



SIS INTEGRATION v4.5

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Version

This document corresponds to Starfish release 2.8 and higher.

Data File Overview

The Starfish SIS Adapter pushes two types of data to your Starfish environment:

1. CSV files containing specific types of SIS data accepted by Starfish
2. Documents to be attached to the Student Folder or used as profile pictures for users

CSV File Format

SIS Data sent to Starfish should be formatted as a CSV (comma-separated values) file with a “.txt” extension. Each row in a CSV file should be terminated by a newline character. Any data field in the file containing a reserved character (comma, newline, or the double quote character) should be surrounded by the double quote (") character. Optionally, data fields not containing reserved characters may be surrounded by double quotes. If any quoted data itself contains the double quote character, the double quote character should 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:

```
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"
```

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 may contain either two double quote characters or nothing at all. **NOTE:** The column **MUST** be included, even if it is not a required field and there is no data for that field in a particular row. In other words, if you don't have data for a particular column, leave the column in the file but each row can have blank data for that column.

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

Comments may be included in any data file adding a number sign (#, aka pound/hash sign) at the beginning of a line. The first non-comment line of a data file must be a comma-delimited list of fields included in the following data lines. More details about the list of fields are included in the **Data Files** sections below.

Student Files Format

Documents to be attached to the student folder and photos to be used as profile pictures for students and other users should be placed in a "studentFiles" directory which should be nested within the "sisdatafiles" directory. The files can be placed at the top level of the "studentFiles" directory or in any subdirectories within "studentFiles." As long as the files are of an accepted type, the SIS adapter will push the file.

Files that can be uploaded to the student folder are limited to the following file types: .doc, .docx, .txt, .rtf, .pdf, .xls and .xlsx. Files that can be pushed to Starfish as profile photos are limited to the following file types: .jpg, .gif and .png.

The filenames for document and profile photos must include an identifier – either the username, integration ID or email address – for the student associated with the file.

Valid formats for document attachments are:

- <username>_<Name-of-link>.<fileExtension>
- <userEmailAddress>_<Name-of-link>.<fileExtension>
- <integrationID>_<Name-of-link>.<fileExtension>

Examples: rlands12345_StudentIntakeForm.doc **OR** rlands@school.edu StudentIntakeForm.doc

Valid formats for profile photos are:

- <username>.<fileExtension>
- <userEmailAddress>.<fileExtension>
- <integrationID>.<fileExtension>

Examples: rlands.jpg OR [rlands@school.edu.jpg](mailto:rlands@school.edu)

If a document or photo file is updated or deleted, the data will be updated or deleted in Starfish as well. Note that all files sent to Starfish will undergo a virus scan and therefore may not be available immediately after the data is imported to your environment.

Data Files

Starfish will process several different types of data in different data files. We have example files for each file type in case you want to see a sample to help better understand the format. Just ask your account manager.

The following types of data are supported:

Type of Data	Standard File Name	Example Group File Name
Course Sections e.g. CS 101 for Fall 2010	sections.txt	Fall10_sections.txt
Organizations e.g. Athletes Fall 2010	organizations.txt	Fall10_organizations.txt
Users e.g. Dr. Smith	users.txt	Advisors_users.txt
Student Admissions Characteristics e.g. High School GPA	admissions.txt	Athletes_admissions.txt
Student Demographics e.g. Chris Jones is FEMALE	demographics.txt	Fall10_demographics.txt
User Attributes e.g. Chris Jones ' Status=Probation	attributes.txt	Athletes_attributes.txt
Student Enrollments	enrollment.txt	Fall10_enrollment.txt
Teaching Assignments	teaching.txt	TAs_teaching.txt
Organization Memberships	orgmembership.txt	Fall10_orgmembership.txt
Enrollment Attributes	enrollmentattributes.txt	Fall10_enrollmentattributes.txt
Relationships e.g. Dr. Smith is Chris Jones' Advisor	relationships.txt	Advisors_relationships.txt
Course Outcomes	course_outcomes.txt	Fall10_course_outcomes.txt

e.g. Mid term and Final Grad		
Academic Status e.g. Primary Major, Major GPA	academic_status.txt	Fall10_academic_status.txt
Assessments - grade items from an online grade book e.g. Quiz 1	assessments.txt	Fall10_assessments.txt
Scores – scores from an online grade book e.g. 80% in Quiz 1	scores.txt	Fall10_scores.txt
Notes	notes.txt	Fall2009Advising_notes.txt

You may provide one data file containing all data for a given type, such as a users.txt file with all users, or you may group the data into multiple files. When grouping data, all data files should be named with the group name, followed by an underscore character, followed by the standard file name. For example, "Fall2010_users.txt" is a valid grouped user data file name.

