

# Data Sync in the ACT Certification System (ACS) May 2021

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Board of Senior  
Secondary Studies

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ACS - ACT Certification System

## ACT Board of Senior Secondary Studies Certification System

This software enables teachers to enter the college data required for the certification of students in their senior secondary years.

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## Data Sync

Data Sync brings student and unit studied data from school administration systems (SAS) into the ACS database. Data Sync takes course and unit data from ACS and updates the corresponding tables in the SAS for public colleges or produces output files for all other users. Unit studied data is extracted from ACS and placed in the file on the SAS server for import into College reporting programs and SAS. Data Sync also provides the manual file upload for colleges without SAS that are connected to ACS.

Data sync comprises a number of components including

- Server side ACS database (server SQL-ACS\SQL\_ACS db ACS)
- Server side staging database (server SQL-ACS\SQL\_ACS db ACSDataSync\_XXXC)
- Client side(College) staging database
- Client side (College) SAS

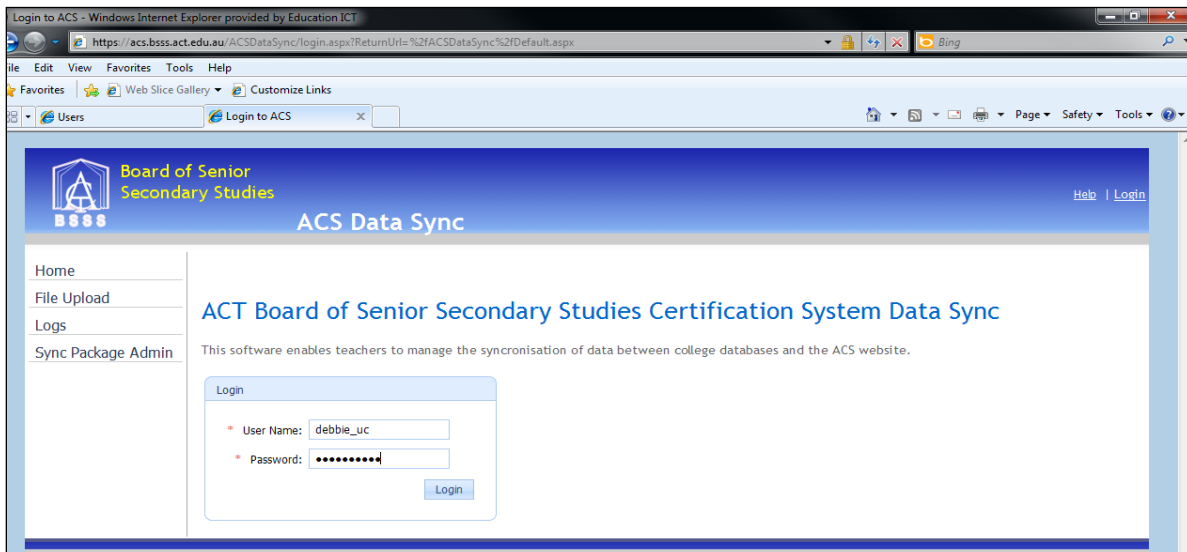
The automate synchronisation replicates the data from the client staging database to the server side staging database. SQL Server Integration Services packages extract the information from the server side staging database into ACS. These packages are schedule to operate automatically but they can be run on demand.

