PST Flight Deck 9.2

Administration Guide

Contents

Resolution

This guide is intended as a reference in the management, use, and understanding of PST Flight Deck. This document was written for a technical audience whom are anticipating a base deployment of a PST Flight Deck environment. It is intended to provide an overview and high-level understanding of the product. Large, complex, or constrained migrations should engage a PST Flight Deck Architect to take the circumstances of your project into consideration.

Introduction

PST Flight Deck is a scalable enterprise capable solution designed to address the issue of decades of unmanaged PST file creation, utilization, and proliferation throughout an organization. The objective of this solution is to identify and migrate the content of Personal Storage Table (PST) files into a target environment in order to permit the content to be subject to regulatory, retention, and organizational requirements. Upon ingestion, it can also be used to eliminate PST files identified throughout the organization.

PST Files

PST files were initially introduced to help Administrators manage data on Exchange 4.0 mail servers. Their availability was expanded to support the use by Outlook to archive or store mail items locally. Expensive and limited mailbox store data on early versions of Exchange made PST files popular with organizations. PST files permitted the expanded use of a mail system without dramatically increasing the perceived cost, downtime, or expense of an Exchange environment. Mailbox quotas began to shrink to ensure the stability and availability of mail servers and PST files were now the target of the exponential growth in data use to facilitate the increased use of email systems within an organization.

The Problem

PST files are a problem within most organizations today. When introduced to users, there were few guidelines as to how or when to use them. Some users began to route all their Exchange mail directly to their local storage, removing the administration and defensible deletion of mail content. Other users took this as an opportunity to save and store everything; began abusing the intent of the system by using it more as a file server than a mail server. Departments began using the storage containers for projects or departmental data on network shares where they were unsupported and more prone to corruption. The data stored within the files frequently fell outside of organizational compliance, retention, and discovery requirements. Data began being lost to poor management practices from the users of these files, corruption, or hardware changes. This PST file life-cycle continued for over a decade in several organizations, resulting in an enormous body of data completely unmanaged, decentralized, and with limited accessibility to those needing it most.

As time progressed, Exchange was able to restructure its storage to accommodate less expensive disks and more redundancy. The server could now accommodate the level of storage being used at a reasonable price without the same concerns of older server versions. While in the wild, PST files had become a problem. A big problem. The longer the use of PST files was permitted, the harder the problem was to resolve. Until the recent versions of Outlook, users were still permitted to store all Exchange mailbox data directly to a PST file on their system and remove all their messages from the centrally managed Exchange servers.

Manual attempts to eliminate PST files by IT departments proved to require a high level of messaging expertise, be very costly, and have an ever-expanding project duration. When things went well, a migration project was time consuming, labor intensive, and was challenging to track the progress of. The limited visibility made it challenging to accurately communicate the expected experience to the users impacted and groups intended to support them. Help desks became flooded with frustrated users wanting access to their critical data and was unable to provide any insight or accurate time-lines as to when their data would become available to them again. Engineers had to request personal passwords, be challenged with old PST file formats, duplicate items within PST files, files that were erroneous duplicated, files that were made as a backup, and file corruption of the PST files. When things went poorly, the effort frequently just failed after much expense and little progress.

The PST Flight Deck Solution

PST Flight Deck is a feature-rich, enterprise grade solution designed to reduce the time and level of effort required migrate PST files to a desired target. PST Flight Deck is designed to minimize many of the issues that plague PST migration projects. PST Flight Deck is able to discover, associate, centralize, process, ingest, and eliminate PST files automatically.

With PST Flight Deck, modules are run prior to the ingestion that are designed to prepare a PST file for quick delivery to the target system. These "pre-flight checks" are initially configured, then executed on every PST file that runs through PST Flight Deck. This process reduces the effort of an overall PST file migration by automating many of the tasks that would be performed reactively by skilled professionals, whom likely have several other responsibilities.

Architecture

PST Flight Deck is built on a modular framework that permits a nearly infinite number of solution design options. The architectural components of PST Flight Deck can be summarized as those that are required for a functional environment and those that provide expanded and supplemental functionality to the solution.

Required Componants

In its most basic configuration, PST Flight Deck requires at least one server, a SQL database, and Migration Agents deployed. The actual requirements for a given project are dependent on the scope and limitations of the project. For a properly scaled environment, please consult a qualified PST Flight Deck architect to review your environment and it's needs as it pertains to a PST Flight Deck deployment.

Below is a diagram showing a high-level architecture of the required components for PST Flight Deck and how they interact in a production environment.
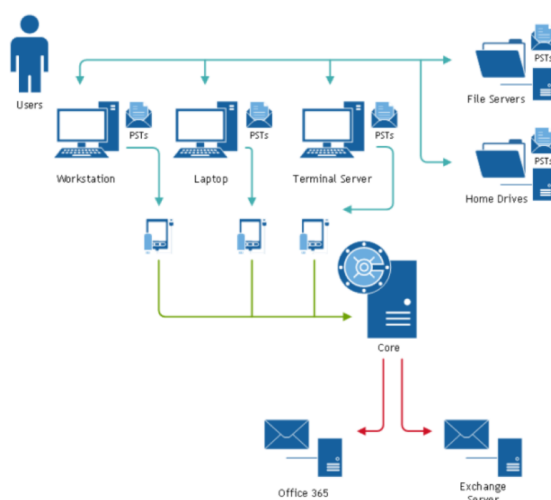
Core

The Core server is responsible for several aspects required for a functional PST Flight Deck system. In a typical configuration, the Core server hosts the PST Flight Deck Core service, the Internet Information Services (IIS) instance hosting PST Flight Deck files, the Background Intelligent Transfer Service (BITS) upload directory, and any number of modules.

The Core service is responsible for communication with the PST Flight Deck system database and execution of scheduled operations. All deployed agents also check-in and update the system through the Core server. Essentially, the Core service acts as the conductor of the entire solution.

A typical deployment of PST Flight Deck begins with the installation of a Core server. In most environments, more than one PST Flight Deck server is used, however for non-production installs it is possible to install all the components on a single server. Supplemental components may also be installed on the Core server, either from the Core installer itself or independent installers.

Modules

In PST Flight Deck, a module refers to one of the components of the solution that run against successfully uploaded user data to a defined and centralized location. It is possible to categorize the PST Flight Deck modules in three categories: pre-ingestion, ingestion, and post-ingestion modules. Although workflow order is configurable, the following categorization is based on a default installation with no modification in the workflow's order.

Pre-Ingestion

Pre-ingestion modules are those that are configured to run prior to the ingestion module. Sometimes referred to as the "pre-flight checks," pre-ingestion modules are designed to prepare and safeguard PST data for ingestion into a desired target. The following table discusses the pre-ingestion modules available for enablement.

Module	Role
Local Upload	Checks if the PST file is present in the BITS upload location
Park	Moves ownerless files to an alternate storage location until ownership is defined
Backup	Copies a PST file to a designated location until operator deletion
Repair	Executes a repair on a PST file
Extraction	Filters and extracts PST files to disk to enable streamlined processing and delivery to the target
Deduplication	Reviews the PST file content to identify duplicated messages and removes them

In most configurations, Extraction and Repair modules should be local to the Uploads directory frequently configured on the Core server.

Ingestion

Ingestion modules are typically chosen at the point of installation. These are the modules responsible for the PST Flight Deck actions taken to ingest a PST file's contents into the desired target. As the first item ingesting successfully completes, the migrated content should be immediately available in the target system. Once a PST file has been successfully ingested or ingestion of the file is not required, PST Flight Deck considers the file as "completed."

Rate of ingestion is frequently a point of bottleneck in a migration and can be monitored in the Management Console, Admin Console, or via the PST Flight Deck Portal. Tuning an ingestion for performance requires the PST Flight Deck Admin Console and an account with sufficient rights. The net ingestion rate may be constrained by limitations of the environment and increasing its work capabilities may result in a decrease of performance. In general, ingestion tuning is performed while closely monitoring the entire environment and until a suitable rate has been achieved or a resource is excessively constrained. If resource constraint occurs, the last known good configuration should be evaluated for resource constraint and selected as the "best tuned" configuration at that point in time.

Post-Ingestion

PST Flight Deck still has some wrapping up to do after the ingestion has completed for a file. Post-ingestion modules are those modules that are responsible for the tasks necessary to clean up after a file has been migrated. The following table discusses the post-ingestion modules available for enablement.

Module	Role
Legacy Viewer	Provides a web-based view into the original PST file contents and structure
CleanUp	Removes processed content from the BITS upload directory
Source File Remover	Queues request for Agents to delete the original file in its original location
PowerShell	Permits the execution of PowerShell scripts as part of the workflow of a PST file. PowerShell scripts can also be used in the pre-ingestion workflow.

Migration Agents

PST Flight Deck leverages a component installed on end-user Windows workstations called the Migration Agent. This agent is critical for discovering PST files, providing meta-data to help determine PST file ownership, managing the user interaction with the migration process, and uploading PST files to a centralized location throughout a migration project. The Migration Agent has a lightweight footprint and is supported on many client operating systems. The Windows version of the Migration Agent has 64 and 32-bit versions. The version of agent that will be installed will coincide with the architecture of Outlook that is installed.

Supplemental Functionality

PST Flight Deck has several features that are not required for a basic configuration but provide an enhanced, more robust, or more customizable experience. The features that are required for any given deployment will vary wildly and it is encouraged to discuss your needs with a qualified PST Flight Deck Architect to determine which components are appropriate for you.

Custom Configuration

PST Flight Deck permits the flexibility to support any size of organization. Smaller organizations may be well suited in utilizing a single configuration for all its users. A larger enterprise often has several conditions which make a "one configuration fits all" approach impractical. PST Flight Deck is able to support the smallest branch offices while managing multiple large campuses within a single environment. To begin to support an enterprise's level of complexity, PST Flight Deck permits the customization of configuration settings within its environment via profile and location designation.

Profiles

Profiles are the initial building block of the ability for a PST Flight Deck to have the level of customizable configuration needed to support today's enterprise. Profiles are used to permit an alternate configuration for users assigned to them. Examples where profiles may be of use are:
- Support complex network topology and limitations
- Support multiple locations
- Support site specific uploads and processing
- Support alternate configurations for different user types (e.g. Executives, road warriors, factory employees)

Profiles enable the assignment of unique File Scanner, Agent, Language, and Location configurations.

Locations

Locations permit work to be assigned into geographically appropriate groupings without the overhead of deployment and management of independent migration environments. This enables an organization to centralize and process PST files in data centres close to the users and their data. Enabling the ability to support multiple locations can reduce overall environmental network consumption and the time for project completion.

Scalability

PST Flight Deck permits the ability to scale out an environment to offload the burden on any given system in the environment. For small and mid-sized projects with no special requirements, a standard deployment may be sufficient. For larger environments or projects with tight time requirements, processing modules may be distributed over several machines to scale the system

to match the environment's needs or reduce bottlenecks in the workflow. These computers with module components of PST Flight Deck installed are referred to as "nodes".

When considering the scalability of your PST Flight Deck environment there are many factors to consider. Please consult a qualified PST Flight Deck Architect prior to scaling out an environment.

Node Functions

Part of the flexibility of PST Flight Deck is the modular approach that is taken within its architecture. The functions required to perform a migration can be run over multiple nodes. This permits many of the same modules to be run in parallel or assigned to specific locations.