The sections that follow describe each of these data files in more details. Each data file has a specific "header" row that must be present as its first non-comment row. This header row describes the columns that are available in the data rows that follow. In addition, each data row of the data file has one or more "integration id" fields, one or more fields that uniquely identify the data row. The descriptions of the data files below contain more information about these special fields. **The data in the data files should be sorted by these integration ID fields.** See the descriptions of each data file below for more details on sorting.

Common Questions

1. **Do you have to end the file with a ".txt" extension?** Yes.
2. **Do you have to provide all files each time?** No. Only provide the files with data that you care to share. For example some colleges only provide the "admissions.txt" file since the rest of the data they need comes from their course management system.

Dates and timestamps in data files should follow the formats displayed in the table below.

Data Type	Format	Example	Meaning
Date	yyyy-MM-dd	2009-10-23	October 23, 2009
Timestamp	yyyy-MM-dd HH:mm:ss	2009-10-23 22:34:59	October 23, 2009 at 10:34pm

Note that if a particular data field is specified as a timestamp, dates are also accepted. Starfish will convert the date to a timestamp.

Course Section Data File

The course section data file contains information about course sections and must contain the following header as its first non-comment row:

integration_id,course_section_name,course_section_id,start_dt,end_dt,modified_ts,term_id

This file should be sorted by the integration_id. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
integration_id (REQUIRED)	A unique identifier for this data row. This should change in your SIS very rarely if at all. Not shown to end users. It must match the ID used by other systems e.g. your Learning Management System (LMS).	BIOL101.35.FA08, or CRN12345. Note: If you are sending Starfish data from multiple sources that may contain duplicate ids when combining the data from various sources, you will want to prefix the id with the source id, such as: BANNER1-142349 and BANNER2-142349.
course_section_name (REQUIRED)	The name of this course section.	Microbiology 101-sect 3 Will be combined with the term in displays.
course_section_id (REQUIRED)	The ID for this course section.	BIOL101.3.FA08. This ID can typically be parsed to obtain information about the department, course number, section number, or term.
start_dt	The start date. Used if the section start date is different from the term start date.	2009-08-18
end_dt	The end date. Used if the section end date is different from the term end date.	2009-12-18
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01
term_id	A unique identifier for the term. If your terms also have multiple sessions, then a session identifier is required as well. These had to be previously provided to Starfish.	SUMMER-2010 FALL-2011SessionA FA11A SU10A SU10B

Removing a row from the course section data file will result in the logical removal of that course section from Starfish. The course section will no longer appear anywhere in the Starfish user interface.

Organization Data File

The organization data file contains information about student groups, cohorts and organizations. Each organization should have its own row. Organizations can have continuous membership e.g. “Athletes” or be term based e.g. “Fall10-Athletes”. The file must contain the following header as its first non-comment row:

integration_id,organization_name,organization_id,start_dt,end_dt,modified_ts,term_id

This file should be sorted by the integration_id. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
integration_id (REQUIRED)	A unique identifier for this data row. This should change in your SIS very rarely if at all. Not shown to end users. *NOTE: The integration_id is case-sensitive and should match the case of the unique identifier for the user in the SIS.	Athletes Fall10-Athletes Physics-Majors Engineering-Students SmithHall-Floor10-Students Org-33
organization_name (REQUIRED)	The name of this organization.	Athletes
organization_id (REQUIRED)	The ID for this organization.	ATHLETES.3.FA08. This ID can typically be parsed to obtain information about the organization or term.
start_dt	The start date. Used if the section start date is different from the term start date.	2009-08-18
end_dt	The end date. Used if the section end date is different from the term end date.	2009-12-18
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01
term_id	A unique identifier for the term. If your terms also have multiple sessions, then a session identifier is required as well. These had to be previously provided to Starfish.	SUMMER-2010 FALL-2011SessionA FA11A SU10A SU10B

Removing a row from the organizations data file will result in the logical removal of that organization from Starfish. The organization will no longer appear anywhere in the Starfish user interface.

