### Welcome

Welcome to the Oracle Business Intelligence Enterprise Edition training.  Also known as OBIEE. This introductory training is for employees who use the Department of Administrative Services (DAS) Datamart.

This training will cover the following topics.

- An overview of the Oracle Business Intelligence Enterprise Edition (OBIEE) and its structure.
- How to access OBIEE and the different types of security levels.
- An overview of the features on the homepage and catalog.
- How to create an analysis.
- How to create a formula and agent.
- Some best practices and helpful tips.

In the resources, you will find links to the test and production environment.

The State is using OBIEE version 12c. This version will be accessible through the web.    We will be using the term OB1 to refer to the Oracle Business Intelligence Enterprise Edition version 12c.

OB1 is replacing the Hyperion query tool. OB1 is the next generation Business Intelligence solution from Oracle.

OB1 can connect to Oracle and non-Oracle sources, such as SQL, Teradata, DB2, Essbase and others. However, with the initial launch of OB1, we are focusing on connecting to the standard DB2 database of Datamart. This will include the Statewide Financial Management System (SFMS) and Oregon State Payroll System (OSPS) data within Datamart.

### Structure of OB1

Let's take a high level look at the OB1 structure.  On the left hand side of the screen you will see the data that is flowing into the OB1 structure. Within the common enterprise information model, many different calculations, security and connections are configured and used. The models of data then become Subject Area's which a user can consume. OB1 has the capability to present this data in various ways such as through mobile devices, dashboards, ad-hoc reporting, and Microsoft office integration. Oracle has a Data Visualization presentation layer, with options, such as charts and graphs.

Currently, OB1 has a test and production environment. A standard user will use production while test will be used as an administrative tool for security or product patches and any updates.

In order to gain access to OB1, contact your Agency Security Officer (ASO).  Once the set up process is complete, you will be notified that you have security access.

Once you receive your OB1 security email, it will contain your initial log-in information. The standard log-in will be your email address, ending in the '@oregon.gov' extension. Even if your regular State email is not '@oregon.gov', you will still use it for accessing OB1. The State is still working on converting all employees to '@oregon.gov'.

### *Passwords*

There are two different types of passwords.

1.  Non-Sync Users:  If you are a non-sync user you will be sent a temporary password.  When you first login you will need to change your password on the OBIEE maintenance site.  Your password will be valid for 90 days and then you'll be required to change it.
2.  Sync Users:  If you are a sync user your password will be the same as the one you use to log into your work computer.  Your OB1 password will be updated when you change your computer password.  There might be a slight delay in your updated computer password syncing with OB1.

### *Access Types*

When a user is logged into OB1, the system starts to look at what type of security access they have obtained. There are three main types of access.  The ASO must request which type of access you will need.

*   Consumer:  This access type allows the user only the ability to consume the information another user has created. An example of this would be a manager who would like to view some of their employees created files. They do not need full access, only view access.
*   Author:  This access type allows the user the ability to create, edit and view the information. Most OB1 users will fall under this category.
*   Admin:  This type of access allows the user to perform administrative tasks such as modifying security permissions for files and folders. In addition, this user has all the rights of an 'Author', so they can create and edit files as well.

### *Security*

To go along with the three main OB1 security settings, a user will also have a subset of this access. A user can have the 'SFMS' view, the 'OSPS' view or both. These views relate to how a user can see the data within the Datamart. The access will allow you to see what are called 'Subject Areas' within OB1. A 'Subject Area' refers to a specific view of tables within the Datamart. For example, if you want to view the 'Agency' table within the Datamart, you find the 'SFMS - Profile: Agency' Subject Area within OB1.

In addition to the specific views that OB1 allows, we have also set OB1 to contain 'Agency Level Security' for OSPS. The standard practice for viewing OSPS Datamart information has been kept, which entails the limited agency access. You will only be able to view the agency or agencies that you work with. As a reminder, this information must be included in the initial request for access to OB1.

### *OB1 Home*

Once you log into OB1, you will see the homepage. It contains various tools to help you create and display business intelligence data.

Based on your security access, your homepage may look different from others.  If you are not seeing all the features you need to on the homepage, please contact an administrator.

