



BiToolkits User's Manual

Productivity tools for the MicroStrategy® B.I. Platform

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Introduction

What is BiToolkits?

BiToolkits is a batch oriented productivity tool designed for the MicroStrategy B.I. platform. It eliminates many of the time-consuming, repetitive tasks associated with MicroStrategy development, administration and QA activities to deliver productivity and quality gains.

Who can benefit from BiToolkits?

Report Developers - BiToolkits enables you to collect, organize and analyze information related to MicroStrategy objects. The *Object Finder* tool offers advanced features to help you search objects based on various properties. The *Object Analysis* tool provides many flexible and powerful functions to assist you conducting object analysis thoroughly and effortlessly. What used to be hours of labor intensive searching and tracing of objects is now reduced to a few mouse clicks. The *Last Use* function performs deep dependency searches to gather usage information to assist you on change impact analysis. Object usage information includes the timestamp of when the object was last used, the name of the object which last used it, and the user associated with its last use. Armed with this information, you can focus your attention specifically on impacted objects that are still in use, and ignore objects that are obsolete.

Administrators - BiToolkits delivers powerful features that help you automate repetitive and tedious tasks such as finding and deleting obsolete objects. The tool also allows you to change ownership/permission on selected objects and all their dependencies in one batch which becomes useful, for example, when re-assigning responsibilities when a developer leaves the company. BiToolkits also allows you to easily restore objects back to their original folders if they were moved during migration.

QA Analysts - New features unique to BiToolkits enable QA Analysts to compare properties of objects (and their components) across different projects and environments. Leveraging this functionality, you can quickly prepare and feed report list to Integrity Manager for cross-environment or pre/post migration comparison of report data.

What is the BiToolkits Workflow?

1. The BiToolkits workflow starts with the *Setup* tool to configure user accounts and MicroStrategy Environments.
2. The next step is to use the *Object Finder* tool to load data as needed into the BiToolkits database.
3. Once the desired data is loaded, various actions can be performed using the *Object Analysis*, *User Object Inventory*, or *QA & Migration Assist* tools.

Concept and Overview

1. Setup Tool

Before BiToolkits is deployed, a designated administrator must first enter user information in *Setup Users* tab and enter MicroStrategy metadata database information in *Setup MicroStrategy Environments* tab. Then each user needs to go into the *Setup My Profile* tab to setup login accounts and to assemble a personalized MicroStrategy Project selection list. Screen shot below is the *Setup* tool.

frmSetup BiToolkits v1.0 License To: Data Pantheon

Setup My Profile Setup Users Setup MicroStrategy Environments System Maintenance

Setup MicroStrategy Environments

EDIT LOCKED Refresh Undo

View Imported Projects

Mstr Environment: Dev

Mstr Environment Desc: Development Environment

Database Platform: SqlServer

DB Connection String: Driver=SQL Server Native Client 11.0;Server=DELL540\SQLEXPRESS;Database=Mstr_Analytics;Trusted_Connection=No;

Mstr Project Source Name: Dev Project

Database Account: ☐ Integrated ☐ Login ID sa Password ** Share This Account ☒

MicroStrategy Account: ☐ administrator Password **** Share This Account ☒

MicroStrategy Metadata Table Prefix

Intelligent Server	History List	Enterprise Manager	Narrowcast Server	NCS Subscription Book
dbo.	n/a	n/a	n/a	n/a

MicroStrategy environment such as Test, Dev, QA, Prod, etc. It is recommended to use a short abbreviation as it combines with MicroStrategy project names to form a selection list in MicroStrategy projects dropdown.

Must first click Unlock to make changes.

Click here to add a new entry.

Import projects after Connections are tested.

Unlock Save Test Connections Import Projects Delete Exit

Record: 1 of 3 No Filter Search

2. Object Finder Tool

Object Finder is a search tool that enables you to load MicroStrategy metadata into BiToolkits. Data in BiToolkits are grouped into batches for easy access. A new batch is created each time *Object Finder* loads data into BiToolkits. Each batch has a batch handle that consists of a sequential batch number, batch creation time, and a batch name (for example: “25 – 4/23/2015 11:20 PM - ObjectFinder”). The batch handle is generated by the system. The batch name can be changed by the user as desire. The batch number and batch creation time cannot be changed. Screen shot below is the *Object Finder* tool.

Note, new batches can also be created from existing data using various functions in other tools.

OBJECT FINDER

QA : MicroStrategy Tutorial

Object Search | Object ID Search | Browse By Folder

Object Name:
Object Desc:
Object Owner ID:

☐ Inclusive Dates

Modified Date Range: To:
Created Date Range: To:

☐ Obsolete Objects Search

Last Modified Prior To:
*Have Not Used Since:

☒ Objects that contain specific MicroStrategy functions

Arithmetic Operators
Basic Functions
Comparison Operators
Comparison Operators for Rank
Data Mining Functions
Date and Time Functions
Financial Functions
Internal Functions
Logical Operators
Math Functions

Function_Name | Function_Group
ApplyAgg | Internal Functions
ApplyComparison | Internal Functions
ApplyCSSecurityFilter | Internal Functions
ApplyLogic | Internal Functions
ApplyOLAP | Internal Functions
ApplyOptional | Internal Functions
ApplySimple | Internal Functions
Banding | Internal Functions
BandingC | Internal Functions

☐ Any Object Types
☐ List Common Object Types
☒ List All Object Types

☒ Show Subtypes | Select All | Clear All

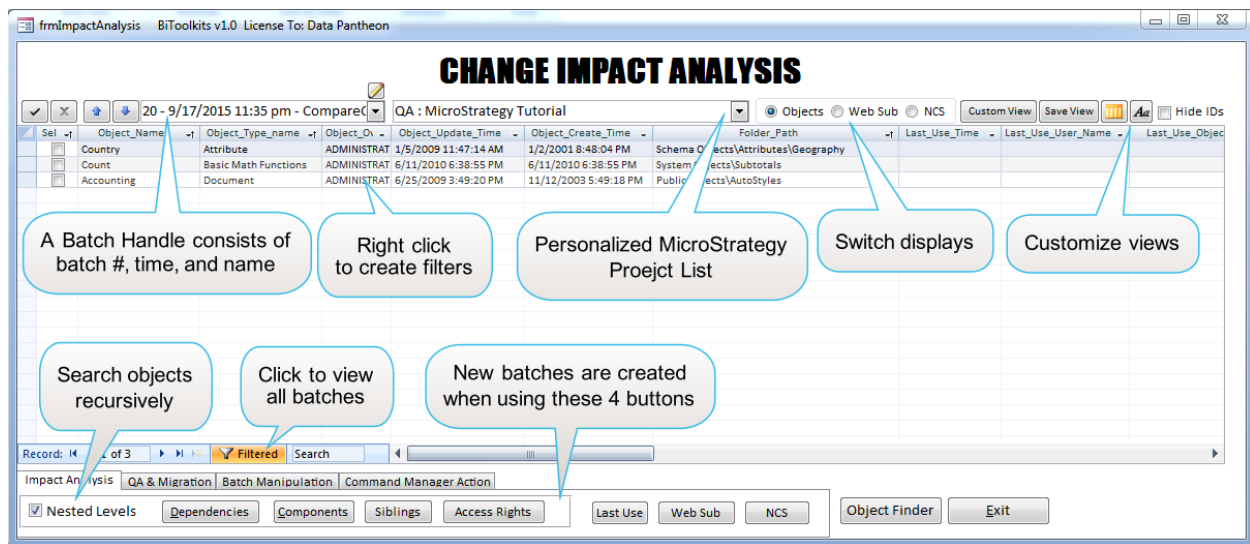
Object_Major	Object_Type_name
Report	FFSQL Graph View
Report	FFSQL Grid Graph View
Report	FFSQL Grid View
Report	FFSQL SQL View
Report	Graph from Cube
Report	Graph View
Report	Grid from Cube
Report	Grid Graph View
Report	Grid Template
Report	Grid View
Report	Grid View2
Report	SQL View

Search | Skip Search | Exit To Main Menu

3. Object Analysis and Batch Manipulation Tools

The *Object Analysis*, *User Objects Inventory*, and *QA & Migration Assist* tools are used to perform data analysis and object manipulations. Typically, you work on one batch at a time; however, the user interface is flexible to allow you to view all batches or to view any data segment with your own filtering criteria. All the three tools share the same user interface with minor customizations. When viewing data by batch, each tool is restricted to view batches that were loaded specifically for this tool. When not viewing data by batch, you have the flexibility of mixing and matching data from all three tools. The underline data are stored in the same table.

Data are segregated per MicroStrategy Projects. The system does not allow you to mix data from different MicroStrategy Projects. Screen shot below is the *Object Analysis* tool.

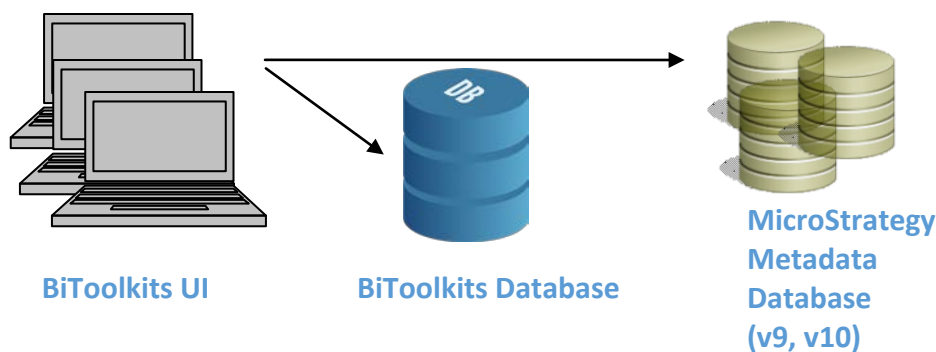


Software Installation

BiToolkits installation is simple and easy. There are no complicated installation steps or Windows registry updates. All you need is an Unzip program such as 7zip (free open source).

Architecture Overview

BiToolkits system consists of two components, User Interface (UI) and Database. Diagrams below illustrate the UI component vs. database component.



System Requirements

The minimum hardware requirement is Windows® PC with 2 GB RAM and 100 MB of free disk space. The minimum display resolution is 1280 x 800. The PC must run on Windows XP or higher. The software has been tested on a variety of Windows devices, including PCs, Laptops, and Tablets. Note, the software does not run on Windows RT operating system.

To be able to use this software, you need Microsoft® Access 2007 (or higher 32bit). If you don't have Microsoft Access, please follow all 3 steps below to install a free version of Access Runtime. For multi-user setup, repeat following steps on each user's workstation.

- Download and install latest version of Microsoft Access 32bit Runtime from Microsoft website <https://www.microsoft.com/en-us/download/details.aspx?id=39358>
- Download and install Security Update, kb2687441, from Microsoft website <https://www.microsoft.com/en-us/download/confirmation.aspx?id=30619>
- Download and install Security Update Fix, kb2597986, from Microsoft website <https://support.microsoft.com/en-us/kb/2597986>

Database Requirements

BiToolkits has its own database which connects to your MicroStrategy metadata databases (Intelligent Server, History List, Enterprise Manager, Narrowcast Server) for READ ONLY access. It does not access your data warehouse database.

BiToolkits supports following databases:

- Oracle 11gR2 (or higher)
- Microsoft SQL Server 2008R2 (or higher)
- Please contact us for information regarding additional database support

BiToolkits requires database account(s) to access MicroStrategy metadata. The following account permissions are required:

- View/Select permission to metadata tables
- Temp table creation permission (SQL Server: global Temp table creation permission)

MicroStrategy B.I. Platform Requirements

BiToolkits supports following MicroStrategy versions:

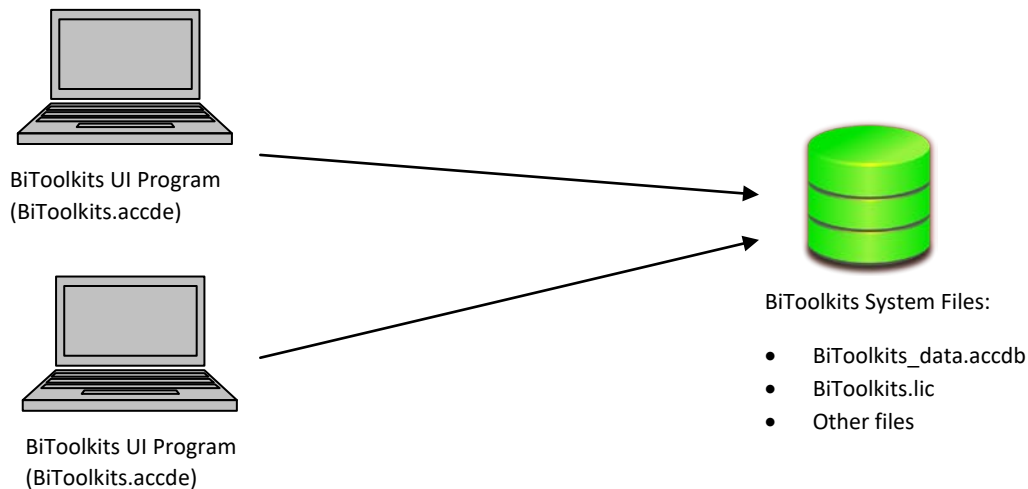
- MicroStrategy version 9 and up.
- Prior versions might still work but have not tested.

