestStand integration configuration

At the bottom is a section where the TestStand integration is configured.

Figure 5. TestStand integration configuration

UAT-TS needs a TestStand administrator account in order for the UAT configuration to be able to synch users/group with TestStand. WF recommends a specific admin user just for UAT-TS integration, as this user is never used outside the UAT-TS configuration.

Enter the name and password for the UAT-admin to be used (default is UAT-admin), and when Save TS config is pressed, the application checks with TestStand if the user exists

If it doesn't exist, the system tries to add the user using the default TestStand admin account. If the default admin user is not valid, a dialog asks for TestStand admin credentials to be used.

The username and password is then stored in another encrypted configuration file.

Use the Validate button to check if the entered credentials are actually valid.

Configuration

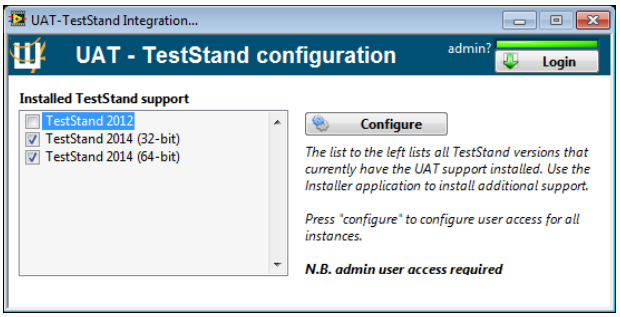


Figure 6. The UAT-TS_Configurator application

When everything is up and running we still might have to add new users, change credentials etc. To do this we can use the included Configuration application (UAT-TS_Configurator). This application is a stripped down version of the Installation application, and does not show any path details since it should only access the current configuration.

To the left is a list of the currently installed TestStand versions, and once an admin user is logged in, it is possible to press Configure to add users, change credentials or user groups.

Since the UAT - TestStand Integration uses locally cached files during runtime, it is possible to edit the configuration from any computer with access to the network-share. This means that the test-stations could be given read-only access to the network share and that a separate PC could be used to manage all users/test stations in the system.

NOTE. When the UAT configuration panel is open no other instances can access the shared configuration, and has to use the cached configuration data. Therefore don't forget to close the UAT configuration editor.

UAT configuration

This section is a modified excerpt from the User Access Toolkit manual, which can be downloaded in full from www.wireflow.se .

This application can edit the configuration in terms of authentication methods, users and groups.

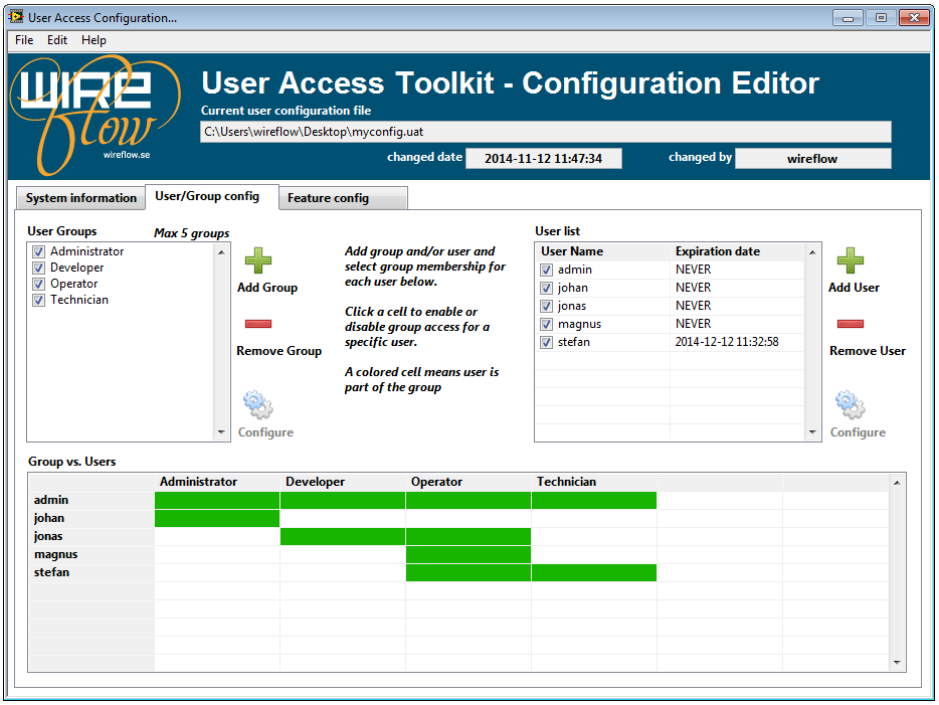


Figure 7. The configuration UI

The configuration panel has three configuration pages

- System information
  - General system info and configuration overview
  - Import and export of configurations
- User/Group config
  - Add, remove, enable or disable users
  - Configure expiration and credentials for users.
  - Add, remove, enable or disable groups
  - Configure user group access
- Feature config (**not used in the TestStand add-on**)
  - Add or remove features
  - Configure feature access for different groups

Using these pages it is possible to configure access for users in the system.

