Aeos® Configuration Guide

Configuring the system

For Software Version 16.2.0.0

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Introduction

As a Huron Administrator, you can change the settings, parameters, and other configuration data for one or more parts of Aeos. Using the Configuration Center, you can view, create, modify, or set up the following:

- Areas and responsibilities–set up codes used to categorize unit and department work ownership for billing and request WIP
- Payers–plan, payer, payer group, and payer type codes used to categorize payers
- Patient types–client, minor, and major types used to categorize patients
- Billing edit codes–indicate requests or specific problems that block an account from being billed
- Request codes–applied to action items to indicate that work is required from someone other than the current representative
- Tasks and task status codes–tasks that must be completed for action items in the system and their task status codes
- Transaction codes–T-codes, transaction groups, and transaction types used to identify and categorize financial transactions applied to accounts; map newly imported, unassigned T-codes into the system
- Denial codes–describe specific reasons for accounts that have been denied payment
- Metric goals– define goals for particular business intelligence (BI) reports, scorecards, and dashboards
- Representative goals–enter goals for metrics that measure individual representative productivity
- Batch deficiency WIP–manually enter the billing edit counts and dollar amounts of batch deficiency WIP
- Key AR transactions–manually enter key AR transactions for a particular facility and date
- Business days–holiday and business day schedules used to determine due dates for action items
- Action item assignment filters–how work is allocated among the individuals on a given team in the system
- Portfolio and worklist views–modify the columns and action item details displayed
- User accounts–view, create, and edit Aeos users, and assign them to their roles
- Employee details–user information and team settings
- Teams and scorecards–associate teams with their scorecards
- Team details–area, supervisor, auto-supervisor, dashboard, hierarchy, and facility information
- Rescore action items–recalculate all scores used to quantify the priority and risk of action items for assignment and worklist display (generally used after configuration changes)
- System logs–use the logging subsystems to troubleshoot or monitor performance

If you have administrative access to the servers, you can do the following in applications outside the Configuration Center:

- Configure role security using Microsoft Authorization Manager (AzMan) to edit role task definitions and operations
- Import new employees and existing representatives using the User Import Tool
- Modify the data import process
- Set up the batch export of action item notes to the client HIS

- Add custom fields to import and set up how they are used
- Edit application configuration settings
- Configure the Auto Coding settings
- Configure how action items are grouped
- Configure the purge process
- Set up the system to support SSL (secure sockets layer)
- Configure the Transactional/BI Message Logging

Setting Up User Accounts

In the Configuration Center, open the User Accounts page to manage the users of the system by clicking **User Account Setup** in the task pane.

The User Accounts page displays existing user accounts and their assigned teams. You can create new accounts, enter basic account details, and assign roles for users. You can also reset passwords for standard users only.

Account Types

In the Aeos system, there are two types of user accounts. There are standard and domain user accounts that differ in how they are authenticated into the system:

- Standard (local user) accounts are authenticated using credentials stored in the AD LDS Huron Application Store that manages Aeos users and roles.
- Domain (AD proxy user) accounts are linked to the user's AD domain account credentials. This allows users to log into the system using their AD domain account name and password. In this case, password maintenance is handled by the domain, outside the Aeos system.

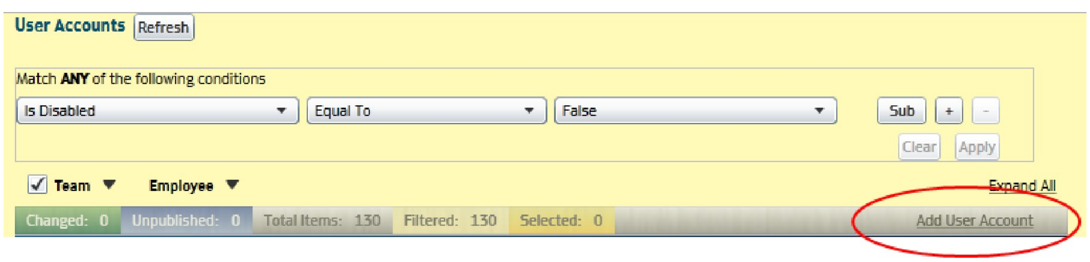
User Import Tool

To quickly create or edit many accounts, use the User Import Tool. You can also convert a user's account between standard and domain account types by using this tool. You cannot convert a user's account type in the Configuration Center.

For more details, see AD/AD LDS User Security and Importing Users, in this document, and the Aeos xx.x/Internal/Technical/AD Proxy Authentication folder in the SharePoint PM Product Documentation library.

To set up a new user account

1. In the Configuration Center, click **User Account Setup**.
2. On the User Accounts page, click the **Add User Account** link.

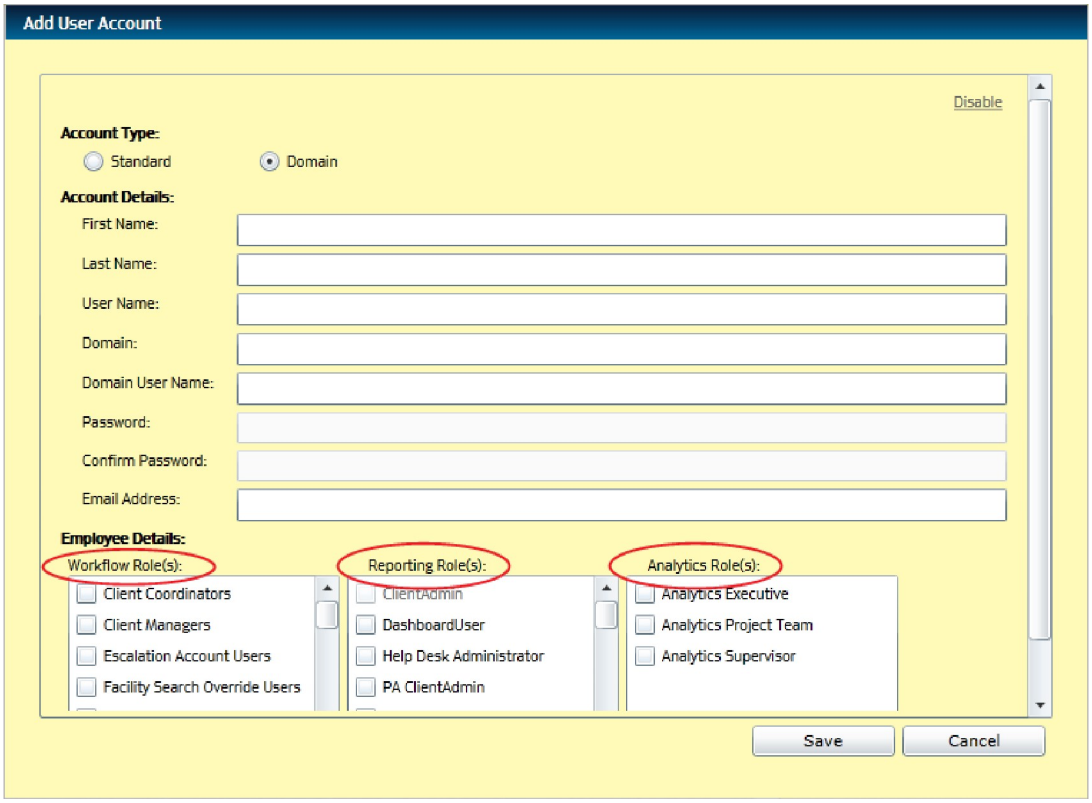


3. In the Add User Account dialog box, enter the **Account Type**, **First Name**, **Last Name**, **User Name**, **Password**, and **Email Address**.

   Enter the domain or password information depending on the user's account type.

4. Select the user's workflow, reporting, and analytics role(s). The most common roles are listed below. For additional details about roles, see Baseline Workflow Roles and Baseline Analytics Roles.