Instructions for New Software Installation

(The following instructions assume that BiToolkits has not been previously installed.)

BiToolkits can be configured for either a Single User or Multi-user installation. The main difference between Single User and Multi-user installation is the location where the BiToolkits system files (database and auxiliary files) are installed:

- For Single User, all BiToolkits files are typically placed in one folder
- For Multi-user, BiToolkits system files must be placed in a shared network folder (see diagram below)



Single User Installation (for both BiToolkits Free and Pro versions):

1. Unzip the software into a desired folder (you must have Read and Write permissions). Remember this folder location as you will be prompted for it when you run BiToolkits for the first time and are prompted to specify the location of the BiToolkits database.
2. If you have purchased BiToolkits, you will need to copy the license file (**BiToolkits.lic** - sent to you by e-mail) into the same folder.
3. Double click **BiToolkits.accde** to launch the program. If you have purchased BiToolkits, you will be prompted to enter the Unlock Code (sent to you by e-mail); otherwise you will be prompted to generate a Free version license file or a Pro version 30 day trial license file.

Multi-user Installation (for BiToolkits Pro version only):

1. Unzip the software into a desire network share folder (you must have Read and Write permissions). Remember this folder location as you will be prompted for it when you run BiToolkits for the first time and are prompted to specify the location of the BiToolkits database.
2. If you have purchased BiToolkits, you will need to copy the license file (**BiToolkits.lic** - sent to you by e-mail) into the same folder.
3. For best performance, each user should have a separate copy of the BiToolkits.accde program along with "BiToolkits License Agreement.pdf" and "BiToolkits Privacy Statement.pdf" installed on his/her workstation or in a personal folder on the network (with both Read and Write permissions). The BiToolkits database and rest of the files will be shared on the network folder.
4. The first user to launch the software (**BiToolkits.accde**) is the default administrator responsible for initial setup of user accounts and MicroStrategy environments. Double click **BiToolkits.accde** to launch the program. If you have purchased BiToolkits, you will be prompted to enter the Unlock Code (sent to you by e-mail); otherwise, you will be prompted to generate a Free version license file or a Pro version 30 day trial license file.
5. For rest of the users, double click **BiToolkits.accde** and select the BiToolkits database on the network folder. No Unlock Code is needed.

Instructions for License Conversion from Trial Version to Licensed Version

Upon completing your purchase you should receive by e-mail the BiToolkits license file and an Unlock Code. Please follow the steps below to install the new license file:

1. Make sure all users exit from BiToolkits.
2. Make sure you have BiToolkits Admin privilege.
3. Backup the existing BiToolkits license file (BiToolkits.lic).
4. Copy the new BiToolkits license file (BiToolkits.lic) to the BiToolkits System folder, overriding the existing file.
5. Start BiToolkits program (BiToolkits.accde). Enter the Unlock Code when prompted. Please note the Unlock Code is user account specific and is valid only for 3 days. If the Unlock Code is expired, you need to request for another one.

Instructions for License Upgrade

A license upgrade increases the number of users permitted to use BiToolkits. Upon completing your purchase of the upgrade, you should receive by e-mail a new BiToolkits license file and an Unlock Code. Please follow the steps below to install the new license file:

1. Make sure all users exit from BiToolkits.
2. Make sure you have BiToolkits Admin privilege.
3. Backup the existing BiToolkits license file (BiToolkits.lic).
4. Copy the new BiToolkits license file (BiToolkits.lic) to the BiToolkits System folder, overriding the existing file.
5. Start BiToolkits program (BiToolkits.accde). Enter the Unlock Code when prompted. Please note the Unlock Code is user account specific and is valid only for 3 days. If the Unlock Code is expired, you need to request for another one.

Instructions for Changing Location of BiToolkits System Folder

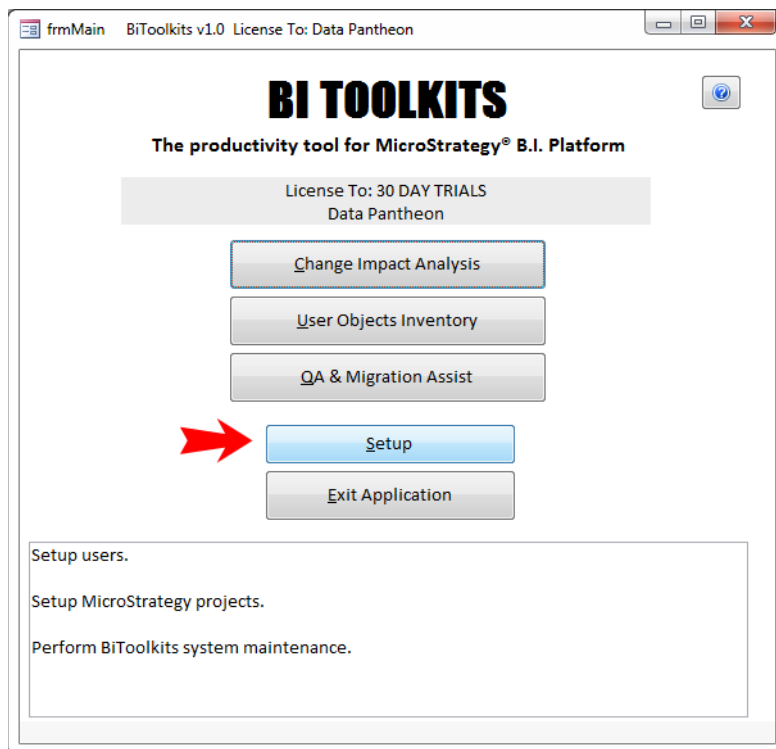
You can move your BiToolkits UI program (BiToolkits.accde) to a different folder without impacting other users. However, if you want to move the BiToolkits system folder to a new location, each BiToolkits UI program needs to be re-pointed to the new location, using the following instructions:

1. Please make sure all users from BiToolkits.
2. Move all the files contained in the BiToolkits System folder to the new location.
3. Notify all users of the new location.
4. When the BiToolkits program (BiToolkits.accde) is launched, it will prompt the user to enter the new location of the BiToolkits System folder where the database (bitoolkits_data.accdb) is located.

Setup Overview

Setup procedures outlined below applies to both Single User installation and Multi-user Installation. Obvious, you only need to create one user account for Single User installation.

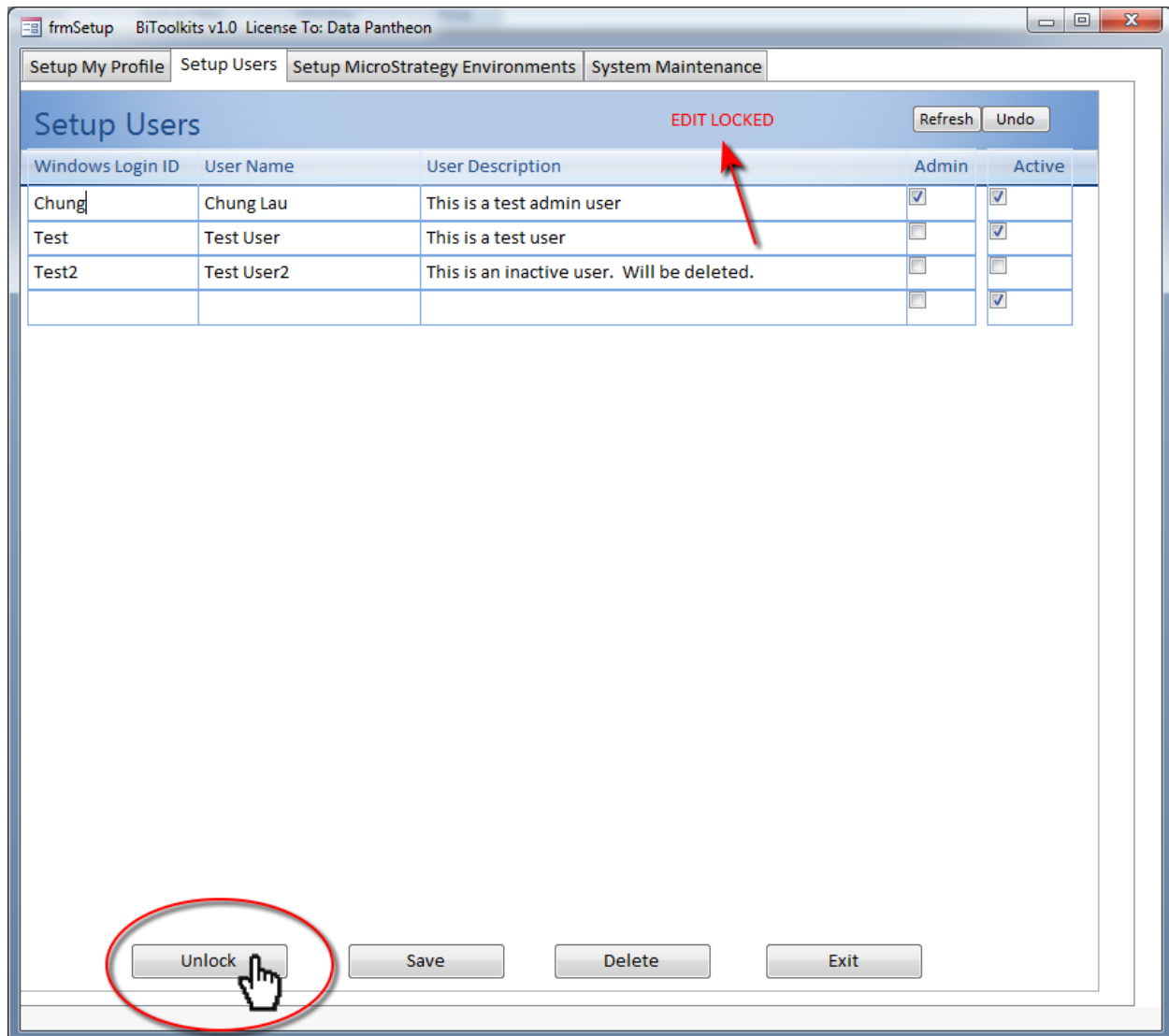
When the program is launched for the first time (or subsequent times but setup was not completed), it will automatically enter the *Setup* tool. After setup is completed, if you need to enter Setup tool again, you must click the Setup button from Main menu (see Main menu below).



Setup Steps

In Multi-user installation, a designated BiToolkits Administrator must be the first one to start the BiToolkits UI in order to setup user accounts and MicroStrategy environments before other users can login. In a Single User installation, you are the BiToolkits Administrator.

1. Launch BiToolkits UI, BiToolkits.acdde.
2. In *Setup Users* tab (see screen print below), enter user information.



3. In *Setup MicroStrategy Environments* tab (see screen print below), enter MicroStrategy environment information. For Single User setup with non-Integrated login, it is recommended to tick the **Share This Account** checkbox for both **Database Account** and **MicroStrategy Account** so that you don't need to enter them again in *Setup My Profile* tab. Be sure to click the Import Projects button and select projects to be used in BiToolkits. Users can only use MicroStrategy projects that are made available here by the Administrator.

frmSetup BiToolkits v1.0 License To: Data Pantheon

Setup My Profile Setup Users Setup MicroStrategy Environments System Maintenance

Setup MicroStrategy Environments

EDIT LOCKED Refresh Undo

Mstr Environment: demo View Imported Projects

Mstr Environment Desc:

Database Platform: SqlServer

DB Connection String: Driver=SQL Server Native Client
11.0;Server=DELL540\SQLEXPRESS;Database=Mstr_DB;Trusted_Connection=yes;

Mstr Project Source Name: Mstr Demo Project

	Integrated	Login ID	Password	Share This Account
Database Account:	<input checked="" type="checkbox"/>			<input type="checkbox"/>
MicroStrategy Account:	<input type="checkbox"/>	clau	***	<input checked="" type="checkbox"/>

MicroStrategy Metadata Table Prefix

Intelligent Server	History List	Enterprise Manager	Narrowcast Server	NCS Subscription Book
dbo.md_	dbo.md_	dbo.em_	dbo.nc_p3	dbo.nc_p3

MicroStrategy environment such as Test, Dev, QA, Prod, etc. It is recommended to use a short abbreviation as it combines with MicroStrategy project names to form a selection list in MicroStrategy projects dropdown.