The menus

Opening, saving and creating new configurations is done through menu actions.

This section briefly describes the available menu selection

File:New...	Creates a new User Access Toolkit configuration from scratch (with only the root admin user at the start)
File:Open...	Opens an existing configuration, prompting the user for a password to load the file. If the password is not correct the configuration is not loaded
File:Save...	Saves the current configuration to file, prompting the user for a password to save the file. N.B. the password must match the password used in the application, otherwise the application cannot read the configuration data.
File:Save As...	Saves a copy of the current configuration to a new file, prompting the user for a password to save the file. N.B. only available if configuration UI launched with empty path.
File:Exit	Exits the application
Edit:Revert	Reverts all edits to the last loaded state
Help:Show Context Help	Opens the context help window

System information

At the top of the panel, in the WireFlow banner, general file information is displayed;

- Current user configuration file = path to the configuration currently edited.
- changed date = date/time when the configuration file was saved.
- changed by = user (in the system) that last saved the configuration

Figure 8. UAT WireFlow banner field

The first thing to do when creating a new configuration is to define what type of authentications the application should use.

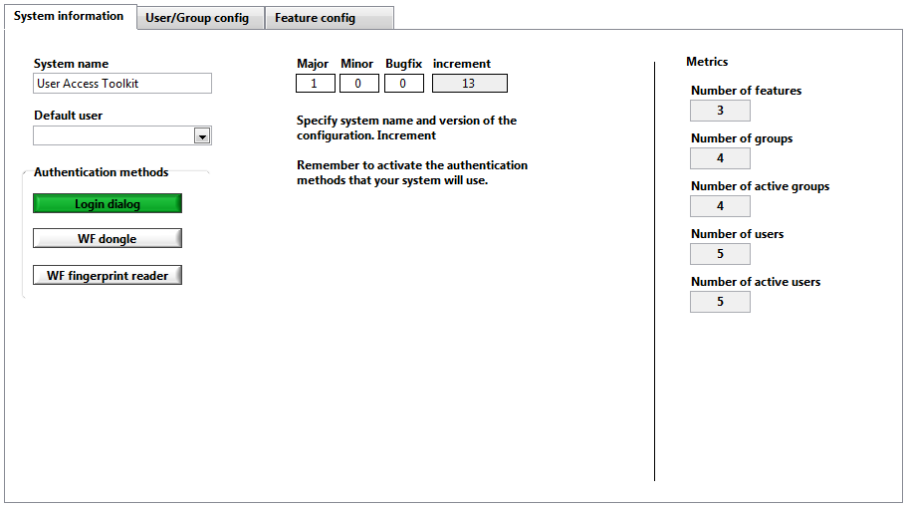


Figure 9. System information page

When an authentication method is enabled, the button is green, e.g. 

, and the option is enabled in the user configuration panel (see Figure 12). The TestStand add-on can only use Login-dialog and the WF fingerprint reader, i.e. the dongle is currently not supported.

System name is only informational, but can be read by the API for information to the end user.

If default user is set, this will be the user that is activated when the configuration is applied when a session is initiated.

The default user should never be an admin user, and will not be activated when configuration is applied.

The right hand side of the information page shows some metrics for the system, like number of groups, users and features.

User configuration

Without a valid user configuration the UAT cannot perform login or access checks.

Configuring a user involves giving the user a unique name, set the user credentials and optionally setting an expiration date as well as group membership.

