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Introduction

The Multiple Measures Placement Service (MMPS) facilitates the collection of verified high school transcript data, generation of an AB-705-compliant recommended placement in English and Math, and delivers the results to colleges along with each standard CCCApply application.

In response to Assembly Bill 705, the Chancellor's Office, in collaboration with statewide advisory committees and technical workgroups, has been implementing the policies, rulesets, data acquisition agreements, and integration pipes to deliver multiple measures placement recommendations to the colleges. This implementation guide outlines the details of this process and the implementation timelines.

Multiple Measures Placement Service Pilot Release Schedule

The Multiple Measures Placement Service (MMPS) is scheduled for early adopter, pilot-college onboarding in Fall 2018, with system-wide adoption and implementation planned for Winter 2019.

MMPS is planned to be released in three stages:

- Pilot Release 1: December 20, 2018, with pilot colleges able to download the MMPS data and recommendations via the Placement Adapter in CSV format

  Partial Example with Header Row:

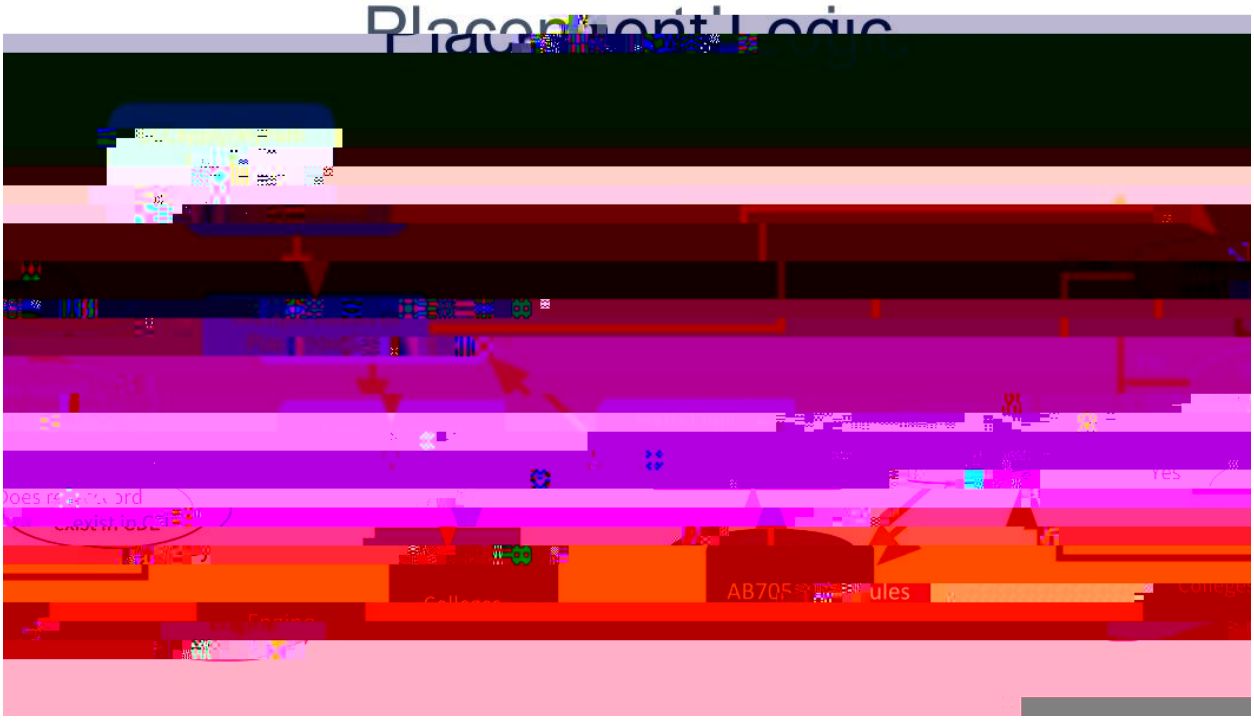
- Pilot Release 2: Winter/Spring 2019, with pilot colleges able to both download the MMPS data and recommendations using the Placement Adapter (CSV) AND concurrently see the same data and recommendations written directly to a staging table in their SIS
- Pilot Release 3: Fall 2019, with pilot colleges able to get MMPS data as above in production as well as see any enhancements or bug fixes incorporated as determined via Pilot Testing

How the Multiple Measures Placement Service Works

The Multiple Measures Placement Service reports placement data and placement recommendations based on a hierarchy of sources in this order, as available:

1. CCGI
2. ERP/Cal-PASS Plus
3. CA Department of Education (CDE)
4. CCCApply student self-reported data.
   Note 1: CDE and the associated CalPADS data will not be delivered as part of the Pilot.