User Data File

The user data file contains information about users and must contain the following header as its first non-comment row:

integration_id,family_name,middle_name,given_name,email,student_id,user_id,
gender,birth_dt,company,job_title,h_phone,b_phone,m_phone,available_ind,modified_ts

This file should be sorted by the integration_id. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
integration_id (REQUIRED)	A unique identifier for this data row. This should change in your SIS very rarely if at all. Not shown to end users, only to your designated Tenant Admin user. Do not send Social Security Numbers. It must match the ID used by other systems e.g. your Learning Management System (LMS).	jsmith
family_name (REQUIRED)	The last name of this person.	Smith
middle_name	The middle name of this person.	
given_name (REQUIRED)	The first name of this person.	Joe
email	Email address. While the email address is optional, it should be populated for any users who have one since many of the features in Starfish require an email address to function.	jsmith@yourschool.edu
student_id	Common ID for any students. Do not send Social Security Numbers.	233A-33-B111
user_id (REQUIRED)	Log in name for primary access point to Starfish e.g. Portal.	Jsmith If you have a portal and intend to perform single-sign-on with Starfish, this is the user's portal username. If you intend to use Starfish local login, this is the desired username.
gender	The gender of this person.	May be either a single character (M,F,U) or one of MALE,

		FEMALE, UNKNOWN. Case-insensitive.
birth_dt	The person's birth date.	1988-12-27
company	The employer of the person.	
job_title	This person's title.	
h_phone	Home phone number.	
b_phone	Work phone number.	
m_phone	Mobile phone number.	
available_ind	Whether this user should be able to use Starfish.	When set to 0, the user is not available in Starfish. Otherwise, the user is available.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the user data file will result in the logical removal of that user from Starfish. The user will no longer appear anywhere in the Starfish user interface, and will not be able to log in to Starfish.

Student Admissions Data File

The student admissions characteristics data file contains information about students when they were admitted to the institution e.g. SAT scores, ACT score, high school GPA. It must contain the following header as its first non-comment row:

user_integration_id,sat_composite,sat_math,sat_reading,sat_writing,act_composite,act_math,act_english,act_science,act_writing,act_reading,toefl_composite,toefl_listening,toefl_structure,toefl_reading,high_school_gpa,placement_math,placement_reading,placement_writing,modified_ts

This file should be sorted by the integration_id. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
user_integration_id (REQUIRED)	A unique identifier for the user related to the attributes in this record.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
sat_composite	A numeric value representing overall SAT score.	
sat_math	A numeric value representing the student's SAT® Mathematics score ranging from 200-800.	500
sat_reading	A numeric value representing the student's SAT® Critical Reading score ranging from 200-	500

	800.	
sat_writing	A numeric value representing the student's SAT® essay score ranging from 2-12.	6
act_composite	A numeric value representing overall ACT score.	
act_math	A numeric value representing the student's ACT® Mathematics score ranging from 1-36.	9
act_english	A numeric value representing the student's ACT® English score ranging from 1-36.	10
act_science	A numeric value representing the student's ACT® Science score ranging from 1-36.	11
act_writing	A numeric value representing the student's ACT® Writing score ranging from 1-36.	12
act_reading	A numeric value representing the student's ACT® Reading score ranging from 1-36.	12
toefl_composite	A numeric value representing an international student's overall English language ability ranging from 310-677.	500
toefl_listening	A numeric value representing an international student's English language listening ability ranging from 31 – 68.	40
toefl_structure	A numeric value representing an international student's English language structure / writing ability ranging from 31 – 68.	66
toefl_reading	A numeric value representing an international student's English language reading ability ranging from 31 – 67.	66
high_school_gpa	A numeric value (accurate to 3 decimal places) representing the student's high school grade point average range from 0 to 4, although over 4 is possible. If a student attended more than one high school provide their last high school GPA.	1, 2, 2.5, 3.141, 4.2 Note some students with AP get over the 4.0 scale
placement_math	An institution specific placement	0, 12, 200, 2.5

	test for mathematics skills with a numeric score.	
placement_reading	An institution specific placement test for reading skills with a numeric score.	0, 12, 200, 2.5
placement_writing	An institution specific placement test for writing skills with a numeric score.	0, 12, 200, 2.5
modified_ts	The timestamp of the last modification to this data row.	"2009-10-16 13:58:01"

Removing a row from the student admissions characteristics data file will result in the logical removal of that information for the user in Starfish but will not affect the user's status.