Must first click Unlock to make changes.

Click here to add a new entry.

Import projects after Connections are tested.

Unlock Save Test Connections Import Projects Delete Exit

Record: 1 of 2 of 3 No Filter Search

4. In *Setup My Profile* tab (see screen print below), enter Database Account and MicroStrategy Account information if needed. If MicroStrategy Environment is setup with share accounts, the accounts you enter here are ignored as share accounts in *Setup MicroStrategy Environments* take precedence. If all MicroStrategy Environments are setup with share accounts, you don't need to enter your accounts here. Click the **Verify** button to validate information you entered. The Verify button performs the following actions:

- Test connection to each MicroStrategy environment entered in the *Setup MicroStrategy Environments* tab.
- Test Command Manager execution if you have Command Manager installed.
- Select MicroStrategy projects to be used in BiToolkits.

The screenshot shows the 'Setup My Profile' tab of the 'frmSetup - BiToolkits v1.0' application. The window title bar includes 'License To: Data Pantheon'. The 'Setup My Profile' tab is active, showing a 'User Login ID' of 'Chung' and 'User Name' of 'Chung Lau'. The 'User Description' is 'This is a test admin user'. There are buttons for 'Refresh', 'Undo', 'Verify', 'Save', and 'Exit'. The 'Database Account' and 'MicroStrategy Account' sections have checkboxes for 'Integrated' and 'Login ID', and fields for 'Password'. The 'Command Manager (full Path and Exe name):' field contains 'C:\Program Files (x86)\MicroStrategy\Command Manager\cmdmgr.exe'. A table of 'MicroStrategy Project' is shown with columns: 'Selected', 'Mstr Auto Login', 'Mstr Share Account', 'DB Auto Login', and 'DB Sh'. The table lists four projects: 'Dev : Human Resources Analysis Module', 'Dev : MicroStrategy Tutorial', 'QA : Human Resources Analysis Module', and 'QA : MicroStrategy Tutorial'. Annotations highlight the 'Personalized project selection list' and 'Data from Setup MicroStrategy Environments tab'.

MicroStrategy Project	Selected	Mstr Auto Login	Mstr Share Account	DB Auto Login	DB Sh
Dev : Human Resources Analysis Module	Yes	No	Yes	No	Yes
Dev : MicroStrategy Tutorial	No	No	Yes	No	Yes
QA : Human Resources Analysis Module	Yes	No	Yes	No	Yes
QA : MicroStrategy Tutorial	Yes	No	Yes	No	Yes

Overview of how BiToolkits Improves Workflow Productivity and Quality

BiToolkits was designed to provide tangible and measurable gains in developer productivity when working on MicroStrategy projects. Multi-environment setups (Dev, QA, and Prod) demand that care is taken to ensure that objects are in-sync across environments and unintended outcomes are avoided. The following list illustrates a typical workflow when working on projects in a multi-environment setup. An asterisk indicates workflow areas where BiToolkits provides productivity and quality gains:

1. Analyze objects that need to be changed* and assess change impacts*
2. Make sure Dev has the latest version of objects - by comparing with Prod environment*.
3. Gather and move required objects into a single folder in Dev environment*.
4. Make changes in Dev and compile a Change List* which documents changed objects.
5. QA Analyst – Verify the Change List by comparing objects between Dev and QA environments*.
6. Pre-QA migration – gather impacted reports in QA*, verify impacted reports are up-to-date*, and take report snapshots (using IM*).
7. Migrate objects to QA environment, take report snapshots*, and compare before and after migration snapshots.
8. Migrate objects to Prod environment, verify user access rights*, and move objects back to their original folders*.

Detail Steps on Using BiToolkits to improve project workflow

1. Analyze objects that need to be changed* and assess change impacts*

BiToolkits has very powerful and versatile tools when it comes to analyzing objects. The *Object Finder* tool in conjunction with *Object Analysis* tool provides many flexible and powerful functions to assist users perform object analysis thoroughly and effortlessly. What used to be hours of labor intensive searching and tracing of objects is now reduced to a few mouse clicks.

The *Search By Functions* filtering option in Object Finder enables you to easily find objects that contain specific MicroStrategy functions, such as Average, Count, ApplySimple, etc.

The ability to search by object types provides flexibility that is not available in MicroStrategy's Search dialog box. You can search objects by common types, detailed types, or subtypes. For example, you can find all Freeform SQL reports, by selecting FFSQL report subtypes.

Due to the relational nature of MicroStrategy objects, the most critical task facing developers today is determining impact assessment when objects (especially Schema objects) change. BiToolkits has developed a proprietary and powerful solution, using a unique search algorithm that performs deep dependency checks. With the click of a single button, the algorithm searches through the metadata database and returns a complete and accurate list of only the objects that are truly impacted.

For some Schema objects, the number of impacted objects could be huge, in the thousands. It is a daunting task to wade through the entire list to determine which impacted objects are still in use. With the single click of a button, the *Last Use* function in the *Object Analysis* tool quickly provides the answers for you. It updates each object with last use information; including the timestamp of when the object was last used, the name of the object which last used it, and the user associated with its last use. Armed with this information, you can focus your attention specifically on impacted objects that are still in use, and ignore objects that are obsolete.

To further assist you on analyzing impacted objects, the *Object Analysis* tool contains functions to list all Web Subscriptions and NCS Subscriptions of impacted reports.

2. Make sure Dev has the latest version of objects - by comparing with Prod environment*.

Once the decision has been on which objects to change, developers face a time consuming task of comparing objects between the Dev environment and the Prod environment to ensure Dev has latest version. This comparison is complicated by the fact that all components in all levels of an object must be compared in order to determine whether the object is identical across environments. An object could be the same across environments but the components used by the object could be different.

With a click of a button, the BiToolkits *Compare Objects* function quickly and reliably compares objects (and all components in all levels) among multiple environments. The results can be viewed on screen with various filtering options as well as exported to a file.

3. Gather and move required objects into a single folder in Dev environment*.

Best practice for many organizations is to gather required objects into a single folder before making changes. Typically, this is very tedious work that requires clicking through many folders and repeating drag & drop operations. Now, all you have to do is select the desired objects in the list returned by *Object Finder* and instruct *Command Manager* to move them to the target folder.

4. Make changes in Dev and compile a Change List* which documents changed objects.

The *Change List* documents new and changed objects in a project, which informs QA Analysts what they need to test. Before BiToolkits, developers had to manually compile the list. With BiToolkits, the list can be generated in various formats, including Excel, XML, CSV, etc.

5. QA Analyst – Verify the Change List by comparing objects between Dev and QA environments*.

When a project is ready for QA, one of the first tasks for a QA Analyst is to verify the Change List. With BiToolkits, this mundane task is simplified to a mouse click using the *Compare Objects* function. The results of this comparison can be exported in various file formats.

6. Pre-QA migration – gather impacted reports in QA*, verify impacted reports are up-to-date*, and take report snapshots*.

Before objects are migrated from Dev to QA, QA Analysts need to take before and after snapshots (preferably using Integrity Manager) of impacted reports. The time consuming task of (a) searching for impacted reports, (b) verifying if impacted reports in QA environment are of the latest version, and (c) gathering reports for before and after snapshots - can now be reduced to few mouse clicks using functions below:

- a) The *Dependents* search function along with *Last Use* function enables you to find impacted objects effortlessly.
- b) The *Compare Objects* function enables you to compare objects (and their components in all levels) in QA environment against objects in Prod environments. You can easily identify outdated objects by reviewing the comparison results.
- c) The *Create Shortcuts* function utilizes Command Manager to create report shortcuts. You can feed these shortcuts to Integrity Manager to run report snapshots.

7. Migrate objects to QA environment, take report snapshots*, and compare before and after migration snapshots.

During QA testing, QA analysts can continue to use BiToolkits to search impacted objects and perform object dependency/component checks.

8. Migrate objects to Prod environment, verify user access rights*, and move objects back to their original folders*.

After objects are migrated to the Prod environment, the MicroStrategy Administrator needs to make sure migrated objects have the correct security settings for intended users. Object components can be nested in multiple levels, making this is a labor intensive task because security settings for all of these components also need to be inspected to ensure correct permissions for intended users.

The BiToolkits *Access Rights* function is designed specifically to automate this process. With the click of a button, the user access rights on selected objects are validated, including all components and at all nested levels.

Another powerful function, *Change Access Rights*, leverages the Command Manager to automate the process of changing security settings on selected objects to grant/deny permissions to a specified user/group.

When objects are migrated to the Prod environment in a single folder, the Administrator was faced with another labor intensive task that involved moving objects back to their original folders. The BiToolkits *Restore to Original Folder* function accomplishes this task with ease. With a click of a button, BiToolkits instructs Command Manager to move these objects back to their original folders.

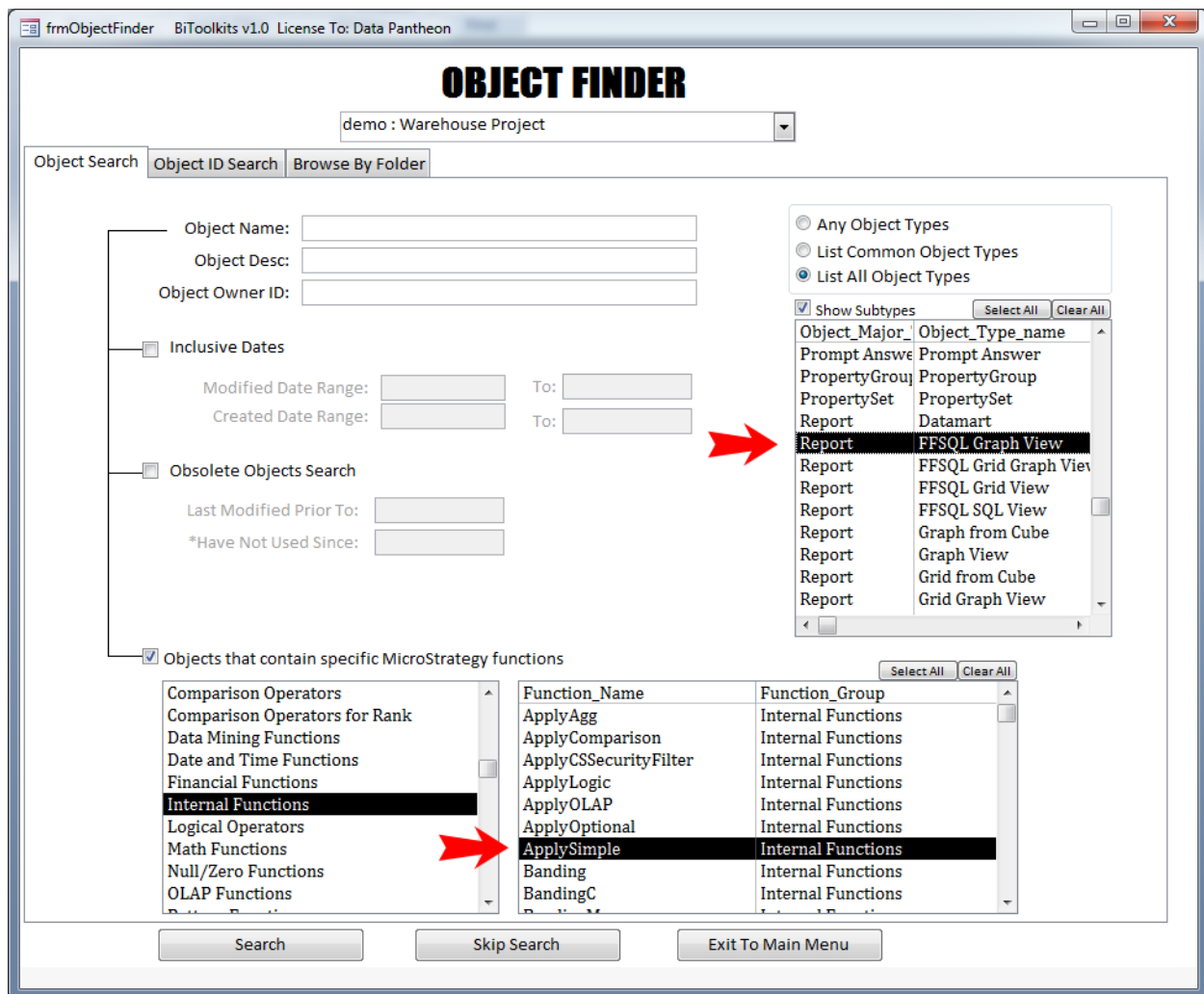
BiToolkits Use Cases

Find objects by specific types

The BiToolkits fully utilizes MicroStrategy internal structures to provide capabilities that are not available anywhere else. The *Search By Functions* filtering option in *Object Finder* tool enables you to easily find objects that contain specific MicroStrategy functions, such as Average, Count, ApplySimple, etc.