Note 2: When CCCApply self-reported data includes a higher "highest math course" than the one reported from ERP/Cal-PASS Plus, then math placement is based on a combination of the self-reported data and the verified data from CalPASS (assuming there is no CCGI data). See the `datasource` field details in Appendix A.



1. Student applies to college via submitting a CCCApply application
2. Math and English placement recommendations are calculated using any/all available transcript data, in alignment with AB-705 statewide rulesets
   Transcript data sources (in priority order):
   - California College Guidance Initiative (CCGI) - CaliforniaColleges.edu
   - Cal-PASS Plus/ERP
   - California Department of Education (CDE) record
   - Self-Reported via CCCApply opt-in screens
3. Placement recommendations are delivered to the college via SuperGlue
   Placement data delivery to the colleges will be via one of the two methods below at each college's request:
   - A downloadable CSV file via a Placement Adapter (Fall 2018)
   - Writing directly to staging table in the college's SIS via the SuperGlue College Adaptor (Spring 2019)

Multiple Measures Placement Service (MMPS) English Placement Details

English Placement	Placement Approach
Students will be recommended into college-level English by default.	Recommendations received from the MMPS will

Note: See Appendix E: MMPS Decision Logic and Placement Adjustment Guidelines for additional information.

Notes for Sharing Placement Data With Students

The MMPS provides English placement specifically whenever data is available. i.e. The MMPS will generate and provide English placements for all students for whom data is available . This does not mean that students should be provided a placement based on their background. Some students would be better served by registering in an ESL curriculum, or recommended course of action. If a student feels they would be better served by an ESL curriculum, they must have the option to do so.

For math placement, MMPS doesn't determine if a student is better served by a SLAM math track or a STEM math track. Colleges need to present math placements that allows student to select the best track based on their education goals.

For students for whom MMPS does not have data, a locally-developed, guided self-placement process must be implemented to guide them on their registration.

Multiple Measures Placement Service Data Sent to Colleges

The table below outlines the placement data sent to colleges.

Recommendations	• English support recommendation • SLAM support recommendation • BSTEM support recommendation • A true/false flag on successful completion of intermediate algebra (equivalent or higher) • A true/false flag on successful completion of algebra (equivalent or higher)

Note: See Appendix A: Multiple Measures Placement Service Data Dictionary

	required to prove that your placement solution is equal to or better than the statewide approach

Implementation Options and Details

This section provides details for implementing the placement data and recommendations.

There are two options for accessing the data:

Option 1: (CSV Download): A Placement Adapter that polls every 30 seconds to pull down placement data and recommendations in CSV format to your server. (Fall 2018)

Option 2: (Writing directly to your SIS): Using the SuperGlue College Adaptor, placement data and recommendations are written directly to your SIS. (Spring 2019)

Option 1: Download Student Placement Data in a CSV File (Fall 2018)

These instructions outline steps to access the Multiple Measures Placement Service (MMPS) CSV file that includes placement data and placement recommendations. A more integrated process that writes placement data and recommendations directly to your SIS via the College Adaptor will also be available at a later date.

The CSV placement data access involves downloading and installing a Placement Adapter that runs on a local server/VM. The Placement Adapter will download the assessment data (self-reported as well as CCGI high school transcript data, if available) as well as the placement eC

Linux Hosts (Recommended - Includes SuperGlue infrastructure):

Installing the Placement Adapter on a Linux host allows integration with the SuperGlue infrastructure, with attendant benefits including automated uptime monitoring and hands-off software updates. If your college is already running the College Adaptor, no college-side installation actions are needed - the placement adapter will be installed on an on-demand basis. If your college is using a Linux host to run the CCCApply Download client, you may use that host. Otherwise, create a new Linux VM (Ubuntu 16.04 or 18.04 allowed) for this purpose. See Linux Host Setup Instructions.

Required Software:

Docker 17.06 - Reference Linux Host Setup Instructions

1. Obtain the script that will be used to reg

- Firewall outbound to https://registry.ccctechcenter.org:5000 - (enables pulling of Docker images)

  `IP: 52.42.216.115 Port 5000; Protocol: TCP`
- College Host inbound from Rancher Servers IPs 52.25.62.20/52.38.206.15 - (enables Rancher server to communicate with Rancher Agent)

  `IPs: 34.211.214.103/54.68.159.190; Ports: 500, 4500; Protocol: UDP`

Windows Hosts (Non-integrated Placement Adapter only; does not include SuperGlue Infrastructure)

This process will install a windows service named “PlacementAdapter” on the host.

