

Chapter 4 *Intermediate Access* Table of Contents

Intermediate Access Level	1
Report Authoring	1
Choosing Your District's Report Authors.....	1
Report Author Training.....	1
Reporting Layers and Data Access.....	2
Table 1 – Features of Reporting Packages	3
Suppressing Aggregate Data for Small Groups.....	3
Figure 1 – Sample MCAS Aggregate Report with Suppression	4
Report Development Standards	4
Table 2 – Features of Training Packages	5
Query Naming	5
Query Construction	5
Style & Formatting.....	6
Data Suppression.....	7
Development & Deployment	7
Additional Resources	8

Intermediate Access Level

Users with the 209 security roles are enabled with intermediate access to the Education Data Warehouse (EDW). Intermediate access provides the same access to data as role 210 (public data for all districts in the state and confidential data for your district), but the 209 role also enables the user to open and edit reports in Report Studio. Report Studio is the Cognos application for report authoring.

Report Authoring

Choosing Your District's Report Authors

Developing local reports should be treated in much the same way that software companies develop new software applications. There are the application designers who determine what the application should do and then there are the programmers who write the code to create the application. In developing your district's reports, you should choose people to design the reports: what they will look like, whom the reports will serve, and what questions the reports will answer. Then choose your report author(s) to write the reports. Only the report authors will need to learn Report Studio. Ideally, report authors should have programming experience and be knowledgeable about databases.

To assist the report authors, report designers would identify, among other things, the intended audience for the report, the data to be displayed, and the anticipated frequency with which the report would be run. The best planners for new reports are the people who will be using them, but the process of completing a report ultimately will involve the collaboration of report designers and authors working together to resolve what is needed with what is possible given the data and tools available.

Report Author Training

If you are a report author and have been granted the 209 security role in Directory Administration, you should not begin to develop reports until you have undergone training in Report Studio. Predefined reports run against the full data warehouse, which contains millions of student and test item detail records. Although report authors cannot

change state-loaded data in the EDW, a poorly written report could slow performance on the data warehouse for all users. It is important that only trained users be given access to Report Studio.

Cognos offers a two-day Report Studio training for general audiences on a regular basis. Additionally, DW301 and DW302 of the six-course curriculum that the Department has made available for downloading, are geared to report authors.

This chapter contains technical information for report authors but is useful to report designers in order to understand “what is possible” in writing reports. For more detailed technical information, report authors should be familiar with the following documents:

<i>Document</i>	<i>Report Requirements</i>
DW-MCAS-Documentation.doc / .pdf	State-loaded MCAS data
DW-SIMS-Documentation.doc / .pdf	State-loaded SIMS data
DistrictExtractGuidesV5.xls	District-loaded local data

Reporting Layers and Data Access

There are four reporting layers, or data packages, which contain all the available data elements that you can add to your report. Depending on the report you are writing, you will choose from one of the following packages:

- **ESE Report Layer** is the general, unsecured report package including SIMS and MCAS data. Columns with identifying student information (SASID, Names) have been hidden. **Note:** This package can be used to create aggregate, multi-district reports for comparing school or district results. Report authors are responsible for ensuring that Department suppression rules are applied to reports containing multiple districts. Suppression rules must also be applied to single district reports that are produced for public consumption. (Please read the next section for an explanation of the Department’s suppression rules.)
- **ESE SIMS Secured Layer** was created to run historical SIMS reports. It is the only package that does not link to the SASID master table (the state-loaded Student Dimension table) where SASID errors are corrected nightly. Historical SIMS reports can be run using the original SASIDs, not the updated SASIDs.
- **ESE Secured Report Layer** is the SIMS and MCAS reporting layer with all columns available, including columns for identifying students. This package restricts access to SIMS and MCAS student detail records to only those users authorized in Directory Administration (DA).
- **District Secured Report Layer** is the same as ESE Secured Report Layer, but with local data (Grades, GPA, Schedules) available.
- An **Extract Validation** package is also available and required to run staging table reports for districts that load local data. (Only the 209 security role enables access to this package.) Districts that are not loading local data should ignore this package. Report authors will only need to use this package if they want to make changes to the staging table reports.