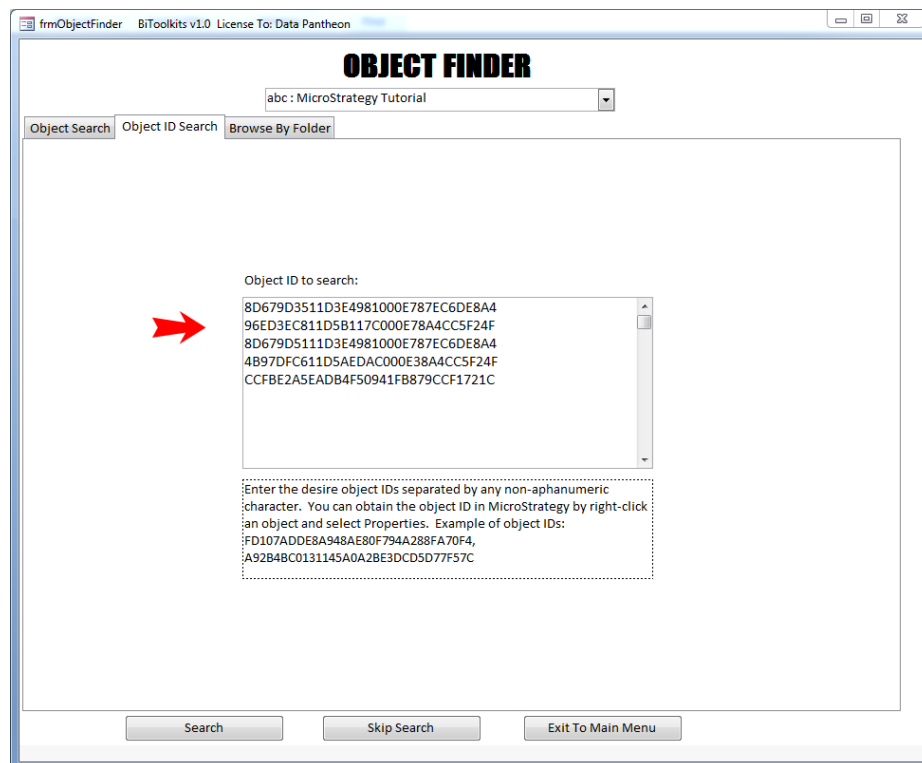
The *Search By Object Types* option provides more flexibility than MicroStrategy's Search dialog box. You can search objects by common types, detailed types, or subtypes. For example, you can find all Freeform SQL reports, by selecting FFSQL report subtypes.

Red Arrows in Screen shot below call out to above functions.



Find objects that are not searchable using MicroStrategy Search dialog box

Have you seen error messages displaying a list of object IDs in DSS Error log, yet the MicroStrategy Search dialog box cannot find these objects? BiToolkits can relieve your frustration with the power provided by the deep search algorithms in the Object Finder tool. Use the Object ID Search tab to locate all of the objects that cannot be found using the MicroStrategy Search dialog box. Additionally, the Object ID Search function (see screen print below) can search multiple object IDs in one batch.



Cleanup obsolete objects

BiToolkits offers several powerful functions to assist you in cleaning up obsolete objects. The *Obsolete Object Search* option in *Object Finder* (see figure 1) helps you to identify obsolete objects. The *Object Analysis* tool (see figure 2) helps you reviewing and fine tune the object list. The *Delete Objects* function (see figure 3) helps you delete objects via Command Manager. Before proceeding with obsolete objects cleanup, please consider following questions:

- How long must objects be out of use before considered obsolete? Note that each object may have its own obsolescence rule.
- What objects to exclude? You probably don't want to include objects that were recently created/modified even though they have not been used. You can specify the object exclusion date under "*Last Modified Prior To:*" filtering option (see figure 1).
- What other search criteria should be included in conjunction with above time parameters? Examples are types of objects, owners of objects, certain keywords in object description, etc.

Use the following steps in BiToolkits to cleanup obsolete objects:

1. Enter obsolete search criteria (see figure 1). If you anticipate there are thousands of obsolete objects, you may want to tick the *Turbo Mode* checkbox to speed up the process. When *Turbo Mode* is ticked, the search algorithm stops searching once it found objects satisfied the search criteria. Note: there the *Last Used* information will not be shown on *Object Analysis* tool. However, you could use still get Last Use information on selected objects using the *Last Use* button in *Object Analysis* tool.
2. Enter additional search criteria if desire.
3. Click the *Search* button in the *Object Finder* tool.
4. In *Object Analysis* tool, sort objects by owner and export objects to a file (see figure 4).
5. Distribute exported objects to their owners for delete confirmation.
6. Once confirmations are received, remove user access rights (using *Change Access Rights* button in figure 3) on the to-be-deleted objects so that no one can use them anymore.
7. Keep the objects in the system for a desired period of time. If no complain from users, delete the objects (using *Delete Objects* button in figure 3).

frmObjectFinder BiToolkits v1.0 License To: Data Pantheon

OBJECT FINDER

demo : Warehouse Project

Object Search **Object ID Search** Browse By Folder

Object Name:

Object Desc:

Object Owner ID:

☐ Inclusive Dates

Modified Date Range: To:

Created Date Range: To:

☒ **Obsolete Objects Search**

Last Modified Prior To:

*Have Not Used Since:

(*This may take a long time to run)

Turbo Mode: ☒

☐ Objects that contain specific MicroStrategy functions

Any OI

☐ List Co

☐ List All

☒ Show S

The Last Use of an object is either last time reports containing the object were run or (if report run time is not available) last modified date of objects that contain the object.

(Figure 1)

frmImpactAnalysis BiToolkits v1.0 License To: Data Pantheon

CHANGE IMPACT ANALYSIS

2 - 9/13/2015 8:48 pm - Component: abc: MicroStrategy Tutorial

Objects Web Sub NCS Custom View Save View Hide IDs

Object Name	Object Type Name	Object Owner	Object Update Time	Object Create Time	Folder Path	Last Use Time	Last Use User
Hypothesis Testing	Grid View	ADMINISTRAT	11/18/2009 8:54:33 PM	5/24/2002 7:36:07 PM	Public Objects\Reports\MicroStrategy Platform Capabilities\Advanced Analytics\	11/18/2009 20:54	Administrator
ID	AttributeForm	ADMINISTRAT	5/11/2015 3:38:15 PM	6/11/2010 6:38:55 PM	System Objects\Form Categories	5/11/2015 15:38	Administrator
In	Function	ADMINISTRAT	3/16/2015 2:55:20 AM	1/1/1900	Schema Objects\Functions and Operators\Operators\Comparison Operators		
Last year in sample DB	Filter	ADMINISTRAT	3/4/2007 4:42:32 PM	5/24/2002 7:29:08 PM	Public Objects\Reports\MicroStrategy Platform Capabilities\Advanced Analytics\		
Last Year's	Transformation	ADMINISTRAT	3/17/2004 4:56:48 PM	1/2/2001 8:47:18 PM	Schema Objects\Transformations		
LU_CALL_CTR	Logical Table	ADMINISTRAT	6/6/2012 12:12:35 PM	1/2/2001 8:47:09 PM	Schema Objects\Tables		
LU_DAY	Logical Table	ADMINISTRAT	6/6/2012 12:12:35 PM	9/21/2001 8:30:19 PM	Schema Objects\Tables		
LU_YEAR	Logical Table	ADMINISTRAT	6/6/2012 12:12:35 PM	1/2/2001 8:47:15 PM	Schema Objects\Tables		
p-value (Heteroscedastic)	Metric	ADMINISTRAT	3/4/2007 4:42:32 PM	5/24/2002 7:33:13 PM	Public Objects\Reports\MicroStrategy Platform Capabilities\Advanced Analytics\		
p-value (Homoscedastic)	Metric	ADMINISTRAT	3/4/2007 4:42:32 PM	5/24/2002 7:33:54 PM	Public Objects\Reports\MicroStrategy Platform Capabilities\Advanced Analytics\		
Revenue	Fact	ADMINISTRAT	12/23/2008 12:25:28 PM	1/2/2001 8:47:19 PM	Schema Objects\Facts		
Sum	Function	ADMINISTRAT	3/16/2015 2:55:24 AM	1/2/2001 8:47:35 PM	Schema Objects\Functions and Operators\Operators\Comparison Operators		
Year	Attribute	ADMINISTRAT	1/27/2012 12:00:32 PM	1/2/2001 8:48:10 PM	Schema Objects\Attributes\Time		
YEAR_DATE	Column	ADMINISTRAT	6/6/2012 12:13:04 PM	9/21/2001 7:03:05 PM	System Objects\Columns		
YEAR_ID	Column	ADMINISTRAT	6/6/2012 12:13:04 PM	1/2/2001 8:48:44 PM	System Objects\Columns		

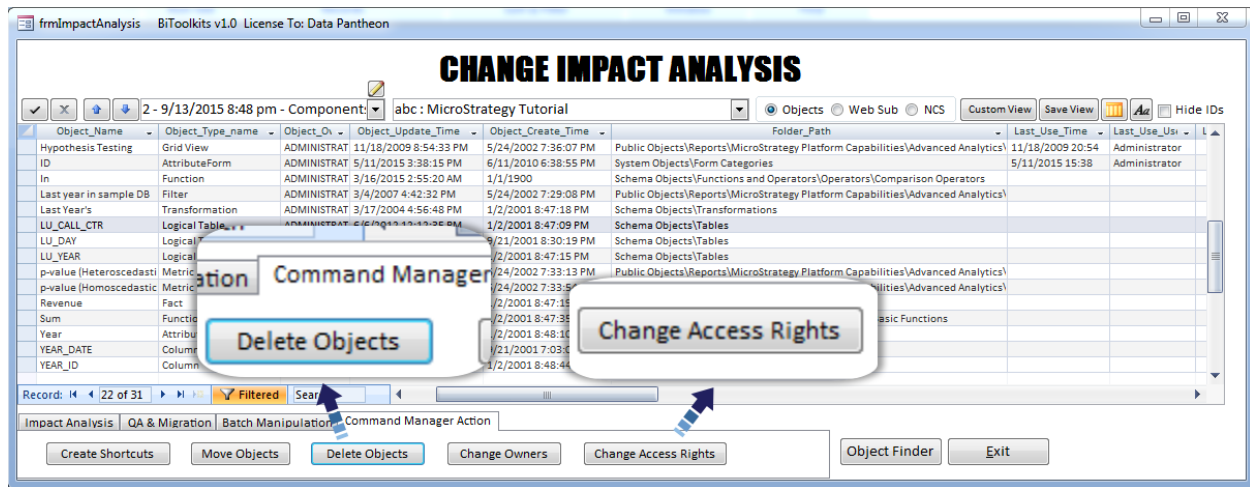
Record: 12 of 31 Filtered Search

Impact Analysis QA & Migration Batch Manipulation Command Manager Action

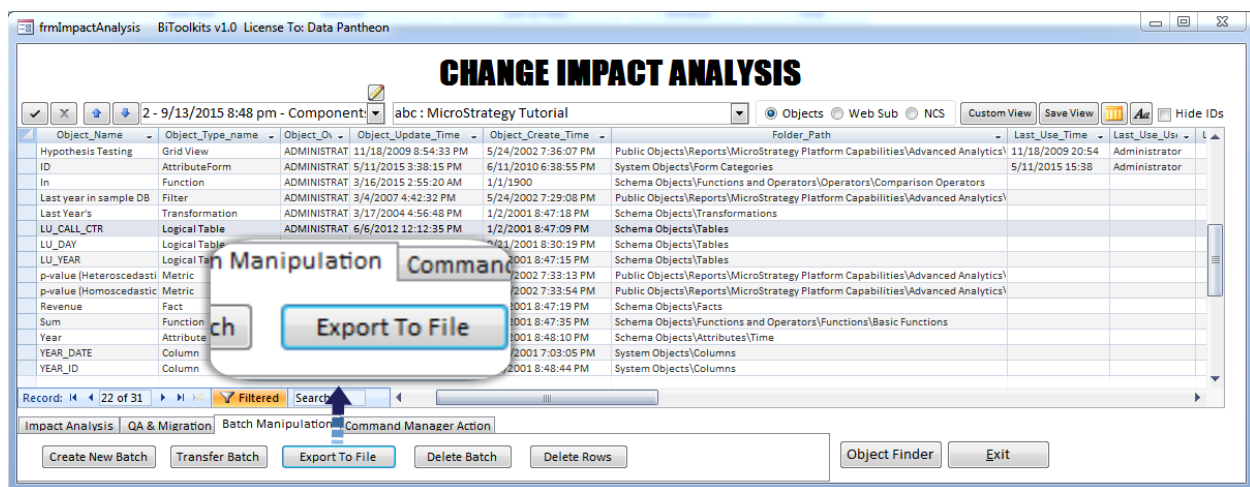
☐ Nested Levels ☒ Dependencies ☐ Components ☐ Siblings ☐ Access Rights