Role	Required Workflow Role	Typical Additional Workflow Roles
Representative	Representatives	Protected Account Users, Transfer Account Users, Facility Search Override
Supervisor	Supervisors	Protected Account Users, Facility Search Override
Client Coordinator	Client Coordinator	Protected Account Users
Huron Administrators	Huron Administrators	Protected Account Users, Transfer Account Users
Huron Project Team Members	Huron Project Team Members	Protected Account Users, Transfer Account Users



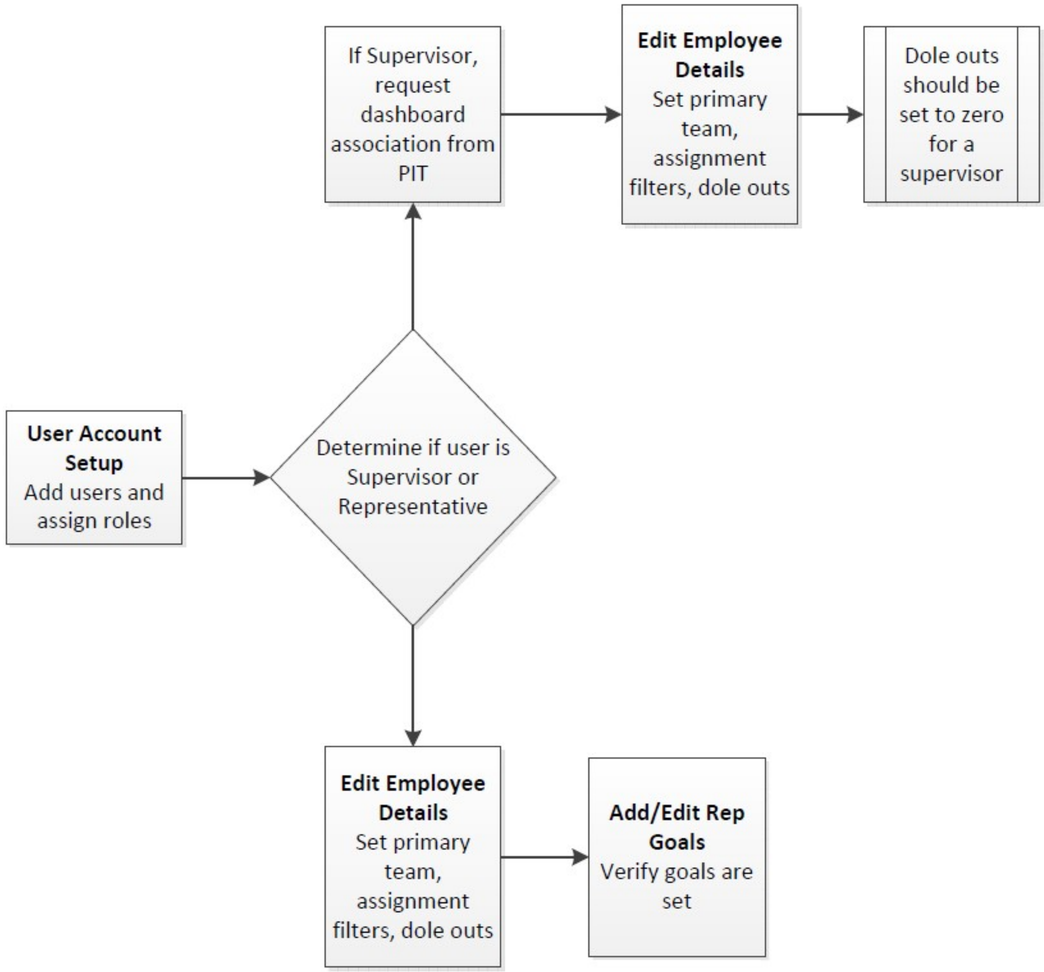
*Aeos Analytics is an option that may not be implemented in your system.

5. If the account is for an employee who needs team-specific access, switch to the Edit Employee Details page and assign the employee to one or more teams.

   Only users with the Representatives or Supervisors workflow roles can be assigned to teams.

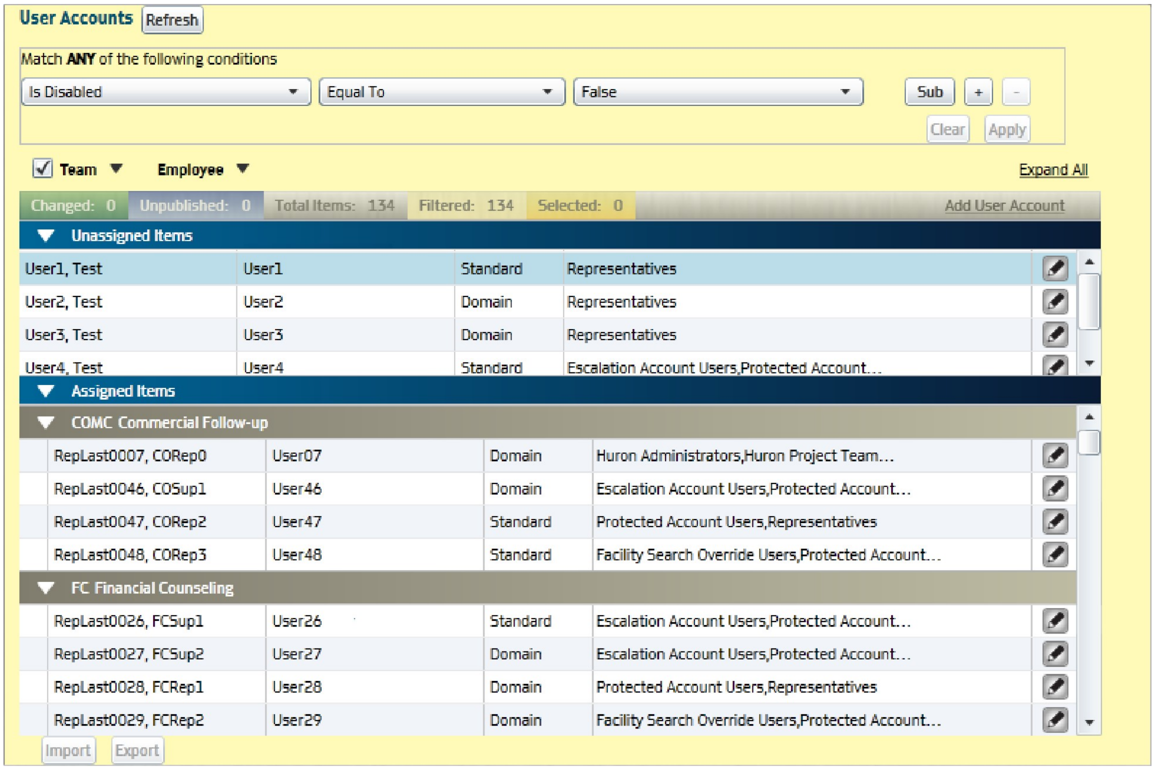
   Although you can add new user accounts and edit their properties, you cannot delete existing accounts or change their user names (logins) because the system maintains an audit history of certain transactions. You can disable an account that is no longer used so that it is hidden from most functions.

Account Setup Process Overview



User Accounts Page

In the Configuration Center, click **User Account Setup** on the task pane to open the User Accounts page where you can view and edit user accounts.



The table displays the user's name (last name, first name), account user name, account type, and workflow roles. By default, the table is grouped by whether users are assigned to a team, then by team name.

Use the controls on this page to change the tiered grid display and edit its contents. For more details about this page, see Using Tiered Grid Pages and Tiered Grid View Filters in Appendix A.

Workflow, Reporting, and Analytics Roles

There are three types of roles that are assigned to user accounts:

- Workflow roles – determine the user's overall access to functionality throughout the Aeos system. Some users may have multiple roles: e.g., a representative user may need to perform supervisor tasks or supervisor may need to be assigned action items. These roles are managed in the AD LDS Huron Application Security Store (See Baseline Workflow Roles).

- Reporting roles – user access and administration of reports in the reporting portal.

  These roles control the access to the reporting portal that is used to deliver and administer reports and online documentation. They are maintained separately from the workflow roles in the security scheme in the reporting portal database. A new role can be created by inserting it directly into the database using Microsoft SQL Server Management Studio (SSMS).

  See Revenue Cycle Stockamp Administrator Guide, Predefined Roles.

  There are a few reporting roles that are reserved, which means that you cannot select them directly in the Configuration Center UI. These are the Representative, Client Administrator (ClientAdmin), and Stockamp Administrator (Stockamp Admin) roles.

Every workflow role is mapped to the Representative reporting role, which provides access to the reporting portal and help functionality. Other workflow roles may be mapped to other reporting roles to provide appropriate access to required areas of the reporting portal UI.

- Analytics roles – user access to Aeos Analytics.

  These roles control the access to the Spotfire reports by mapping Spotfire groups to roles in the AD LDS Huron Application Security Store (See Baseline Analytics Roles).

  In Aeos Analytics, users with the Huron Administrator workflow role automatically have the Spotfire Administrator role.

  *Aeos Analytics is an option that may not be implemented in your system.

