



STARFISH EXPORTER v1.2

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Version

This document corresponds to Starfish release 2.2.7 and higher.

Overview

The Starfish Data Exporter is a tool that can be used to keep data from Starfish in sync with a remote system such as a CRM, a Data Warehouse, or any other 3rd party tool that may benefit from having information from Starfish. It is both a protocol for requesting data, and a Java Adapter that works with the protocol out of the box. Most clients will choose to use the Java Adapter rather than needing to understand the protocol for requesting files and managing those requests. When using the Java Adapter you will configure the type of files you are interested in and the schedule for the job to run and the Adapter will take care of the rest. Please note that only the differences from the previous execution will be downloaded. If no data in the Starfish system has changed since the previous execution, then an empty file will be downloaded. The tool will not keep a history of previous files that have been downloaded. It is your responsibility to make sure some other tool is processing the files once they have been downloaded. Should any failures occur in processing a particular days files the Adapter can be configured to look back in time to before the failure and therefore a second attempt can be made at processing those changes.

File Format

Data sent from Starfish will be formatted as a CSV (comma-separated values) file with a “.csv” extension. Each row in a CSV file will be terminated by a newline character. All data fields in the file are surrounded by the double quote (") characters. If any quoted data itself contains the double quote character, the double quote character will be repeated twice. Consider the following sample data:

Data field 1	Data field 2	Data field 3	Comments
BIOL101	What is "Biology"?	This is a freshman level course. It is intended for...	data field 2 contains a double quote character, data field 3 contains a newline
CHEM101	General Chemistry		data field 3 is empty
CSCI301	Computer Science 301	Algorithms, and more	data field 3 contains a comma

Properly formatted representations of the above data include:

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BIOL101,"What is ""Biology""?","This is a freshman level course.
It is intended for..."
CHEM101,General Chemistry,
CHEM101,General Chemistry,""
"CHEM101","General Chemistry,""
CSCI301,Computer Science 301,"Algorithms, and more"

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Note that when data is not available for a particular field (such as data fields 3 in the second sample data row above), the data row will contain two double quote characters.

The CSV format is widely understood by many software applications and this type of quoting most likely can be automated. For more information about CSV files, please refer to:

http://en.wikipedia.org/wiki/Comma-separated_values

Data Files

Starfish will export several different types of data in different data files. The following types of data are supported:

Type of Data	Standard File Name
Tracking	tracking.txt
Appointments	appointments.txt

The sections that follow describe each of these data files in more details.

Tracking Data File

The tracking data file contains information about flags, kudos, referrals, and to-dos, collectively referred to as Tracking Items. Flags are created by Flag Rules; Kudos are created by Kudos Rules; etc.

Collectively these rules are referred to as Tracking Rules. The first line of the file is a header which contains a comma separated list of the Fields in the table.

Field	Description	Data Type (length)	Examples / Notes
Item Ext ID	A unique externally reliable identifier for this tracking item.	String (36) Not null	"90d070e4-ea5e-48ac-8b65-68258889944a "
Rule Name	The name of the Tracking Rule that created this item.	String (256) Not null	"Poor Attendance"

Creator User Id	The User ID (login name) of the user that created the item. If raised by the System, the value will be empty.	String (100)	"jdoe"
Creator Integration Id	The Integration ID (typically SIS ID) of the user that created the item. If raised by the System, the value will be empty.	String (512)	888776666
Creator First Name	The first name of the person that created the item. If raised by the System, the value will be empty.	String (200)	"Joe"
Creator Last Name	The last name of the person that created the item. If raised by the System, the value will be empty.	String (200)	"Smith"
Creator Institutional Email	The institutional email address of the person that created the item. If raised by the System, the value will be empty.	String (255)	"jsmith@yourschool.edu"
Tracking Type	The type of the item.	Enumeration (15) Not null	FLAG, TO_DO, KUDO, REFERRAL
Item Origin	If the item was raised by the System or Manually (by an end user).	Enumeration (15) Not null	MANUAL, SYSTEM
Item Subcategory	The category of the flag, if it is a flag, otherwise the value is ACADEMIC.	Enumeration (15) Not null	ACADEMIC, SOCIAL, FINANCIAL, HEALTH, EXPERIMENTAL
Course Section ID	ID of the course section (if any) associated with the Intervention.	String (255)	"BIOL101.108.04"
Course Section Name	Name of the course	String (255)	"General Biology I"