## Access to Data Sync

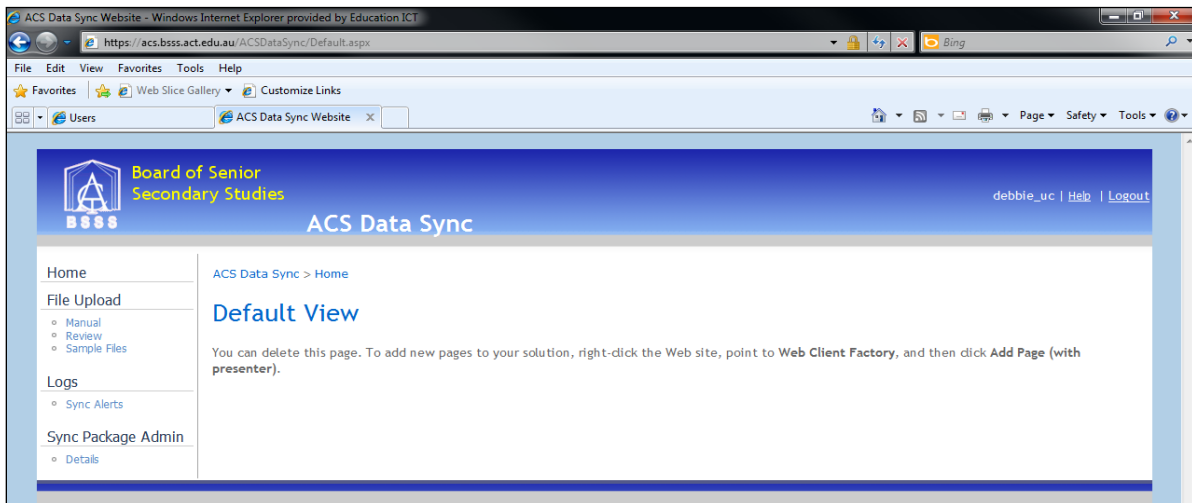
User Controls automatically have access to the Data Sync website. To allow other users access to Data Sync, the role Data Sync needs to be added to the user via ACS. Currently Data Sync is accessed via the [website](#).

## Logon to Data Sync

- Open the browser on a computer connected to the internet
- Type in the internet address for [ACS Data Sync](https://acs.bsss.act.edu.au/ACSDataSync) (https://acs.bsss.act.edu.au/ACSDataSync)
- A logon box will appear and look similar to this



- Enter the User Name and Password and the home page below will appear



## Settings

### Client Settings

This screen shows the packages which are enabled for the selected school. Use these to control which packages 'sync' on a school by school basis.

Note that for a package to run

- it must be enabled
- the assessment period data sync start and end dates must be set (See *Settings > Assessment Periods*)
- the current date must lie between the data sync start and end dates

In the example shown below all packages have been enabled.

- **“Download”** refers to data transfer from ACS to the College SAS
- **“Upload”** refers to data transfer from the College to ACS

#	Name	Value
<a href="#">Edit</a>	DownloadUnits	True
<a href="#">Edit</a>	UploadUnitsStudied	True
<a href="#">Edit</a>	DownloadCourses	True
<a href="#">Edit</a>	DownloadStudents	True
<a href="#">Edit</a>	UploadStudents	True
<a href="#">Edit</a>	DownloadUnitsStudied	True

#### **DownloadUnits**

This package transfers unit data (codes, title, value, accreditation type, accreditation period) to a MAZE college.

#### **UploadUnitsStudied**

This package transfers unit studied data (studentID, unit code, course code, assessment period, year studied, grade, scores) from the college SAS to ACS

**DownloadCourses**

This package transfers course data (codes, title, accreditation type, accreditation period) to a MAZE college.

**DownloadStudents**

This package transfers student data ACS to a college (client side staging database only).

**UploadStudents**

This package transfers student data from a college SAS to ACS.

**DownloadUnitsStudied**

This package transfers unit studied data (studentID, unit code, course code, assessment period, year studied, grade, scores) from ACS to the file output. This was previously known as LBSSY.txt and is now the STMA.txt

These files are produced as the last step in the data syncing process.

The file is deposited on the output server and access needs to be arranged. The STMA.txt file contains differences between ACS and MAZE.

The package appends the data to the STMA.txt file, so to get a current data file delete the STMA.txt file such that the next append will be the required data.

**Assessment Periods**

- Each college has specified assessment periods for S1, S2, Q1, Q2, Q3, Q4, M2 and Y1.
- Not all of these periods need to be specified.
- Q1, Q2, Q3, Q4 dates may not overlap.
- Data Sync will run for any assessment period that includes the current date.

A sample Assessment Period schedule is shown below.

- The assessment period start and end dates are set in **ACS > Assessment Periods** – they cannot be edited here.
- The Data Sync Start and End Dates are set so all Data Sync packages which are enabled will run between these dates.
- Data Sync packages will not run until
  - Data Sync start and end dates have been entered (click on the edit hyperlink to do this) and
  - the current date lies between these dates.