Adding New User Accounts

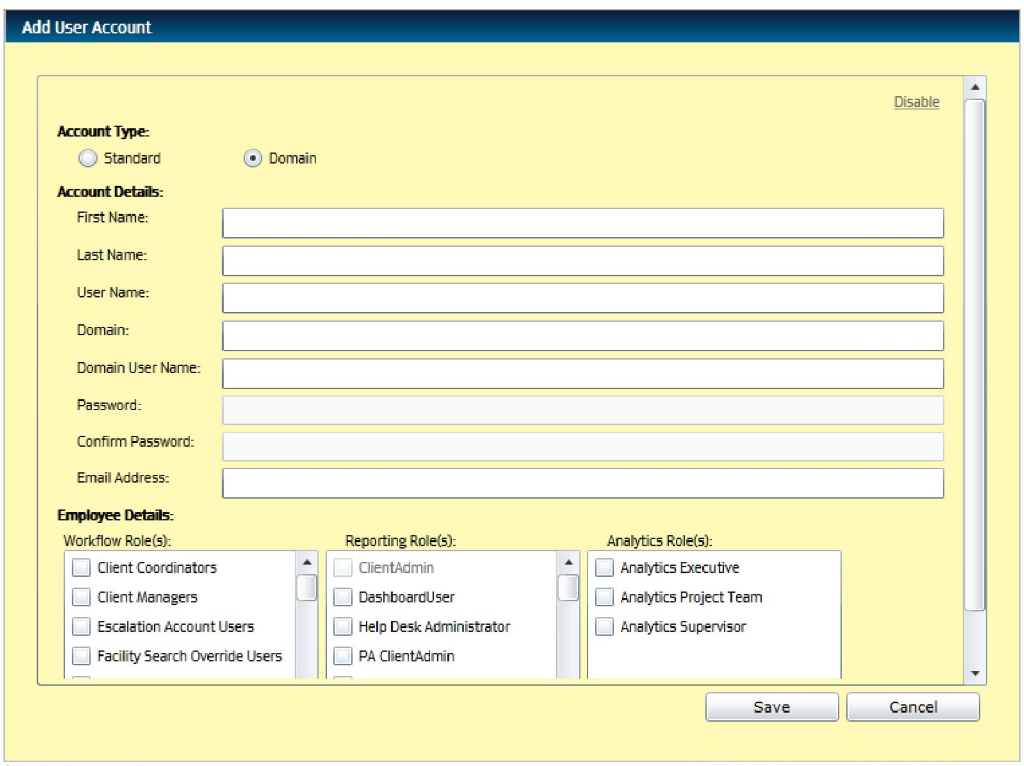
On the User Accounts page, you can add new user accounts to the system. Users may be representatives, supervisors, managers, coordinators, administrators, or combinations of these. The worklists, dashboards, scorecards, reports, configuration forms, and other parts of the system that users can access depend on their roles and teams.

After creating an account for an employee user who needs to view or perform work for specific teams, you must add it to a team using the Edit Employee Details page. Adding an account to a team is not necessary for users with administrative roles who are implementing or supporting the system.

The User Accounts page creates new accounts one at a time. If needed, use the User Import Tool to create or edit many accounts at once, or convert accounts between standard or domain account types.

To create a new user account

1. In the Configuration Center, click **User Account Setup**.
2. Click **Add User Account**.

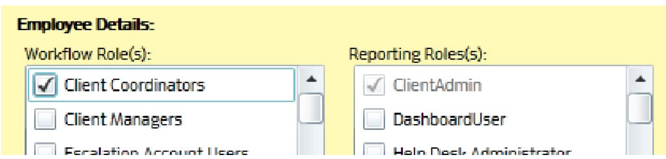


*Aeos Analytics is an option that may not be implemented in your system.

3. Under Account Type, choose the **Standard** or **Domain** option.

4. Under Account Details, enter the name, domain, password, and email information as applicable for this new account.
    - The **User Name** must be unique and cannot be edited or deleted once you have saved it.
    - **For a domain account**, the **User Name** is usually - but not required to be - the same as the **Domain User Name**. You must enter the **Domain** and **Domain User Name** for an existing AD domain account that is linked to this Aeos domain account. The password fields are disabled since the password is managed on the domain controller.
    - **For a standard account**, the domain fields are disabled since they do not apply. Enter the password in the **Password** and **Confirm Password** fields.
5. Under Employee Details, select the roles that apply to this user in the **Workflow Role(s)**, **Reporting Role(s)**, and **Analytics Role(s)** boxes.

    Selecting a workflow role automatically selects all its mapped reporting roles. E.g., selecting Client Coordinators automatically selects ClientAdmin.

    Note: reporting roles that are reserved are grayed out and cannot be edited.
6. Click **Save**.

Editing User Accounts

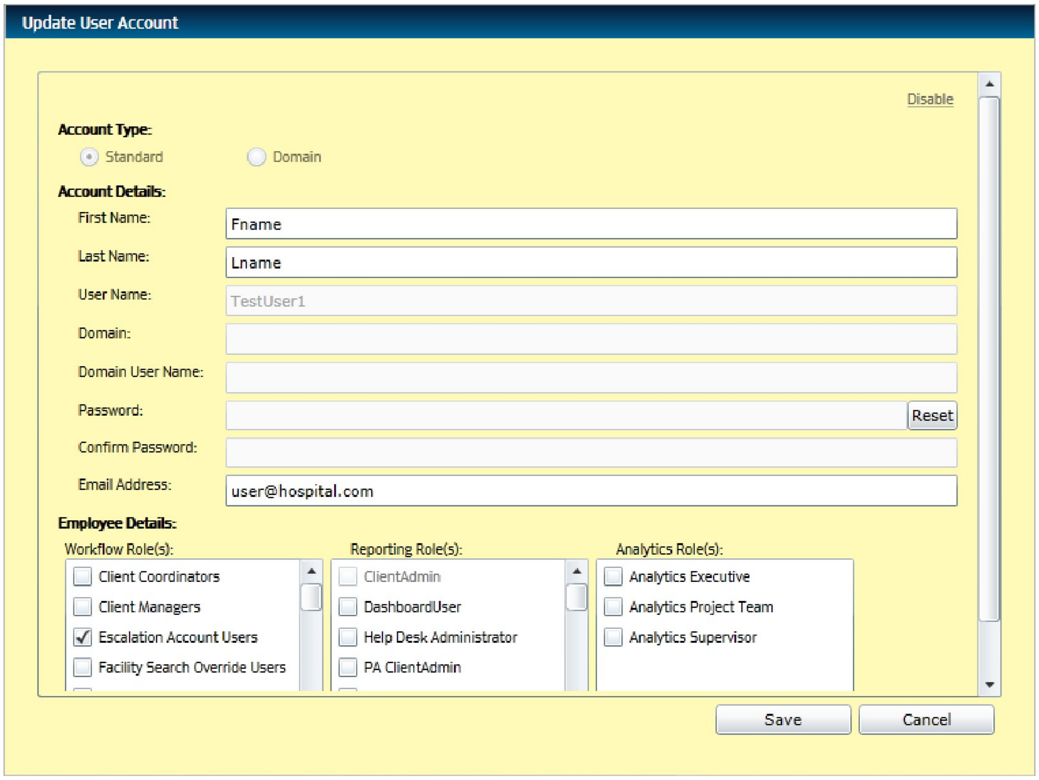
Existing user accounts can be edited from the User Accounts tiered grid. You can edit account details, employee roles, and reset passwords as needed.

On the User Accounts page, you can edit one account at a time. If needed, use the User Import Tool to add or edit many accounts at once, or convert accounts between standard or domain account types.

You cannot change or delete an existing user name because certain transactions including the user name must always be saved in the system audit history. However, you can disable an account that is no longer used so that it is hidden from most functions.

To edit a user account

1. In the Configuration Center, click **User Account Setup**.
2. Click the **Edit** button for an account.



*Aeos Analytics is an option that may not be implemented in your system.

- You cannot change the account type of an existing account in the Configuration Center.

  You can change it using the User Import Tool.
- Under Account Details, edit the first name, last name or email information for this account.

  The **User Name**, **Domain**, and **Domain User Name** cannot be edited for an existing user.
- For standard users, you can reset the password by clicking **Reset**.
- Under Employee Details, edit the roles that apply to this user in the **Workflow Role(s)**, **Reporting Role(s)**, and **Analytics Role(s)** boxes.
- To effectively remove or hide this user from the end user UI, click the **Disable** link.

  The link becomes an **Enable** link that reverses this operation.

  Note: when you re-enable a formerly disabled account, you must also make the account active and available for its applicable teams from the Edit Employee Details page before the user can be assigned any work.