Table 1 – Features of Reporting Packages

<i>Reporting Package</i>	<i>MCAS</i>	<i>SIMS</i>	<i>Local Data</i>	<i>School & District Security Filters</i>	<i>Student Names & SASIDs</i>
ESE Report Layer	X	X			
ESE SIMS Secured Layer		X		X	X
ESE Secured Report Layer	X	X		X	X
District Secured Report Layer	X	X	X	X	X
Extract Validation		X	X	District	

Suppressing Aggregate Data for Small Groups

Small cell suppression must be applied when reports are viewed by anyone other than school/district personnel working directly with the student(s). This includes

- reports created using the *Power Play* analysis cubes, and
- predefined reports containing aggregate data for the current district or multiple districts.

Aggregated school, district, and statewide test results that contain a list of student characteristics which would make it possible to identify a student’s test results are considered confidential information. According to federal education laws, confidential information includes

“a list of personal characteristics or other information that would make it possible to identify the child with reasonable certainty.”¹

Consequently, it is Department policy that public reports containing aggregate student performance data must suppress results for small groups of students when associated with characteristics that would make it possible to identify a student. Department policy requires suppression of confidential data in public reports whenever an identified group contains:

- Fewer than 10 students for MCAS data
- Fewer than 6 students for SIMS data

When an identified group is smaller than these thresholds, the report must display a placeholder (for example, -, *, NA) with a disclaimer explaining what the placeholder means.

Note in the sample report (*Figure 1*) that the MCAS results are suppressed in rows where the size of the subgroup was less than 10. It is not necessary to suppress every cell with less than 10 students, for example, 6 students failed the MCAS out of 53 in the subgroup of students with disabilities. Results are suppressed when the identifiable subgroup contains less than 10 students.

¹ National Forum on Education Statistics, Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies, NCES. Washington, DC: 2004. <http://nces.ed.gov/pubs2004/2004330.pdf>

Student Group	School							District						
	Stud Incl	AYP Part**	% of Stud at Each Perf Lvl				CPI	Stud Incl	AYP Part**	% of Stud at Each Perf Lvl				CPI
	#	%	A	P	NI	F		#	%	A	P	NI	F	
Stud. w/ Disab	53	100	36	19	40	6	81.6	61	98	39	16	36	8	82.0
LEP/FLEP	6	-	-	-	-	-	-	6	-	-	-	-	-	-
Low Income	9	-	-	-	-	-	-	12	100	8	25	42	25	64.6
African American/Black	9	-	-	-	-	-	-	11	100	55	27	9	9	88.6
Asian or Pacific Islander	73	99	92	4	3	1	98.6	74	99	92	4	3	1	98.6
Hispanic	11	100	73	-	9	18	81.8	11	100	73	-	9	18	81.8
Native American	0	-	-	-	-	-	-	0	-	-	-	-	-	-
White	364	100	82	11	7	0	97.3	373	100	82	11	7	1	97.2

NOTE: MCAS performance levels are not reported for cohort counts fewer than 10.

Figure 1 – Sample MCAS Aggregate Report with Suppression

Also note that suppression rules apply to any identifiable subgroup with less than 10 students, not just the AYP subgroups. For example, if there are less than 10 female students in the third grade or less than 10 students (any race or gender) in a particular school, then their test results require suppression.

The ESE Report Layer package provides district report authors with the ability to create single district and multi-district reports. As a district report author, you are responsible for ensuring that the Department’s suppression policy is applied appropriately to any reports you create for public consumption. The School and District Profile reports (<http://profiles.doe.mass.edu/>) provide additional examples of appropriate suppression.