## AssessmentPeriods

#	Assessment Period	Start Date	End Date	Data Sync Start Date	Data Sync End Date
<a href="#">Edit</a>	S2	1/07/2010	31/12/2010		
<a href="#">Edit</a>	S1	1/01/2010	30/06/2010		
<a href="#">Edit</a>	Q3	31/07/2010	27/10/2010		
<a href="#">Edit</a>	Q4	28/10/2010	31/12/2010		
<a href="#">Edit</a>	S1	31/01/2011	8/07/2011	9/03/2011	8/07/2011
<a href="#">Edit</a>	Q1	31/01/2011	29/04/2011	9/03/2011	8/07/2011
<a href="#">Edit</a>	Q2	2/05/2011	8/07/2011	9/03/2011	8/07/2011
<a href="#">Edit</a>	S2	9/07/2011	31/12/2011		
<a href="#">Edit</a>	Q3	9/07/2011	30/09/2011		
<a href="#">Edit</a>	Q4	1/10/2011	31/12/2011		

Note that the Start and End Date for the Assessment Periods appear to be editable here, but they are not – changes will not save. To change Start and End Date for the Assessment Periods use ACS application – not Data Sync.



## Logs

### Sync Alerts

- Select your college from the drop down list next to School
- By default Alerts are order from latest to earliest
- There are alerts for the Student data and Unit Studied data
- To find why a record is not updating type in the student id in the filter row
- Click on the plus sign to expand to see the messages. At this stage the messages are a bit cryptic
- Once you have solved the issue click on the **Mark as Handled** hyperlink to remove the alert from the list
- It is not necessary to monitor this every day. The alerts are provided so that you can try and understand why data is not coming into ACS

### Understanding the Alert Messages

#### UnitStudied Delete

- This alert occurs when a unit studied records was deleted from SAS and cannot be deleted from ACS.
- Click on the plus sign to show error details

Student Alerts	
Details	Alert Date UTC
UnitStudied has references in AssessmentItemResult table and cannot be deleted. Details are: College: CBRC, StudentId: 0693411, UnitStudiedId: 10075722	13/10/2010 03:17:24
Page 1 of 1 (1 items)	

**FK Violation**

- This alert occurs when a unit studied record had been added to SAS but the unit code or course code does not exist or is expired in ACS
- Click on the plus sign to show error details

SQL Server Integration Service Data Alerts					
#	Id	Student ID	Alert Type Id	Home School Code	Alert Date
Mark as Handled	8160344_1	8160344	Student Deleted	CBRC	13/10/2010 03:30:04

Student Alerts	
Details	Alert Date UTC
StudentId 8160344 has been deleted from college CBRC	13/10/2010 03:30:04
Page 1 of 1 (1 items)	

**Student Deleted**

- This alert occurs when a student has been removed from SAS. The student will not delete from ACS nor will the student details be updated

SQL Server Integration Service Data Alerts					
#	Id	Student ID	Alert Type Id	Home School Code	Alert Date
Mark as Handled	0491724_3	0491724	FK Violation	CBRC	13/10/2010 03:17:07

Student Alerts	
Details	Alert Date UTC
UnitStudied failed ACS insertion on UnitCode. Details are: College: CBRC, StudentId: 0491724, SasPrimaryKey: 509906, UnitCode: 98211, CourseCode: 9997, UnitGrade: , ClassCode: 9ASLS2, UnitStudiedId: 0	13/10/2010 03:17:07
Page 1 of 1 (1 items)	

**Student Moved**

- This alert occurs when a student moves to another ACT college.

**Sync Packages**

This screen shows the execution of packages between the server side college staging database and ACS. In the example below UnitStudiedSync\_MKCC failed because there was no data sync start and end data for the package.