1. On the server/VM where you run your current CCCApply Download Client, open a browser and input the signed url for download to your local server/VM:
   a. The latest version (1.0.1) is available at: https://ccc-dl-pkgs.s3.amazonaws.com/placement-adapter/PlacementAdapterSvc_latest.zip
   Note: If your college participated in early-pilot testing, your Placement Adapter windows service would write CSV files that didn't have a HEADER row. To upgrade, process/move/rename any existing CSV file for the Placement Adapter. The HEADER row is written when the file is created upon the next Placement Adapter poll.

Appendix A: Multiple Measures Placement Service Data Dictionary

The following are the underlying data element definitions that make up the Multiple Measures Placement Service object model.

Field	Type	Length	Constraints	Meaning	Sensitivity
placementStatus	character varying	20	Not null	Used to quickly differentiate between the status of the placement: Allowed values: COMPLETE_PLACEMENT, PARTIAL_PLACEMENT (only grade point average available so unable to give high level math placements and transcript data will be incomplete or unavailable) NO_PLACEMENT (student was not found in erp database)	Low
cccid	Character varying	20	not null	cccid of student completing CCCApply application	Medium
ssid	Character varying	10	maybe null	ssid of student completing CCCApply application	High
collegeMISCode	Character varying	20	not null	College miscode of college student completed application.	Low

datasource	integer($int32)	not null, values 1-4	Source Of Placement Data (in priority order): 1 = California College Guidance Initiative (CCGI) 2 = Cal-PASS Plus (CPP): No CCCApply self-reported data was available 3 = CCC Apply: No Cal-PASS Plus data was available) 4 = Both CCCApply AND CalPASS+ data were available (i.e. represents a commingling on514.55ata wfrrmCalSS+ da

preCalculus	boolean

			Composition or Literature 7 = 10th grade (orlower) English Composition or Literature 0= None of the Above / Don't Know		
englishCompletedCourseGrade	string		maybe null A A- B+ B B- C+ C C- D F P NP Non-passing Grade X = None of the Above / Don't Know	Grade of Highest English Course Completed	Low

mathematicsCompletedCourseId	integer($int32)		maybe null 1 Pre-algebra or lower 2 Algebra 1 3 Integrated Math 1 4 Integrated Math 2 5 Geometry 6 Algebra 2 7 Integrated Math 3 8 Statistics 9 Integrated Math 4 10 Trigonometry 13 – Math Analysis 11 Pre-calculus 12 Calculus or higher 0 - None of the Above / Don't Know	Highest Mathematics Course Completed	Low

mathematicsCompletedCourseGrade	string		maybe null A A- B+ B B- C+ C C-1 D F P NP ON = Other Non-passing Grade X = None of the Above / Don't Know	Grade of Highest Mathematics Course Complete	Low
mathematicsPassedCourseId	integer($int32)		maybe null algebra or		

			9 Integrated Math 4 10 Trigonometry 13 – Math Analysis 11 Pre-calculus 12 Calculus or higher 0 - None of the		

ITQthe

C+

C

C-

D

F

P

NP

ON = Other Non-passing Grade

X = None of the Above / Don't Know

tstmpERPTransmit	Long		Unix Timestamp	Time stamp when placement was received from ERP timestamp	Low

Appendix B: Sample Banner Multiple Measures Placement Service Data Mapping

The following tables provide a sample template for mapping the multiple measures placement service data to Banner SIS.

CCC Field Name	Banner DB Staging Table	Banner Field Name	Explanation
	SZRPLMT	SZRPLMT_SEQ_NO	An auto assigned incremental sequence
	SZRPLMT	SZRPLMT_PIDM	A foreign key for the student (e.g. from)
cccid	SZRPLMT	SZRPLMT_CCCID	cccid of student completing CCCApply application
ssid	SZRPLMT		

			Recommended
slam	SZRPLMT	SZRPLMT_SLAM_SUPPORT	SLAM Support Recommendation 1 = Support Not Recommended 2 = Support Recommended 3 = Support Strongly Recommended
stem	SZRPLMT	SZRPLMT_STEM_SUPPORT	STEM Support Recommendmended

Appendix C: Sample Colleague Multiple Measures Placement Service Data Mapping

The following table provides a sample template for mapping the multiple measures placement service data to Colleague SIS.