3. Click **Save**.

Importing Users

Administrators can add or update multiple Aeos user accounts in a single operation with the User Import Tool (Huron.UserImport.exe). Use this tool instead of the User Accounts page in the Configuration Center to add or modify many user accounts on the User Accounts page. It imports CSV (comma separated values) files containing user account information. In the process of updating accounts, it can convert users between both standard and domain account types in the AD LDS Huron Application Store.

See AD/AD LDS User Security in this document and the Aeos xx.x/Internal/Technical/AD Proxy Authentication folder in the SharePoint PM Product Documentation library.

Huron.UserImport.exe is found on the application server in:

C:\Program Files (x86)\Huron Consulting Group\Tools\Huron.UserImport\

User Import Process

1. Create the user import file in the specified import file format.
2. On the application server, run **Huron.UserImport.exe**.
3. Log in with the sa_administrator (Stockamp Portal Administrator) user name and password.
4. Enter the path to the user import file.
5. Click **Import**.

The User Import Tool can also be run in command line mode.

Creating the User Import File

You can use a text editor or Microsoft Excel to create the user import file for the User Import Tool. This CSV file consists of a header row with the field names followed by one or more rows of user records.

Import File Format

The user import file format must have a header row followed by one record per line with the following plain text fields delimited by commas: Tenant*, UserID*, FirstName*, LastName*, Email*, Phone*, Password**, UserGroups*, PortalRoles, RequirePasswordReset*, IsActiveDirectoryUser, DomainName, DomainUserName, RecreateUserInADLDS*.
* indicates required fields, ** only required for new UserIDs

Importing Notes

- The import file should not be more than 100 records as it may time out.

  After it times out, you must restart IIS and retry the import.
- The file can simply end with the text of the last field of the last record. There is no need for a blank line at the end.
- After importing users, you need to refresh the User Accounts page in the Aeos Configuration Center to see the new users. There is no need to login again or restart IIS after the import.
- Audit the UserGroups and PortalRoles fields to make sure that the values from the user specs match the exact names of the workflow and portal roles. For example, the specs may not match number or spacing (e.g. representatives vs representative, portfolio user vs portfolio users, etc.). You can see these role names in the Add User Account dialog box.

Field Notes

Field	Notes
Tenant	Tenant Name
UserID	The account user name that is used to log in to the Aeos application. For Aeos domain accounts, the UserID should usually be the same as the DomainName (AD network user name). Case insensitive. There cannot be duplicate UserIDs in the import file.
UserGroups	Workflow roles that may be assigned to users. Some users may have multiple roles: e.g., a representative user may need to perform supervisor tasks or supervisor user may need to be assigned action items. In this case, multiple roles may be entered into a user record in the UserGroups field delimited by semicolons (;). See Workflow, Reporting, and Analytics Roles. Only existing workflow roles are valid values for this field. This field is not case-sensitive. Analytics roles are not handled by the User Import Tool. Use the Aeos Configuration Center UI or Spotfire thick client to manage them.

Field	Notes
PortalRoles	Reporting roles that may be assigned to users. Multiple roles are delimited by semicolons. You can use the import file to assign the reserved roles that cannot be assigned directly in the Configuration Center UI. See Workflow, Reporting, and Analytics Roles. Some workflow roles must be mapped with certain reporting roles to get appropriate access to the Portal. If a user (row) in the import file has a workflow role without its required reporting role mapping, the system automatically adds the required roles to the user account. E.g., if a user has 'Client Coordinators' in its UserGroups column but no 'ClientAdmin' in the PortalRoles column, then the 'ClientAdmin' role is added during the import process. This process does not work both ways. Having certain reporting roles does not automatically add workflow roles. E.g., if a user has 'ClientAdmin' in the PortalRoles column but no 'Client Coordinators' in its UserGroups column, then the 'Client Coordinators' role is NOT added during the import process. Only existing reporting roles are valid values for this field.
Password	This field is only required when a new standard account is imported into the system. It is ignored if the UserID field for the record already exists in the system. Must be blank for a domain account. As a security measure, clear this column or delete the import file after the import is complete.
RequirePasswordReset	Enter either true or false. If this is true, the user must change the password during the first log in.. **For Huron internal use only.** This field should be set to true for standard users at the client site, and is only set to false for development or testing. If nothing is entered for a standard user, the import for this record fails. This should be set to false for domain users. This field is only used when a new standard account is imported into the system (i.e., it is ignored if the UserID field for the record already exists in the system or is for a domain account).
IsActiveDirectoryUser	Enter either true or false. - If true, configure the account as a domain account and the DomainName and DomainUserName fields are required. - If false, configure the account as a local account, ignoring the DomainName and DomainUserName fields. *Required for domain accounts
DomainName	AD network domain name. If the user is not a domain user, leave this field blank. *Required for domain accounts
DomainUserName	AD account user name. If you are creating an Aeos domain account, its UserID should usually be the same as the DomainUserName. If the user is not a domain user, leave this field blank *Required for domain accounts
RecreateUserInADLDS	Enter either true or false. This setting only applies if there is already an existing Aeos account with the same name (UserID) in the AD LDS Huron Application Store. • If true, replace the entire record of an existing user. This must be true for account type conversions. • If false, replace all fields except for the password and active directory/domain fields of an existing user. If nothing is entered for domain accounts, the import for this record fails. If nothing is entered for standard accounts, this field is treated as a FALSE and the import succeeds with a warning, unless there are other errors. *Required for account type conversions

Example

An import file with three new accounts viewed as a CSV file in Microsoft Excel:

	A	B	C	D	E	F	G	H
1	Tenant	UserID	FirstName	LastName	Email	Phone	Password	UserGroups
2	Stockamp	flname1	Fname1	Lname1	user@test.com	000-000-0000		Client Coordinators;Protected Account Users
3	Stockamp	flname2	Fname2	Lname2	user@test.com	000-000-0000	password	Supervisors;Protected Account Users;Escalation Account Users;Transfer Account Users
4	Stockamp	flname3	Fname3	Lname3	user@test.com	000-000-0000	password	Representatives;Protected Account Users

I	J	K	L	M	N
PortalRoles	RequirePasswordReset	IsActiveDirectoryUser	DomainName	DomainUserName	RecreateUserInADLDS
Representative	FALSE	TRUE	hecdev	flname1	FALSE
Representative	TRUE	FALSE			FALSE
Representative	TRUE	FALSE			FALSE

Setting up the user import file for new standard accounts

To set up an import record for a new standard account (AD LDS authentication):

- In the user import file, all fields for the account record must be entered except for the DomainName, DomainUserName, and RecreateUserInADLDS fields.
- IsActiveDirectoryUser must be FALSE.

Setting up the user import file for new domain accounts

To set up an import record for a new domain account (AD proxy authentication):

- In the user import file, all fields for the account record must be entered except for the Password, RequirePasswordReset, and RecreateUserInADLDS fields.

  Since these passwords are managed on the domain, any values in password-related fields are ignored.
- In most cases, the UserID (Aeos User Name) is the same as the DomainUserName; this is not a requirement. An exception case is if the UserID is already taken.
- IsActiveDirectoryUser must be TRUE.
- The new user's DomainName and DomainUserName must be entered.

Updating existing accounts

If you import a UserID (user name) that already exists in the Aeos system, its record is updated in the Huron Application Store in AD LDS.

- With RecreateUserInADLDS = FALSE, the newly imported field values replace the existing values for that user except for the password and active directory/domain fields.
- With RecreateUserInADLDS = TRUE, the newly imported record replaces the entire existing record for that UserID.

Converting between standard and domain account types:

To change an existing Aeos account's account type:

- In addition to the new user requirements, change IsActiveDirectoryUser to TRUE for converting to a domain account, or FALSE for a standard account.
- RecreateUserInADLDS must be TRUE.

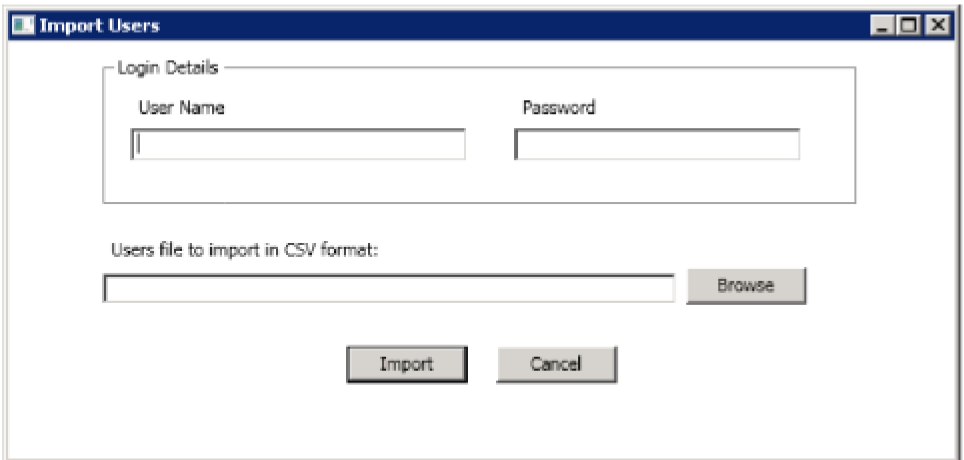
Note: The Configuration Center UI cannot change user account types. See AD/AD LDS User Security.