	section (if any) associated with the Intervention.		
Item Status	The item status.	Enumeration (15) Not null	ACTIVE, RESOLVED
Resolved Date	The date and time the item was resolved.	Date/Time	2011-11-23 10:00:00 EST
Resolved By User Id	The User ID (login name) of the user that resolved the item.	String (100)	"jdoe"
Resolved By Integration Id	The Integration ID of the user that resolved the item.	String (512)	888776666
Resolved By First Name	The first name of the user that resolved the item.	String (200)	"Joe"
Resolved By Last Name	The last name of the user that resolved the item.	String (200)	"Smith"
Resolved By Institutional Email	The institutional email of the user that resolved the item.	String (255)	"jsmith@yourschool.edu"
Create Date	The date and time the item was created.	Date/Time Not null	2011-11-23 10:00:00 EST
Resolution Notes	Comment entered while resolving the item.	String (no limit)	"Class absences were due to add/drop."
Due Date	The due date of the intervention	Date/Time	2011-11-23 10:00:00 EST
Tracking Rule Description	A description of the tracking rule. This is show to people who will create items with this rule.	String (no limit)	"Raise this flag for students who have missed 2 or more class sessions in a row."
Item Context	A description of the data that triggered a System rule or the course context for an item.	String (256)	"Macroeconomics II: Average below 70% on 8/16/11."
Item Creation Comment	Comment entered while creating the	String (no limit)	"Karen missed the first two classes this semester."

	item.		
Student User Id	The User ID (login name) of the student that the item was for.	String (100) Not null	"jdoe"
Student Integration Id	The Integration ID (SIS ID) of the student that the item was for.	String (512) Not null	"888776666"
Student First Name	The first name of the student.	String (200) Not null	"Karen"
Student Last Name	The last name of the student.	String (200) Not null	"Sanders"
Student Institutional Email	Institutional email address of the student.	String (255)	"ksanders@starfishcollege.edu"
Student Alternate Email	Alternate email of the student.	String (255)	"ksanders@gmail.com"

Appointments Data File

The appointments data file contains information about appointments between a calendar owner (often an advisor or instructor) and a participant (often the student). This will include individual appointments and group sessions. The first line of the file is a header which contains a comma separated list of the fields in the table.

Field	Description	Data Type (length)	Examples / Notes
Appointment Ext ID	A unique externally reliable identifier for this data row.	String (36) Not null	"90d070e4-ea5e-48ac-8b65-68258889944a"
Calendar Owner Integration ID	The Integration ID of the calendar owner.	String (512) Not null	"0294523"
Calendar Owner User ID	The User ID (login name) of the calendar owner.	String (100) Not null	"jdoe"
Calendar Owner First Name	The first name of the calendar owner.	String (200) Not null	"Joe"
Calendar Owner Last Name	The last name of the calendar owner.	String (200) Not null	"Smith"
Calendar Owner Institutional Email	The institutional email of the calendar owner.	String (255)	" jsmith@yourschool.edu "