CCC Field Name	Colleague DB Staging Table	Colleague Field Name	Explanation
	XCTC_PLMT_PLACEMENT	XCTC_PLMT_PLACEMENT_ID	
tstmpSISTransmit	XCTC_PLMT_PLACEMENT	XCTC_PLMT_ACTIVITY_DATE XCTC_PLMT_ACTIVITY_TIME	Date and time placement was added to the SIS
tstmpERPTransmit	XCTC_PLMT_PLACEMENT	XCTC_PLMT_ERP_DATE XCTC_PLMT_ERP_TIME	Date and time placement was approved by ERP

cccid

englishCompletedCourseId	XCTC_PLMT_PLACEMENT	XCTC_PLMT_ENG_COMP_CRS_ID	Highest English Course Completed
englishCompletedCourseGrade	XCTC_PLMT_PLACEMENT	XCTC_PLMT_ENG_COMP_CRS_GRD	Grade of Highest English Course Completed
mathematicsCompletedCourseId	XCTC_PLMT_PLACEMENT	MATH_COMP_CRS_ID	Highest Mathematics Course Completed
mathematicsCompletedCourseGrade	XCTC_PLMT_PLACEMENT	XCTC_PLMT_MATH_COMP_CRS_GRD	Grade of Highest Mathematics Course Completed
mathematicsPassedCourseId	XCTC_PLMT_PLACEMENT	XCTC_PLMT_MATH_PASS_CRS_ID	Highest Mathematics Passed
mathematicsPassedCourseGrade	XCTC_PLMT_PLACEMENT	XCTC_PLMT_MATH_PASS_CRS_GRD	Grade of Highest Mathematics Course Passed
placementStatus	XCTC_PLMT_PLACEMENT		

slam	CCTC_PLCMT_STG	CCTC_PLCMT_SLAM_SR	SLAM Support Recommendation 1 = Support Not Recommended 2 = Support Recommended 3 = Support Strongly Recommended
stem	CCTC_PLCMT_STG	CCTC_PLCMT_STEM_SR	STEM Support Recommendation 1 = Support Not Recommended 2 = Support Recommended 3 = Support Strongly Recommended
isAlgI	CCTC_PLCMT_STG	CCTC_PLCMT_ALG1	Successfully Completed Algebra I
isAlgII	CCTC_PLCMT_STG	CCTC_PLCMT_ALG2	Successfully Completed Algebra II
trigonometry	CCTC_PLCMT_STG	CCTC_PLCMT_TRIG	Trigonometry Recommendation True = Recommended False = Not Recommended
preCalculus	CCTC_PLCMT_STG	CCTC_PLCMT_PREC	PreCalculus Recommendation True = Recommended False = Not Recommended
calculus	CCTC_PLCMT_STG	CCTC_PLCMT_CALC	Calculus Recommendation True = Recommended False = Not Recommended
completedEleventhGrade	CCTC_PLCMT_STG	CCTC_PLCMT_11G	Completed Eleventh Grade
cumulativeGradePointAverage	CCTC_PLCMT_STG	CCTC_PLCMT_HS_GPA	Cumulative Grade Point Average
englishCompletedCourseId	CCTC_PLCMT_STG	CCTC_PLCMT_ENG_HCC	Highest English Course Completed

		PS_CCTC_PLCMT_STG.CCTC_PLCMT_RCV_TS	holds the tstmpSISTransmit field

HSGPA 3.0 **-OR -** HSGPA 2.3 & C or Better in Precalculus	No additional academic or corequisite support required
HSGPA 2.3–3.0	Additional academic and corequisite support recommended
HSGPA < 2.3	Additional academic and corequisite support strongly recommended
Transfer-Level Gateway-STEM Math	
HSGPA 3.4 **-OR-** HSGPA 2.6 AND enrolled in a HS Calculus course	No additional academic or corequisite support required
HSGPA 2.6 or Enrolled in HS Precalculus	Additional academic and corequisite support recommended
HSGPA 2.6 and no Precalculus	Additional academic and corequisite support strongly recommended

Placement and Recommended Support Can be Determined Solely from a Student's GPA

The student placement/recommended support can be determined solely from GPA.

However, math placements based solely on GPA have the following implied :

- Colleges will receive a math placement based on the GPA without knowing if the student completed Algebra I and Algebra II
- Colleges may need to use the supporting documentation below in order to adjust placements/recommended support based on additional information collected from the student

Higher-Level Math Placement Details

Higher-level math placements use the Direct Matriculant Model from ERP (Educational Results Partnership).