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On the left side of the homepage, are the action items you will use to create, explore, discover, monitor and report your data. In the initial implementation of OB1, you will <u>not</u> be using the 'Mobile application', 'Performance Management' or 'Marketing' options, as well as, the 'Download BI Desktop Tool' and 'Go to the New Home Page' located at the bottom of the page.

Let's look at some of the homepage menu options that are visible at all times in the application. These menu options provide quick access to alerts, the homepage, catalogs, favorites, and dashboards. You can also create a new file or open an existing file. The "Signed In As" option is where you go to log out of OB1. It's important to note, if there is no activity for an extended period of time you will be automatically logged out.

The 'recent files' section is displayed in the middle of the homepage and displays up to nine files you have worked with recently. It can also show recent 'Dashboards', 'Alerts', or the 'most popular' used files.

OB1 saves all files to the DAS server, which is much different than in the past. Users used to save business intelligence files to their own agency networks or desktop computers. Saving OB1 format files to an agency network is no longer an option; however, you can export the data in another format, to allow for saving to your network.

### OB1 Catalog

On the OB1 homepage, you will see the menu option Catalog which provides a detailed look of the file folder structure within OB1.

Here are the main folders you will see. This is where 'My Folders' and 'Shared folders' are. Each user will have access to their own personal folder. This is where you should save your standard files.

Based on your security permissions, your access to the shared folder will vary. You may have little or no access to this folder; however, if you need access to the shared folder, contact your ASO.

Most of the shared folder structure will be set by the DAS Datamart administrator; however, agencies will be able to build some of the shared folder structure, starting with a folder for your own agency. This folder will be used to save files so they can be shared within your agency.

Within the Shared folder will be the Repository. The Repository provides standard reports created on a statewide level. The Repository contains files that are similar to a template. These files help provide a base foundation for data gathering. Once a repository file is selected, you have the option to make alterations based on your agency's needs. Permissions and subfolders will be controlled by an OB1 administrator and can be altered as necessary.

Within the Catalog, you can access several options or you can access them by selecting "More" on a file or folder. There are options, such as deleting, copying, and renaming a file or folder. In addition, an administrator can use the "Permissions" option to provide a user access to a file.

For each file there is a properties option where you can add a description about the file. This option is highly

recommended because you can provide details in the field so others know what is contained in the file.

***Introduction to Analysis***

Here are some key items you need to know about before doing an analysis.

An Analysis is the query building interface for OB1. It is very similar to a query section within the Hyperion application. The Analysis is used for the construction of results and various other data presentations. In addition, an analysis helps set up the necessary fields and filters needed for the business intelligence data gathering.

When you start creating your analysis, you will be required to select a subject area. The subject area is made up of two types of tables - financial and profile which is the same way the Datamart is set-up. The financial subject areas contain information, such as general ledger balances and transaction amounts. While profiles provide titles for various data elements as well as a complete view of all data elements in the current system. For example, the 'compt object' profile table contains all the compt objects while a transaction would only contain a few.

Within each subject area there are columns. Columns contain the individual pieces of data that an analysis returns. Columns will determine what data an analysis contains.

There is a calculated fields folder. This folder was created to contain standard formulas used on a statewide level. For example, 'Row Count' contains a standard formula to help users count and display the amount of rows obtained from the analysis. This is a formula that can be used on a statewide level and can be very helpful in analyzing data. Formulas will continue to be added to the Calculated Fields folder. You can submit a formula for consideration by emailing the Datamart Support. Suggestions will be reviewed and if approved, added to the calculated field folder.

OB1 has a row limitation of one million. If you pull data that goes over a million rows, you will receive an error and you will need to go back to the 'criteria' section and update the options to limit the number of rows. Once the analysis data is obtained from the data source, OB1 has the capability of exporting the information to various formats, such as, PDF, HTML, Excel, or CSV.

Now let's walk through the steps for creating an analysis.

Start by logging into OB1. From the homepage click on the 'New' option and then select 'Analysis'. This will bring you to the 'Subject Area' selection and depending on your security access, you will see different subject areas, which point to tables within the Datamart. Most users will be able to view the SFMS or Accounting subject area's and some will be able to see OSPS or payroll as well.

The two options at the bottom of the subject area are reserved for OB1 administrators only. Select the subject area you are going to do the analysis from.

Once you have selected the desired subject area, you will be moved to the 'criteria' creation section of OB1.