Student Demographics Data File

The student demographics data file contains information useful to identifying the population to which a student belonged when admitted to the institution. It must contain the following header as its first non-comment row:

user_integration_id, pell_grant_eligible, race_ethnicity, gender, first_generation_student, modified_ts

This file should be sorted by the integration_id. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
user_integration_id (REQUIRED)	A unique identifier for the user related to the attributes in this record.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
pell_grant_eligible	Is the student eligible for financial aid under the Pell Grant financial aid rules? This is a measure of socio-economic status.	"Y" for yes, "N" for no.
race_ethnicity	A student's race/ethnicity provided as a space-separated list of abbreviations: <ul style="list-style-type: none"> - Hispanic or Latino ("HI") - Alaskan Native or American Indian ("AI") - Asian ("AS") - Black or African American ("BL") - Native Hawaiian or other Pacific Islander ("NH") 	"WH" for White "WH HI" for White and Hispanic "BL WH AI" for Black, White, and American Indian Accepted values: HI, AI, AS, BL, NH, WH

	- White (“WH”)	
gender	A student’s gender.	May be either a single character (M,F,U) or one of MALE, FEMALE, UNKNOWN. Case-insensitive.
first_generation_student	Did none of the student’s parents attend any college?	“Y” for yes, “N” for no.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

User Attributes Data File

The user attributes data file contains a listing of special attributes you can set on students. As an example, attributes can be used to mark users as being on academic probation, or being a student athlete. Starfish can then use these attributes to target retention efforts to those students, or to simply display additional information about the student within our system. Please contact product support if you expect to send user attributes so we can coordinate and properly configure the system for you.

user_integration_id,attribute_key,attribute_value,modified_ts

This file should be sorted by the user_integration_id, with a secondary sort on attribute_key. Each field of the data file is described in the table below. The same attribute should never be set for the same user twice.

Field	Description	Examples / Notes
user_integration_id (REQUIRED)	A unique identifier for the user related to the attributes in this record.	“s12020303” or “jsmith” See description of user data file for more information on the user’s integration id.
attribute_key (REQUIRED)	The unique identifier of the attribute you are setting for the user. A unique list of all attributes must be sent to Starfish Product Support prior to sending the first user attributes file.	ATHLETE, ACADEMIC_PROBATION, TRIO Should be UPPERCASE with no spaces or special characters. Must not exceed 50 characters in length.

attribute_value (REQUIRED)	The current value for the attribute. This is not a value displayed within the system, but should uniquely identify the current state of the attribute.	Examples are often specific to the attribute_key being discussed. So for ATHELETE it might be "true" or "false", or it might be "football", "basketball". For ACADEMIC_PROBATION it might be "true" or "false" or it might be "medium_risk" or "high_risk" or something else more specific to the policies on your campus. Must not exceed 500 characters in length.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the user attribute file will result in the logical removal of that attribute from the user in Starfish. Again, the strategies used for setting attributes should be discussed with Starfish prior to making any changes.

Enrollment Data File

The enrollment data file contains information about course section enrollments (mapping of a user to a course section), and must contain the following header as its first non-comment row:

course_section_integration_id,user_integration_id,user_role,available_ind,modified_ts

This file should be sorted by the course_section_integration_id, with a secondary sort on user_integration_id. The combination of these two ids is a derived "integration_id" for each enrollment data element. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
course_section_integration_id (REQUIRED)	A unique identifier for the course section related to this enrollment.	See description of course section data file.
user_integration_id (REQUIRED)	A unique identifier for the user related to this enrollment.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
user_role (REQUIRED)	The role of this user within the course section.	STUDENT, INSTRUCTOR, TA. Case-insensitive.
available_ind (REQUIRED)	Whether this enrollment should be shown to students in Starfish-	When set to 0, the enrollment is made unavailable. Otherwise,

	assuming within term display dates.	the enrollment is available.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the enrollment file will result in the logical removal of that enrollment from Starfish. This is not the correct method for indicating a drop or withdrawal. To indicate a drop or withdrawal, leave the enrollment in the data file and set that row's available_ind field appropriately.

Teaching Data File

The teaching data file contains information about instructors of course sections. It is not a required file, and the Enrollments file can be used to assign both instructor and student enrollments instead. In some cases, it is easiest to assign the teaching enrollments separately, such as if this data comes from a different system or if the data is typically assigned at a different time than student enrollments. This file is identical in format to the Enrollments file and must contain the following header as its first non-comment row:

course_section_integration_id,user_integration_id,user_role,available_ind,modified_ts

This file should be sorted by the course_section_integration_id, with a secondary sort on user_integration_id. The combination of these two ids is a derived "integration_id" for each enrollment data element. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
course_section_integration_id (REQUIRED)	A unique identifier for the course section related to this enrollment.	See description of course section data file.
user_integration_id (REQUIRED)	A unique identifier for the user related to this teaching assignment.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
user_role (REQUIRED)	This should always be set to INSTRUCTOR or TA.	INSTRUCTOR Case-insensitive.
available_ind (REQUIRED)	Whether this enrollment should be shown to students in Starfish- assuming within term display dates.	When set to 0, the enrollment is made unavailable. Otherwise, the enrollment is available.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the teaching file will result in the logical removal of that instructor's section enrollment from Starfish.