Module Node

Module Nodes are servers with PST Flight Deck modules installed on them. They encompass all PST Flight Deck servers containing modules and not included in another node type. Module nodes can be used to scale processing of any module workload to permit rapid processing of items uploaded.

Most Module Nodes do not have any special considerations outside of resource availability and the ability to communicate to the Core. Extraction and repair nodes have high disk requirements and are typically located on the machine with the highspeed disks used for the BITS upload directory.

Ingest Node

Ingestion Nodes are Module Nodes that include an Ingestion module. They are typically deployed to support geographically distributed resource allocation within PST Flight Deck. Multiple ingestion nodes may also be leveraged to expedite the timeline to project completion when appropriate.

Azure Node

An Azure Node is a special node used in migrations to cloud based targets. Azure nodes can be used in a migration by itself or in support of geographically centric resource allocation for a multi-site organization. Azure Nodes are nodes deployed to Microsoft's Azure service to act as the intended centralization target, processing, and ingestion nodes for a configured location. Azure Nodes can be used to minimize the footprint required to scale an environment out or to enable small businesses to leverage PST Flight Deck by reducing the initial hardware requirements of the solution.

Content Scanning

One of the largest challenges in PST migration projects is accurately determining ownership of a PST file. Most PST files have ownership identified within the Discovery process for PST Flight Deck. PST files identified by a Share Scanner, or by a user as not belonging to them, require some special analysis. PST Flight Deck's Content Scanner is used to scan PST files marked as

"Ownerless," or those files located on specific file servers. It can provide more information to help determine ownership association based on the contents of the file. Files processed by the Content Scanner can have the most common sender and most common recipient recorded and taken into consideration when determining PST file ownership. This attribute is also evaluated against a user's proxy addresses to ensure account migration history is taken into consideration when evaluating ownership.

Centeralized Uploads

The Central Upload Agent (CUA) is a component frequently utilized in a PST Flight Deck environment. The primary role of the CUA is to upload files stored on centralized repositories more rapidly without having to use a workstation's Migration Agent.

In a traditional migration situation without a CUA, remotely stored PST files would be queued for BITS transfer using a user's Migration Agent to facilitate the upload request.
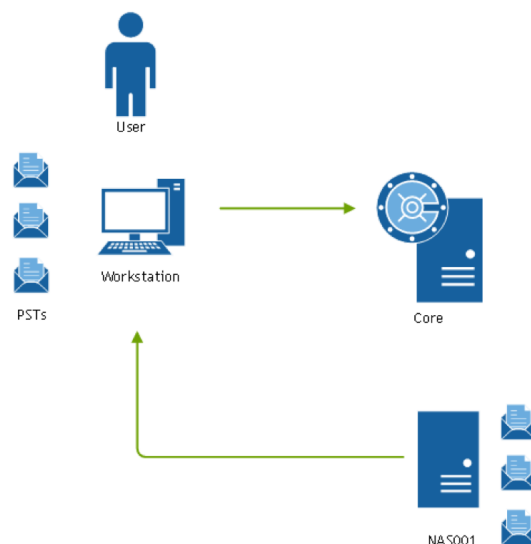
When a CUA is deployed, and the environment is appropriately configured, files on remote file servers are uploaded by a nearby CUA rather than connecting back through the workstation.
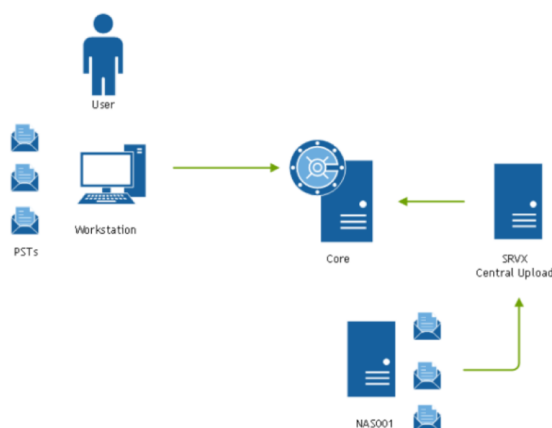
Forced Migrations

If an environment has a CUA installed, configured, and running with sufficient permissions, it can be used to facilitate Forced Migration requests. A Forced Migration utilizes the CUA to connect to a user's local machine and copy the eligible PST file over the administrative share on their local system. This enables a user to have their files uploaded without having to go through BITS or even a Migration Agent. This feature is useful for Migration Agents struggling to complete an upload or as a means to migrate users who are rarely connected to the domain.

Support for Application Streaming

The PST Flight Deck Application Streaming Wrapper (ASW) is designed for environments that utilize virtual application streaming to provide Outlook to users. Due to the way application streaming is performed, a typical agent approach cannot be used.

The ASW works as a wrapper for Outlook on an application streaming solution. Upon launch, it checks to see if a user is enabled for migration. If they are enabled, it quickly closes open connections to PST files associated with the user's Outlook profile during that streaming session. Once that has completed, it launches Outlook and maintains the standard user experience without any of the PST files connected. There is no interaction required from users streaming Outlook but their experience will be impacted as PST files will no longer be attached to their streamed Outlook instance. The ASW is frequently used in conjunction with a Share Scanner and Central Upload Agent to enable discovered files to be uploaded from shared resources without the use of a traditional Migration Agent.

Remote Management

A PST Flight Deck environment can be globally distributed and centrally managed by a single Core server. Administration and operation of the environment can be performed remotely. The PST Flight Deck Management Console is available to those needing the ability to manage a PST Flight Deck migration without the need to edit the settings of the migration solution. The ability to install a console on an Operator's workstation enables them to perform their duties without the need to grant remote access to the server hosting. The core services and Administration Console.

4

Interfaces

PST Flight Deck has a choice of user interfaces to interact with the product. To some extent the interface utilized depends on the role being performed. PST Flight Deck is scalable not just in processing power, but also in its ability to adapt to any size of team associated with the migration project.

Consoles

PST Flight Deck consoles are applications that run from the server or an Administrator, Architect, or Operator's workstation. They permit the most control over a PST Flight Deck environment. There are two consoles available: The PST Flight Deck Administrator Console and the PST Flight Deck Management Console.

The PST Flight Deck Administrator Console (Admin Console) provides the most access to configure a PST Flight Deck environment. It is typically available on the Core server and is installed as an available feature by the Core installer. Access to the Admin Console is required during the initial install, setup, pilot, and ramp-up of your project, but is not typically required for the duration of your project. Alternatively, a project can be entirely managed from the Admin Console if desired.

The PST Flight Deck Management Console (Management Console) is intended to provide operators a client to use on their local workstations. The Management Console provides the options necessary to perform the daily operations of a PST Flight Deck migration without requiring access to a PST Flight Deck server. The primary difference between the two consoles is the Management Console does not have the option for the "Settings" menu as the Admin Console does.

With the exception of the above, both interfaces are the same. The remainder of this section will refer to both as the Console.

Navigation

In general, navigation within the Console is similar no matter where you are in the Console. The core of a Console has a Ribbon Panel, Navigation panel, and the body of the console, where the selected data is displayed.

The top of the Console contains several features and is seen below:
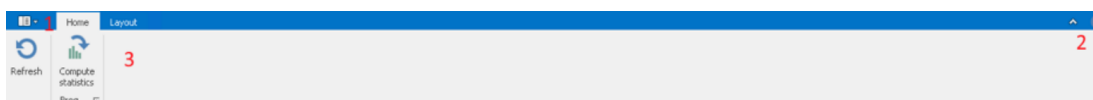
Tag	Component	Description
1	File Options	Provides the ability to display general information, launch a help file, or exit the Console
2	Info	Provides information related to the product, version, and license
3	Ribbon	Provides options related to the visible or selected items within the interface. Changes depending on location and selection within the Console

The left side of the Console is used for navigation. The following is an example of the options available within the navigation pane of the console:
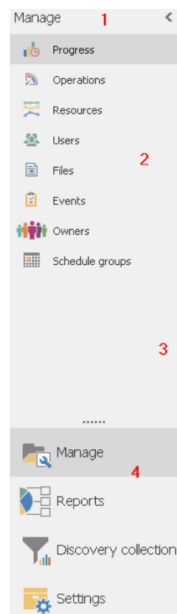
Tag	Component	Description
1	Navigation Control	Collapses the navigation panel
2	Navigation sub-menus	Options that are exposed based on the navigation menu selected
3	Navigation sizing	Slider to permit you to resize the navigation pane

Tag	Component	Description
4	Navigation menus	Parent navigation options that expose contextual options for a given area

The navigation pane has menus at the bottom that act as parent containers for related options within. Selecting one of these menus will expose relevant sub-menus in the navigation pane above. The menus available are Manage, Reports, and Settings.

Managing Console Data

The Consoles have a powerful interface that permits the filtering of live data to return data you are seeking. Many areas of PST Flight Deck return a lot of data that can be too much to be useful without the ability to refine the results. The information below discusses several approaches to managing the data being returned within the grid of several options within the Console.

Columns

Additional data columns can be added to many of the grids in PST Flight Deck.
To access the additional columns of data:
1. Right-click on an existing column heading
2. Select "Column Chooser"
A list of available data columns will be shown. You can drag and drop from the list of columns on to the appropriate part of the user-list.

Sorting

The column headings can be clicked to change the sort order, a subsequent click on the same column heading will change the direction of the sort. Most columns support "drag and drop" functionality to change their position relative to the other data columns. This can make the data more presentable and readable. A data column can be removed if required by right-clicking on the column and choosing the "Remove this Column" option.

Filtering

It is possible to access the data filtering features in most of the Console's grids in these ways:
1. Right click on the appropriate column heading and choose the option "Filter Editor"
2. Hover near the right hand corner of a column heading until the small filter icon becomes visible, and then click on it
3. By default, the filter entry row is displayed underneath the column headings. A value can be entered into any of the columns in this row and the data list will automatically be

filtered according to your input. Operations can be selected by clicking the small icon (filter hint). This will show this popup:
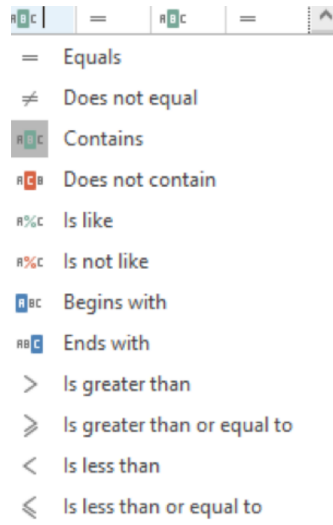
Simply click on the desired operator and it will be entered.
After a filter has been applied, an option to "Edit Filter" is presented in the lower right corner of a console. This can be selected to access the advanced editor for the currently applied filter, which will permit you to perform very complex queries to return specific data within a Console.

Grouping

The list of users can be grouped by one or more columns as follows:
1. Right click on an appropriate column heading and choose the option "Group By This Column".
2. Right click on a column heading and choose the option "Show Group By Box".

Searching

Filtering can be used to reduce the overall list, but sometimes it is necessary to search for data within a given column. You can search for particular data within a grid by right-clicking on a column heading and selecting the option "Show Find Panel." Previously used searches can be selected from the dropdown list.