Participant Integration ID	The Integration ID of the participant (i.e. student).	String (512) Not null	"09876555"
Participant User ID	The User ID of the participant (i.e. student).	String (100) Not null	"Ksanders"
Participant First Name	The first name of the participant.	String (200) Not null	"Karen"
Participant Last Name	The last name of the participant.	String (200) Not null	"Sanders"
Participant Institutional Email	The institutional email of the participant.	String (255)	"ksanders@starfishcollege.edu"
Participant Alternate Email	Alternate email of the participant.	String (255)	"ksanders@gmail.com"
Appointment Type Reason	The reason for the appointment.	String (100)	"Course tutoring"
Appointment Start Date	The date and time the appointment is schedule to start.	Date/Time Not null	"2011-11-23 10:00:00 EST"
Appointment End Date	The date and time the appointment is schedule to end.	Date/Time Not null	"2011-11-23 10:00:00 EST"
Appointment Location	Where the appointment takes place.	String (50)	"Chrysler Hall, Room 301"
Appointment Description	Description of the appointment by the maker.	String (no limit)	"Can we talk about my dropping a math course?"
Appointment Comment	Notes taken during or after appointment by the calendar owner.	String (no limit)	"The student was very organized and we discussed ..."
Canceled Date	The date the appointment was canceled if it was canceled.	Date/Time	2011-11-23 10:00:00 EST
Course Section ID	The course section ID (if any) the appointment is associated with.	String (255)	"BIOL101.108.04"
No Show	If the appointment maker showed.	Boolean	True, False

Integration Protocol

Note: Most clients will not need to understand the details of this protocol. Using the Java Adapter will ensure the proper protocol is followed.

The following is a description of the protocol that must be followed to retrieve a zip file from a Starfish server containing one or more of the data files mentioned previously. A Starfish integration account is required before proceeding, if you do not have a Starfish integration account contact Starfish support. The protocol is a series of URL's that must be requested before the file is ready for download, any script or program that can make http request can be used to implement the protocol.

In the following examples, *hostname* would be the Starfish hostname assigned to your tenant and *starfish-env* is either *starfish-ops* or *starfish-ea* depending on the tenant environment.

Authenticate

First authenticate with the integration account credentials provided by Starfish. The username and password are required parameters. The request will return a *jsessionid* which must be used on every subsequent request. E.g.

<https://hostname/starfish-env/remote/authenticate.html?username=itest&password=12345>

Request Report

Next request a report type, we currently only support "tracking" and "appointments". The *reportType* parameter is a comma separated list of reports types (i.e. data files) and it is required. The *lastExecutionTime* is a timestamp representing the last time data was requested. It must be in GMT (GMT + 0:00) also known as Zulu time, basically anyone not located in Greenwich, England must adjust their local time to GMT. The format is *dateTtimeZ* where date is yyyy-mm-dd and time is hh:mm:ss, T and Z are constant literals. Another way to express it is yyyy-mm-ddThh:mm:ssZ.

The data files will only contain data that has changed since the lastExecutionTime, if the lastExecutionTime is not provided then all data in Starfish for the requested report types will be returned. In order to avoid large files and processing time on both ends, the lastExecutionTime should not be set in the initial request and set in subsequent request to only obtain the data that has changed since the last request. The request will return a token that must be used as the *extracDataToken* on subsequent request. If a previous request was processed with the last hour, the current request will return WAIT_HOUR, meaning that an hour must pass between completed requests.

Parameter	Value
reportType	Intervention
lastExecutionTime	2011-09-26T18:12:00Z

<https://hostname/starfish-env/remote/extractIntegrationData.html;jsessionid=w4vqflsrv7dv1t9lpwfr3hmw?reportType=intervention,appointment&lastExecutionTime=2011-09-26T18:12:00Z>

Poll

Once a request is submitted a batch job in starfish will produce the reports and they should be available within a half hour but it may take up to 24 hours. By polling you can determine when the job is complete. The *extractDataToken* parameter is required. The request will return either FILE_READY when the request has been processed and is ready for download or FILE_NOT_READY if the request has not been processed. Keep polling at a reasonable frequency until FILE_READY. See Response Codes below for more information. E.g.

<https://hostname/starfish-env/remote/isDataReady.html;jsessionid=w4vqflsrv7dv1t9lpwfr3hmw?extractDataToken=7bc255ceb3c5eb5-bd9c-4d86-8222-3723c2d5c678>

Download

The file can be downloaded after polling indicates it is ready. The *extractDataToken* parameter is required. E.g.