Organization Membership Data File

The organization membership file contains information about members of organizations. This allows the institutions to document who are the members of the club, cohort, college, dorm, etc. This file is identical in format to the Enrollments file and must contain the following header as its first non-comment row:

course_section_integration_id,user_integration_id,user_role,available_ind,modified_ts

This file should be sorted by the course_section_integration_id, with a secondary sort on user_integration_id. *Despite the fact that the column is called course_section_integration_id it is actually the integration_id from the organization file which should be used in this case.* The combination of these two ids is a derived "integration_id" for each enrollment data element. Each field of the data file is described in the table below.

Field	Description	Examples / Notes
course_section_integration_id (REQUIRED)	A unique identifier for the organization related to this membership.	See description of organization data file.
user_integration_id (REQUIRED)	A unique identifier for the user related to this membership.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
user_role (REQUIRED)	This should always be set to INSTRUCTOR, TA, or STUDENT. <i>(Yes, the language is like course sections even though it's an organization)</i>	INSTRUCTOR Case-insensitive. An Instructor of an organization is treated like the leader and students are treated like the members. Relationships can be created automatically.
available_ind (REQUIRED)	Whether this enrollment should be shown to students in Starfish-assuming within term display dates.	When set to 0, the enrollment is made unavailable. Otherwise, the enrollment is available.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the organization membership file will result in the logical removal of that membership from Starfish.

Enrollment Attributes Data File

The enrollment attributes data file contains a listing of special attributes you can set on students who are enrolled in a specific course section. As an example, attributes can be used to mark users as being

disengaged in the course. Starfish can then use these attributes to target retention efforts to those students. Please contact product support if you expect to send enrollment attributes so we can coordinate and properly configure the system for you.

user_integration_id,course_section_integration_id,attribute_key,attribute_value,modified_ts

The same attribute should never be set for the same user in the same section twice.

Field	Description	Examples / Notes
user_integration_id (REQUIRED)	A unique identifier for the user related to the attributes in this record.	“s12020303” or “jsmith” See description of user data file for more information on the user’s integration id.
course_section_integration_id (REQUIRED)	A unique identifier for the course section related to these grades.	“cs101a-fall2010” See description of course section data file.
attribute_key (REQUIRED)	The unique identifier of the attribute you are setting for the user in this section. A unique list of all attributes must be sent to Starfish Product Support prior to sending the first enrollment attributes file.	ENAGED Should be UPPERCASE with no spaces or special characters. Must not exceed 50 characters in length.
attribute_value (REQUIRED)	The current value for the attribute. This is not a value displayed within the system, but should uniquely identify the current state of the attribute.	Examples are often specific to the attribute_key being discussed. So for ENGAGED it might be “true” or “false”. Must not exceed 50 characters in length.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the enrollment attribute file will result in the logical removal of that attribute from the user in Starfish. Again, the strategies used for setting attributes should be discussed with Starfish prior to making any changes.

Relationships Data File

The relationships data file contains a listing of non-course-related role relationships, such as Advisors or Tutors, which should be assigned in Starfish. This file allows you to assign roles other than Instructor and TA to users for one, many or all students in the system.

The file should contain the following header as its first non-comment row:

parent_integration_id,parent_role,child_id,child_role,term_id

The file should be sorted on the parent_integration_id. Each field is described in the table below.

Field	Description	Examples / Notes
parent_integration_id (REQUIRED)	A unique identifier for the parent user in the role relationship.	“s12020303” or “jsmith” See description of user data file for more information on the user’s integration id.
parent_role (REQUIRED)	The name of the parent role.	The parent role should be created in Starfish before assigning it to users via this file. e.g., Academic Advisor
child_id (REQUIRED)	Identify the user(s) for whom the parent user should be assigned the parent role relationship.	Options for this field are: <ul style="list-style-type: none"> • Integration ID: enter an integration ID for an individual user. E.g., “s12020303” • allStudents: enter this keyword if the parent user should have the specified role for all students in the system. • Course/Org/Group ID: enter a course, organization or group ID if the parent user should have the specified role for all students in the system who are enrolled in the course or organization. E.g., CHEM108.151.10 • Course pattern: enter a pattern, using an asterisk (*) as the wildcard character, if the parent user should have the specified role for all students in the system who are enrolled in a course with an ID that matches the pattern. E.g., CHEM*

child_role (REQUIRED)	The name of the child role.	This will typically be Student but can sometimes be Basic User in certain situations.
term_id (REQUIRED)	The ID /prefix for the term in which the role relationship should be assigned.	Note that the term must exist in your Starfish tenant in order for the role relationship to be assigned. Contact your account representative to request that the term be added. E.g., FA.10

Course Outcomes Data File

The course outcomes data file contains the official grade information for courses as may appear on a student's transcript, e.g. Final Grade, Credit Hours.