Last Use Web Sub NCS Object Finder Exit

(Figure 2)



(Figure 3)

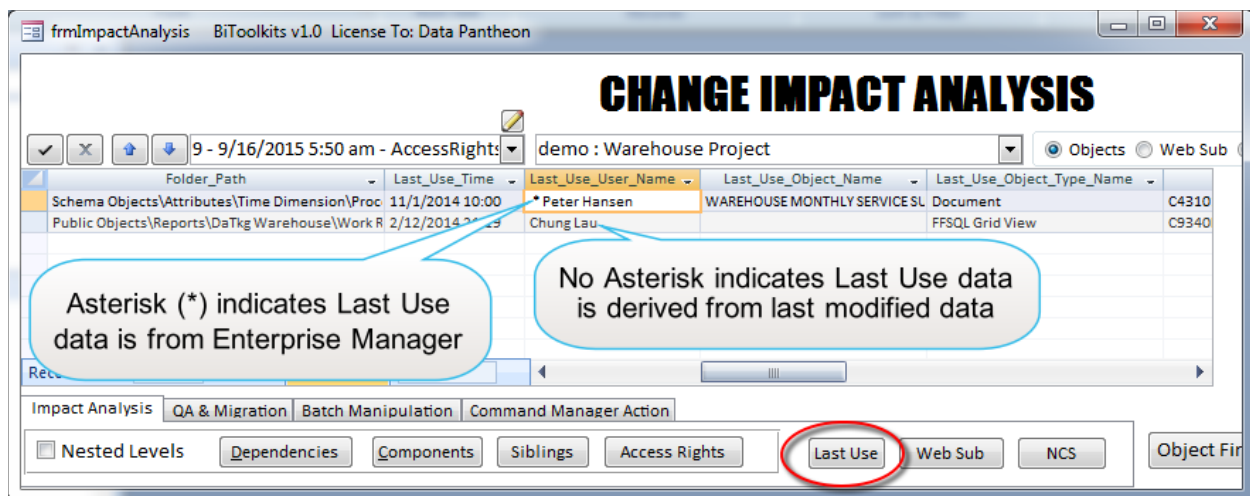


(Figure 4)

Find Last Use information

The *Last Use* function in *Object Analysis* tool is arguably the most powerful feature implemented in BiToolkits. This function is essential for change impact analysis. It enables you to easily track down object's usage information such as who use it and when it was last used. Below steps illustrate how the *Last Use* function works internally.

1. Performs a deep search to compile an object Dependency List that includes all nested levels and object types (such as metrics, filters, reports, etc.). For Schema objects, this list could be huge.
2. If you have Enterprise Manager, the Last Use information will be determined by the last report execution time. The following Last Use fields are populated with data from Enterprise Manager:
 - Last Used Time - Last report execution date/time
 - Last Used User Name - MicroStrategy user who runs the report (note the * in front of the name to denote data is from Enterprise Manager)
 - Last Used Object Name – Name of the report that was last run
 - Last Used Object Type Name – One of the Report types (such as Report, Document, Intelligent Cube, etc.)
3. If a) your installation does not have Enterprise Manager, b) Enterprise Manager does not contain report execution information on any of the reports in the Dependency List, or c) your Dependency List does not contain any reports, the Last Use information will be determined by the last Modified time. The following Last Use fields are derived from the object's properties:
 - Last Used Time - Last object Modified date/ time
 - Last Used User Name - Object owner name (note there is no * in front of the name)
 - Last Used Object Name – Name of the object that was last modified (blank if it is the same as the source object name.)
 - Last Used Object Type Name – Name of the object type (such as Metric, Filter, Custom Group, Report, etc.)

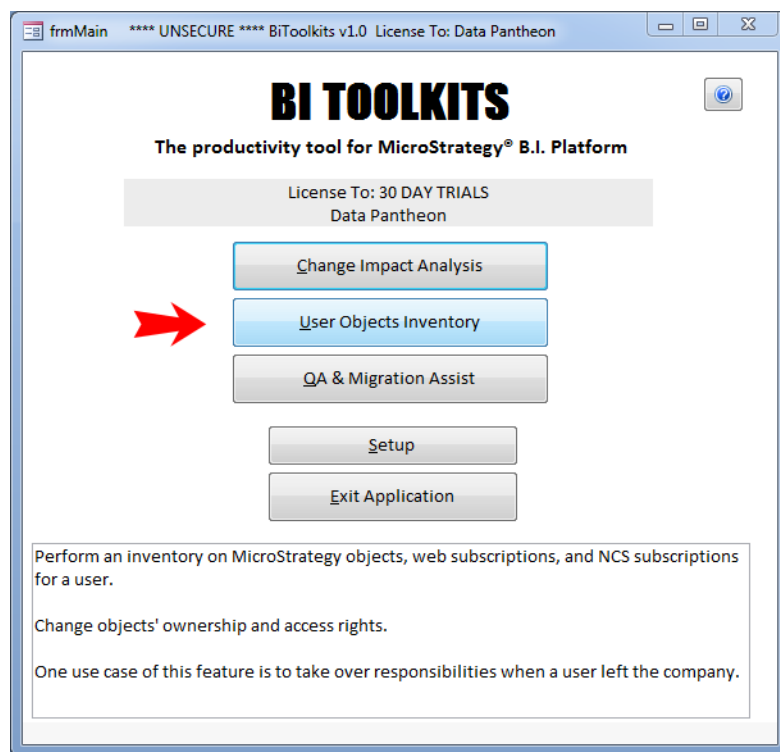


Distribute responsibilities when users left the team

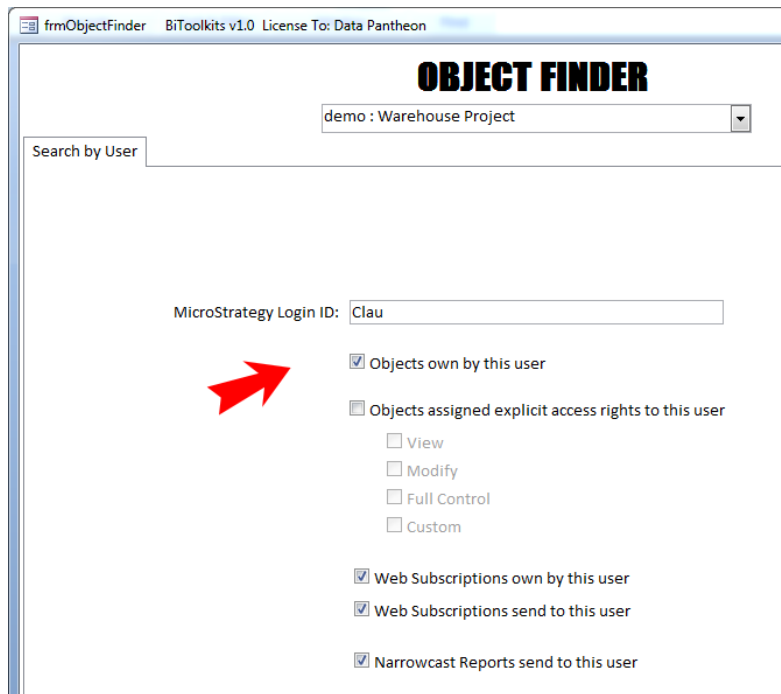
When MicroStrategy users are terminated, they left behind personal objects may scatter in many folders. Those objects need to be re-assigned to other users. There are Web Subscriptions and NCS Subscriptions need to be unsubscribed. It is an arduous task for MicroStrategy Administrators to go through the process of taking an inventory of impacted objects, re-assigning responsibilities to other users, moving objects to different folders, changing objects' ownership, and changing objects' security settings.

BiToolkits was designed to simplify this task with an easy 3 step process.

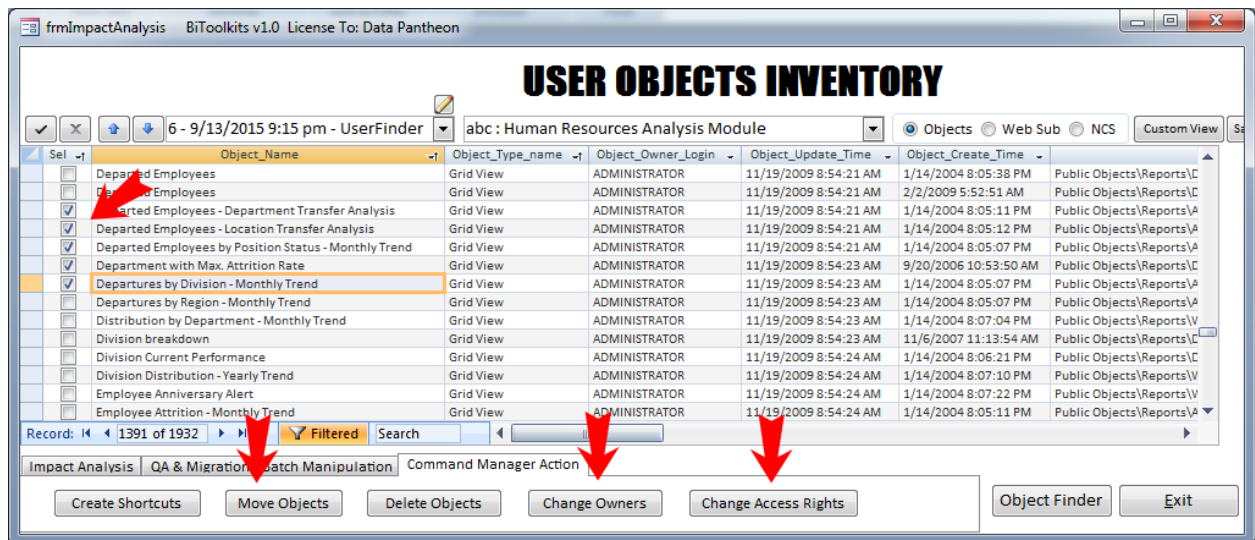
1. Click *User Objects Inventory* button on the *Main* menu (see figure 1).
2. Enter desire *User Login ID* in *Object Finder* tool (see figure 2).
3. Select objects from the *User Objects Inventory* tool and choose actions (such as *Move Objects*, *Change Owner*, and *Change Access Rights*) from *Command Manager* Action tab (see figure 3).