Saving a Layout

If you identify a filter that is useful for your migration it is possible to save it for later use. To store the customized grid click on "Save" in the "Layout" ribbon. Each saved layout can be given a unique name. Previously saved layouts can be retrieved by clicking on "Load" in the "Layout" ribbon bar. The current data list can be reset to the defaults by clicking on "Reset" in the "Layout" ribbon bar. Saved layouts can be retrieved and executed by selecting "Load" on the PST Flight

Deck "Layout" ribbon and selecting the name assigned to the saved layout. You can also select "Overwrite" to save over a pre-existing layout or "Delete" to remove the saved layout.

Manage

The "Manage" menu is the most commonly accessed area during a migration. Most of the functionality required for an Operator to manage the PST Flight Deck migration can be found in this section. Options are grouped into sub-menus and are described below:

Sub-menu	Description
Progress	Provides high-level statistics and trends about the current status of a migration
Operations	Provides information of interest in the daily operation of a system including performance trends and current backlog information
Resources	Provides information about CPU, memory and disk performance
Users	Provides information and options to manage the end-users in the environment
Files	Provides information and options to manage the files discovered in the environment
Events	A filterable list of events produced within the PST Flight Deck environment during a migration
Owners	Permits ownership review and management during a migration
Schedule groups	Permits the scheduling of enabled batches

Hotkeys

Some key combinations have been included to assist in the navigation of the Manage section of the console. The areas affected are frequently navigated between during a migration project. Use of these hotkeys can enable quicker daily navigation.

Key combination	Description
ALT + U	Navigates to the last view of the Manage > User section
ALT + F	Navigates to the last view of the Manage > File section
ALT + O	Navigates to the last view of the Manage > Owners section

Additionally, there are shortcut keys associated with specific popup dialog boxes.

Progress

This view provides an overview of the project as a whole. The following are its features:

Feature	Description
User	Table showing statistics related to uses and their status within the migration
Project Statistics	Graphs showing the status and trends of files and users over the past days, weeks, or months
File	Table showing statistics related to discovered files and their status within the migration

Operations

A section designed to enable an Operator to quickly be able to tell the current health of a migration in a graphical display. The following are its features:

Feature	Description
Alerts	Drillable badges displaying the number of actions needed or unacknowledged events
Last 24 hour BITS activity	Shows hourly activity reported for files being centralized from the Agents to PST Flight Deck for the past 24 hours

Feature	Description
Module Backlog	Drillable bar graph showing the size or count of data backlogged per PST Flight Deck module
Last 24 hour Ingest activity	Shows hourly ingest rates over the past 24 hours
BITS size last 14 days	Line graph showing daily rates of centralized data over the past two weeks
Ingest activity last 14 days	Line graph showing daily rates of ingestion over the past two weeks

Resources

This section permits centralized observation of resource consumption of servers running Modules within a specified location. The focus of this is to provide a point in time review of resource consumption and not a comprehensive performance monitor for the PST Flight Deck environment. Displayed is graphical output for CPU, RAM, and disk usage.

Users

This section of the Console is where most actions against users are taken. Assignment of user types, profiles, and priorities are all performed within this section. This sub-menu is where a lot of the migration monitoring and management takes place.

The grid returned under the "Users" sub-menu is comprised of two portions. Initially presented is a display of user information and general statistics about all the users in an AD environment. Each user who has discovered files can be expanded by clicking the plus sign (+) at the left of its row. The resultant sub-table has the same characteristics as the "Files" section and will be described in detail in a succeeding section of this guide. The ribbon and right-click options change depending on which section your selection is located.

The home ribbon when "Users" is selected has options impacting the selected user (with one exception). These options and a description of their functionality are as follows:

Name	Section	Description
Refresh	Refresh	Refreshes data in the grid
Enable Users	Manage Users	Permits the ability to set migration and email priority

Name	Section	Description
		assignments to enable users for email communication or migration
Actions	Manage Users	Contains a dropdown list of several available actions. The contents of the list are also available when right-clicking a selection in the grid
Reset User	Manage Users	Removes all database entries for files associated with the selected user or group of users
Assign Profile	Manage Users	Permits profile assignments to users for specialized settings
Request Client Log File	Manage Users	Queues a request delivered at the next agent polling period for a selected user to return the PST Flight Deck Migration Agent client logs to the server for review
Import Attributes	Manage Users	Allows importing of a specifically formatted text file, or XLSX, to assign values to fields for specific users
Edit Attributes	Manage Users	Allows manual assignment of "User Custom Field" values. See the "Collect custom attributes from Active Directory" page for more.
User Log	Manage Users	Provides information regarding events, errors, and actions taken against the selected user through the duration of the project
Progress	Information	Provides Active Directory information about the

Name	Section	Description
		selected user and the status of all PST files for that user by number, volume, and current progress
Inactive Users	Information	Provides the ability to identify users who have historically returned discovery results but have been inactive for a specified number of days
Add	Comments	Enabled Operator to create a new comment on a user or file depending on the selection
Show	Comments	Shows all comments associated with the selection
Close All Comments	Comments	Closes all comments associated with the selection

The "Action" menu has several options for selection. As with the home ribbon under the "Users" sub-menu, these options are related to the presently selected object in the grid, and changes depending on if that selection is one or many files or users. These options are also available when right-clicking on selection within the grid. The following is a list and description of the options available under the "Action" menu when a user is the selected object:

Action option	Description
Clear Postponement	During an interactive migration, permits a reset of a user's request to postpone the migration of their files
Mark files for Migration	Operators option to migrate a user's files
Mark files for Deletion	Operators option to delete a user's files
Change User Type	Operators option to specify a non-default user type for an account
Manage User's Files	Shows a filtered redirection to the owner management portion of the console showing

Action option	Description
	the selected users files
Set Unauthorized for Migration	Marks a user not authorised for migration, even though they may be enabled
Watch/Stop processing	Flags or un-flags a user for watching
Show user's workstations	Shows workstations that a given user has logged into

The type of user designated by the "Change User Type" option can dictate the way the features of the product affect a given user. Below is a list of available types and their description:

Type	Description
User Account	Default type assigned to all users
Service Account	Type to identify service accounts that may be discovering data erroneously
Admin Account	Type to identify accounts with elevated permissions that may be discovering data erroneously
Group Mailbox Account	Type to identify mailboxes belonging to a department or other group
Operator	Designated type for all PST Flight Deck Operators
Leaver	Designation for an account belonging to someone who has left the organization
Helpdesk	Designation for member of the help desk team
Not in AD	Designation for local accounts logged into workstations with a Migration Agent installed
Mac OS user	Designation for users running a version of Apple's workstation operating system

	Designation for a user that is in Office 365 with
Cloud	an email address different from the one in Active Directory

Files

The "Files" section of the console is also very commonly accessed while managing a migration. Like the "Users" section, it provides a lot of functionality to determine status and granular details of a migration. Actions can be executed on specific files when appropriate. The options available in the "Files" sub-menu's home ribbon are as follows:

Name	Section	Description
Refresh	Refresh	Refreshes the data in the grid
Actions	Manage PSTs	Contains a dropdown list of several available actions available to take about the selection in the grid
Reprocess Module	Manage PSTs	Opens a window to allow for removing and reprocessing modules for the selected file
Reset Upload	Manage PSTs	Removes upload status and queues eligible files to be uploaded
Import File Attributes	Manage PSTs	Allows importing of a specifically formatted text file, or XLSX, to assign values to fields for specific files
Migration Statistics	Information	Shows statistics for the ingestion of a PST file
Progress	Information	Shows the details for all modules run against a selected file
Show Discovery	Information	Shows information on instances of discovery for a selected file
Show Events	Information	Shows all events logged that are related to a file
User log	Information	Provides information regarding events, errors, and

		actions taken against the user associated with the selected file through the duration of the project
Add	Comments	Enables creation of a new comment on the selected file
Show	Comments	Shows all comments associated with the selection
Close All Comments	Comments	Closes all comments associated with the selection
Continue/Delete	Operations	Change status of selected file or files to 'Deleting' and removes applicable failed module
Repair	Operations	Changes status of selected file or files to 'File corrupt' and removes applicable failed module
Continue/Unblock	Operations	Removed 'Ingestion blocked' or "Partial extraction' status on selected files
Reingest	Operations	Queues a file or its contents to be copied from the configured 're-ingestion' location to the configured 'upload location' and sets the file to be reprocessed
Continue/Migration	Operations	Changes status of the selected file or files to 'Migrating' and removes applicable failed module
Skip Module	Operations	Forces the current module to be skipped and permits a file to move on to the next phase of the workflow

The "Action" menu has several options for selection. These options are also available when right-clicking on a file within the grid. The following is a list and description of the options available:

Action option	Description

Show User	Changes console navigation to the Users section filtered by the user associated with the selection
Change Owner	Launches a window to specify the owner of selected file or files
Change Status	Launches a window to change the migration status of selected file or files
Request Client Log File	Queues a request to be delivered at the next agent polling period of a specific user to return the PST Flight Deck client lots to the server for review
Reset Agent	Queues a request delivered at the next agent polling period for the agent to be exited and launched again
Disconnect File	Removes the selected file from the users PST profile resulting in the file being disconnected from Outlook when next launched
Scan Content	Flags a file for the Content Scanner to review
Show Workstation Files	Change console navigation to a filtered 'owners' section showing all files located on the same machine as the selections original location
Collect Orphaned	Permits users to receive a request to secure and transfer a PST file for centralization
Report Module Stats	Redirects view to Reports > PostProcess Stats with filter for the selected PSTFileEntryID
Remove File Entry	Removes record of the selected file from the database
Re-Ingest	Re-ingest a file
Watch/Stop Watching	Flags or un-flags a file for watching

Watched items

The Watched items section shows all files and users that have been flagged for watching. This provides a consolidate view of key items. The home ribbon for this sub-menu and each action menu changes depending what is selected, a user or a file. The ribbons and action menu options are the same as their respective.

Events

The Events section shows all unacknowledged events that have occurred on the system since deployed. The default view of the Events grid shows the Type, Source, Event details, a count of the occurrences of the events, the level of severity of the event, and the last logged time for the event. The home ribbon for this sub-menu has the following options:

Name	Description
Refresh	Refreshes the data appearing in the grid with the latest information from the system database
Acknowledge	Marks the selected event as acknowledged resulting in its removal from the view upon refresh
Search	Permits searching events using values in specified fields
Add	Enables creation of a new comment on a selected event
Show	Show all comments associated with the selection
Close All Comments	Closes all comments for the selected event(s)

Owners

Managing owners is a critical part of a successful migration. The Owners section shows the results of our owner identification efforts; including owner conflicts, warning levels, all ownership related metadata, the probability that ownership has been identified, who a presently is the owner of a file, and who PST Flight Deck thinks should be the owner.
In some migrations, a lot of effort is required in the Owners section to ensure the data discovered is going where it is expected to go. Upon discovery, ownership management can begin and drastically reduce the level of effort required towards the middle and end of a migration. Owner management can also be delayed until later in the migration. If file ownership is not addressed early in the project, the files could be blocked from ingestion due to not meeting the minimum ownership probability threshold.