Using the User Import Tool

After you create a user import file, you can import its records into the Aeos database using the User Import Tool.

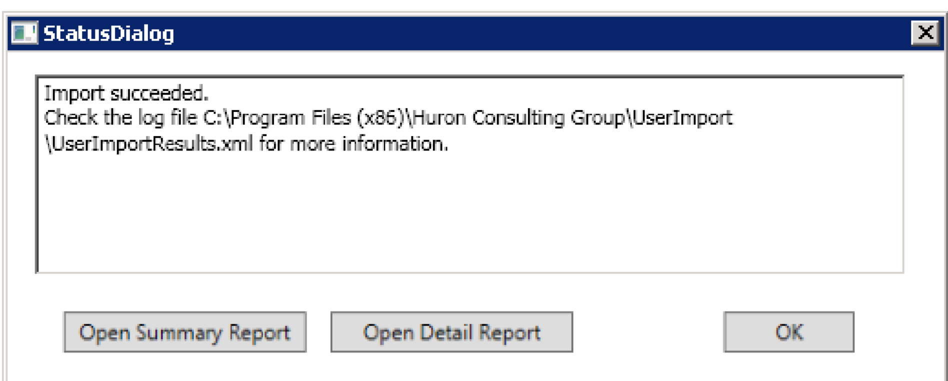
To import users

1. Create a CSV file of users in the specified import file format.
2. Log into the Aeos application server.
3. Run C:\Program Files (x86)\Huron Consulting Group\Tools\Huron.UserImport\Huron.UserImport.exe.



4. Under Login Details, enter your Aeos account user name and password.

   You must have the Huron Administrators workflow role to use this tool.
5. In **Users file to import in CSV format**, type in or browse to the path to the user import file.
6. Click **Import**.
7. If the import succeeds, the following dialog box is displayed:



   The entire import fails if there are missing/mis-ordered columns or multiple records with the same UserID in the user import file. Please check the Summary and Detail Reports for warnings. See User Import Reports.
8. Click **OK**.

Importing Users in Command Line Mode

The User Import Tool can be run on the Aeos application server at the command prompt by simply adding parameters:

C:\Program Files (x86)\Huron Consulting Group\Tools\Huron.exe /ImportFilePath: "<*csv file*>" /UserName:<*username*> /Password:<*password*>

For example:

C:\Program Files (x86)\Huron Consulting Group\Tools\Huron.exe /ImportFilePath:"c:\import\newusers.csv" /UserName:c_kane /Password:r0$e6ud!

The command prompt returns a message indicating whether you succeeded or failed, and the user import reports are created.

User Import Reports

The User Import Tool creates two import report files as it runs. These reports are located in the same folder as the user import CSV file. Open these reports by clicking one of the buttons on the StatusDialog box after the import finishes:

- **Summary Report** – UserImportSummaryReport.html, summary level report
- **Detail Report** – UserImportResults.xml, detailed report

The status of each record in the import is reported. The reports identify specific records that fail to import even though the overall import file succeeds. They can also identify some situations that create or update accounts with unintended but valid configurations.

> For example: a user account record in the import file fails with IsActiveDirectoryUser = TRUE but an invalid DomainName or invalid DomainUserName. Another record in the same import could succeed with ActiveDirectoryUser = null by mistake, invalid DomainName, and invalid DomainUserName, and because the latter two fields are ignored, a standard account is unintentionally created.

Troubleshooting User Imports

See the following PS Wiki topic for troubleshooting guidance:

http://pswiki/PSWiki/doku.php?id=aeos:config:configsupport:troubleshooting_user_imports

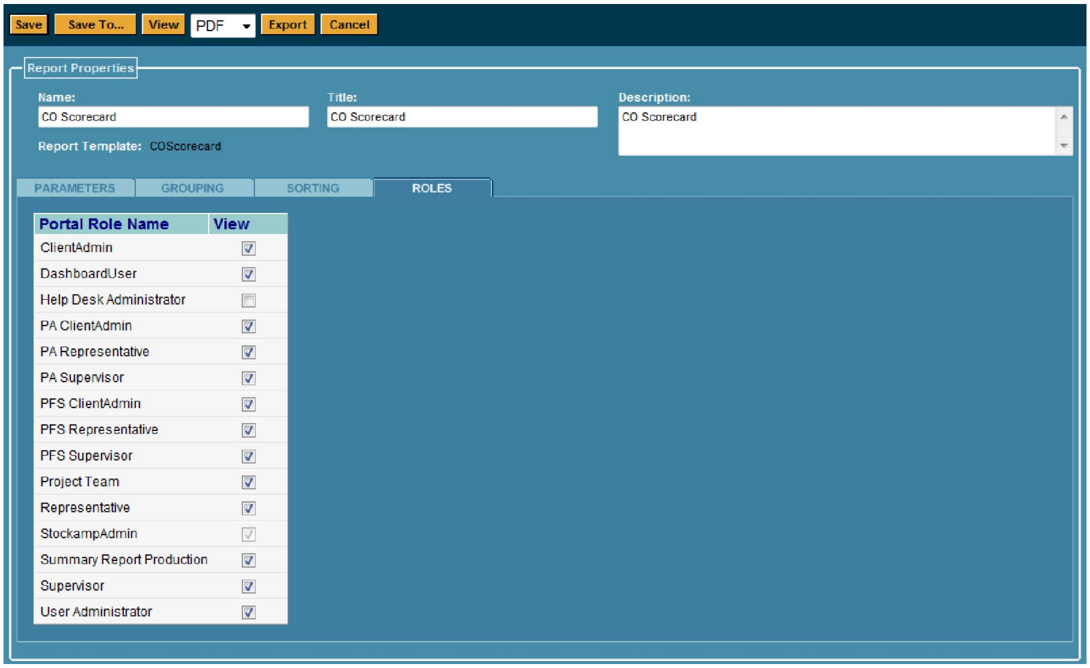
Role-Based Access to Reports

Access to reports is tied to reporting roles. You can limit the access to reports to only those that are necessary for a specific role. You can set up the role-based access in the report properties Roles tab.

Stockamp Administrators (Huron-staff administrative role) have access to all reports and generally client administrators do as well. This allows Stockamp Administrators and client administrators to view different reports than, for example, client managers and supervisors.

To grant access to reports in report properties

1. In Aeos, click the **Analysis** tab and **Aeos Scorecards and Reports** button.
2. From the Business Intelligence menu, click **Standard Reports** and then navigate to the report that needs to be edited.
3. Click the **Properties** icon.
4. Click the **Roles** tab.



5. Select the **View** check box for each role that should have rights to view the report.
6. Click **Save**.

Facility Search Override

By default, users whose workflow role is not Client Coordinator, Huron Administrator, or Huron Project Team can only search for accounts within a set of particular facilities depending on their team membership. If you need to give some of these users the ability to search all facilities, you have two options:

- The best practice is to add the Search - Facility Search Override operation to a particular role using AzMan so everyone with that role has this capability. See the Using AzMan section, specifically the **To add or remove operations procedure**. For example, the client may want the Supervisor role to have the ability to search all facilities.
- If there are only a few individuals of a particular role who need that capability, you can update their user accounts directly to include the Facility Search Override workflow role. See Editing User Accounts.

Editing Employee Details

The Edit Employee Details page allows you to add or edit employee team memberships. Employees can be members of multiple teams. You can edit the following employee settings:

- **Team Membership** - add an employee to a team
- **Primary Team** - set an employee's primary team; determines the layout (column headers) of the representative's worklist or supervisor's portfolio; also affects team and representative information in reporting
- **Action Item Distribution Limits** - change the **Target** and **Dole Out** number of action items for a worklist
- **Assignment Filters** - change from the team default value (priority only) to include one or more team-specific assignment filters
- **Active Status** - when employees are added to a team and made active, the system can assign them action items from the team portfolio according to their dole out numbers and availability.