SQL Server Integration Service Logs				
Id	Event	Source	Start Time	End Time
488749	PackageEnd	UnitStudiedSync_MARC	04/08/2011 11:11:10	04/08/2011 11:11:10
Message : End of package execution.				
488748	PackageEnd	UnitStudiedSync_RDFC	04/08/2011 11:11:10	04/08/2011 11:11:10
488747	PackageEnd	UnitStudiedSync_MKCC	04/08/2011 11:11:05	04/08/2011 11:11:05
488746	OnPreExecute	UnitStudiedSync_MKCC-EmailGetAssessmentPeriodError	04/08/2011 11:11:05	04/08/2011 11:11:05
488745	PackageEnd	UnitStudiedSync_CGGS	04/08/2011 11:11:05	04/08/2011 11:11:05
488744	PackageEnd	UnitStudiedSync_STCC	04/08/2011 11:11:05	04/08/2011 11:11:05

## College Clients

This screen shows which clients are connected to data sync via Web Service Connections. In the example below three colleges are not connected.

College Client Web Service Connections		
Drag a column header here to group by that column		
Home School Code	Is Online	Last Connection
EDMC	<input checked="" type="checkbox"/>	29/07/2011 04:22:52
MARC	<input checked="" type="checkbox"/>	04/08/2011 09:21:04
MKCC	<input checked="" type="checkbox"/>	04/08/2011 09:58:57
MERC	<input checked="" type="checkbox"/>	04/08/2011 10:28:57
STCC	<input checked="" type="checkbox"/>	04/08/2011 10:29:07
NARC	<input checked="" type="checkbox"/>	04/08/2011 10:50:53
LGNC	<input checked="" type="checkbox"/>	04/08/2011 10:51:06

This screen also shows a log of communication.

College Client Web Service Logs					
Drag a column header here to group by that column					
	Log ID	Severity	Title	Timestamp	Message
+	411962	Information	RDFC	04/08/2011 11:17:05	Synchronise request from school
+	411961	Information	RDFC	04/08/2011 11:14:12	Synchronise request from school
+	411960	Information	RDFC	04/08/2011 11:10:20	Synchronise request from school
+	411959	Information	RDFC	04/08/2011 11:09:11	Synchronise request from school
+	411958	Information	DARC	04/08/2011 11:07:29	Synchronise request from school
+	411957	Information	DARC	04/08/2011 11:07:28	Synchronise request from school
+	411956	Information	DARC	04/08/2011 11:07:26	Synchronise request from school
+	411955	Information	DARC	04/08/2011 11:07:25	Synchronise request from school

When the web service connection runs (every 12 minutes) the packages that are enabled copy data to and from the client side staging database. Synchronisation between the client side and severer side



staging databases occurs (this may take a few cycles – certainly within the hour provided web service connection is maintained).

## Sync Package Admin Details

- Select your college from the drop down list next to School
- All enabled Packages will be displayed. There is a maximum of 4 as shown below

ACS Data Sync > Sync Package Admin > Details

### Sync Package Details

School : CBRC the Canberra College

Job Name	Enabled
Sync_CBRC_CourseSync	<input checked="" type="checkbox"/>
Sync_CBRC_StudentSync	<input checked="" type="checkbox"/>
Sync_CBRC_UnitStudiedSync	<input checked="" type="checkbox"/>
Sync_CBRC_UnitSync	<input checked="" type="checkbox"/>

- Clicking on the plus sign next to the Package name to expand to show all details about this package as shown below

ACS Data Sync > Sync Package Admin > Details

### Sync Package Details

School : CBRC the Canberra College

Job Name: Sync\_CBRC\_CourseSync Enabled:

[Run Now](#)