The options on the home ribbon for the Owners sub-menu are as follows:

Name	Description
Refresh	Refreshes the data
Recalculate Ownership	Calculates ownership probability and conflict warning of the selection
Accept Suggest User	Assigns ownership of the selection to the user suggested
Clear Operator Override	Removes Operator assigned ownership of the selection

Name	Description
Set Owner	Produces window to assign ownership of the selection from a list of users
Import Owners	Option to import specifically formatted CSV file to make ownership decisions
Unblock	Enables file where ingestion has been blocked, to proceed
Mark for Deletion	Change status of selection to 'Deleting' status
Add	Enables creation of a new comment on a selected file
Show	Shows all comments associated with the selection
Close All Comments	Close all comments for the selected files(s)
Details	Shows key pieces of information for a specific file

Schedule Groups

Schedule groups allows an operator to schedule batches to be enable at a certain time/date, with a specific migration priority. Settings are available that can limit the number of people and/or volume for a given batch.

At the specified date/time, the users in a given batch are set to the specified migration priority as long the following conditions are met:

1. Optionally, the user has an Office 365 mailbox
2. Optionally, the mailbox is licensed
3. Optionally, size of discovered PST's is smaller than the free space in the mailbox
4. Optionally, uploads is not in a limited or stopped state.

Office 365 mailbox information is obtained from the Office 365 user synchronization task. The options on the home ribbon for the Schedule groups sub-menu are as follows:

Name	Description
Refresh	Refreshes the data
Add	Adds a scheduled batch configuration
Edit	Edits an existing scheduled batch configuration

Name	Description
Delete	Deletes an existing scheduled batch configuration
Import	Allows importing of a specifically formatted text file, or XLSX, to assign values to the fields associated with batch schedules
Set notifications	Allows setting an email address to receive notifications when scheduled group is not enabled

Reports

The Reports menu of the console is where an Operator or Administrator would go to get information related to the migration. Some of the content seen in this section is similar to data available through the Manage menu and is provided with alternate options in the ribbon. The following is a list of sub-menus for the Reports menu and a description of their functionality:

Sub-menu	Description
Summary	Provides data within the console showing the overall summary of the current migration status
Users	Grid showing information related to users with Active Directory and the PST files associated with them
Files	Grid showing details about PST files discovered on the system
Module Stats	Provides stats on a per file basis related to the number of items within a PST file that were processed by a module, how many came out, and what the difference between the figures is
Ingestion Stats	Provides stats on the number of items failed or migrated by the ingestion task
Workstations	Provides a listing of users and the workstations they were seen on throughout the discovery process

Sub-menu	Description
Comments	Provides a report of all comments made in any part of the product
Finalized Users	Provides a report of all completed users, the time of their first upload, time of their last successful ingestion, and a summer of the data migrated
Batches	Provides report showing migration statistics groups by the migration priority presently set
Failed Items	Reports on the items that failed ingestion. The list is generated when the Post-Processing – Items Details Report step in the workflow runs
Schedule Groups	Shows configured scheduled batch groups

Exporting

Many reports in this section can also be exported to an alternate format for distribution or use outside of the product. All exporting options are available in the home ribbon of the console window and includes the ability to export to a number of formats. Selection of an export format will prompt you for where to save the file and show you the progress of the export.

Discovery Collection

Discovery collection is an optional feature that provides legal personnel the ability to select files to be collected for a case. PST files are collected with a six-step workflow.

1. Case is defined with legal and technical owners.
2. Select users the PSTs are to be collected from
3. Select the search criteria for the files
4. Confirm the files to be collected
5. Files are copied to the uploads directory
6. File are moved from the uploads directory to another repository

The options on the home ribbon for the Discovery Collection sub-menu are as follows:

Name	Description
Refresh	Refreshes the data

Name	Description
Add new case	Adds a case configuration
Delete case	Deletes an existing case
Reprocess case	Reprocesses the case after correcting failure

Settings

The Settings section is not available in the Management Console and can only be accessed by the Admin Console. The options under the Settings section are mostly designed to be configured prior to the start of a production migration and left unchanged through the migration. Changing settings in this section after Migration Agents have been deployed can negatively impact your environment. It is important to understand the impact of any change you make. If you are unfamiliar with the impact a change may have, please contact support for assistance.

The options on the home ribbon for Environment are as follows:

Name	Description
Refresh	Refreshes the data
Save	Saves all configuration data
Export configuration	Exports PST Flight Deck configuration to an XLSX file

Settings for the environment are grouped into several sub-menus, described as follows:

Sub-menu	Description
Environment	Contains global configuration settings for the PST Flight Deck system
Windows Migration Agent	Contains settings for configuration and customization of the Windows Migration Agent in the environment
Mac OS Migration Agent	Contains settings for configuration and customisation of Apple's workstation operating system agent
Locations	Contains listing and configuration and options for management of locations
Modules	Permits location assignment and customizable configuration options for all modules

Sub-menu	Description
Workflow	Provides options to enable, disable, re-order and modify execution parameters for a module
Profiles	Contains listing and configuration options for management of user profiles
Module Editor	Module specific configuration options
Scheduled Tasks	Provides management of scheduled tasks used to facilitate a migration
Computers	Contains a grid showing all computers and their types identified during discovery, installation and use of the product. Permits assignment of central servers, content scanning targets, and locations for computers identified
Email	Provides user and team communication templates and configuration
Leavers	Configuration required to migrate users to Office 365 who have left the organization

Environment

The Environment sub-menu contains global parameters for the migration. Some of these values can be adjusted by more granular settings within the product. The Environment sub-menu consists of five sections: General, Advanced, Ownership, Groups, and Roles. These values are discussed in greater detail in the followings sections of this documentation.

General

The General tab contains three configuration settings. Below is their description and if they are required in a migration:

Setting	Required	Description
Highest priority	Yes	Values used to set the highest migration priority that can be set and have a user still considered to be 'enabled' for migration
Convert Time to Local Server Time	No	PST Flight Deck maintains UTC time internally, and by

Setting	Required	Description
		default, displays all times in UTC. This option allows times to be displayed based on server time
Settings Mode	yes	Allows the changing of module settings based on mode of operation. The modes of operation are Demo, Default, and Self-Adjustment

Advanced

The Advanced tab contains general system configuration parameters required for a functional PST Flight Deck environment. The descriptions of the options available and the sections they are contained in are found below:

Setting	Section	Description
Scan Domains	Advanced Mode	Values to narrow scope of an environment to a single or a series of semi-colon separated domains
Concurrent Uploads	Advanced Mode	Number of concurrent uploads that can be performed by all Migration Agents
Maximum Upload Size	Advanced Mode	Total size of concurrent uploads that can be performed by all Migration Agents
Use Regular Expression	Advanced Mode	Option to enable regular expression in 'Scan Domain' value
Dedupe Timeout	Advanced Mode	Period of time in hours configured to have the Deduplication Module ignore the 'Wait for All PSTs' option
Discovery Expiration	Advanced Mode	Period of time in days prior to marking discovered PSTs in a 'Discovery Expiration' status
Failed Item Threshold Warning	Extraction	Number of items permitted to fail extraction prior to a warning being logged and the

Setting	Section	Description
		file status changed to 'Partially Extracted'
Check owner before ingestion	Ingestion	Option to block the ingestion of PST files that have failed to meet the configured ownership threshold criteria but are otherwise prepared for ingestion into the target
Failed Item Threshold	Ingestion	Number of items permitted to fail ingestion prior to warning being logged and the file status being changed to 'Partially ingested'
Failback Subject	Ingestion	The subject used for messages created by the Failback feature
Failback Body	Ingestion	The body used for messages created by the Failback feature
Disable Failback ingest	Ingestion	Option to disable failback messages
EV SQL instance	Ingestion	The SQL Server or instance containing the Enterprise Vault Directory database
Enable Central Upload	Migration Agent Behaviour	Option to enable the use of the Central Upload Agent
Force Migration Status	Migration Agent Behaviour	Optional status that permits central upload
Reset Hanging Uploads	Migration Agent Behaviour	Time in hours prior to retrying a file reported to be getting uploaded by BITS
Upload PSTs marked for deletion	Migration Agent Behaviour	Option to permit centralisation of files marked as 'Deleted'
Upload PSTs marked 'Not Owner'	Migration Agent Behaviour	Option to permit centralisation of files with no owner
Upload PSTs marked as shared	Migration Agent Behaviour	Option to permite centalization of files marked as shared

Setting	Section	Description
Re-Queue Deletions	Migration Agent Behaviour	Setting for time delay to delete files when current set user is not logged into a computer but another user is
Disk Space Threshold (On, Limited, Off)	Uploads Monitor	Setting a range of options to lessen the risk of an upload directory running out of space
Migration Priority	Active Directory Provisioning	The AD group distinguished name of the AD group that controls migration priority when AD provisioning is used
Email Priority	Active Directory Provisioning	The AD group distinguished name of the AD group that controls email priority when AD provisioning is used
Value	Active Directory Provisioning	Priority assigned to each group
Allow self enable	Self Enablement	Option to allow self enablement via the web portal
Check mailbox exists	Self Enablement	Option to check if a user has a mailbox
Check Size	Self Enablement	Option to check if a user's mailbox is big enough for the PST data
Check License	Self Enablement	Option to check if a user has an Office 365 license
Check uploads	Self Enablement	Option to check if uploads is healthy
Enabled users count	Self Enablement	Setting that limits the number of users that can be enabled
Queue Size	Self Enablement	Setting that limits the number of users that can be queued for enablement
Batch Size	Batch migration scheduling	Setting that limits the number of users that can be enabled in a given scheduled batch
Check mailbox	Batch migration scheduling	Option to check if a user has a mailbox

Setting	Section	Description
Batch volume	Batch migration scheduling	Setting that limits the total size of PSTs in a given batch
Check uploads	Batch migration scheduling	Option to check if uploads is healthy
Default Language	Languages	The default language to be used for all mail communication sent from the product
Override Language	Languages	Override all languages regardless of the language specified on the workstation
Enable Mailing	Mail	Selection to enable SMTP server to be used for project based user communication, notifications, alerts and any other automatically generated email communication
SMTP Server	Mail	Name of the SMTP server
Port Number	Mail	Port of the SMTP server
Sender	Mail	SMTP Address used to send all messages
User Name	Mail	Optional user name filed for authentication to SMTP server
Password	Mail	Optional password for authentication
Migration Priority and Value	Active Directory Provisioning	Configuration options to enable users through AD group membership
Email Priority and Value	Active Directory Provisioning	Configuration options to enable user communication through AD group membership

Shared Scanner

The shared scanner tab provides for the management of multiple central file scanner servers. This allows from a centralized location for the management of the file scanner configurations and scheduling. The options on the home ribbon for the shared scanner sub-menu are as follows:

Name	Description
Refresh	Refreshes the data
Save	Save all configuration data
Add shared scanner	Presents a list of discovered computers and allow the selection of a shared file scanner
Deleted shared scanner	Deletes a configured shared file scanner
Export configuration	Exports the shared scanner configuration to a XLSX file

Ownership

The Ownership tab is used to define criteria for file ownership determination. There are two main components to the Ownership tab: Weight Table and User In Path.