You will see various folders, depending on the subject area you selected. At most there will be three types of folders in this area - Financial, Profile and Calculated Fields. While reviewing the folders and columns in this section, you should notice the 'naming convention' of the columns have been updated. For instance, the Profile table columns now reference the screen in RSTARS that it is related to.

Click on the arrow next to each folder and all the available columns will be displayed.  Click on the column name you want to add to your analysis and drag it over to the 'Selected Columns' area. Continue to do this for each column you want to add to your analysis.

### Column Options

For each column you move to the Selected Columns area, you will have several options.

- Sort:  You will be able to specify the sort order for the columns.  Roll your mouse over 'Sort' and the options for sorting will show. If you want more than one sort, the 'Add' descending or 'Add' ascending sort options must be selected. If not, all other sorts will be reset to the new sort you selected.
- Edit formula:  For some of the columns you will be able to create or edit a formula.  You can create or edit a formula to add functions, conditional expressions, and so on.  A column formula specifies what the column values represent.  This editing affects the column only in the context of the analysis and does not modify the formula of the original column in the subject area.
- Edit column properties:   You can change the style and the formatting for each column.  There is also an option to add 'conditional formatting'. A conditional format is a tool allowing you to apply specific formats and have that formatting change depending on the value of the field or the value of a formula. For example, you can have a field appear bold only when the value of the field is greater than 100.
- Filters:  You can create and edit filters to a column.
  Delete:  This will delete the column from the analysis.
- Saving:  You can save a column to the catalog for reuse in other analyses.  Saving a column is helpful for example, if you have edited the formula of a column or set column properties that you would like to save and reuse in other analyses.

### Filters

The next step in this process is to add filters to the analysis. It is important to limit what is being pulled by any analysis because there is a row limitation of one million. Keep it to what you truly need. This will help the speed of the analysis as well as make it easier to analyze. The top two filters are Agency and date. The date can be Fiscal Year, Appropriation Year, or even Pay Period End.

To add a filter, in the Filters area there are three icons in the toolbar - create a filter, remove a filter, or save a filter for future use.  Select the 'Filters' icon and you will see a listing of all the columns you selected or select the 'more columns' option to access all the fields available in the subject area.

Select the column you want to filter and a pop-up window will appear.  The column name and default operator will automatically be displayed.  You can change the operator or value by from the drop down menu. Once you have selected all the filtering options, click 'OK' to add the filter.  If you want to add additional

filters, complete these steps again.

For this analysis we selected agency and appropriation year as shown in the filters area.

### Results

Now that you have selected what data you want in your analysis you will select the 'Results' tab to obtain the data.

The waiting time for your data to be retrieved is based on many variables, such as agency size, time requested, and others using the Datamart. If you are experiencing extended delays, please email the Datamart support.

Once you receive data within the 'Results' section, you will see a tab called 'Compound Layout'. This is how OB1 displays data within the 'Results' section. Each compound layout created can be altered to display various views such as tables, charts, pivots, and graphs.

Below the Compound Layout area you will see 'Selection Steps'. Everything you do in the Compound Layout section will be recorded and displayed in this area. It is a step by step depiction of what is occurring in the compound layout.

### Compound Layout

Within the Compound Layout area you will find different formatting tools.
- Format container: This option provides ways to align, create borders and adjust width.
- View properties: This option allows for different data viewing, altering content paging, updating rows per page and row styling.
- Edit view: This option allows additional editing of the prompts, sections, and measurements.
- Remove view: This option allows you to remove the view from the compound layout.

Now, let's look at some of the most commonly used shortcut keys available in the Results section.
The print options lets you print the results in a printable PDF or HTML format.

Export results allows you to export the results to different formats. When you export to a different format, you are still limited to one million rows of data. By exporting the data you can save it to your computer or a network within your agency.

The Scheduler option allows you to schedule a specific analysis to run at a desired time. We will be looking at this feature, in more detail, later in the training.

The next option is to 'Show how results will look on a Dashboard'. Depending on what option you select, OB1 will create a sample Dashboard. You can choose to keep the view or not.

If you ever need to refresh the data, there is a 'Refresh' button as well. You only need to do this if the data has changed.

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OB1 creates different 'Visualizations' which can include graphs, pivots, and charts. To create a visualization, select the drop down menu and then select the type of visualization you'd like to create. You can add multiple visualizations to a results section or compound layout.