The file should contain the following header as its first non-comment row:

user_integration_id,course_section_integration_id,midterm_grade,final_grade,credit_hours,enrollment_type,modified_ts

The file should be sorted by user_integration_id, with a secondary sort on course_section_integration_id. Each field is described in the table below.

Field	Description	Examples / Notes
user_integration_id (REQUIRED)	A unique identifier for the user related to this score.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
course_section_integration_id (REQUIRED)	A unique identifier for the course section related to these grades.	"cs101a-fall2010" See description of course section data file.
midterm_grade	The numeric score value out of 4.0 or a letter score previous provided as a grade scale to Starfish.	3.5 or C+
final_grade	The numeric score value out of 4.0 or a letter score previous provided as a grade scale to Starfish.	3.5, or C+, or PASS, or AU
credit_hours	A numeric (accurate to 3 decimal places) value for the number of credit hours for the course.	3 or 1.0 or 1.000
enrollment_type	The expected type of grade.	If specified, one of the following: <ul style="list-style-type: none"> • L - Letter grade • PF - Pass/Fail

		<ul style="list-style-type: none"> AU - Audit <p>If not specified, the enrollment is treated as a letter grade.</p>
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

- **A pass/fail record would look like this:**
s12020303,cs101a-fall2010,PASS,PASS,1.0,PF,2009-10-16 13:58:01
- **An audit record would look like this:**
s12020303,cs101a-fall2010,AU,AU,0.0,AU,2009-10-16 13:58:01
- **Letter grade enrollment records can look like this:**
s12020303,cs101a-fall2010,2.589,3.2,1.0,L,2009-10-16 13:58:01
- **Or if not specified, like this (notice the missing enrollment_type field):**
s12020303,cs101a-fall2010,2.589,3.2,1.0,,2009-10-16 13:58:01

Academic Status Data File

The academic status data file contains information regarding the student’s overall academic plans and status at the institution.

The file should contain the following header as its first non-comment row:

user_integration_id,cumulative_gpa,major_gpa,total_credit_hours,primary_major,primary_major_code
secondary_major,secondary_major_code,class_level,program,admitted_term_id,modified_ts

The file should be sorted by user_integration_id. Each field is described in the table below.

Field	Description	Examples / Notes
user_integration_id (REQUIRED)	A unique identifier for the user related to this score.	“s12020303” or “jsmith” See description of user data file for more information on the user’s integration id.
cumulative_gpa	A numeric value, accurate to 3 decimal places, for student’s overall GPA.	2.0 or 3.141
major_gpa	A numeric value, accurate to 3 decimal places, for student’s GPA within their major.	2.0 or 3.141
total_credit_hours	A numeric value, accurate to 3 decimal places, for the number of credit hours the student has earned at the institution.	3 or 1.0 or 1.000

primary_major	The student's major focus of study.	"English"
primary_major_code	The initials used to identify the primary major.	"ENGL"
secondary_major	The student's minor focus of study.	"Computer Science"
secondary_major_code	The initials used to identify the secondary major.	"CMSC"
class_level	A numeric value representing the student's class level (Freshman, Sophomore, etc.) at the institution.	1, 2, 3, 4, etc. Values must be greater than or equal to 1.
program	The student's program of study at the institution.	Bachelors of Science
admitted_term_id	A unique identifier for the term in which the student was admitted to the institution. If your terms also have multiple sessions, then a session identifier is required as well. This ID had to previously provided to Starfish.	SUMMER-2010 FALL-2011SessionA FA11A SU10A SU10B
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Assessment Data File

The assessment data file contains information about course section assessments (assignments, quizzes, tests) that are kept in an online grade book. Please note that many learning management system's online grade books are handled through specific Adapters for them e.g. Blackboard, Moodle. This file is for an online grade book without a specific adapter. The file must contain the following header as its first non-comment row:

integration_id,course_section_integration_id,title,description,due_dt,points_possible,scorable_ind,calculated_ind,external_grade_ind,modified_ts

This file should be sorted by the integration_id. Each field is described in the table below.