The Weight Table defines the weights and threshold used in determining PST file ownership. The descriptions of the criteria available and their descriptions are seen below:

Weight criteria	Description
File Owner	The value populating the Owner attribute of the file on disk
Scanned Owner	The user running the Discovery Agent at the point(s) of file identification
User Name in Path	The sAMAccountName identified in the path where the file is located
Most Common Sender	The sAMAccountName seen most commonly as the sender of messages within the PST file
Most Common Receiver	The sAMAccountName seen most commonly as the receiver of messages within the PST file
Attached to Outlook Profile	The user associated with the Outlook. instance where the PST file was at one point attached
Operator Override	Used to define the percentage assigned to manual assignment of ownership within the product
Threshold	The percentage value required for a PST file to avoid being blocked prior to ingestion
Computer Owner	The owner of a computer where the PST file was identified

Weight criteria	Description
Custom Owner Property	An attribute that can be associated to an owner and is also present in the metadata returned by the product

Computer Owner and Custom Owner Property are values that are able to be manually imported so they may be able to be taken into consideration in determining the ownership of a file. As every organization is different, the threshold and weight of the criteria are suggested to be tuned to meet the needs of an organization and project. Generally speaking, a file should require a minimum of three criteria matching a single user until ingesting into that user's account.

The User in Path section of the tab allows creation of a Regular Expression used to identify a common location of user account names in discovered file paths. Default values are common. Identification of a user's name in a path can be a good indication of file ownership.

Bandwidth limitations

The Bandwidth limitations tab provides for the management of upload bandwidth limitations, which are defined by IP address. If a workstation has an IP address within a range that has a limitation, the BITS bandwidth utilization is limited to the set bandwidth. The constraint can also be limited to certain times of the day. For example, an office may require low speed BITS uploads during the day but can have higher speeds at night. The options on the home ribbon for the Bandwidth limitations sub-menu are as follows:

Name	Description
Refresh	Refreshes the data
Save	Saves all configuration data
Add limitation	Adds a bandwidth limitation configuration
Delete limitation	Deletes a configured bandwidth limitation

Role Based Web Portal

Groups and Roles enable role based configuration for access to the PST Flight Deck Portal (Portal).

The Roles tab contains two main panes: the Role settings and Current Roles.

Current Roles shows a listing of the currently configured roles in a grid showing its name, the priority assigned to that role, and a description of the role. It includes the ability to edit or delete an existing role as well as to Add a new role.

The Role settings page is where a selected role is configured. Options to configure all that is displayed for the Current role section are available as well as a list of actions that can be associated with a Role. Each action corresponds to a section within the Portal. The Actions presently available, their corresponding section in the Portal, and a description are as follows:

Action	Section	Description
AccessHelpdeskSection	User Search	Permits the ability to search for a user and returns the details of the current status of their migration
AccessReportsSection	Project Status	Provides high level information in several reports summarising the project, the progress over the past day, and the progress of total users
AccessProjectManagersSection	Enabled Users	List of enabled users, their name, and the status of their migration
AccessIncidentSecftion	Support Tickets	Interface for non-operators to identify, update, and review issues related to the migration
AccessBusinessOperationsSection	File Action	Outstanding actions required for the progress of one or more PST files
AccessImportUsersSection	Import	Interface for non-operators to import lists of users for association to groups

Any number of Roles can be created to accommodate an organization's needs.

Groups are used to associate AD groups to roles and locations. The Groups tab contains two main sections: Group settings and Current groups.

Current groups display a grid showing the currently configured AD Group Name, the Role type associated to that group, and a description for the entry. There are options Edit or delete an existing group, or to add a new group.

The Group Settings section of the tab permits you to configure the entry under Current groups. In addition to the values displayed in the Current groups pane, you can also associate a configured group with a location, and an email for notifications.

Changing the settings in any Role or Group requires the changes to be confirmed and the appropriate section to be saved. Settings will be applied after restarting IIS.

Console Access

The Admin console has two levels of access – Expert and non-expert. Users are given access via this feature.

Windows Migration Agent

The Windows Migration Agent sub-menu provides configuration options for the settings sent out to all the workstation's running the Migration Agent for Windows in an environment. Configuration settings are able to be applied to all Windows based Agents or can be customized to suit the needs of an organization by creating several specialized configurations. There are three tabbed menus within the Migration Agent sub menu, all containing a drop down permitting the editing of specific configurations.

File Scanner

The File Scanner tab controls the behavior of the Discovery Agent portion of the Migration Agent. This section is where you will configure the locations you wish an agent to scan, as well as what you want it to skip. The options available in this tab are as follows:

Option	Description
Scan Delay	Period of time in hours establishing a range used to determine a random time that a Migration Agent will wait prior to scanning a system
Last Scan	Period of time in minutes that must pass prior to initiating another discovery scan on a specific workstation
Resident Discovery	Option to enable the Discovery Agent to stay in memory after a scan completes
Scan Attached	Enabled attached files, outside of the configuration locations for scanning, to be included in the discovery results
Folder Excludes	List of locations where Discovery results should ignored
File Name Excludes	List of files where Discovery results should be ignored
Path	List of locations configured for scanning by Migration Agents

Additional configuration options are available when creating or editing a location for scanning. Scanning location specific folder and file exclusions are available to enable a granular level of exclusions. Options to scan removable media and substituted Paths are also available on a per location basis.

Agent

The Agent tab contains configuration options related to the Agent portion of Migration Agent running on Windows workstations. This component of the Migration Agent is responsible for querying the PST Flight Deck Core service and getting information back from it. It is also responsible for managing the user experience during a migration by providing pop-up menus to engage a user in their data's migration. The Agent also reports attached PST files that are not in a

configured scanning location to the server and disconnecting PST files from profiles when appropriate.

The "General" section of this tab permits you to choose if a migration will be performed in Snapshot or in Disconnect Mode. Also in this section is the configuration for the "Polling Interval". This value should be set as is appropriate for the number of Migration Agents deployed in an environment. The larger number of agents reporting to a server, the longer a polling interval should be set to.

The "System Tray" section contains customization on how you would like the Agent to be represented on a user's workstation. The options available for selection/deselection are as follows:

Option	Section	Description
Disconnect / Snapshot mode	General	Select disconnect or snapshot mode
Silent Migration	General	Option to enable silent mode for the migration. Silent migrations allow automatic uploading and processing of files without user interaction.
Pop Postpone Delay	General	The time in days before a user who postponed their migration will natively wait before being prompted for action by the agent again
Max Postpone	General	The maximum number of days a user can postpone
Polling Interval	General	The number of minutes for polling
Suppress Complete Pop Up	General	Option to prohibit Migration Agents from reporting when PST files have completed processing
Complete Pop Up Once Finished	General	Option to report a final pop-up once all identified PST files for a user have completed processing
Show Password Protected Info	General	Shows password protection information in the agent pop-up
Show in System Tray	System Tray	Enable display of Migration Agent in a system's notification area

Option	Section	Description
Progress	System Tray	Shows upload progress of PST files
Manual Select	System Tray	Permits a user to manually select and start the upload of PST files
Send Log	System Tray	Enables option to permit users to initiate a request to send local log files to the server for review
Mail Log	System Tray	Enables options to permit users to create a new mail message with log files attached to it
Show Log	System Tray	Enables option to open the Migration Agent log file
Exit	System Tray	Enabled option to exit from Migration Agent via the icon in the notification tray.

The Advanced section of the Agent tab has additional options governing some functionality within the Migration Agent. Some of these settings aid to manage the user experience during a migration. The options available under the advanced section and a description of their function are as follows:

Option	Description
Auto Update	Enable push of updated Migration Agent to workstations
Update Version	Specification of the version to be pushed to the Migration Agent
Snapshot Speed	Enables the ability to limit the speed a snapshot is created on a workstation
Initial Sleep	Value representing the delay of time for Agent actions to be initiated after user log on
Agent Sets Registry Keys	Enables the ability to set required registry keys for a user on a workstation once they are enabled for migration
Disable users using PST files	Enables the ability to disable the use of PST files for a user on a workstation once they are enabled for migration

Option	Description
Disable Completed Users using PST files	Enables the ability to disable the use of PST files for a user on a workstation once they have completed migration
Display User Action for Initial Status Only	Display user action only for files that are discovered

The Duplicate Files section of the Agent tab has settings that control processing for duplicate files. Likely duplicate files are defined as files that have the same last modified date and the same name. Options available under the advanced section and a description of their function are as follows:

Option	Description
Resolved Likely Duplicate Files	Process only one file if duplicates are found
Delete Duplicates without Uploading	By default, duplicate files are uploaded and deleted from the source. This option prevents the uploading

The Upload Limitations section of the Agent tab has settings that aid in determining if uploads are being attempted over a slow network connection, eg, a VPN. Options available under the advanced section and a description of their function are as follows:

Option	Description
Minimum Adapter Speed	Uploads pause if the adapter speed is lower than the set value
Minimum Upload Speed	Uploads pause if the uploads speed is lower than the set value
VPN adapter description	Uploads will pause if the VPN adapter description contains the text in the setting

Mac OS Migration Agent

The Mac OS Migration Agent sub-menu provides configuration options for the settings sent out to all the workstation's running the Migration Agent for Mac in an environment. Configuration settings are able to be applied to all Mac based Agents or can be customized to suit the needs of an organization by creating several specialized configurations.

The options on the home ribbon for the Mac OS Migration Agent sub-menu are as follows:

Name	Description
Refresh	Refreshes the data
Save	Save all configuration data
Create Config	Creates a new configuration file
Edit XML	Edits existing configuration file
User Licenses	Display the status of the workstation license
Manage Users	Wizard to allow matching Mac users with AD users

Option	Description
Work item interval	How often in minutes the agent will look for work to do
Config Interval	How often in minutes the agent will look for configuration changes
Scan Files Interval	How often in minutes the agent will scan for new data to process
Silent Migration	Option to enable silent mode for the migration. Silent migrations allow automatic uploading and processing of files without user interaction.
Max Postponement	The maximum number of days a user can postpone once they are enabled for migration
AllowExit	Option to show Exit option on workstation
Registration Key	Unique key required to process Mac data
Path Excludes	Includes the paths to exclude from file scanning
Search Paths	Includes the path to scan for files

Locations

The Locations sub-menu offers the ability to manage complicated migration environments. They permit work to be assigned into geographically appropriate groupings.

The options on the home ribbon for the Locations sub-menu are as follows:

Name	Description
Refresh	Refreshes the data
Add	Adds a new location
Edit	Edits an existing location
Transparent Central Upload	Configures transparent central upload

Options available during Location creation or modification are as follows:

Option	Description
Name	Desired name of location
Description	Brief description of the location
BITS Upload URL	URL path, including port number, used by agents to centralise PST files over BITS
Upload Location	UNC path used by modules to access content from the share associated with the BITS upload URL
Re-ingest Location	Path or Azure storage connection string specified for the Re-ingest process to obtain content for consecutive modules
Unpark Location	Path where ownerless PST files are located when parked
Concurrent Uploads	The number of simultaneous uploads that can be performed by all Migration Agents
Maximum Upload Size	The total size of concurrent uploads that can be performed by all Migration Agents

Each location can be configured to specify a peak and limited rate for Concurrent Uploads based on disk availability. These values are designed to reduce the risk of consuming all available space on the upload location.

Locations enable an organization to centralize and process PST files in data centres close to the users, their data, and their target system.

Transparent Central Upload

Transparent Central Upload is a feature to enable better integration for the Central Upload Agent (CUA) with transparent migrations. Unlike an Agent running locally, the CUA has no ability to detach and snapshot files presently accessed by a user.

Enabling Transparent Central Upload ensures that all active Agents on the user's workstations have validated the existence of the required registry keys or has set them prior to permitting the CUA to upload data on a remote resource. Transparent Central Upload also has the capability to schedule the period of time where it will attempt to centralize targeted files. This enables an administrator to schedule centralization of these files during a time when they will be less likely to be accessed.