(Figure 1)



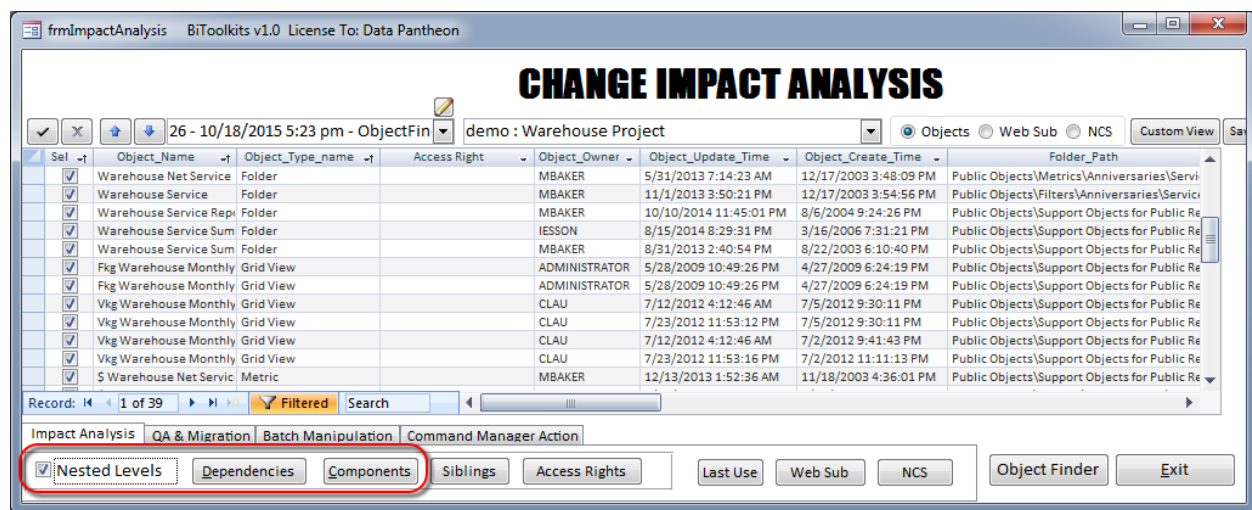
(Figure 2)



(Figure 3)

Search object dependencies and components

The object *Dependents* search function (see screen print below) is implemented with a powerful option, *Nested Levels*, to enable you to retrieve depending objects nested in many levels. Likewise, the *Components* search function (see screen print below) utilizes the same power of *Nested Levels* to retrieve components nested in many levels. Unlike MicroStrategy's recursive "contained" and "contained by" options in the Search for Objects screen (which returns thousands of unrelated objects), the search result in BiToolkits excludes unrelated objects. Please see more explanations below.



The *Nested Levels* option in the *Dependents* and *Components* search function works differently than MicroStrategy's recursive "contained" and "contained by" options in the Search for Objects function.

Here is an example to illustrate the differences:

In MicroStrategy's Tutorial project, let's select the "First Order Date" attribute under the Customers folder (see Figure 1) and examine the followings with the help of MicroStrategy's Search for Objects function:

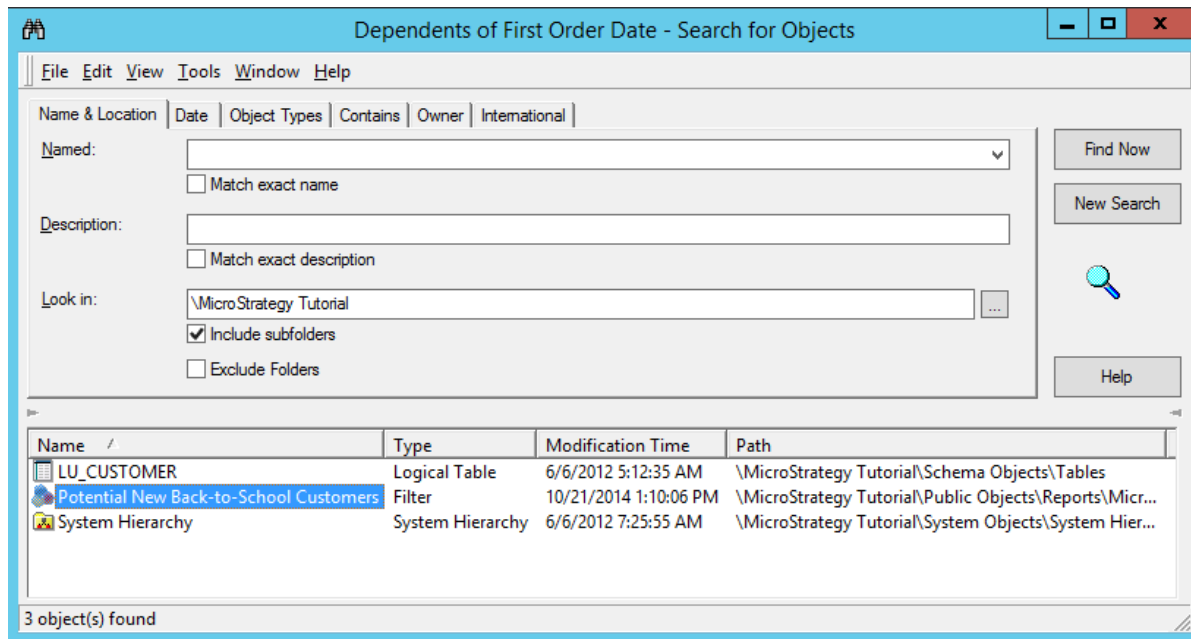
1. Perform the Dependents search on "First Order Date" attribute and notice it returns 3 objects, LU_CUSTOMER (Logical Table), Potential New Back-to-School Customers (Filter), and System Hierarchy (System Hierarchy) (see figure 2).
2. Perform the Dependents search on "Potential New Back-to-School Customers" filter and notice it returns three grid reports (see figure 3). There are no more dependencies on the grid reports.
3. Perform the Components search on "Potential New Back-to-School Customers" filter and notice it returns 2 objects, First Order Date (Attribute) and Not Between (Function) (see figure 4).
4. Perform the Components search on "First Order Date" attribute and notice it returns 2 objects, First Order Date (Attribute) and Not Between (Function) (see figure 5).

5. Perform Dependency search on “First Order Date” attribute with the recursive “contained” option enabled and notice it returns **1792** objects (see figure 6).
6. Perform Components search on “Potential New Back-to-School Customers” filter with the recursive “contained by” option enabled and notice it returns **368** objects (see figure 7).
7. In BiToolkits, the *Dependents* search on “First Order Date” attribute with the Nested Levels option enabled would return **5** objects, 1 filter, 3 grids, and itself (see figure 8). We believe this result is more in line with what the user is looking for.
8. In BiToolkits, the *Components* search on “Potential New Back-to-School Customers” filter with the Nested Levels option enabled would return **6** objects, 2 attribute forms, 1 table column, 1 logical table, 1 logical function, and itself (see figure 9). Again, we believe this result is more in line with what the user is looking for.

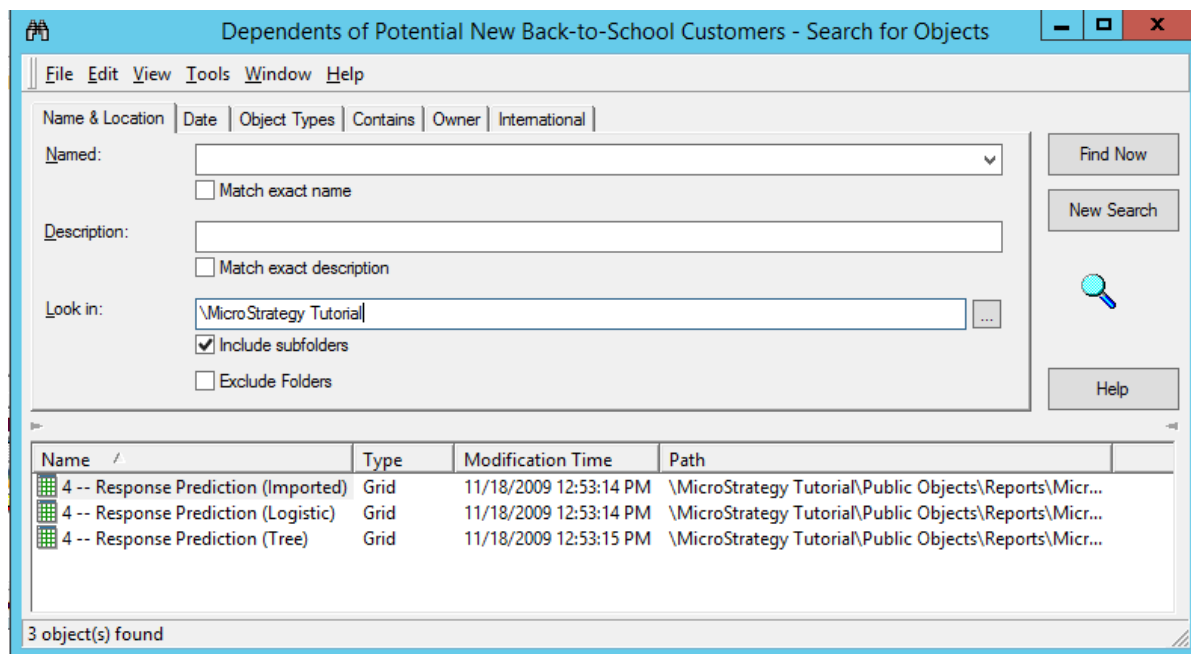
Location: MicroStrategy Analytics Modules (Direct)\MicroStrategy Tutorial\Schema Objects\Attributes\Customers

Folder List	Name	Type	Modification Time	Description
MicroStrategy Tutorial	Age Range	Attribute	1/5/2009 3:43:41 AM	
My Personal Objects	Customer	Attribute	6/6/2010 10:06:40 AM	
Object Templates	Customer Address	Attribute	8/7/2007 1:02:33 AM	
Private segments folder	Customer Age	Attribute	1/23/2012 3:28:56 AM	
Profiles	Customer Birth Date	Attribute	8/7/2007 1:02:34 AM	
Project Builder	Customer City	Attribute	12/23/2008 4:25:11 AM	
Project Objects	Customer Country	Attribute	6/28/2006 7:45:23 AM	
Public Objects	Customer Email	Attribute	8/7/2007 2:17:31 AM	
Schema Objects	Customer Gender	Attribute	1/5/2009 3:53:47 AM	
Attributes	Customer Region	Attribute	1/5/2009 3:50:01 AM	
Customers	Customer State	Attribute	12/23/2008 4:25:28 AM	
Geography	Days to Ship	Attribute	8/7/2007 1:02:40 AM	
Products	Education Level	Attribute	1/5/2009 3:52:29 AM	
Promotions	First Order Date	Attribute	3/3/2009 3:17:13 PM	
Time	Household Count	Attribute	10/30/2009 10:12:43 AM	
Facts	Housing Type	Attribute	1/5/2009 3:58:02 AM	
Functions and Operators	Income Bracket	Attribute	1/5/2009 3:57:53 AM	
MicroStrategy	Last Order Date	Attribute	3/3/2009 3:16:54 PM	
	Marital Status	Attribute	1/5/2009 4:00:15 AM	

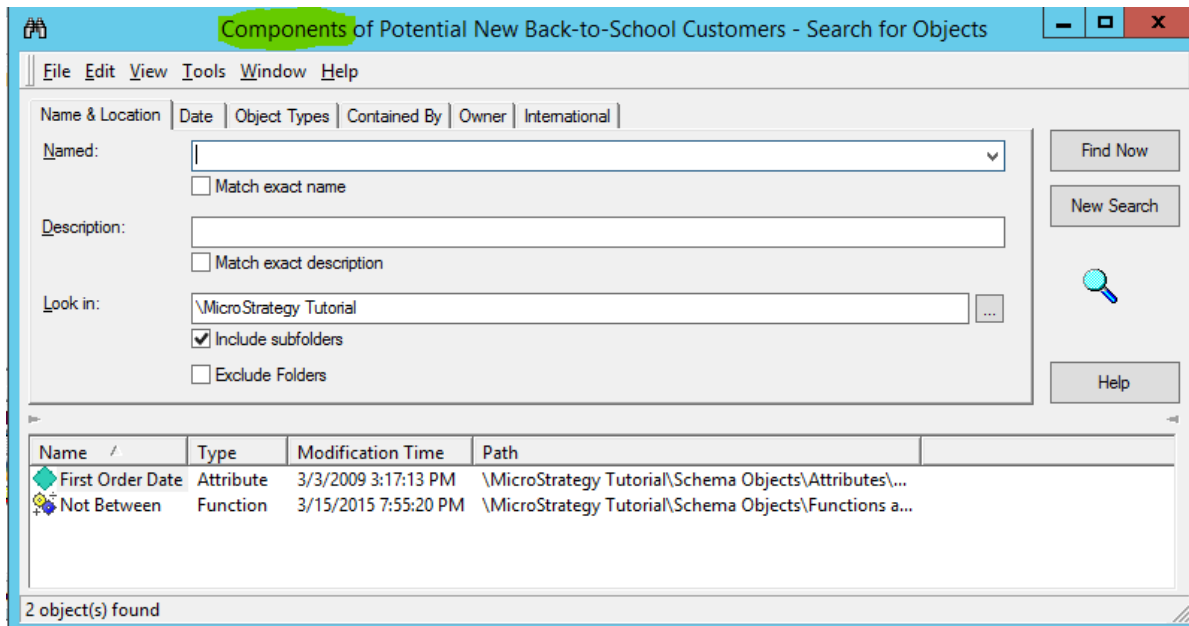
(Figure 1)