  When employees leave a team, you must make them inactive to effectively remove them. The team's action items on their worklists become unassigned and they cannot be assigned new action items.
- **Availability Status** - when employees are logged into the Aeos application, they are considered available for action item assignment. Employees may manually flag themselves as not available. You can temporarily override an employee's availability to stop the system from assigning a specific team's action items to him or her.
- **Dashboard** - give an employee rights to view the team dashboards

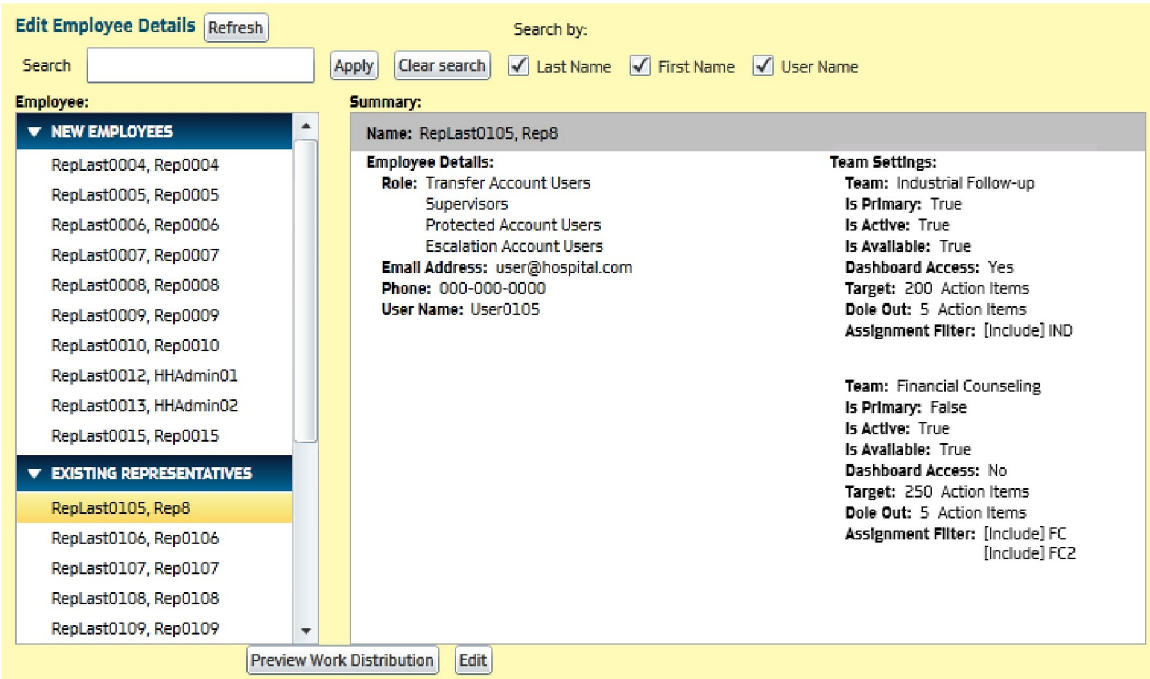
You can preview the impact of these changes to work distribution. See Previewing Work Distribution.

Although you can add new employees and edit their properties, you cannot delete an employee's record from the Aeos system because it maintains a historical record of certain transactions. You can, in effect, remove employees from the system by inactivating them from all teams.

See also: Account Setup Process Overview.

Using the Edit Employee Details Page

In the Configuration Center, click **Edit Employee Details** to view or edit employee or representative information and settings.



The Edit Employee Details page consists of the Search controls, Employee list, and Summary box.

- In the Employee list, click either a new employee or an existing representative to view his or her employee details and team settings in the Summary box. A new employee is someone who has been added to the system but has not yet been assigned as a representative on a team. To appear in this list, the employee’s user account must be assigned a workflow role of supervisor or representative.
- If the Employee list is too long to quickly browse, use the Search box to find employees by their last, first, or user name.
- Click **Edit** to change the team settings for the selected employee or representative.
- Click **Preview Work Distribution** to see the changes to the team workloads that occur as you create new or edit existing representative's settings. See Previewing Work Distribution.

When editing the team settings for an employee, consider the following:

- **Multiple Teams/One Primary**: A representative can be on multiple teams but only one of them is his or her primary team.

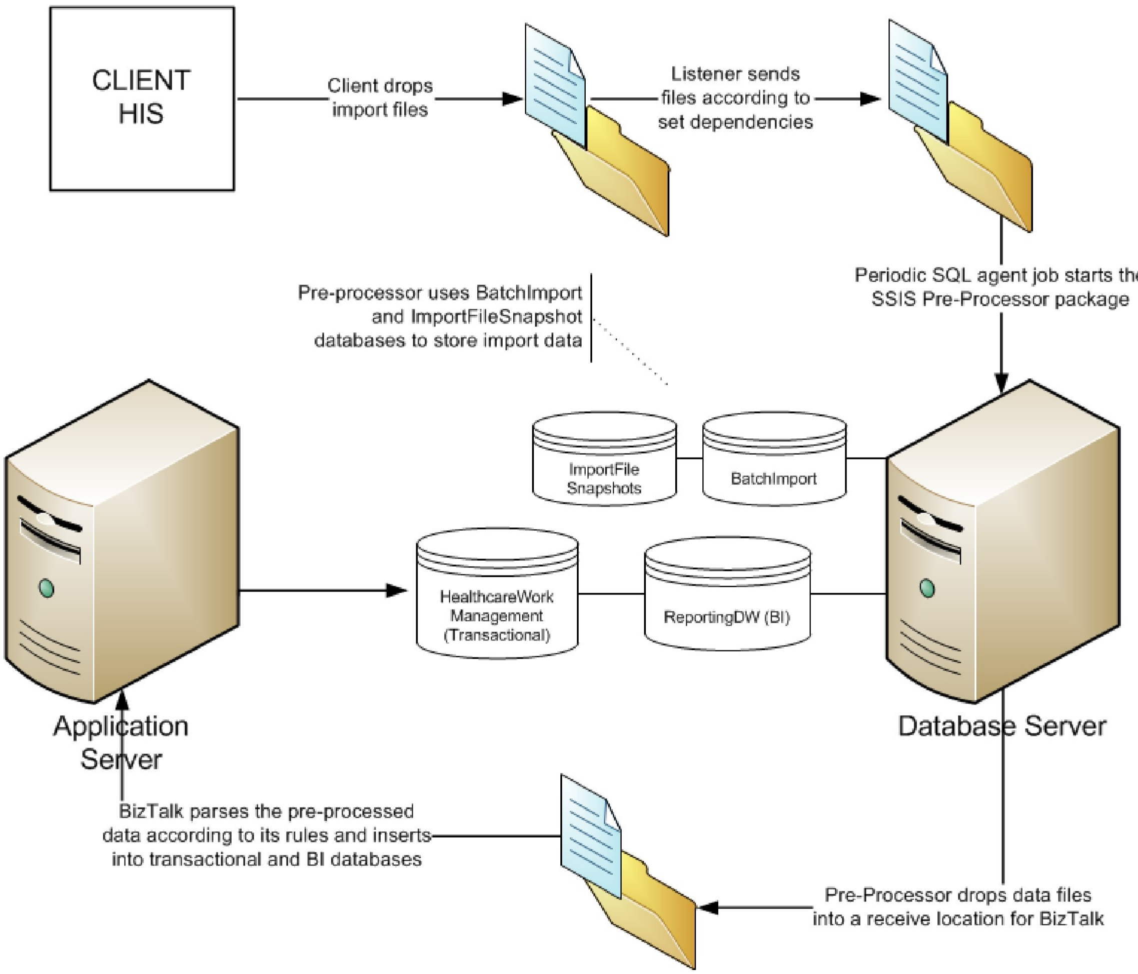
  The **Set as Employee’s Primary Team** setting determines which columns are displayed on the representative's worklist or supervisor’s team portfolio. It controls which fields are shown in the Action Item Details tool panel. It also sets the representative’s team information in reporting.

- **Active Status**: The **Active** field indicates long term availability; whether the system can assign action items from the team portfolio onto the representative's worklist. The default value for this field is true, but you may want to clear it if you are adding someone who will not start for a while.