Report Development Standards

Predefined reports run against the full data warehouse (all years, all districts, all schools, all students, all test items) and can stress the resources of the warehouse, depending on the scope of the query. During the development process, report authors should always use the training data packages when developing reports. The training packages mirror the reporting packages in production, but the database that they link to contains a fraction of the data available in the data warehouse.

When you are ready to launch your new reports, they can be re-deployed to the production system by changing packages. This can be done in Report Studio by going to File > Report Package, or in Cognos® Connection by clicking on the Set Properties icon. In Set Properties, select the General tab and then click Link to a package... under the Package section. When you click on this link, all the available packages are displayed with a radio button to enable selection.

ESE Training Layer corresponds to District Secured Report Layer, which is a superset of the other packages, and can be used for most report development. The ESE SIMS Training Layer corresponds to the ESE SIMS Secured Layer and should be used for reporting on SIMS historical data only.

Table 2 – Features of Training Packages

<i>Training Reporting Package</i>	<i>MCAS</i>	<i>SIMS</i>	<i>Local Data</i>	<i>School and District Security Filters</i>	<i>Student Names and SASIDs</i>
ESE SIMS Training Layer		X			X
ESE Training Layer	X	X	X		X

Query Naming

- In general, queries, parameters, variables, and data items should be named to be as descriptive as possible. The default names applied to new items (e.g., Query1, Query2, Parameter1, Data Item1, etc.) should never be used.
- Report-specific naming conventions should be followed consistently. For example, if a report requires a school-level query and a similar district-level query, the queries should have similar names, such as School Results and District Results, not School Results and Results for District.
- Query items that are pulled directly from SIMS or MCAS query subjects generally should not be renamed. To change the label of a data item, change the **Label** property in **Properties: Data Item** for the data item, not the **Name** property. Custom labels should only be necessary in top-level (presentation) queries, not sub-queries.

Query Construction

- Reports should use as few queries as possible, although in some cases, multiple small queries may be preferable to a single large query for performance reasons. If a chart and a list can both be rendered from the same query, for example, *use a single query to populate both*, instead of one for the chart and another (similar or identical) for the list. In the **Property** pane, navigate to the top level chart or list object and set the **Query** element to a pre-existing query.
- Narrow your query to a small subset of data by using filters. This will help minimize the impact of report development on the performance of the production system, as well as helping to speed up your report development process.
- Queries against SIMS or MCAS query subjects *must* be constrained (filtered) on *at least one* of the following columns:

SIMS Data Items:

- SIMS Year
- SIMS Collection Period
- SIMS School ID No.
- SIMS Reporting Org Code
- SIMS SASID

MCAS Test/Subject/Item:

MCAS Year
MCAS District/School Code (sprp_sch/sprp_dis)
MCAS Subject
MCAS Grade
MCAS SASID

There are **no exceptions** to this requirement. Reports that require all rows from multiple years should use the **State Summaries** query subjects, not the query subjects in the SIMS or MCAS namespaces.

- [Cross joins](#) (Cartesian products) should be avoided. A number of specific cross joins have been defined in the default reporting packages, and additional cross joins should not be necessary for most reporting purposes.
- [Outer joins](#) should be used sparingly, if at all. Outer joins should not be used if it is possible for the joined sub-queries to return a large (>1,000) number of rows.
- Prompt queries should make use of prompt summary tables (in the Prompts namespace) whenever possible. Set the **Use Value** element of a prompt to an indexed field (e.g., **District Code**) and the **Display Value** element to a more user-friendly field (e.g., **District Name**).
- Prompt queries for **Locations** should include the filter **[Org Type] in (6, 13)** (for all public and charter schools, respectively), unless report specifications require otherwise or you are using the MCAS prompt summary table.
- All prompt values must be sorted.