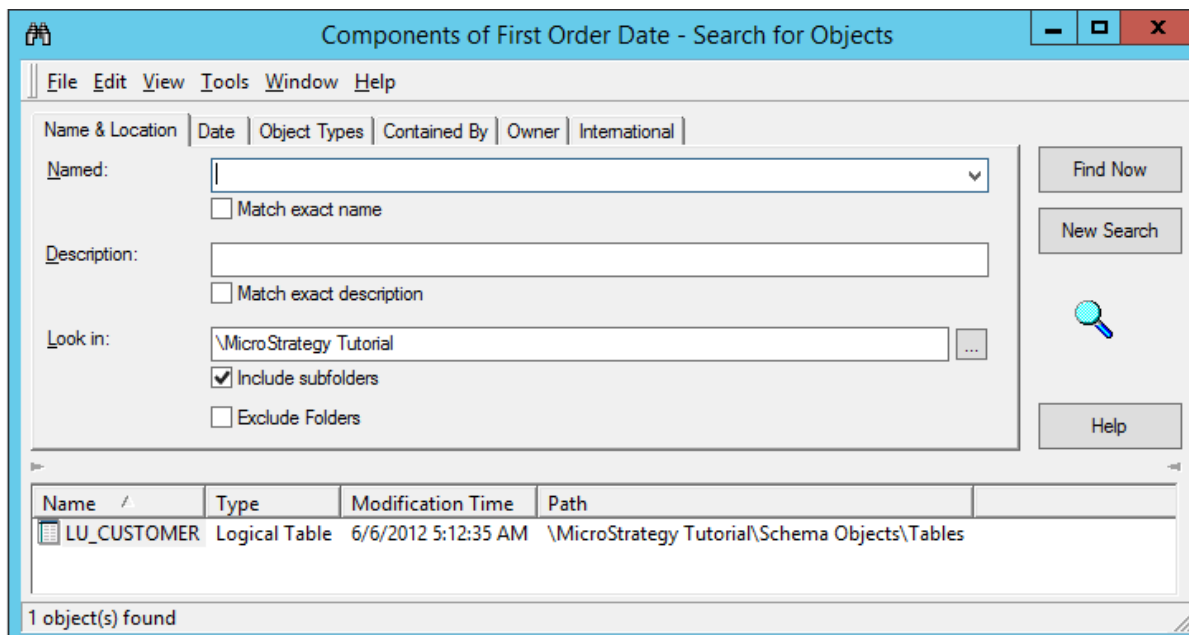
(Figure 2)



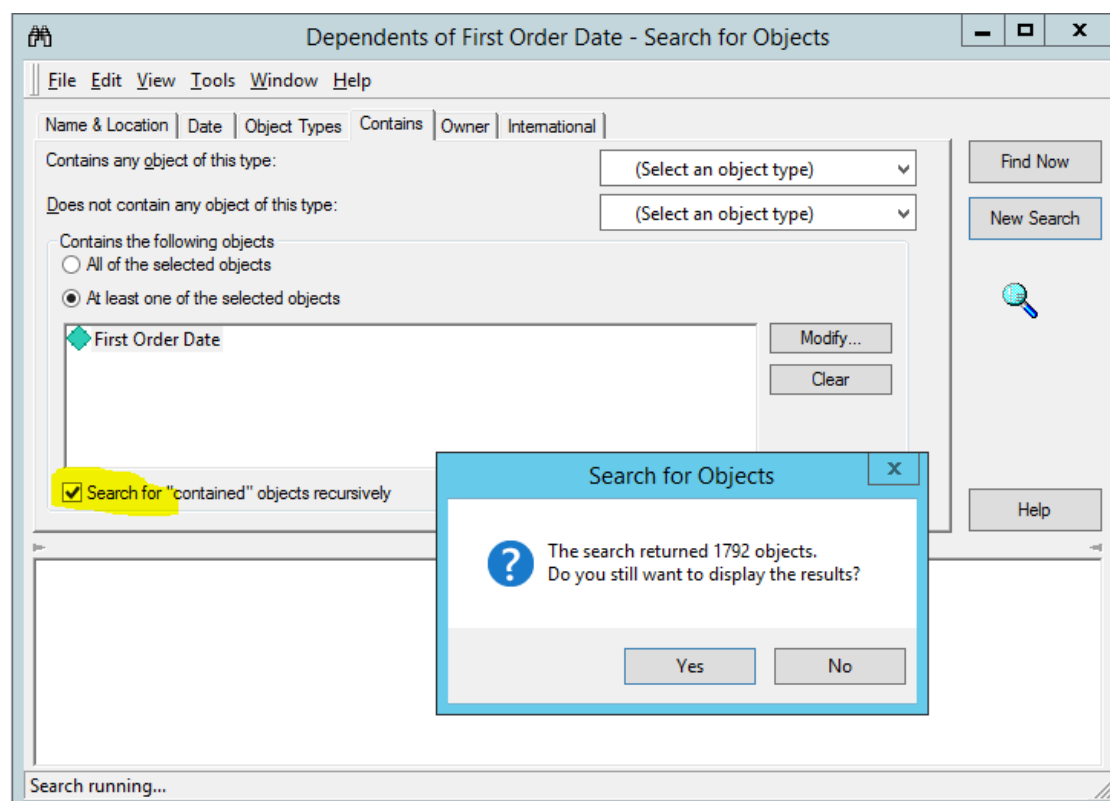
(Figure 3)



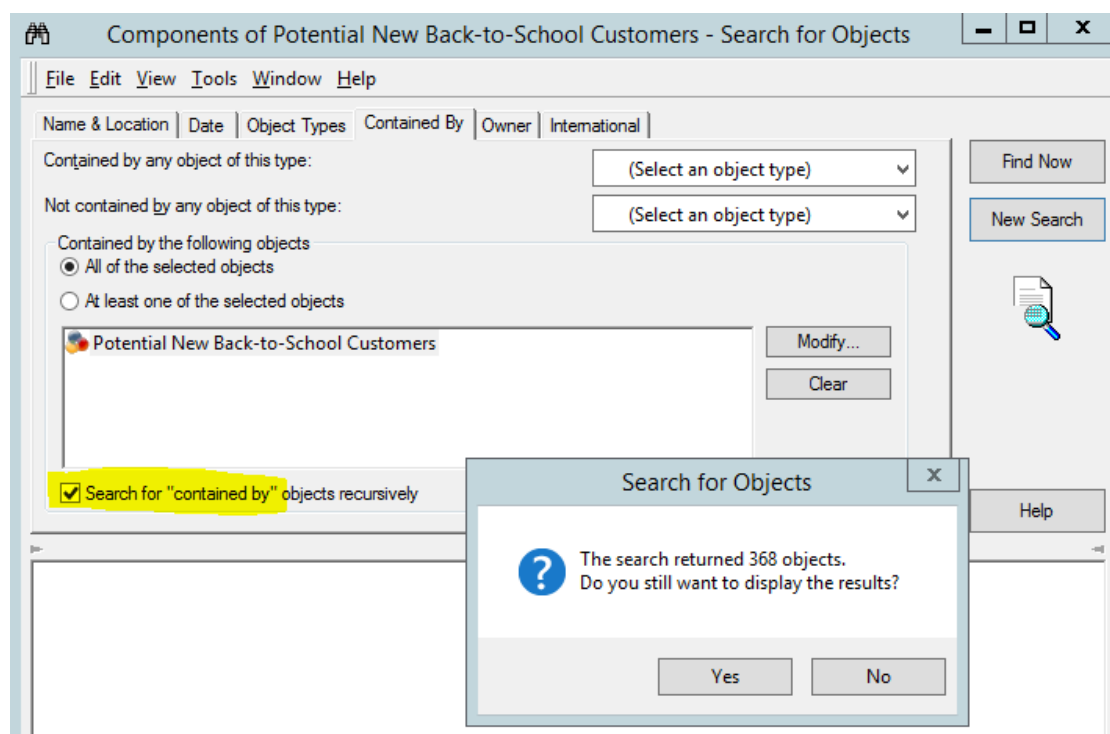
(Figure 4)



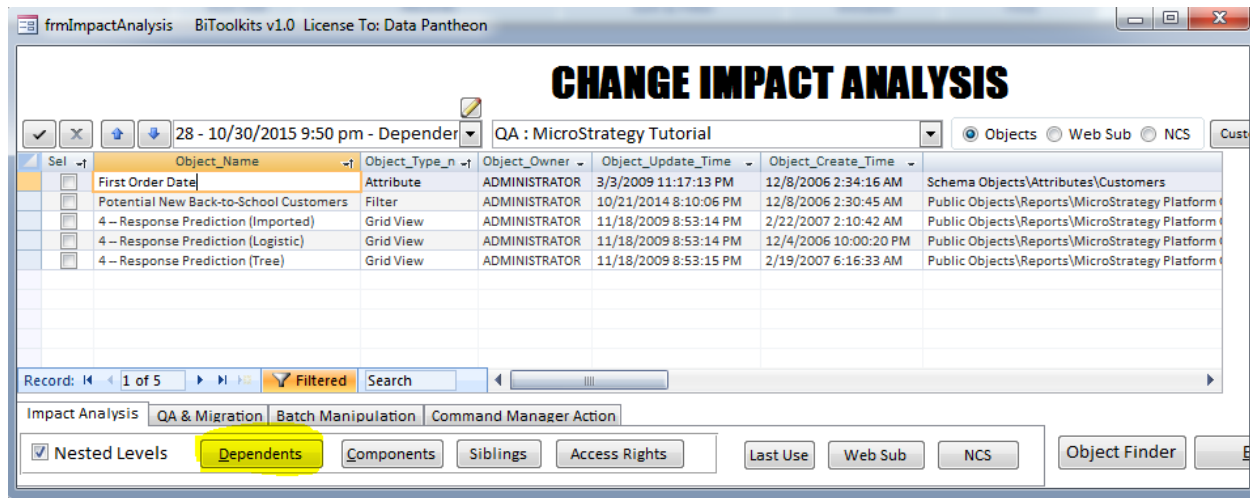
(Figure 5)



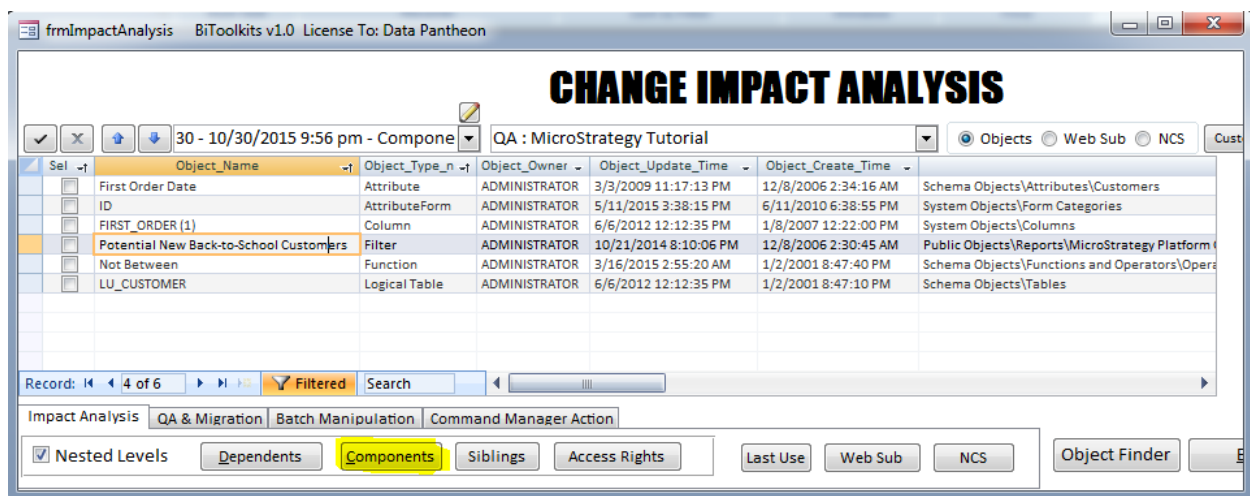
(Figure 6)