#### Job History (Today)

Step Name	Message	Run Status	Run Time	Run Duration	Retries Attempted
Run CourseSync SSIS package	Executed as user: ACTEDU\SQL_ACSRS_User, Microsoft (R) SQL Server Execute Package Utility Version 10.0.2531.0 for 64-bit Copyright (C) Microsoft Corp 1984-2005. All rights reserved. Started: 12:52:23 PM DTExec: The package execution returned DTSEB_SUCCESS (0). Started: 12:52:23 PM Finished: 12:52:24 PM Elapsed: 0.75 seconds. Process Exit Code 0. The step succeeded.	Succeeded	12/10/2010 12:52:00	1	0
(Job outcome)	The job succeeded. The Job was invoked by User SQLAgentLinkedServerAccount. The last step to run was step 1 (Run CourseSync SSIS package).	Succeeded	12/10/2010 12:52:00	1	0
Run CourseSync SSIS package	Executed as user: ACTEDU\SQL_ACSRS_User, Microsoft (R) SQL Server Execute Package Utility Version 10.0.2531.0 for 64-bit Copyright (C) Microsoft Corp 1984-2005. All rights reserved. Started: 12:00:01 PM DTExec: The package execution returned DTSEB_SUCCESS (0). Started: 12:00:01 PM Finished: 12:00:06 PM Elapsed: 7.204 seconds. Process Exit Code 0. The step succeeded.	Succeeded	12/10/2010 12:00:00	7	0
(Job outcome)	The job succeeded. The Job was invoked by Schedule 24 (ACSDataSync-Every-6Hour). The last step to run was step 1 (Run CourseSync SSIS package).	Succeeded	12/10/2010 12:00:00	9	0
Run CourseSync SSIS package	Executed as user: ACTEDU\SQL_ACSRS_User, Microsoft (R) SQL Server Execute Package Utility Version 10.0.2531.0 for 64-bit Copyright (C) Microsoft Corp 1984-2005. All rights reserved. Started: 11:43:21 AM DTExec: The package execution returned DTSEB_SUCCESS (0). Started: 11:43:21 AM Finished: 11:43:22 AM Elapsed: 0.812 seconds. Process Exit Code 0. The step succeeded.	Succeeded	12/10/2010 11:43:00	1	0
(Job outcome)	The job succeeded. The Job was invoked by User SQLAgentLinkedServerAccount. The last step to run was step 1 (Run CourseSync SSIS package).	Succeeded	12/10/2010 11:43:00	1	0

Sync\_CBRC\_StudentSync  
 Sync\_CBRC\_UnitStudiedSync  
 Sync\_CBRC\_UnitSync

- Click on the **Run Now** button to manually run the package. Press F5 or the refresh icon to see the outcome

## Unit Studied Business Rules

The Unit Studied business rules and associated logic are essential to ensure only valid data is copied to ACS and that data is not lost from ACS (i.e. assessment item results in a Markbook).

### Inserting New Unit Studied records in ACS

A **new** Unit Studied record will not be inserted by the Unit Studied package from the server side staging database into ACS unless:

- The assessment period is valid (Y1, S1, S2, Q1, Q2, Q3, Q4)
- The assessment period is a current assessment period
- The unit code is valid (adopted by the college) and not expired
- The unit course is valid (adopted by the college) and not expired
- The student number is valid and in ACS

### Updating Existing Unit Studied records in ACS

An existing Unit Studied record will be updated by the Unit Studied package from the server side staging database to ACS if all of the conditions above are met.

If there are assessment item results in a Markbook for that Unit Studied record then the existing Unit Studied record is copied and given the same TID (unique identifier number) but with a negative value. For example, if the existing unit studied record below is updated from **course code 1234 and unit code 12345** to **course code 4567 and unit code 45678** and there are assessment item results in a Markbook the following unit studied records are produced.

TID	StudentID	Assessment Period	Year	Course Code	Unit Code	Grade	Raw Score	Scaled Score
123456	9876547	S1	2011	1234	12345			

TID	StudentID	Assessment Period	Year	Course Code	Unit Code	Grade	Raw Score	Scaled Score
123456	9876547	S1	2011	4567	45678			
-123456	9876547	S1	2011	1234	12345			

The negative TID Unit Studied record will have to have assessment item results moved from the Markbook for unit 12345 to the Markbook unit 45678. When this is done then data sync will delete this Unit Studied record. (See **Moving Assessment Item Results** in the User Manual)

### Deleting Existing Unit Studied records in ACS

An existing Unit Studied record will be updated by the Unit Studied package from the server side staging database to ACS if there are no assessment items in a Markbook for that Unit Studied record. If there are assessment items in a Markbook for that Unit Studied record then an alert will be generated and the record not deleted.