OB1 provides a way to create 'Calculated fields'. To the right of the visualizations view, you will see an icon that looks like a ruler. It is used for making formulas such as 'A' plus 'B' equals the new value of 'C' or a formula like 'If' 'X' occurs, then do 'Z' times 'Y'. You can create many different calculated fields. It is recommended to create these calculated fields within the 'criteria' section; however, you are able to complete this task within the 'Results' section as well.

There are four other options allowing you to create, duplicate, delete, or rename any compound layouts within your results section.

In the Results tab you are able to sort. To do this hover your mouse over a title of a column field, then you will see an 'ascending' or 'descending' option. This will only sort the one field you have selected. All other sorts will be removed and only the new sort you selected will be used.

Within the Results section, you can create or delete views. If you delete a view, it is not fully deleted. You can always add it back at any time, by using the 'view' option. The views can also be moved around by dragging and dropping the view into the desired location. You must remember to wait for the blue line that will show up when your mouse is in line to drop the view into place.

### Saving

As with any program it is always a good idea to save often. There are two important save icons, when editing an analysis, one is 'save' and the other is 'save as'. When saving, it will ask you to save to either the My folders or Shared folders area. It is only necessary to save to the shared folder when you believe the file will need to be accessed by others. If this is just an analysis for your own use, then saving to the My folder space is best.

When saving, it is highly recommended to add descriptive text in the description field. This can be any information to help describe what is contained in the file. This will help you and others understand why the file was created or what is contained in the file.

Once saved, the file will be displayed in the catalog section of OB1.

### Formula Creation

Now we are going to look at some advanced features. We will talk about formula creation and agents. We will start by discussing formulas.

Creating a formula can be very useful. Formula creation focuses on creating calculated or computed items that then become a standard field within the analysis. This creation can be done at different stages of the analysis. It is recommended to do this at the 'criteria' level. You may also do it at the 'results' section; however, the earlier the better, so it can be included in all data sets. This will also help the new formula field

to be easily added within the 'results' section.

### Row Count

The example formula we will examine is 'Row count'. Row count is a frequently used formula and has been added to the Calculated Fields folder. If you have new formulas, please share them by emailing the Datamart support.

Row count can be a handy tool to help you understand how much data your criteria has created.

To add any formula to an analysis, in the Results section you will click on the 'New Calculated Measure' icon that looks like a ruler. A pop-up window will display.

You must first rename the column as it cannot be the same name as another field. For our example, it was renamed as 'Row Count'. Next, you will add the formula in the 'Column Formula' area. Once the correct formula is in place, you select 'ok'.

If an error occurs, it will be displayed at the bottom of the pop up window. A correct formula must be included for the field to display and close properly.

You will be taken back to the results area and you can see a new column was added with the row count.

When a new formula is included in the results, it is displayed as a standard column. You will more than likely want to have the total row count at the top of your results view as a header. To do this, click on the pencil icon. This will get into the 'Compound Layout' mode. Next, move the 'Row Count' column from 'Columns and Measures' into the 'Sections' area.

To create the total row count, click on the 'sigma summation symbol' and from the drop down menu select either 'Before' or 'After' .

Another way to add Row Count as a heading, is to select 'section properties' and a pop-up window will display. Change the 'column heading display' to either 'Start' or 'Above' and click 'Done' to finish editing. This change will display the title of the field to Row Count.

When you are done making these changes, click 'Done' to view the results. You will now see row count at the top of the table.

### Agents

Now let's look at 'Agents'. An agent is the process to schedule data to run at a specific date and time. You can use agents to provide alerts, schedule when data is published, identify how and who the data is delivered to, and create conditional event-driven action. This can help you automate your business processes.

### Alerts

Agents can provide alerts. An alert is a notification generated by an agent delivering personalized and actionable content to specified recipients or to subscribers to the agent.

You can see the alerts that have been delivered to you by going to the homepage and viewing the 'alerts' section.

You can also see the data on the first page of 'My Dashboard', which is shown in the 'dashboard' menu option, by selecting 'My Dashboard'.

### General

The first step in creating an Agent is to click on the 'schedule' icon when you are in the results section of an analysis. Once selected, a new window will appear providing details for creating an agent. You will need to make the appropriate selections under each of the tabs.