  Employees who leave this team should be made inactive to stop assigning them action items from the team portfolio. When you clear this check box, the system moves the action items from the inactivated employee's worklist back to the team portfolio for reassignment. Also the inactivated

Importing Client Data

Importing client data into the Aeos application involves an SSIS pre-processing system that transforms the input data to extract only the new and changed accounts compared to the previous import. This data is written into change files in a format that the Aeos BizTalk application can take and insert into the Aeos databases. The process can be summarized as follows:



1. Client IT drops the data files for import into the system.
2. The Huron File Management Service (Listener) monitors the drop folder and sends files to the Pre-Processor input folder in the order that they should be imported.
3. SSIS Pre-Processor package loads data into the BatchImport database
4. Pre-Processor processes imported data and generates text change files (changed or new data only).
    - o Scrubs data
    - o Resolves duplicate records
    - o Compares the currently imported data to previously imported data saved in the BatchImport database, and extracts new and changed records
    - o Adds necessary fields (e.g., AsOfDate, TenantGUID)
    - o Logs appropriate events to the ESB log

- o Quarantines records that are defective (e.g., missing fields, wrong field length)
- o Reformats data (e.g., groups visits)

5. Change files are written into a drop location folder for the BizTalk application.
6. The BizTalk application transforms text change files into XML messages.

   Transforms imported data to the Aeos canonical schema.
7. The BizTalk application processes message files according to business rules, then inserts new and changed items into the transactional and BI databases.

Formatting Import Files

The format and content of the import file results from an analysis of the data that the client can provide for the Aeos application. An important part of the implementation effort involves working with client IT to establish the format of these files.

- Files from the client can be received in any format. The baseline import file format or SSIS package configuration needs to be modified to suit the client data.
- Identify the columns correctly and name them appropriately
- The baseline import file format is a text flat file with one record per line using the pipe (|) delimited column format.

Import Drop Folders

There is a drop folder on the database server where the daily import files (Account_Night.txt, Account_TRAC.txt, etc.) are copied. By default it is found here:

\\<*database server name*>\IMPORT\DELIVERY

The Huron File Management Service, also called the "listener", monitors the DELIVERY folder and ensures that files are imported in the correct order; for example, a certain file may not import until a predecessor file imports successfully. According to the dependencies that are set up during configuration, the listener moves import files from the DELIVERY folder into the PREPROCESSOR drop folder:

\\<*database server name*>\IMPORT\PREPROCESSOR

Once here, files are imported according to the pre-processor job schedule.

You can bypass the file dependencies and manually import a file by dropping it directly into the PREPROCESSOR drop folder (for example, if an import file is late or a predecessor file import fails).

Pre-Processing Imported Data

The Pre-Processor consists of a scheduled SQL agent job, SSIS (SQL Server Integration Services) packages (dtsx files), BatchImport database, and ImportFileSnapshots database on the database server.

1. To start pre-processing new client data, client IT drops their import files into the Aeos system drop folder. By default this folder is C:\IMPORT\WATCHDROP.
2. The Huron File Management Service (Listener) sends the import files from the WATCHDROP folder to the C:\IMPORT\PREPROCESSOR folder in the order specified by the configured dependency rules.
3. According to its schedule, the SQL Server Agent Job **Process_BatchImport** executes the SSIS package **BatchImportPreProcessor.dtsx** that takes these files and runs the ETL process that uses the BatchImport database for cache and staging.

   On the Database server, BatchImportPreProcessor.dtsx can be found, by default, in: C:\Program Files (x86)\Huron Consulting Group\Batch Import PreProcessor\Processing\

4. The Pre-Processor parses these files and compares their contents to the data from the previous import which is stored in the BatchImport database. For each import file, it produces text change files that consist of changed or new records. These change files are 1000 record chunks of the import files and are written into their appropriate folder in C:\IMPORT\IN.
5. When the Pre-Processor is done, the BizTalk application takes the text change files and converts them into XML message files that are used to update the Aeos databases. It processes their contents according to the business rules and loads the HealthcareWorkManagement (transactional) and ReportingDW (BI) databases accordingly.

Snapshots

There are three snapshots taken for each import process and stored in the **ImportFileSnapshots** database. They are taken:

- just after importing the data (before quarantine and scrubbing)
- after quarantine and scrubbing
- after authoritative logic.

The snapshots record only the changes made to the data from the import file and are used the debug the import process.

Setting Up the Pre-Processor

The Pre-Processor is set up during project implementation after Aeos has been installed. For 12.3 and later, this process is described in the Pre-Processor Setup Guide in the PS Wiki.

Source Control

The files involved with the data import can be found in source control in TFS in pmtfs\DefaultCollection:

$/ClientConfig/PIT Baseline/12.3/PreProcessor

Import Data Files and Folders

The IMPORT folder contains files that are involved in pre-processing the client import data files into the change files that are used by the BizTalk application for business rules processing. The input, intermediary (temporary), and output files of the import process are stored here. The contents and structure of this folder may be changed from default during installation depending on the client. The default folder structure is as follows:

Folders/Contents

- C:\IMPORT\IN

  Pre-processed data from the import files (changed and new data only) chunked as text flat files with 1000 records per change file. These files are the inputs for the BizTalk application.

  There are subdirectories for each of the import file types that go through the PreProcessor for example: C:\IMPORT\IN\BEAccount (TRAC), C:\IMPORT\IN\BillingErrors, C:\IMPORT\IN\Billholds (billhold data for billing errors), C:\IMPORT\IN\Denials, C:\IMPORT\IN\FEAccount (ONTRAC, Scheduling), C:\IMPORT\IN\TransactionCodes.

  C:\IMPORT\IN\AccountReset – this folder is unused, ignore it

  C:\IMPORT\IN\ARStatistics – an import file type that does not go through the PreProcessor

  C:\IMPORT\IN\AutoCoding – an import file type that does not go through the PreProcessor

  C:\IMPORT\IN\BusinessEvents – a BI-related import file type that does not go through the PreProcessor

C:\IMPORT\IN\Deleted – import records that are not in the current (most recent) import file but were in the previous import file. Only implemented for billholds and BE accounts:

- C:\IMPORT\IN\Deleted\Billholds – This file is used to detect when a billing error is no longer present in a billhold import file.
- C:\IMPORT\IN\Deleted\BEAccount – contains the same as above for back end import files.

- C:\IMPORT\OUT

Debug message files output by BizTalk. Only enabled for debugging/implementation testing purposes, not used in production.

Filename format: MessageSink_{<unique identifier>}.xml

Also contains the activity notes files. See Configuring Notes Export.

C:\IMPORT\OUT\AutoCoding – Debug message files that are relevant to Auto Coding only

- C:\IMPORT\PREPROCESSOR

Incoming import data files dropped by the client IT. One flat file per import type: e.g., ONTRAC, TRAC, account, billing, denial, etc.

C:\IMPORT\PREPROCESSOR\ProcessFailed - import files that failed entirely (no records successfully pre-processed) are moved here from the C:\IMPORT\PREPROCESSOR subfolder when the Pre-Processor is done with them

C:\IMPORT\PREPROCESSOR\ProcessSucceeded - import files that successfully pre-processed are moved here from the C:\IMPORT\PREPROCESSOR subfolder and renamed with time stamp appended

C:\IMPORT\PREPROCESSOR\RecordsFailed - records that failed from import files where the other records were successfully imported (partially pre-processed). One flat file per import type.

C:\IMPORT\PREPROCESSOR\Backup - any fixed-length data files saved for backup purposes

Temporary files used during processing written in:

- C:\IMPORT\PREPROCESSOR\Post-PreProcess\Deleted
- C:\IMPORT\PREPROCESSOR\Post-PreProcess\Inserted
- C:\IMPORT\PREPROCESSOR\Temp

C:\IMPORT\WATCHDROP - folder where client IT drops import files for the Huron File Management Service or “Listener” to process in the order set up by its dependency configuration. See Configuring the Import File Processing Order.

C:\IMPORT\WATCHARCHIVE - files that fail the size variance check from the WATCHDROP folder are moved here

Import Configuration Files and Folders

The Pre-Processor SSIS packages and configuration files are located in the Batch Import PreProcessor folder. The contents and structure of this folder may vary depending on the client. The default folder structure is as follows

Folders/Contents

- C:\Program Files (x86)\Huron Consulting Group\Batch Import PreProcessor\Processing

BatchImportPreProcessor.dtsx SSIS package file that controls the ETL process

- C:\Program Files (x86)\Huron Consulting Group\Batch Import PreProcessor\Configuration

  BatchImportPreProcessor.dtsConfig file - configuration settings and information (database server, database, locations, etc.)
- C:\Program Files (x86)\Huron Consulting Group\Batch Import PreProcessor\DataSource

  Data source connections used by the Pre-Processor:
    - Control.NET SQL.ds
    - Control Native OLE.ds

Batch Import Database

The data from the import files is loaded for pre-processing into the BatchImport database on the Aeos database server.