## Schedules

- Colleges can nominate the schedule they would like for any of the 4 packages
- Current schedules:

Interval	Operation
10 minute	7:57 to 20:00
15 minute	8:04 to 20:00
30 minute	8:00 to 20:00
1 hour	continually for 24 hours

6 hour	continually for 24 hours
12 hour	continually for 24 hours

- Colleges should contact the Technical Advisor should they wish to alter a Package schedule.

The screen below shows the packages scheduled every 30 minutes.

**Jobs Scheduled**

ALLC - Sync\_ALLC\_StudentSyncCSV Attach

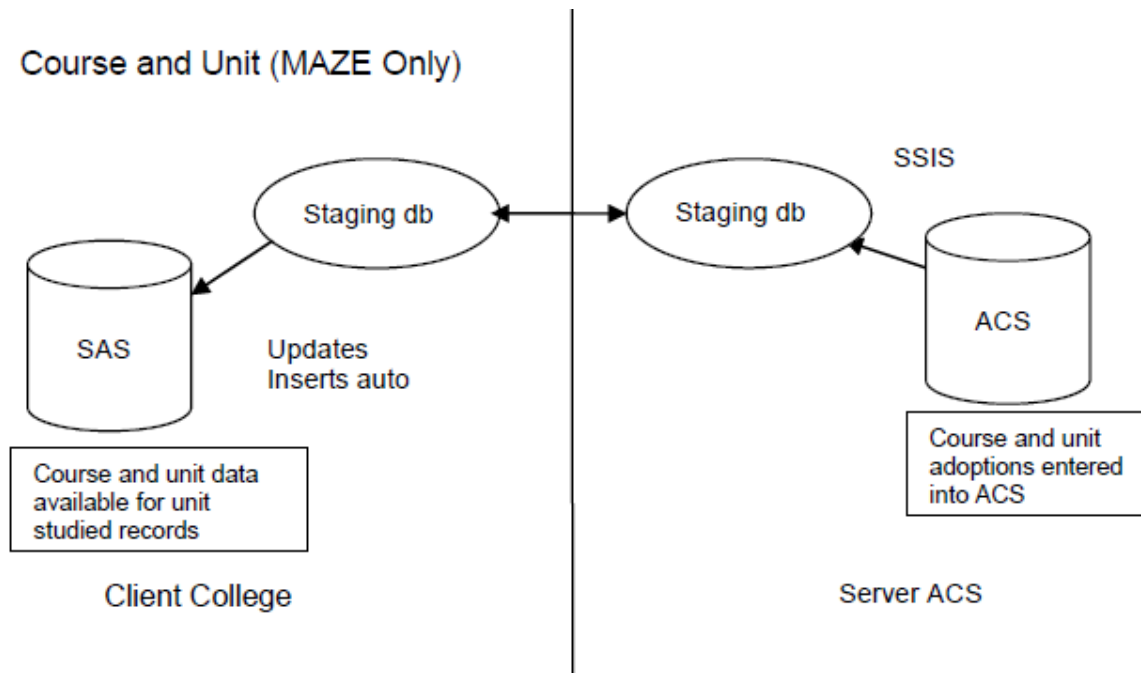
Drag a column header here to group by that column

#	School Code	Job Id	Name	Enabled	Category	Version	Last Run Date	Last Run Outcome	Next Run Date
<a href="#">Detach</a>	ERNC	e3a267d9-cff8-4026-9659-089b8fcb9aae	Sync_ERNC_UnitStudiedSync	1	[Uncategorized (Local)]	8	4/08/2011 11:07:00 AM	Succeeded	4/08/2011 11:37:00 AM
<a href="#">Detach</a>	HWKC	badc3ba2-9369-46f6-85d6-20d30fda5272	Sync_HWKC_UnitStudiedSync	1	[Uncategorized (Local)]	9	4/08/2011 11:07:00 AM	Succeeded	4/08/2011 11:37:00 AM
<a href="#">Detach</a>	DCKC	a0c2d3e4-a9a2-4795-8438-26a039b1b79e	Sync_DCKC_UnitStudiedSync	1	[Uncategorized (Local)]	8	4/08/2011 11:07:00 AM	Succeeded	4/08/2011 11:37:00 AM
<a href="#">Detach</a>	COPC	898804e2-410c-431b-9671-bc8afc80d579	Sync_COPC_UnitStudiedSync	1	[Uncategorized (Local)]	11	4/08/2011 11:07:00 AM	Succeeded	4/08/2011 11:37:00 AM
<a href="#">Detach</a>	GNGC	4e24e354-5e06-4368-b35a-44728992306f	Sync_GNGC_UnitStudiedSync	1	[Uncategorized (Local)]	6	4/08/2011 11:07:00 AM	Succeeded	4/08/2011 11:37:00 AM