Field	Description	Examples / Notes
integration_id (REQUIRED)	A unique identifier for this item.	"cs101a-fall2010-quiz 1" If no externally unique id is available, a primary key from the SIS may be used.
course_section_integration_id (REQUIRED)	A unique identifier for the course section related to this enrollment.	"cs101a-fall2010" See description of course section data file.
title (REQUIRED)	The item name.	"Quiz 1"
Description	The item description.	
due_dt	The item due date.	2009-09-20
points_possible (REQUIRED)	A numeric value representing highest available points for this item or the highest letter score previous provided as a grade scale to Starfish.	100 or "A+" or "A"
scorable_ind (REQUIRED)	Whether to include this score in calculations.	If this is a course requirement e.g. a survey to be completed or some other item that Starfish should not include in grade calculations, this should be set to a zero. Otherwise it should be a one.
calculated_ind	Whether this grade book item is just a calculated value based on other grade book items.	If this is a column that expresses a score based on a formula that uses other grade book items, set this to a one. Otherwise set it to zero.
external_grade_ind	Whether this is the published final grade for this course section.	Set to one to indicate that this item is represents the final grade for this course section.

		Otherwise set to zero.
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the assessment file will result in the logical removal of that assessment from Starfish. The assessment will no longer appear anywhere in the Starfish user interface, and will not be available as a trigger criteria for Starfish system-raised flags.

Score Data File

The score data file contains information about grades in an online grade book not more directly support by Starfish. It must contain the following header as its first non-comment row:

gradebook_item_integration_id,course_section_integration_id,user_integration_id,points,points_possible_override,graded_ts,first_attempt_dt,modified_ts

This file should be sorted by the gradebook_item_integration_id, then course_section_integration_id, with a tertiary sort on user_integration_id. Each field is described in the table below.

Field	Description	Examples / Notes
gradebook_item_integration_id (REQUIRED)	A unique identifier for the grade book item related to this score.	"cs101a-fall2010-Quiz 1" See description of grade book data file.
course_section_integration_id (REQUIRED)	A unique identifier for the course section related to this score.	"cs101a-fall2010" See description of course section data file.
user_integration_id (REQUIRED)	A unique identifier for the user related to this score.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
points (REQUIRED)	The numeric score value or a letter score previous provided as a grade scale to Starfish.	79 or C+
points_possible_override	If the points_possible from the grade book item does not apply to this user, this is the place to put an override value.	80 or B+ Example, the grade book item data file may store 100 as the points possible, but a particular user is given a points possible of 80 due to special circumstances.
graded_ts	The timestamp when this item was graded. If left blank the grade will be treated as if it is	2009-10-16 14:23:02

	unofficial because it still needs approval from the instructor and will be left out of calculations and will not be flagged.	
first_attempt_dt	The date this item was first submitted by the student.	If multiple attempts are allowed, this field captures the first attempt date
modified_ts	The timestamp of the last modification to this data row.	2009-10-16 13:58:01

Removing a row from the score file will result in the removal of that score from Starfish. The score will no longer appear anywhere in the Starfish user interface, and will not be available as a trigger criteria for Starfish system-raised flags

Notes Data File

The notes data file allows you to import notes entered in Student Information Systems and other systems into Starfish for display in the student folder. For example, you may want to import historical records of notes entered for students in systems used prior to using Starfish. It must contain the following header as its first non-comment row:

note_integration_id,user_integration_id,note_type_id,note_author_id,subject,note_content,note_date,shared_ind

This file should be sorted by the note_integration_id. Each field is described in the table below.

Field	Description	Examples / Notes
note_integration_id	A unique identifier for the note.	"n12345678"
user_integration_id	The unique identifier for the student about whom the note is written.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.
note_type_id (REQUIRED)	A unique identifier for the note type. To find the note integration ID, navigate in Starfish to Tenant Admin > Note Types and edit the Note Type for the note. The note_integration_id will be listed beneath the permissions grid.	"TYPE_8_5"
note_author_id (REQUIRED)	A unique identifier for the user who wrote the note.	"s12020303" or "jsmith" See description of user data file for more information on the user's integration id.

subject	The subject of the note if one exists.	"Note about Rachel's Academic Plan"
note_content (REQUIRED)	The note text.	"Rachel and I discussed her Academic Plan. She is progressing nicely."
note_date	The timestamp for the date/time the note was written.	2012-02-09 13:58:01
shared_ind (REQUIRED)	Indicate whether the note should be shared or private.	Set to "n" to indicate that the note should be private. Set to "y" to indicate that the note should be shared.