Tables

The BatchImport database has cache, staging, quarantine, and temporary tables for the different import file types. In addition, it has the following tables used for import processing:

- AccountLookUp – all account and visit source identifiers in the system
- ColumnsToValidate – specific columns that need to be validated in the import files
- CustomFields – non-baseline fields added to Aeos system specifically for the client. These fields pass through to the UI or reporting. (e.g., “as of date”).
- DayOfWeek – specifies the Day values used in the FileDependency and ProcessWindow tables that configure the Huron File Management Service (Listener)
- FileDependency – used by the Huron File Management Service (Listener) to save import file dependency information.
- FileFormat – file format of fixed-length import files
- FileFormat_Custom_Lookup – mappings between columns in the import file containing custom field info and BizTalk schema
- FileFormat_Lookup – same as above for non custom fields
- HuronVersion – logs changes to this database that occur through installation or direct updates to the schema
- ImportFile – information about the import files, based on the import file types (supports multiple import files of the same type); contains the ArchiveLocation field for the raw and change files (If null use default locations)
- ImportFileType – information about the specific data file types of the import files
- ImportLog – statistics and metrics for each import of each client import file
- ImportSchema – defines the names of the BizTalk schemas; there is one schema per BizTalk map
- ImportSchemaColumn – defines columns/fields in the BizTalk schemas
- KeyColumns – lists the key columns and their positions in each import file
- LookupColumns – For AccountLookUp table, specifies the location of the account number in every import file (account lookup key columns)
- ProcessWindows –defines when an import file can be received and processed.
- Quarantine_Records – records that cannot be imported
- ReceivedFiles – historical record of import files dropped in the C:\IMPORT\WATCHDROP folder

Stored Procedures

The BatchImport database's Stored Procedures folder contains scrubbing sprocs for each import file type; these begin with usp_Delete or usp_Quarantine.

It also has the following key stored procedures:

- usp_CheckDroppedAccounts
- usp_CheckIfCacheTableWillBeErased
- usp_CheckIsJobRunning
- usp_Get_1000_Accounts
- usp_Get_Single_Account
- usp_GetAccountSourceIdFromLookUp
- usp_GetLookupCols
- usp_InsertIntoImportLog
- usp_UpdateAccountAndVisitSourceId
- usp_UpdateFileProcessEndTime
- usp_UpdateJobStatus

Added by Bridge Solution:

- sps_AutoTrimScrubbing
- sps_ClearQuotedIdentifiers
- sps_CreateImportSnapshot
- sps_GetSchemaColumnMapping
- sps_GetSchemaCustomColumnMapping
- sps_PurgeImportSnapshot
- sps_QuarantineDuplicateRecords
- sps_QuarantineEmptyKeyFields
- sps_QuarantineFormattingIssues
- sps_StripHeaderFromStaging

Mapping Imported Fields in BizTalk Mapper

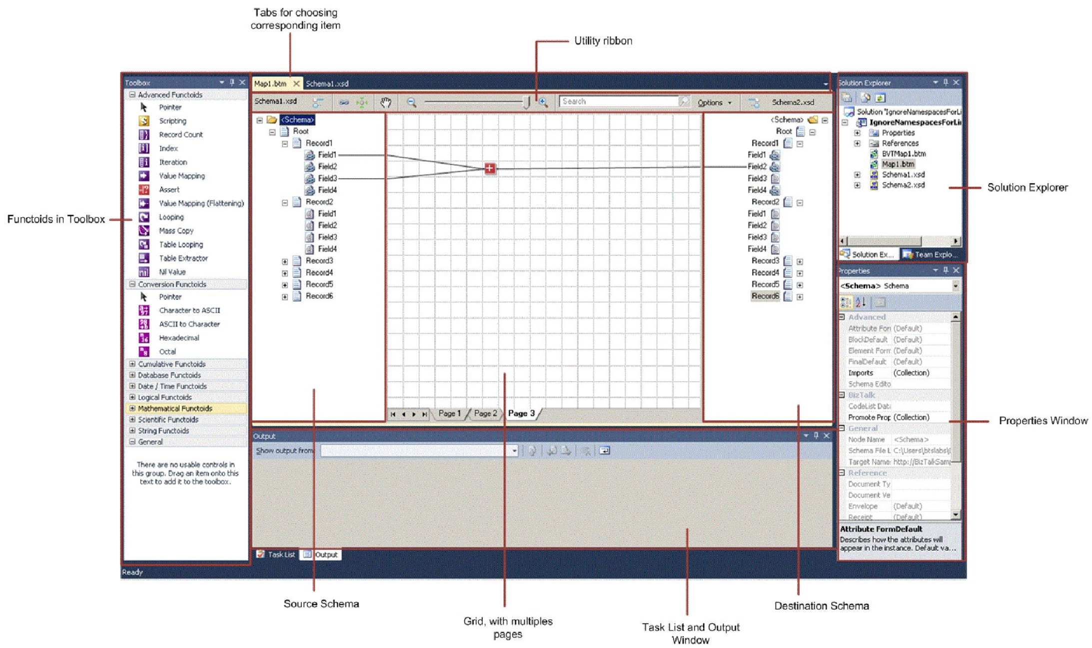
Use the BizTalk Mapper in Visual Studio to view or edit the field mapping from the import flat files to the tables in the HealthcareWorkManagement database. The mappings specify the transforms from the imported data in the text change files (pre-processor output) to the to the Aeos canonical schema. See the process overview in Importing Client Data.

The BizTalk Mapper lets you map fields between the source and destination schemas defined by two XSD files. This mapping information is stored in a BizTalk map file that has a .btm extension. The source XSD file is the schema of the client import file and the destination import file is the schema used by the Aeos BizTalk rules engine. There is a map and XSD files for every import file type that is used in the system.

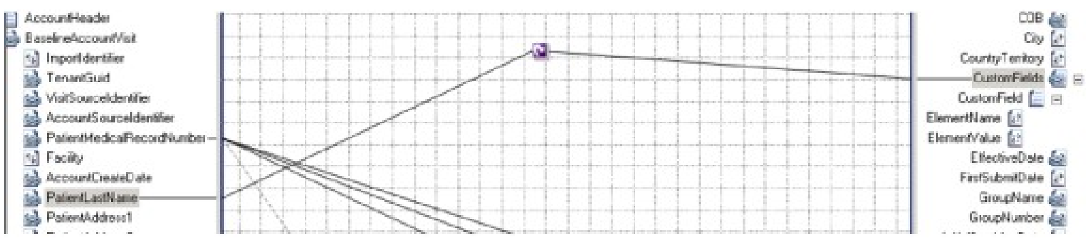
To edit the field mapping from the import file to the transaction database

1. In the Visual Studio Team Explorer, open the Source Control Explorer and get the latest Aeos source code.

2. In the Solution Explorer, open the map file (.btm) for the client import file you want to edit.



3. Edit the linked fields from the source schema to the destination schema.



For each field you want to add or modify, create or edit connections using any applicable functoids in the grid:

a. In the destination schema, identify the node to map the field from the source schema.
b. Create or edit a connection to the parent field node (use the looping functoid if there are multiple source nodes where the field can be found).
c. Create or edit a connection to the field node using the condition > 0 functoid so that null value fields are not imported.
d. Create or edit a connection to the ElementName node containing the name of the field.
e. Create or edit a connection for the ElementValue node for the value of the field using any applicable functoids from the Toolbox.

4. Test your change by right-clicking the map file in the Solution Explorer, and clicking **Test Map**.

   Check the Output window for warnings.

Configuring the Import File Processing Order

The Huron File Management Service or “Listener” allows you to set up the order that import files in a “drop” folder are processed by the Aeos system. For example, you can set up an ordering where a dependent file cannot be imported until a predecessor file appears or successfully completes its import.

The listener is a Windows service called the Huron File Management Service. It must be running on the server where the pre-processor is installed, usually the database server.

The listener does the following:

- Checks dependencies between import files
  whether a particular import file has arrived in the drop folder before importing
  whether a predecessor file has been imported
- Checks import file size variance
  does not import a file that is unexpectedly large or small
  reports this import failure to the Import Status page in the Configuration Center UI
- Checks predecessor file import failure tolerance
  does not import a dependent file if its predecessor file has too many records that failed to import
  reports this import failure to the Import Status page
- Imports files during appropriate time windows
  can set up multiple time windows (12:00 AM – 6:00 AM and 2:00 PM – 4:00 PM)
  can set up different windows for every day of the week for each file
- Logs the status of received import files

For more details about how to configure the Import File Listener, see Using the Import File Listener.