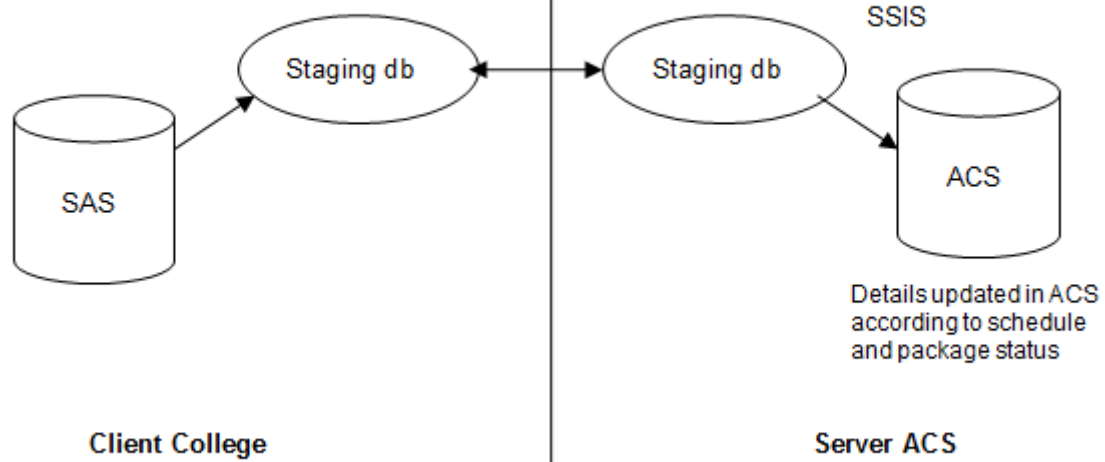
To remove a package from this schedule click the detach hyperlink.

To add a package to this schedule select a package from the pull down menu and click the **Attach** button.

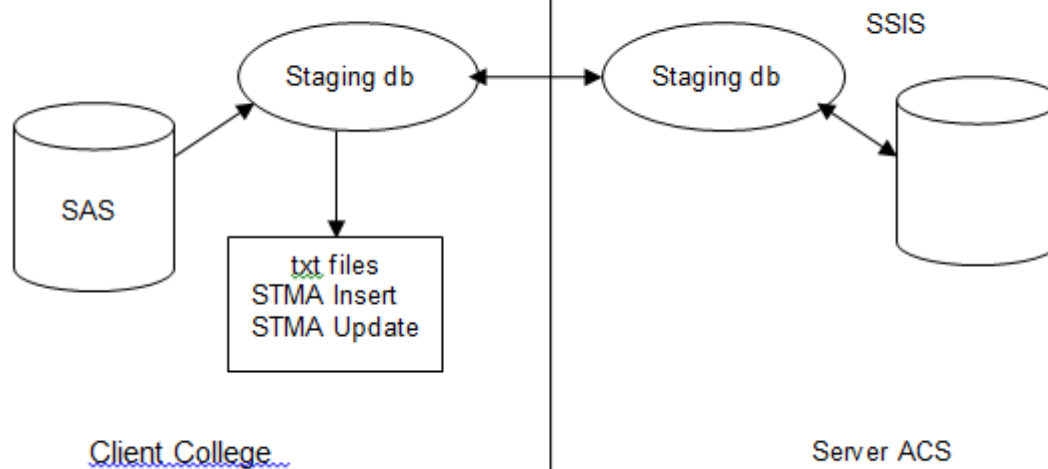
## Diagrams



## Student personal data



## Unit Studied



Note that unit studied records can be entered into ACS directly, but these will not sync back to the SAS.