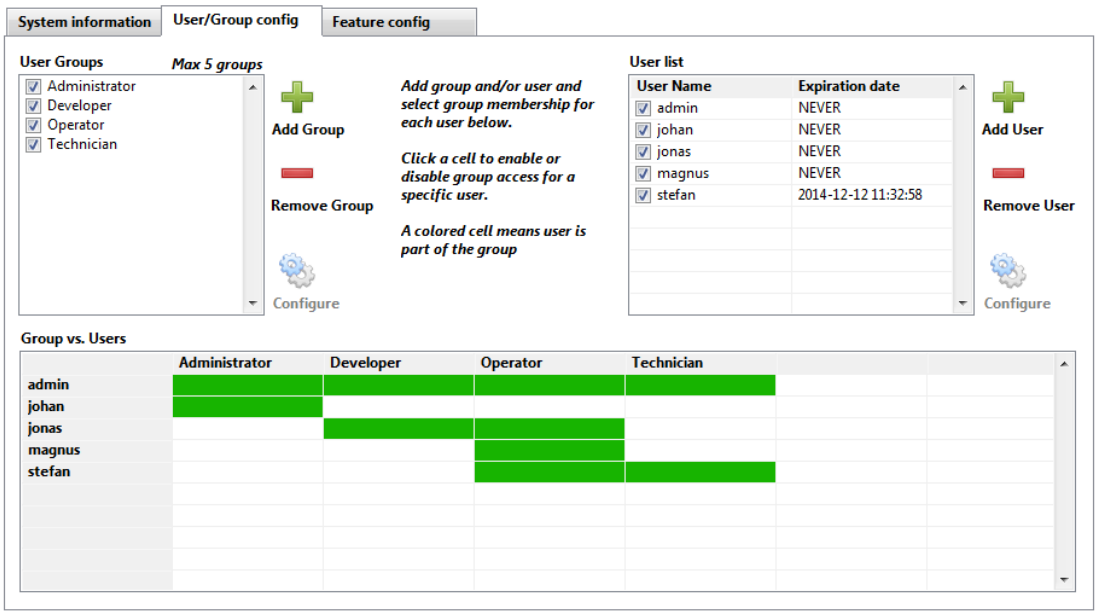


Figure 10. User configuration

Figure 10 shows the configuration of user and groups;

- The "User Groups" shows the groups in the system and their active state.
- The "User list" shows the current users in the system and their active state as well as the expiration date
- "Group vs. User" shows and defines the group membership for each user in the system. Groups are in columns and users are in rows.

The checkboxes to the left of a user or group name can be used to disable or enable the selected item (disabling is not possible for the default admin user or admin group):

- Disabling a user means that the user cannot access the system, but that the user information is still stored in the configuration data.
- Disabling a group means that all users that are member of that group loose the access right defined for that group.

Exactly how a group/user can be configured is described in more detail in the following subchapters.

Adding a new group

To add a new group, press 

and give the new group a name and optionally set the group inactive (group name cannot contain spaces, and while name is invalid the OK button will be disabled).

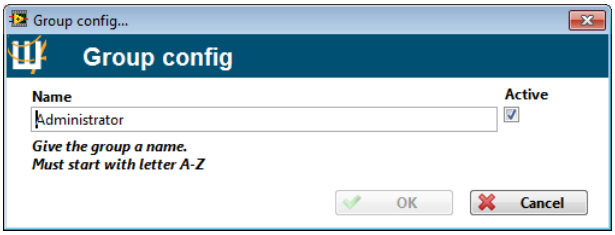


Figure 11. Group configuration dialog.

Removing an existing group

To remove an existing group, select one or more groups in the group list and press Remove Group and either accept or cancel the deletion. The default admin group cannot be removed.

Renaming a group

To rename a group, double-click the group name or press the Configure button next to the group list, and change the name in the Group config dialog.

Adding a new user

To add a new user, press Add User and fill in the information in the pop-up. A checkmark to the left of an authentication type means that the authentication is configured.

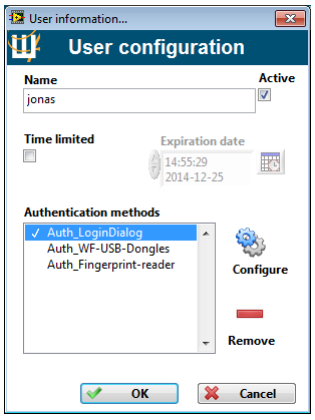


Figure 12. User configuration dialog

- Name
  - Must be a unique name and can only contain the characters:
    - a-z, A-Z, 0-9, _-().@
- Active
  - Sets the user to be active or inactive. Can also be set from the user list
- Time limited
  - If the user account is time limited, set this checkbox and fill in the Expiration date
- Expiration date

    - Expiration date is only active if the “Time limited” checkbox is set.
- Authentication methods
    - List of the currently active authentication methods and their status. A checkmark before an authentication indicates that it is configured and ready to be used.
- Configure
    - Opens up a dialog to configure the selected authentication method.

Login dialog authentication

Login dialog is the most basic user validation. To configure a user with the login dialog option, we have to specify the password.

Figure 13. Specifying user password for login dialog

The configuration dialog we have to specify the new password, and if “Hide characters” is selected we have to specify the password twice. When the “Confirm New Password” and “New Password” matches (or if Hide characters is unchecked) the OK button is activated.

The password is hashed using the SHA-256 algorithm, and the only thing that is saved to configuration is the username and the hash. Since the SHA-256 algorithm is one-direction, it is impossible to reveal the password from the hash value.

Fingerprint reader credentials

Even if the fingerprint authentication works on many LabVIEW platforms, the configuration of the user has to be performed on a desktop version of LabVIEW. Configuration requires a connected WF fingerprint reader.

Configuring a user for fingerprint access means that we have to take a number of captures of one or more fingers.