Data File Validation

Prior to sending data to Starfish, all data files are validated for errors including, but not limited to:

- Misnamed columns
- Missing columns
- Missing required fields
- Incorrectly formatted fields

Data file validation may be performed independently of the regular, periodic Starfish Data Service. This is done using a program that is installed with the Starfish Data Service. The program is named `validate.cmd` or `validate.sh` depending on your platform, and lives in the top-level directory of your Starfish Data Service installation.

To validate your SIS data files:

1. Run the `validate` command for your platform
2. View the `starfish-datapump-validation.log` file found in the log directory within your Starfish Data Service installation
3. The last line of the file will indicate the success or failure of the validation process: "End validation: true" for success "End validation: false" for failure

Should data file validation fail, the `starfish-datapump-validation.log` file will contain one or more lines for each file that failed validation.

Example Validation Failure:

```
14 Mar 2011 00:15:00,021 INFO Begin validation
```

```
14 Mar 2011 00:15:00,022 INFO Users.txt: Begin file validation
```

14 Mar 2011 06:55:00,023 ERROR Users.txt: 8: Line has fewer fields than header

14 Mar 2011 00:15:00,022 INFO Users.txt: End file validation: false

14 Mar 2011 00:15:00,023 INFO End validation: false

Example Validation Success:

14 Mar 2011 00:15:00,021 INFO Begin validation

14 Mar 2011 00:15:00,022 INFO Users.txt: Begin file validation

14 Mar 2011 00:15:00,022 INFO Users.txt: End file validation: true

14 Mar 2011 00:15:00,023 INFO End validation: true

Sending Data to Starfish

The Starfish Data Service contains a folder where all data files should be placed for processing. The location and name of this folder is configurable in the Starfish Data Service's config.xml file. You may create subdirectories if you have many grouped data files and prefer subdirectories to help keep your files organized.

You may place the current full set of data into the specified data files directory at whatever schedule you prefer. Prior to performing any processing necessary to ship data to Starfish, the Starfish Data Service will validate the files present in the data files directory as described in the Data File Validation section of this document. If any of the data files fail validation, no data will be processed for shipment to Starfish, and any errors will be logged in the datapump validation log.

Once the data is validated, the Starfish Data Service will compare the current set of data to a previous snapshot of the data it maintains and compute any differences. Once those changes have been computed, the Data Service will package and send any changes securely to the Starfish servers.

Frequently Asked Questions

1. How do I handle term transitions?

One common approach to handling terms is to create a group (a file name prefix) for each term you are going to be sending data for. For example, if the first term you were using Starfish is for spring term 2011, you might have certain files with a prefix like:

- users.txt
- Spring2011_sections.txt
- Spring2011_enrollment.txt

- Spring2011_course_outcomes.txt
- Spring2011_relationships.txt

Then when you are getting ready to send data for Fall 2011 you would have a new batch of files like Fall2011_sections.txt. It is perfectly normal to have data files for multiple terms in place at the same time. In general there is no reason to delete the files from previous terms. If you do delete files from previous terms it is important to make sure the term is over, because if the files are deleted while the term is still active the data is treated as if it was deleted and therefore enrollments are marked as dropped or withdrawn, rather than simply put into an archived status.

This allows you to configure your scripts to generate only the current term data on any given update of the files. But it also still allows you to update previous terms on a less regular basis. For example some final grades for a course might occasionally change long after the term is complete. This scheme allows for you to go back and update prior term data without having the overhead of generating those files every night.

Some files, like users.txt might always contain a complete list of all users across all terms. This is because this data is less term specific. Generally speaking if a student is actively enrolled in your institution they should be included in the users file and only if they graduate, transfer, or withdraw should they be completely removed.

2. How do I handle a student who exits the institution during or after the term?

Do not include them in the users file. This will end all of their enrollments. Their grades and history will be maintained on Starfish.

3. How do I handle a student who drops a class?

Do not include their enrollment in the enrollment file. This will end their enrollment for this class. Their grades and history will be maintained on Starfish.

4. How do I handle a student with a judiciary or financial hold on their classes?

If the student should still be able to meet with instructors, although not be able to attend class, do nothing. Otherwise set the available_ind on their enrollment. If the enrollment is still present, advisors will see it will an indication of a hold.

5. How do I handle a student who pre-registers for the next term?

Include their enrollment. The display date attributes for the term will determine when instructors and students will see it.