Modules

Provides a list of all registered modules in the environment and the last time they checked into the server. Data is returned in a grid format with selectable and filterable results. Where appropriate, location specific configurations can be used to accommodate the needs of that location.
The options on the home ribbon for the Modules sub-menu are as follows:

Option	Description
Refresh	Refreshes the data
Set Location	Permits assignment of a module to a location
Add Server	Permits the ability to add and configure the type of Central Upload Agent identified
Delete Server	Permits the ability to remove the configuration of Central Upload Agents identified
Log Level	Changes the logging details

Workflow

The Workflow sub-menu permits the enablement and order that the PST Flight Deck modules will be processed. The configurations can be made per location, selectable by the drop down at the top of the grid. This area permits you to enable or disable modules, permit certain modules to be skipped if a file fails successful processing by that module, how long to wait prior a file being eligible for processing by that module, or if processing should begin after all the files have been successfully queued for that task.

The options on the home ribbon for the Workflow sub-menu are as follows:

Option	Description
Refresh	Refreshes the data
Up	Moves a workflow step up
Down	Moves a workflow step down

Option	Description
Edit	Edit the settings for a given step in the workflow
Clone	Clones an existing workflow

When Edit is selected a popup will appear that has the following options/settings:

Option	Description
Skip if Failed	Option to allow the workflow to continue if a given step fails
Enabled	Enables the workflow step
Wait for All Files	Option to wait for all files to complete a certain step before moving on to the next step in the workflow. This is used mostly for deduplication
Don't check for Location	Option to ignore location information for a given step. Used mostly for source file remover
Delay in minutes	How long the step waits before it is executed. Used mostly for the source file remover
Timeout in minutes	Length of time the steps waits for completion for a given file. The step is restarted for a given file after this timeout.
File is attached	Option to process a file if it is attached to Outlook or not
File types to process	Options to select the types of files to process in a given step

Profiles

The Profiles sub-menu offers the ability to add and configure assignable user profiles. They are used to permit an alternate configuration for users associated with them and enable the assignment of unique File Scanner, Agent, Language, and Location configurations. Not all migrations require additional profiles but they are provided to enable support of complex environments where a migration project is taking place.

The options on the home ribbon for the Profiles sub-menu are as follows:

Option	Description
Refresh	Refreshes the data
Add	Creates a new profile
Edit	Edits an existing profile
Delete	Deletes an existing profile

Options available during profile creation are as follows:

Option	Description
Name	Desired name of profile
Description	Brief description of the profile
File Config	File scanner configuration associated with the profile
Windows Agent Config	Windows agent configuration associated with the profile
Agent Language	Language configuration associated with the profile
Location Name	Location associated with the profile
Workflow	Workflow associated with the profile
Mac OS Agent Config	Mac agent configuration associated with the profile

Module Editor

The Module Editor permits module specific configuration to be set down to a location level. Locations are specified by a drop box at the top of a tabbed interface. All modules enabled have configuration options exposed in each of the tabs. Configuration settings assigned here can be overridden using the Custom Settings option in the Module Settings sub-menu.

Common Options

There are several settings which are seen over most or all of the modules within PST Flight Deck. The following table provides a description of these configuration options:

Option	Description
Location	Drop-down at the top permitting selection of location for the site specific module configuration defaults
Number of Threads	Number of instances of the modules functionality which are configured to run simultaneously
Update Interval	Time the module waits between queries to the core for more work items
Number of work items	The total number of requests for work a service will queue at a time
Storage Locations	Specification of the storage area used by the module

Some modules also permit the ability to assign a cloud connection string for a storage location to support Azure nodes.

Some modules have configuration options that are specific to them. The following section discusses these options.

Repair

To ensure maximum efficiency of the Repair module, it is recommended that it be installed on the same machine as the Extraction module and the BITS upload location. When the Repair module is on a location local to the BITS upload location, there is special configuration required to enable the repair request to use the local path rather than a UNC path. Enabling this configuration has shown to produce a substantial performance gain for the repair module.

Extraction

The extraction module is a powerful module that performs several tasks during the extraction process. This functionality requires many additional configuration options that are specific to it. The following table provides a description of these options:

Option	Description
Generic Filter	Enables filter criteria to be provided that applies to all items in the PST file
Notes Filter	Enables filter criteria to be provided that applies to email based message classes

Option	Description
Appointment Filter	Enables filter criteria to be provided that applies to appointment based message classes
Filter Deleted Items	Option to filter items in the Deleted Items folder
Enable Replace	Permits the ability to convert message classes of an item during extraction
Keep Items only in IPM Root	Enabled ability to remove items in an area of the PST which is inaccessible in target systems
Source Type	Original message class desired for conversion
Destination Type	Message class intended for the value specified in 'Source Type' to be converted into
Enable Content Scanning	Enables the ability to identify most common sender and recipient in extracted PST files for better owner recognition
Encoding for ANSI files	Selects regional ANSI encoding
Skip Password Protected	Option to skip extraction for password protected files

The Extraction module is also able to filter data from PST files when that content is not desired or known to be unsupported in a target system. Filtering items will remove items based on how they match the specified criteria and these items will not be migrated to the target system. Filters will be applied to the scope of the area they are placed. For example, filters placed in the "Appointment Filter" filed will only apply to message classes associated with Appointments.

Filtered content is written to the specified "Filter Location". The following is a list and description of properties PST files can be filtered by:

Filter	Description
MessageClass	Property of a message which identifies the type of message it is
Created	The creation date of a message
Subject	The subject of a message
ReceivedBy	The name, email address, or distinguished name of the user who received the message
Sender	The name, email address, or distinguished name of the sender of a message
ModificationDate	The last modified date of a message

Filter	Description
Size	The size of a message

Filters are case sensitive when applied. Its syntax can be built using the properties above and standard C# string methods. These methods are appended to a property and applied against the value of that property. If you wanted to find a property containing the value of "xyz" you would append .Contains("xyz") to the name of the property.

For more information on C# string methods and the options available for filtering, please refer to the MSDN site on the topic.#

Filtering Examples

The following example on how to filter messages types by message class can be used if Enterprise Vault shortcuts are desired to be excluded from a migration:

item.MessageClass.ToLower().StartsWith("ipm.note.enterprisevault")

The following example shows how to exclude all items older than a year from being migrated:

item.Created < DateTime.UtcNow.AddMonths(-13)

This final example shows a filter designed to remove items larger than 25 MB from being migrated:

item.Size>26214400

Dedup

This tab contains configuration settings for the duplication function. By default, Dedup examines, and dedupes, mails items within a PST and mail items between multiple PSTs. The settings unique to this tab are described as follows:

Option	Description
Hash Storage Location	The drive path of where the calculated hash values are stored
Limit to other Files only	Allow deduplication only between files

Office 365 Exchange

This tab contains configuration settings for the ingestion into Microsoft targets such as Office 365 and Exchange servers. PST Flight Deck uses the Advanced Ingestion Protocol (AIP) as a primary ingestion method into Microsoft targets. The settings in this tab control the behavior of this module and permit the ability to tune these settings to get the best performance possible. The settings unique to this tab are described as follows:

Option	Description
User Sync	Permits Office 365 user synchronisation in multi-tenant environments
Subfolder name	The location created or used in the target mailbox where all content migrated is placed into
Unique subfolder names	Enables files with the same display name to have unique folders created for each PST file ingested
Ingest by Age Filter	Set a date filter for ingestion
Autodiscover Override	The URL that should be resolved by a proper functioning Audodiscover system
Exchange Version	Enables specification of the version of Exchange the EWS API is expecting to communicate with, as required in early API versions
Disable Certificate Validation	Permits use of unsigned and untrusted SSL certificates when communicating over HTTPS to the target system
Disable Past Reminders	Removes reminders for meetings and calendar items that occurred in the past
Tracking Information	Applies hidden metadata about the migration to items written to the target system
Folder Types	List folder types of tasks, calendar, and contact
Update Retention	Enables the ability to set a retention policy tag in the target system at the Top Folder level or on all items
Retention Policy Tag	The policy in the target system that is expected to be applied to migrated content

Enterprise Vault

This tab contains configuration settings for the ingestion into Enterprise Vault targets. PST Flight Deck uses the Enterprise Vault API as an ingestion method into Enterprise Vault targets. The settings in this tab control the behaviour of this module and permit the ability to tune these settings for the desired results. The settings Unique to this tab are described as follows:

Option	Description
Retention Category	The ID or name of the Retention Category content is to be stored under
Subfolder name	The location created or used in the target mailbox where all content migrated is placed into
Unique subfolder name	Enables files with the same display name to have unique folders created for each PST file ingested
Ingest by Age Filter	Sets a date filter for ingestion
Tracking Information	Applies hidden metadata about the migration to items written into the target system
Create Shortcuts	Enables the ability to create Enterprise Vault shortcuts in Exchange targets for migrated content
Shortcut Filter	Option to filter shortcuts that are created. Create shortcuts must be enabled.

EV Shortcut Rehydration

This tab contains configuration settings for the identification and restoration of Enterprise Vault shortcuts identified within PST files. The settings in this tab control the behaviour of this module and permit the ability to tune these settings for the desired result. There is only one unique value in this tab. The Item Ingest Parallelism is used to determine the number of items requested for rehydration per pass per thread of a running module.

Cleanup

This tab contains configuration settings for the cleanup module. The settings in this tab control the behaviour of this module and permit the ability to tune these settings for the desired result.

Option	Description
Move Location	Select local or cloud storage

Option	Description
Local Location	Sets the local storage path for cleanup data
File Statuses to Delete	Sets the status codes of files to be deleted during cleanup. The default value is status 2400 (Deleting)

Leftover

This tab contains configuration settings for the Leftover module. The Leftover module copies non-ingested data to a file share or OneDrive. The settings in this tab control the behavior of this module and permit the ability to tune these settings for the desired result.

Option	Description
Destination	Select share (eg c:\, e:\ or UNC path) or OneDrive
Subfolder name	Creates a subfolder in the destination
Flat Structure	If checked, all leftover data is saved in the destination with no folder structure
Unzip	If checked, individual leftover mail items will be stored. If unchecked, zipped items will be stored

Scheduled Tasks

Scheduled tasks sub-menu permits review and management of regular activities required in a migration. The interface shows all tasks available to the system and the time they are last run. You can execute the tasks now or you can change the configuration of a given task to run at specified times. Tasks can also be scheduled to execute on a regular interval and run continually.

ℹ️ **NOTE:** You may notice that some 256kb files are marked as empty, while other files are deleted and marked as 'Deletion Complete'. Enabling the 'Process empty files' setting deletes the files without uploading them.

Scheduled Reports

The Scheduled Reports sub-menu permits management of schedule report configurations. Scheduled reports are run periodically and are made available through the web portal to users

who subscribe to the report. The reports are created by running defined SQL scripts and are saved as CSV files. Subscribed reports are emailed to the subscriber as ZIPed files.