Starting with the 'General' tab, you will select the priority of the scheduled file and 'run as' a specific user. It is recommended to use your own user information.

### Schedule

Next is the 'Schedule' tab where you create the schedule for when the agent will process. You will need to select the frequency from the drop down menu. Depending on the frequency, you will have different options. We will use monthly as our frequency.

After selecting 'Monthly' you will need to select what day it will be processed and what months you want it processed for.

If you plan to complete a condition then you should schedule it to run daily after 6pm. This will run the agent after the load process has occurred and pull the necessary data.

In addition, if you plan to select a condition, the program will look at the schedule first and then verify if the condition is also met prior to running the file. Therefore, the running 'daily' example, will cause the file to only run when the condition is met, yet it will check to see if the condition is valid each day.

### Condition

Next is the Condition tab, which helps set specific requirements that will trigger a file to run depending on if the condition is met.

You can create a new condition or browse for an existing condition.

The Datamart administration team included some commonly used conditions. These are located within the

directory called 'Shared Folders/Condition'. The dates within these conditions are updated by the Datamart technical support due to their varying nature.

After you select a condition, the name of the condition will be displayed.

### Delivery

The 'Delivery Content' tab is where you are able to select how your data will be delivered through email.

You are able to add a subject line in the Subject field.

You can add the data to the email in various formats such as CSV, Excel, PowerPoint, and PDF. If you plan to add an attachment to the email, it is recommended you use the CSV file format. This format has been improved in the OB1 settings to allow one million rows of data to be exported. The other applications do not allow that much data to be exported at one time. In addition, CSV is very similar to Excel, so a user can easily save the file in the Excel format once it has been obtained.

You can add a note to the email.

### Recipient

Next, is the Recipient tab where you are able to decide who will receive the data.

Recipients can be users of OB1 or others who are not users of OB1. However, others will need a specific email address included, while an OB1 user can be searched for and selected from the tab menu.

To add an recipient who is an OB1 user, do the following.  Click the plus icon.  The Select User window will display.  You can do a search by entering a person's name or scrolling through the list of accounts.  When you find the person to add as a recipient, click on their name in the 'Accounts' list and then click on the single arrow.  You will see all the recipients you selected under 'Selected Members'.  When you are done selecting recipients, click OK.

To add a recipient who is not an OB1 user, do the following.  Select the envelope and plus sign icon.  The Enter Email Address will display.  Enter the email address for each recipient.  You can add multiple email addresses by separating them with a comma.   Click OK when you are finished.

All the names or emails of the recipients will be displayed.

### Destination

Next, is the Destination tab where you are able to decide how they will receive the data.

The destination for the data is determined based on various options that are selected, such as 'homepage', 'alert' and 'dashboard'. It is ok to select multiple destinations, if needed.

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***Action***

The 'Action' tab is where you are able to select specific actions to invoke when the agent completes. If no action is necessary, then it is ok to skip this tab.

***Save & Test Agent***

Prior to completing the Agent, you should review all details within the Overview section, which is displayed above the Agent tabs. All details can be verified in this section.

You also have the ability to test the Agent. To do this, click 'Run Agent Now' to test.

To save the Agent, click the 'Save this agent as…' option.  The Save Agent window will display.  Select what folder you want to save the agent in, add the name of the agent, and add a description of the agent.  Click OK when you are done and the Agent will be saved in the Catalog section.

Once the Agent has processed, if you selected the destination option of 'Homepage and Dashboard' you will be able to go to the 'Alerts' section on your homepage and view the Agent data. In addition, you can view the 'My Dashboard' section and see the Agent data as well.

***Best Practices***

This completes the introductory training on OB1.  Here are some best practices and helpful hints.
* All OB1 files will be saved to the DAS server. We will no longer save files to our agency directories, as in the past.
* It will be key to develop a good naming convention for saving your files to the OB1 folders.
* You should always add a description to the file so you will know what it is for as well other users who have access to the file.
* It is recommended to export your data to a CSV file.
* OB1 has a repository similar to what to Hyperion had. Statewide files will continue to be added to these folders for your use.
* When you open an Analysis, it will open to the Results' section. This section will always refresh data. You are able to cancel it with the 'cancel' button.
* Formula creation is slightly different than with Hyperion. It is recommended to research and share your findings with all users, when it comes to these new formula.