<https://hostname/starfish-env/remote/getDataExtract.html;jsessionid=w4vqflsrv7dv1t9lpwfr3hmw?extractDataToken=7bc255ceb3c5eb5-bd9c-4d86-8222-3723c2d5c678>

Verify (optional)

The file can be verified for errors by performing a CRC32 checksum and providing it as a parameter. The *checksum* parameter is required. E.g.

<https://hostname/starfish-env/remote/verifyExtractFile.html;jsessionid=w4vqflsrv7dv1t9lpwfr3hmw?checksum=2376546441>

Response Codes

In addition to the request responses mentioned above the system may return other responses which indicate errors or warnings. The following table describes all possible responses.

Response	Description
TOKEN_EXPIRED	The current extract token expired. A new report should be

	requested.
INVALID_TOKEN	The extract token provided in the URL is not valid. Check its formatting.
FAST_POLLING	The polling frequency is high, try polling less than 10 times per hour.
FILE_NOT_READY	The requested file is not ready for download, try again later.
FILE_READY	The requested file is ready for download.
INVALID_QUERY_STRING	The Query String is either not properly formatted or missing required parameters.
INVALID_CREDENTIALS	An Invalid username and/or password was submitted while authenticating.
NOT_AUTHORIZED	Tried to access an URL without authenticating first or the jsessionid expired. Authenticate and try again.
UNKNOWN_ERROR	An unknown error has occurred.
CHECKSUM_SUCCESS	The checksum is correct.
CHECKSUM_FAILED	The checksum is incorrect.
WAIT_HOUR	Must wait at least one hour between requests.

Example Sequence of Requests

This is for a first time run on Sept 26, 2011 at 18:12:00 , note step 2 does not have a last execution time.

1. <https://hostname/starfish-env/remote/authenticate.html?username=itest&password=12345>
returns : w4vqflsrv7dv1t9lpwfjr3hmw
2. <https://hostname/starfish-env/remote/extractIntegrationData.html;jsessionid=w4vqflsrv7dv1t9lpwfjr3hmw?reportType=intervention,appointment>
returns : 7bc255ce-bb3c5eb5-bd9c-4d86-8222-3723c2d5c678
3. <https://hostname/starfish-env/remote/isDataReady.html;jsessionid=w4vqflsrv7dv1t9lpwfjr3hmw?extractDataToken=7bc255ce-bb3c5eb5-bd9c-4d86-8222-3723c2d5c678>
returns : FILE_NOT_READY : The requested file is not ready yet, try again later.
FILE_READY : The requested file is ready for download.
4. <https://hostname/starfish-env/remote/getDataExtract.html;jsessionid=w4vqflsrv7dv1t9lpwfjr3hmw?extractDataToken=7bc255ce-bb3c5eb5-bd9c-4d86-8222-3723c2d5c678>

returns : A zip file with reports.

The next run on Sept 27, 2011 at 20:15:00Z, note step 2 has a last execution time of the previous run.

1. <https://hostname/starfish-env/remote/authenticate.html?username=itest&password=12345>
returns : w4vqflsrv7dv1t9lpwfjr3hmw
2. <https://hostname/starfish-env/remote/extractIntegrationData.html;jsessionid=w4vqflsrv7dv1t9lpwfjr3hmw?reportType=intervention,appointment&lastExecutionTime=2011-09-26T18:12:00Z>
returns : bb3c5eb5-bd9c-4d86-8222-3723c2d5c678
3. <https://hostname/starfish-env/remote/isDataReady.html;jsessionid=w4vqflsrv7dv1t9lpwfjr3hmw?extractDataToken=bb3c5eb5-bd9c-4d86-8222-3723c2d5c678>
returns : FILE_NOT_READY : The requested file is not ready yet, try again later.
FILE_READY : The requested file is ready for download.
4. <https://hostname/starfish-env/remote/getDataExtract.html;jsessionid=w4vqflsrv7dv1t9lpwfjr3hmw?extractDataToken=bb3c5eb5-bd9c-4d86-8222-3723c2d5c678>
returns : A zip file with reports.