The options on the home ribbon for the Scheduled Reports sub-menu are as follows:

Option	Description
Refresh	Refreshes data
Add	Creates a new report definition
Delete	Deletes an existing report definition
Edit	Edits an existing report definition

The options available in the report configuration are:

Option	Description
Name	The name of the report
Description	Description of the report
Mail Template	The name of the email template used for emailing subscribed reports
SQL query	SQL script to generate the report
Schedule	Schedule for executing the query
Day of Month	Select day of month for monthly reports
Report Enabled	Option to enable/disable the report

Computers

The Computers sub-menu provides a grid of data showing all machines seen in the environment. The data returned also includes all computers where content was discovered. Computers can be assigned to specific locations, be designated as "Central Servers" so the Central Upload Agent uploads the content on it, and can be flagged to have the content of the files identified on that machine scanned for sender and recipient information. Should it be appropriate, comments can be added, displayed, or managed for computers identified within the environment.

The options on the home ribbon for the Computers sub-menu are as follows:

Option	Section	Description
Refresh		Refreshes the data

Option	Section	Description
Set	Central Servers	Sets servers to act as a central upload server
Unset	Central Servers	Unsets servers acting as a central upload server
Set	Content Scanner	Sets servers to act as a content scanner
Unset	Content Scanner	Unsets servers acting as a content scanner
Add	Comments	Add comments for a selected computer
Show	Comments	Shows comments for a selected computer
Close All Comments	Comments	Close all the comments for a selected computer
Set Location	Location	Assigns a computer to a specific location
Import Owners	Computer	Imports CSV file of computer owner information to be used in ownership calculations
Admin File Scan	Computer	Forces a file scan on a computer using the agent service to find files that the logged in user doesn't have rights to

Email

The Email sub-menu contains templates and configuration related to all email messages sent from the PST Flight Deck environment. These messages include templates for the various stages of a migration project a user goes through, as well as notification emails that are sent to PST Flight Deck team members responsible for portions of the migration. The grid seen in this section displays the template names and the type of email communication they are. All templates can be tested by selecting the applicable message, hitting the Test button on the ribbon, and providing the requested information.

There are two types of email communication in PST Flight Deck. The first type is "Batch" email messages. Batch Email messages are triggered manually by the PST Flight Deck Administrator by highlighting the applicable message and selecting the Batch Mail button on the ribbon. The resultant window will ask the email priority range that you would like to send the message to and have a button to send the messages. This will queue messages for delivery during the next scheduled send.

Automatic templates are sent when conditions for a user have been met. They can be configured to only be sent after a specific time and have a robust rules system that can be used to develop the conditions under each mail being sent. After enabling a template, the rules are evaluated regularly upon execution of a scheduled task. When the conditions match, the message is queued for delivery during the next scheduled sending of content within the queue; then is logged as having been sent. Automatic templates can also be configured to only be sent once.

Templates can be edited within the XML initially provided after launching the Edit button, or can be edited using the WYSIWYG button to launch a rich text graphical editor. If using the graphical editor and the communication requires images to be included, special consideration is required. After editing a template, it is encouraged to test the message prior to using it in production.

The options on the home ribbon for the Email sub-menu are as follows:

Option	Section	Description
Refresh		Refreshes the data
Add	Templates	Adds a new email template
Edit	Templates	Edits an existing email template
Delete	Templates	Deletes an existing email template. Only user defined templates can be deleted
Batch Mail	Templates	Queues email for batch delivery
Test	Templates	Sends a test email for a selected template

Leavers

The Leavers O365 sub-menu contains the configuration required to leverage PST Flight Deck to add orphaned PST files into your target system for compliance or legal search. The grid of this tab shows the licenses available for the environment and permits the designation of the number of licenses that will be used to facilitate this functionality. The options available help to define what the naming convention used to create new archives in the target will be, the usage location, email domain associated with the tenant, and the ability to set and configure legal holds against the migrated content.

Event rules engine

The Event rules engine option provides for the development and maintenance of workflows that define how various events are processed. Each event processed is given a threshold for the number of times an event happens before the action steps are taken. With this engine, you can

define actions to take and notifications to be sent. Automatic actions such as agent reset can also be configured.

The steps to create an event rule are:

1. Add workflow

2. Add a rule that triggers the workflow

3. Add steps to be taken once the rule is satisfied

The options on the home ribbon for the Event rules engine sub-menu are as follows:

Option	Section	Description
Refresh		Refreshes the data
Add workflow	Workflow settings	Adds a new rules workflow
Edit workflow	Workflow settings	Edits an existing rules workflow
Delete workflow	Workflow settings	Deletes an existing rules workflow
Edit rule	Workflow settings	Edit existing rule within a workflow
Add step	Workflow settings	Adds a step to an existing rule

ANSI Encoding

Some older PSTs are use ANSI encoding (Outlook 2002 and earlier). In the case that characters are not part of ANSI set (Korean, Japanese etc), those characters may not be displayed correctly after ingestion.
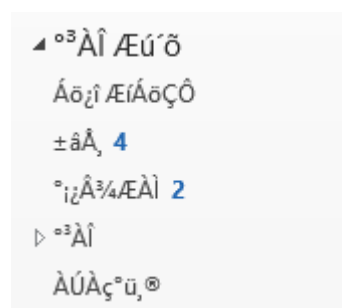
Such PSTs need to be converted to Unicode before migration specific encoding can be used during extraction. This can be set on each extraction module in the Module Editor.

Portal

PST Flight Deck has a role based web interface designed to deliver information or decision-making authority to those in the organization who require it. The PST Flight Deck Portal (Portal) empowers the PST Flight Deck team to be able to do what they need to, when they need to, without requiring Operators, Administrators, or Architects to intervene. The result is a streamlined migration project with the proper team members being enabled and notified when appropriate for them to resolve the present issue. Throughout the Portal, selecting the Help icon can provide contextually relevant information to you when needed.

Actions, Roles, and Groups

Actions are used delegate access to specific roles. Each action correlates with a feature of the Portal. Actions can be used to grant as much access is necessary to a given role.

Roles can be created as are required and be built to suit the needs of the project. For a smaller project where limited resources are engaged throughout the entire project, one role for all the actions may be sufficient. Larger organizations may wish to create more roles for a higher degree of permission segmentation. For example, an organization may permit a help desk role to see details about a user's progress, but not wish for them to see information related to the project as a whole. Roles can be prioritized to resolve rights assignment when a user is a member of multiple roles.

Groups are used to associate AD groups with Roles and Locations configured. This enables the ability to create project groups of users that are managed within AD and associate them with the role types created. Groups also have the ability to associate an email address for the product to email the group it is affiliated with when action items are required.

The combination of these three components creates the security configuration for the role based Portal administration.

Features

There are several Portal components associated with an Action and available for assignment. Each Portal component is created with the goal to resolve a project need. The following discusses the functions of each of the available components of the Portal.

User Search

This component provides a handy utility to search for a user or account name and return information about the current status of that user. This utility is frequently helpful for a help desk or equivalent group who receives initial calls from an organization's users for questions concerning the migration project. The interface can provide information on the user and each of

the PST files associated with the users. Initially, it provides an overview of that user's migration. Details can be obtained by drilling into the info button against the user or any of their files. The User Search is associated with the AccessHelpdeskSection Action under Settings > Environment > Roles of the Admin Console.

Self-service Portal

The user search is also leveraged as a resource for users to see the progress of their personal migration. Appending "SelfService" to the UserSearch page will return the user page for the authenticated user. This portal may be included in project FAQ's or communication to the user as a method to keep users informed as to the progress of their migration, while lessening the burden on teams supporting the migration. There is no Action associated with this function, but any user from the domain scanned by the product can view their migration's status and progression by accessing the Self-service portal.

An example of the URL used to access this page is as follows:

http://YourServerName/PSTFlightDeckHelpdesk/SelfService

File Action

This component of the Portal is about empowering the proper team members be able to resolve issues related to the migration without requiring the PST Flight Deck Administrator or Operator's engagement. PST migrations are complicated projects that involve many groups of the business to get the job done. The File Action component of the Portal presents issue specific web wizards to walk users through remediation of an issue with a file.

Take the following example. A file is being migrated that is presently destined for UserA's archive, but the product has not been able to gather sufficient information to ensure that the file belongs to that user. PST Flight Deck has a configurable ownership certainty threshold and the ability to block files from being ingested which do not meet that minimum criteria. UserA's file was blocked from ingestion while someone manually approves the ingestion. If a file is blocked because of such an issue, the help desk could call the user to confirm that the data is theirs and they would like it migrated. Rather than communicating the decision back to the PST Flight Deck Administrator or Operator, the help desk personnel could resolve the issue themselves via the File Action feature of the portal.

The File Action component of the Portal is associated with the AccessBusinessOperationsSection Action under Settings > Environment > Roles of the Admin Console.

Support Tickets

PST Flight Deck has the ability to create, manage, track, and update project related support tickets for a specific user, file, host, or event. This feature enables Operators or other team members to

be able to address the largest concerns of a migration, as well as track progress against problematic files. This product feature enables project management groups to streamline the troubleshooting and issue resolution associated with the project for a reduced impact to its end users. The Support Ticket portion of the portal is associated with the AccessIncidentsSection Action under Settings > Environment > Roles of the Admin Console.

Project Status

The project status reports are a series of reports designed to enable appropriate team members access to the data that is important to them. An Operator may wish to know what the progress day over day is while the Project Manager may want to see an overview of the entire project. There are three reports provided over the Portal to help to determine the status of a project.

The "Project Overview" report provides a high-level progress report on the number or volume of files Completed, failed, and remaining over a configurable period of time. This is a good measure to determine the current progress of the project and how far into it a migration team is.

The "Daily Progress" is a useful report to determine at a glance that everything is working as expected. It provides daily ingestion rate information for the past 24 hours. This can help you determine if more users need to be enabled and if you are maintaining the anticipated rate of ingestion through each day.

The "User Progress" report provides metrics on the number of Users with PST files identified and statistics related to them and their progress through the migration work-flow. These charts help to understand the nature of the PST problem identified and what the product is doing to resolve it.

The Project Status portal reports availability is controlled by the AccessReportsSection Action under Settings > Environment > Roles of the Admin Console.

Enabled Users

The "Enabled Users" report provides a list of all the users enabled for migration. It provides some high- level information related to their current status and progress, and a link back to the User Search page for that user. Its access is governed by the AccessProjectManagersSection Action under Settings > Environment > Roles of the Admin Console.

Import

The import feature empowers an Operator to delegate the creation of waves to project managers or other members of the business without the requirement of granting access to a Console. The feature's accessibility is controlled by the AccessImportUsers Action under Settings > Environment > Roles of the Admin Console.

Operational Activities

The operation of a PST Flight Deck environment is something that requires daily effort and monitoring to ensure optimal throughput. Rate of centralization, rate of upload, size of available disk space, and module backlogs are just a small number of the areas of concern for a PST Flight Deck operator. A failure to perform near daily operation activities could result in a large backlog of work to be performed.

Operational activities can begin at the point of agent deployment when the Discovery process begins and information related to ownership and scope of the PST problem an organization is facing begins to become clear.

Overview

After a PST Flight Deck system is installed, there are some common steps that are taken through a project. For information related to the requirements or deployment of a PST Flight Deck system, please refer to the appropriate guide. A PST Flight Deck system must be configured and tuned appropriately. Best practices to maintain a computer operating system and a SQL database are recommended. Insufficient or contention for available resources will negatively impact the entire PST Flight Deck environment. A common area neglected in a deployment is the SQL database.