Style & Formatting

- Report-specific abbreviations in names are generally unnecessary and should be avoided, such as Schl as a substitute for School. Abbreviations that can be easily understood by a general audience (e.g., # or No. for Number, % or Pct for Percent) are acceptable.
- Refer to [School/District Profiles](#) and the [ESE Style Guide](#) for standard naming and abbreviation conventions.
- All pages on all ESE reports must include standard ESE headers and footers, consistent fonts, and standard ESE [colors](#) for charts and buttons. Districts do not need to follow ESE standards and should not use the ESE logo. If districts have a logo that they would like to use, it can be sent to the Data Warehouse team to be placed on the server. However, it is not possible to restrict the use of this logo to your school or district.
- All pages, including prompt pages, must contain the name of the report in the header.
- Prompt pages with multiple prompts must use two-column tables to ensure proper left-alignment of prompt labels and selection elements.
- Report pages must show the **Display Value** for every parameter that is used to filter the data displayed to the user.

- Percentage values should be formatted to display no more than one decimal place, unless report specifications require otherwise. (Note that CPI should always have one decimal place.)

Data Suppression

- Reports using the ESE Report Layer package must implement proper suppression rules if they include SIMS or MCAS data. In particular, reports displaying student characteristics subject to protection under FERPA or other state or federal laws (including MCAS performance level distributions) must *suppress all data* for identifiable subgroups that include:

- fewer than 10 students for MCAS
- fewer than 6 students for SIMS data

Additional information is provided above in [Suppressing Aggregate Data for Small Groups](#). If you have additional questions regarding suppression, please contact Student Assessment Services (mcas@doe.mass.edu) or Information Services & Technology (data@doe.mass.edu).

- Reports using the **ESE Secured** or **District Secured** report layers should not require suppression if user authorization is properly assigned. However, end users must be made aware that reports showing measures for small subgroups are considered confidential.

Development & Deployment

- For ease of use, create separate folders for report specifications and report output. Scheduling reports to execute offline and create report views in a folder dedicated to output is a convenient and user-friendly way to deliver reports to your end users.
- District reports should be developed using the **ESE Training Layer** package. This practice will speed up development (due to the smaller database) and reduce the load on the production database. Once a report is debugged, the report can be changed to one of the production packages using **File > Report Package...** in Report Studio.
- Districts can share reports with other districts by placing them in the folder **Public Folders > District Folders > Shared - District Report Authors - Not ESE Validated**. When using this shared folder, please note:
 - Do not share report output (saved HTML, PDF, or Excel results) that include data on individual students, or any other confidential data (see [Suppressing Aggregate Data for Small Groups](#)).
 - Reports found in this folder and its subfolders have not been validated by the ESE staff.
- The Department of Elementary & Secondary Education (ESE) and school districts are required to abide by the confidentiality provisions outlined in the Data Access Policy (see Appendix A, *Statewide Education Data Warehouse Policy Statement*).

- Reports should be checked thoroughly for accuracy before being shared. The School and District Profiles on the Department’s website (<http://profiles.doe.mass.edu/>) as well as a district’s student information system are data sources against which newly created reports can be checked.

Additional Resources

Within the Education Data Warehouse portal, a Report Authors Resource page has been created to make help documents readily available to report authors. The documents on this page provide assistance in using the Report Studio application and in understanding the state SIMS and MCAS data. Documents such as the SIMS handbook can be downloaded from the public website, but the query item references for SIMS and MCAS are particular to the Education Data Warehouse and are only found in the EDW portal.

The query item references explain the changes in code definitions that have occurred since 2002. Report authors must know the history of these changes to accurately retrieve data for reports. For instance, if you are writing a report to show race and ethnicity data over several years, you should know that in 2002, the definition of the code 01 was 'Native American', but from 2006 to the present, it has been defined as 'White'. Similar changes to code definitions exist for MCAS as well.

The Report Studio resources are supported by IBM, the company that now owns Cognos. The IBM Support and the IBM Technical Library links enable you to search posted questions and articles on Report Studio. In addition, the Department created the Report Authors email list to enable report authors to use each other as resources. To subscribe to this list, please visit the EDW public webpage at <http://www.doe.mass.edu/infoservices/dw/>.