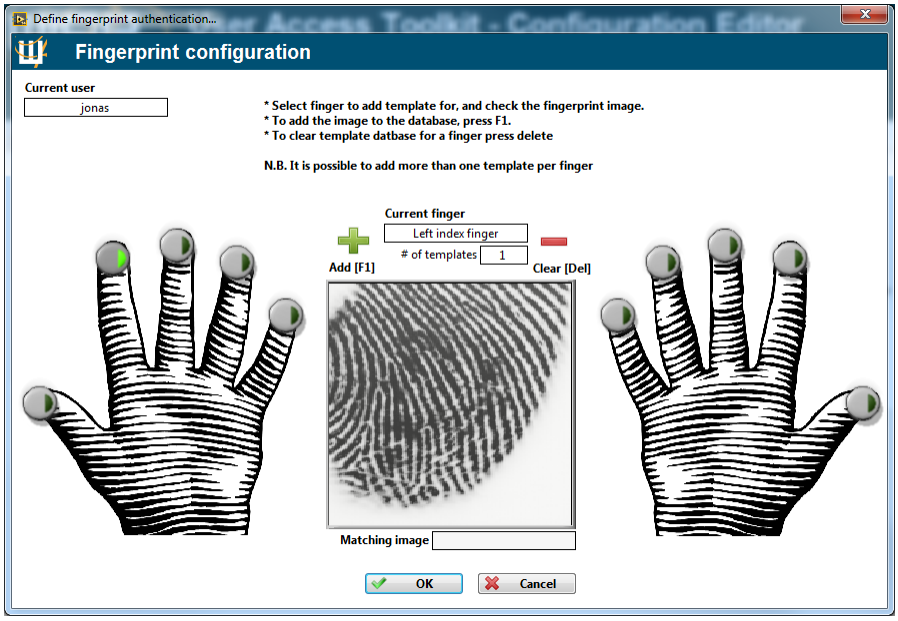


Figure 14 Fingerprint authentication setup

The setup panel in Figure 14 is used to configure the fingerprint access for a user in the User Access Toolkit. The basic usage is;

1. Select finger to use by pressing a Boolean at one of the fingertips.
2. Once the image is good enough the Add [F1] button will be activated. Press the button (or press F1 on the keyboard) to add a new template image to the database
3. The "# of templates" counter indicates how many templates that is currently stored for the selected finger.
    a. Adding more templates can result in better image matching, but can also result in more false positives.
4. Once a finger has a template added, the finger will be automatically detected and displayed in the Matching image string indicator

To delete the template(s) for a specific finger, press Clear [Del].

Removing an existing user

To remove an existing user, select one or more users in the user list and press Remove User and either accept or cancel the deletion. The default admin user cannot be removed.

Reconfigure an existing user.

To change the expiration date as and/or credentials or other user information, press Configure or double-click on the user name, and that will open the same dialog as when a new user is added (see Figure 12).

Troubleshooting

Error codes

The toolkit can return the following custom error codes, in the configuration UIs.

Code	Source text	Explanation
6400	Invalid block size for cypher!	The cypher algorithm cannot use this block size (internal error).
6401	Invalid Key size for cypher!	The cypher algorithm cannot use this key size (internal error).
6402	Unrecognized configuration format! Make sure a valid configuration is selected.	UAT is initializes with an unrecognized configuration format! Older versions of UAT might not read new UST config versions.
6403	Invalid configuration data! Check encryption password and make sure a valid configuration is selected.	The configuration data is invalid after decryption, check password and that a valid configuration is selected.
6404	Write Key failed! Check parent key value.	Update of USB dongle key value failed.
6405	User "%s" don't exist!	Unknown user name (internal error)
6406	User access toolkit is not initialized!	UAT has to be initialized before any checks can be performed.
6407	Programmatic login not possible with authentication "%s"!	The current authentication doesn't support programmatic login (internal error)
6408	Group "%s" don't exist!	Unknown user group name (internal error)
6409	Feature name "%s" not found!	Unknown feature name (internal error)
6410	Group "%s" already exists!	The user group name already exists in configuration (internal error)
6411	Invalid feature name "%s"	The name of the feature is invalid (internal error).
6412	User "%s" already Exists!	The user name already exists in the system (internal error).
6413	Authentication failed; User: %s Expired: %s	Optional error if a login fails
6414	Feature "%s" not active for the current user "%s".	Optional error for an unsupported feature.
6415	Validation failed; User "%s" Expired: %s	Optional error if a validation fails
6416	Current user "%s" is not a member of the expected groups.	Optional error for user-group check

6417	Current user "%s" is not an administrator!	Optional error if not an admin user.
6418	Attribute "%s" was not found!	Optional error if attribute not found.
6419	Authentication type is invalid!	The specified authentication type is invalid (internal error)

Technical support and Professional services

For support please check LabVIEW Tools network for updates and/or send an email to support@wireflow.se