Initial Testing

In a freshly deployed environment that has a limited number of controlled agents, PST Flight Deck can be configured to expedite testing. Once appropriate, an end to end test is recommended to ensure all components of the system are properly functioning.

Typically, an initial end to end test is done with the default configuration options enabled. Once confirmed to have been successfully completed, the system should be configured to the design of the project and consecutive testing performed. Changing settings once the Migration Agents are deployed may have undesired results.

Pilots

After end to end testing is completed, it is important to evaluate and configure acceptable threshold values for extraction and ingestion failures. Doing so will prevent the review of every PST with one or two failures and permit an Operator to focus on larger areas of concern.

Once configuration and testing have been completed, the Migration Agent will need to be packaged and tested for deployment. This is frequently done on a small group of users close to the PST Flight Deck team. If the deployment installation went as expected and the workstations

can be seen reporting back to the PST Flight Deck server, the system will need to be less aggressively configured to accommodate the added communication from the agents.

At this point you can begin the deployment of the agents to the remaining workstations in an environment. The business pilot will consist of the users who tested the agent package deployment and will provide an opportunity to begin to see bottlenecks within the environment. Tuning the system to a balance of resource consumption and performance is frequently initiated during the business pilot because it is the first time in a project that the system could be busy enough to maximize the performance of the system. Other pilots may wish to be performed depending on the results of initial pilot attempts.

Discovery and Owner Management

After deployment of the Agent to the remaining workstations occurs, the discovery of PST files begins. It is suggested to let this process run until the number of discovered PSTs starts to level out. In smaller projects this may take three or more weeks. Larger projects may take longer.

During the discovery process and through its completion, it is suggested that Operators focus the efforts on ownership identification through the options within Manage > Owners. Accurate and complete ownership identification is one of the challenges in PST migration projects. PST Flight Deck is able to provide suggestions as to ownerships immediately following the initial discovery results being returned. Aggressively managing ownership of files during the discovery phase of a project will drastically reduce the challenges and time needed to manage file ownership at later phases of the project.

The number and volume of PST files may continue to grow as your migration continues, but when discovery is nearing the end, consistently sustained growth can be seen week over week. At this point waves of users can start being prepared for migration. Typically, this initially involves ensuring communication has gone out to impacted users and enablement groups have been defined for the migration.

Ramp-Up

The Ramp-up phase implies growing the wave sizes until waves are keeping the system busy with available disk space and mostly completing them in the desired wave interval. Setting the Migration Priority for a wave of users enables them for migration. Commonly, a unique priority value would be set per migration wave. Daily monitoring is required at this point of the migration. Monitoring should consist of the environment, the active wave(s), and those users' files until mostly completed. Remediation and reprocessing of some PST files or items may be required for the wave to fully complete. In addition, module tuning to achieve more performance within the limitations of the environment should also be performed during the initial monitoring and growth of migration waves.

Migration

You do not have to wait for a wave to be entirely completed prior to starting the next wave. The goal of an efficient migration project should be to minimize backlog but ensure enough work to have the environment persistently working. This typical bottleneck in a migration work flow is

typically the extraction module but could be other areas if certain environmental factors dictate it. Keeping a system busy requires persistent uploads and consistent ingestion to ensure there is enough work to keep the system working at its fullest capacity without running out of available disk space.

Wrap Up

As users complete, an Operator may choose to move their migration priority to a disabled value. This permits control over future discoveries for the user. Backup files are frequently kept for a determined period of time after a user has completed the migration. This location, and all other module's storage locations will need to have content removed when appropriate. When a user or the migration completes, it is recommended that those users have the DisablePST registry key set on their workstations to reduce the re-introduction of PST files after a user's source files have been removed.

Stages of a Migration

During a migration, both users and files are progressing through a workflow. Each stage of the process has specific results indicating what has happened to the file. Stages are used to describe the phases of this process so that an individual can tell the status of a user or a file at a glance.

The user workflow stage is complex and are calculated by the server on an hourly schedule. The displayed status may not correctly reflect the current status of the user. This is normally not an issue as the status of a user does not change that fast. Below is a list of stages used to describe the status of a user:

Stage	Description
0	No actions have been taken against the user or the user has a disable 'Migration Priority' set
1	User is enabled for migration
2	All of an enabled users files have had expired discovery conditions met or have had actions taken against them
3	User has started uploading PST files to the server
4	All files in scope are in a completed status
5	All of a users PST files have fully completed the workflow

File stages are current, up to the minute, for a specific file. The following are the stages of file processing:

Stage	Description
0	File has been discovered but no actions against that file have been taken yet
1	Owning user is enabled for migration and is eligible for actions to be taken against the file
2	An action has been taken against the file
3	File has been queued by the agent for centralization
4	File has been centralised to the desired location and is ready to be processed by the modules
5	Modules have begun to process the file
6	The file is ingested into the target
7	All workflow operations have completed for this file

The primary goal of a PST Flight Deck is to move PST files from a dispersed location and ingest them into a centralized location. Files are considered "Complete" when the need to ingest the file has been satisfied. This is most commonly due to complementing a successful ingestion of a file, however can also be achieved by a file being in a status that does not get ingested (Deleting, Not a PST File.....). Files or users can be considered "Complete" but still have modules in the workflow that have not competed.

Troubleshooting

Issues do happen! When they do it is important to be able to identify that a problem did occur, the nature of the problem, and what actions need to be taken to remediate the problem. While investigating, it is encouraged to note the steps of your investigation through the PST Flight Deck comment system. This will enable you to easily see when an issue with a file is recurring and the approach being taken will need to be reviewed.

Issue Identification

There are many difficulties that can happen in PST migration projects. Being able to identify when a problem is happening at the client vs. the server or which module a failure took place in can expedite the ability to identify the problem and promptly resolve it.

Monitoring

Monitoring the migration is a common way issues are identified. When migration priorities are set for a group of users, a certain expectation of their progress accompanies their enablement. As users or files begin to lag behind the remaining users or files, an Operator will look into why. Frequently this is where issues, the point of their failure, and steps for remediation are identified. Quickly reviewing the appropriate grid can tell you if a user is not logging on, if the upload has completed, if a specific process has failed for a file, or if the user has fully completed their migration. Without monitoring your system, some issues may just not be found.

Events

Most issues log entries in a console under Manage > Events. For most migrations, it is suggested to use this window as a sort of running tally of outstanding areas to investigate in a migration. Most events imply an issue which requires some actionable correction. Acknowledging events whose investigation has completed or have been resolved permits an Operator to have an easy view into what is wrong and what still needs resolution or investigation. Many issues identified by monitoring and review of exceptions can more easily be identified through the Events sub-menu.

Exceptions

Exceptions are instances of failures of some functionality within the product. Mostly identified via monitoring or event review, some level of exceptions occurs in every migration. The details of the exception provide a reason why the exception occurred. If you are able to identify a specific exception, review of the events, Console, or logs will help to better understand the nature of the failure. Log excerpts and collection are typically required for support tickets involving exceptions.

Backlogs

Backlogs are mostly identified by review of the Operations or Files sub-menus. Backlogs can indicate an issue with the environment's tuning, exceptions, or services which are not running. Backlogs take place after a file has been centralized and it is already located on the local machine. The modules responsible for processing these files may have more work than they are able to process in the time allocated. Additional sizing or tuning may be required to eliminate the bottleneck and get the system caught up again. Bottlenecks not investigated or resolved are likely to recur as the migration continues.

Point of Failure

When discussing details about an issue, a common area of interest is the "point of failure". This is the exact point in time that the issue occurs, where it occurs, and under what conditions. The idea of determining the point of failure is to ultimately find a means by which to reproduce the issue being observed. Once any issue can be reproduced on demand, it is infinitely easier to work

towards a solution. For troubleshooting, the identification of a point of failure means that we are able to reproduce the issue, collect applicable logs, sample items, and make assessments on if the issue is environmental or not. In most instances, we can collect samples that are provided to our Support team for analysis. This frequently expedites the troubleshooting of an issue and results in a drastically shortened time to resolution.

Logging

PST Flight Deck has very robust logging features that enable administrators to effectively troubleshoot problems. There are several categories of logs – agent logs, server logs and installation. Agent logs are generated by the Migration Agent and are stored on a user's computer. Agent logging is enabled by default. Server logs are generated by the various PST Flight Deck modules and the Core. Server logging is disabled by default. Installation logs can be found at /appdata/local/temp/InstallLogs.zip

Agent Logs

The Windows Migration Agent has two components, the discovery agent and the migration agent, and both components generate logs. Both logs can be retrieved from a workstation using the Request Client Logs feature in the Admin Console. If enabled, a user can elect to send logs to the server using the Send Log feature of the Migration Agent.

Discovery Agent

The Discovery Agent log is written to a file named FileScanner_hostname.log. The log will not be created if there are no warning levels. There is rarely a need to change the logging level but you may be directed by Quest support to change it for troubleshooting.

Migration Agent

The migration log is updated every time the agent polls or every ten minutes when the agent checks for configuration changes and its name is MigrationAgent.log The Migration Agent log records items such as routine polling results, user enablement status, error conditions, work items to be processed, etc.

Server Logs

Server logs are used to log all routine work and errors conditions. They are extremely important for troubleshooting problems that occur with modules, consoles, the portal, and all client/server interactions. There is a log for every running PST Flight Deck service, the Admin console on the core server, and the web interface. Each log has a maximum size of 100MB, at which point the new log is created and the original one renamed to include "archive" and a number in its name. These logs are stored in c:\program files (x86)\Quadrotech\logs\. The various server log descriptions are in the following table. The directory where logs are stored can be changed during installation.

Log	Description
Core	Shows all activity related to the PST Flight Deck Core
Active Directory	Shows all activity of the Active Directory module
Backup	Shows all activity of the Backup module
Deduplication	Shows all activity of the deduplication module
Extraction Service and Worker	The service log shows the overall work of the extraction module and the worker log shows the details for individually extracted items
Park	Shows all activity of the park module
Repair	Shows all activity of the repair module
Content Scanner	Shows all activity of the content scanner module
Clean Up	Shows all activity of the Clean Up module
Office 365 Service and worker	The service log shows the overall work of the Office 365 module and the worker log shows the details for individually extracted items. This log applies to Exchange migrations as well
PowerShell	Shows all activity of the PowerShell modules
Hosted	The hosted logs show activity of IIS while PST Flight Deck is processing. There are tow logs, one for the PST Flight Deck core and one for the Helpdesk web interface

Getting Help

If you experience an issue while using our product, please use this guide to attempt to gather as much information as possible about the nature of the issue. Identification of the point of failure of an issue and collecting the appropriate logs when starting a ticket will aid the support process and ultimately, the resolution of the issue you are experiencing. When you have an issue that you are unable to address yourself, you may also contact a Quest support representative by going to www.support.quest.com/contact-support.

If you have a question on how to use a feature of the product, sizing, or any product related questions regarding the use of the product, then please contact your Field Enablement representative for further guidance.

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About

We are more than just a name. We are on a to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

Our brand, our vision. Together.

 Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece — you — to the community, to the new Quest.

Contacting Quest

For sales or other inquiries, visit www.quest.com/contact.

Technical Support Resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at https://support.quest.com. The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request

- View Knowledge Base articles

- Sign up for product notifications

- Download software and technical documentation

- View how-to-videos

- Engage in community discussion

- Chat with support engineers online

- View services to assist you with your product