(Figure 7)



(Figure 8)

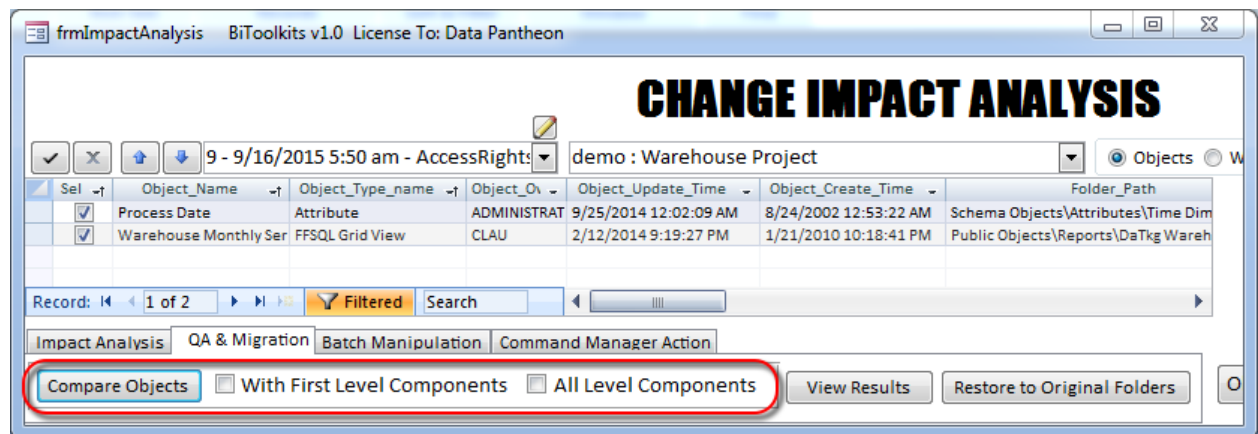


(Figure 9)

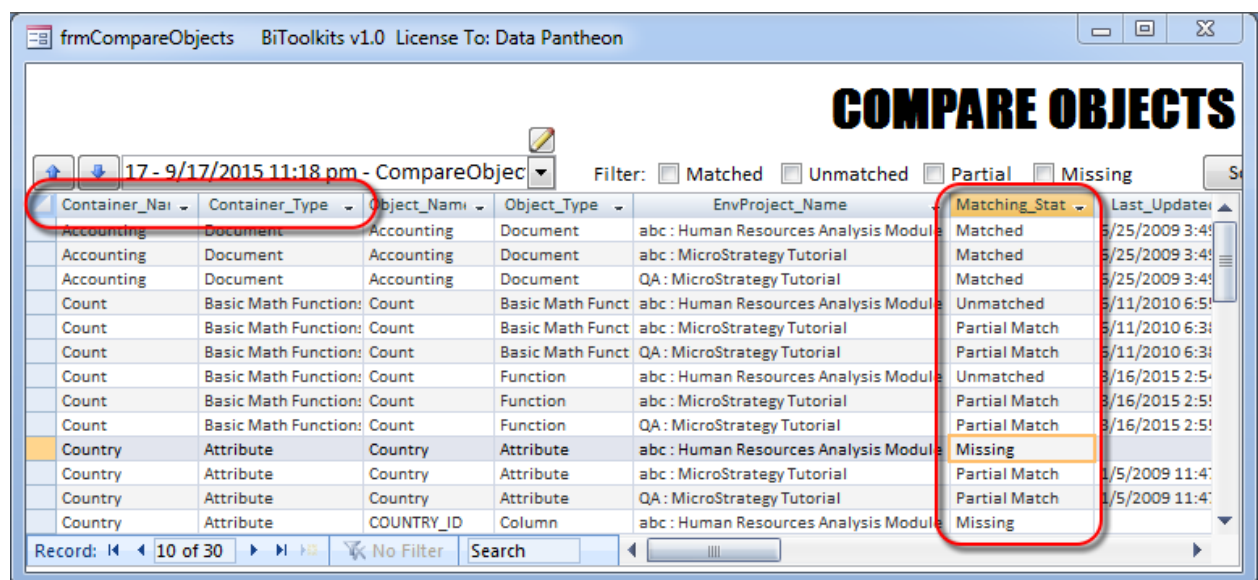
Compare objects across MicroStrategy Projects and Environments

In a multi-environment setup, objects are out-of-sync over time. It is a reality we all have to deal with. Often, mistakes were made because reports look the same across environments but they are actually different when trace down to components level. BiToolkits' *Compare Objects* function (see figure 1) is designed to eliminate these mistakes. The *Compare Objects* function compares objects across MicroStrategy Projects and environments. Below is a list of key points when using this function:

1. The object comparison logic uses object ID, not object name. The reason is internally MicroStrategy uses object ID when referencing the object. In Compare Objects screen, the Sort by Object ID button enables you to easily identify renamed objects in different environments.
2. Objects can be compared as per selection, no components included. In *QA & Migration* tab (see figure 1), if you uncheck both "With First Level Components" and uncheck "All Level Components" options, the Compare Objects function only compares selected objects without including components.
3. Objects including first level components can be compared if the "With First Level Components" is checked.
4. Objects including all level of components can be compared if the "All Level Components" option is checked. Note the comparison process may take a long time if components are nested in many levels.
5. On the Compare Objects screen (see figure 2), the Container_Name and Container_Type columns are blank if the comparison does not include components. If the comparison includes components, the Container_Name and Container_Type columns show the object name and object type where the components came from.
6. The Matching_Status column (see figure 2), has following values:
 - Matched – an object is identical in all Projects.
 - Unmatched – an object is different across Projects.
 - Partial Match – This status is applicable only when comparing three or more Projects. To illustrate how this status works, let's assume you are comparing three projects, A, B, and C. If an object is the same in projects A and B but C, the status for projects A and B is "Partial Match" while for project C is "Unmatched". If an object is the same in all three projects, the status is "Matched".
 - Missing – An object does not exist in the Project.
7. When the Compare Objects function is run, new batches are created to group objects (and components) selected for the comparison. If you are comparing three projects, three new batches are created, one in Project.



(Figure 1)



(Figure 2)

Prepare QA test with before and after report snapshots

Before objects are migrated from Dev to QA environment, QA Analysts need to take snapshot of report data. After objects are migrated to QA environment, another snapshot of report data is taken. The Before and After snapshots are compared to determine any unintended side effects due to object migration.

Assuming the impacted reports are already put in a Batch in BiToolkits, procedure below provides step by step instructions on preparing QA test with before and after report snapshots:

1. Before object migration, select the *QA & Migration* tool in *Main Menu*.
2. If the impacted report Batch is not in QA environment, follow steps below to copy the Batch to QA environment:
 - a. In *QA & Migration* screen, uncheck both *With First Level Components* and *All Level Components* options.
 - b. Click the *Compare Objects* button. When prompted to select projects to compare, select the target project in QA. The *Compare Objects* screen is displayed. If you see objects with *Unmatched* or *Missing* status, you need to migrate those objects to QA.
 - c. Exit the *Compare Objects* screen and return to *QA & Migration* screen.
 - d. Select the QA project from the project selection list drop-down.
 - e. Click the batch drop-down list and note a new batch was created as a result of the *Compare Objects* function.
 - f. To ensure reports in QA are up-to-date, you can run another *Compare Objects* function between QA and Prod environment with *All Level Components* option checked.
3. In *QA & Migration* screen, make sure current Project is from QA environment, current Batch contains impacted reports, and object selection checkboxes are ticked as desire.
4. Click the “*Create Shortcut*” button (under *QA & Migration* tab) and select a target folder. A screen pops up and displays generated Command Manager scripts. If you have Command Manager installed on your machine, you can click the *Run* button to run scripts there. If you don’t have Command Manager installed on your machine, you can save scripts to a file and run it in another machine. Note a new batch is created as a result of the “*Create Shortcut*” function. In the new batch, objects are checked if scripts generated successfully.
5. Once report shortcuts are created in QA environment, you can feed the shortcuts to Integrity Manager for report execution.
6. Once report executions are completed, use MicroStrategy’s Object Manager to migrate objects from Dev to QA environment.
7. After migration, run Integrity Manager again on the same set of reports. Please make sure to clear all caches in MicroStrategy before running Integrity Manager.

Restore objects back to their original folders

When an object is loaded into BiToolkits database, it includes the object's properties, such as folder path, object type, etc. Utilizing this information, the *Restore to Original Folders* function (under *QA & Migration* tab) can generate Command Manager scripts to move objects to the folder paths stored in the database.

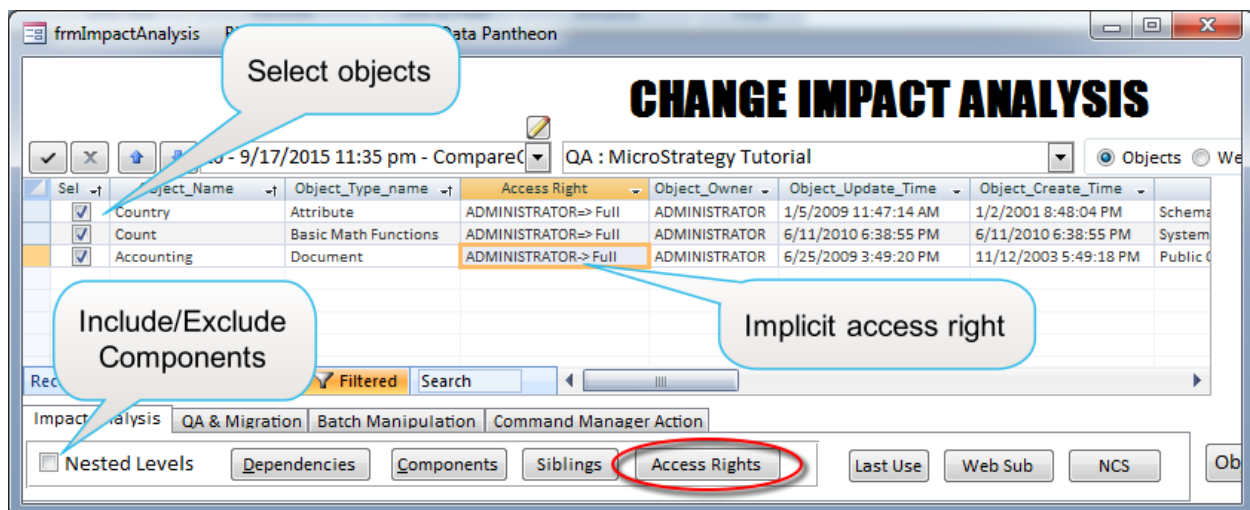
Before the object migration, you first need to take a snapshot of object properties from target environment. The *Compare Objects* function can be used for this purpose (see "Compare objects across MicroStrategy Projects and Environments" for more details). Assuming to be migrated objects reside in one folder, procedure below provides step by step instructions on object migration from QA to Prod and restore objects to original folder in Prod environment:

1. Before object migration, select the *QA & Migration* tool in *Main Menu*.
2. Click the *Object Finder* button (on bottom of screen) and the *Object Finder* screen is displayed.
3. In the *Browse by Folder* tab, using the project selection list drop-down to select the project in QA environment.
4. Navigate the folder hierarchy and select the desire folder that contains objects for migration. Click *Search* button and the search results are now shown in *QA & Migration* screen.
5. In *QA & Migration* screen, uncheck both *With First Level Components* and *All Level Components* options.
6. Click the *Compare Objects* button. When prompted to select projects to compare, select the target project in Prod. The *Compare Objects* screen is displayed. Note you may see some objects with *Missing* status. This is due to new objects in QA have not yet migrated to Prod.
7. Exit the *Compare Objects* screen and return to *QA & Migration* screen.
8. Select the Prod project from the project selection list drop-down.
9. Click the batch drop-down list and note a new batch was created as a result of the *Compare Objects* function.
10. Use MicroStrategy's Object Manager to migrate objects from QA to Prod environment.
11. Once migration is completed, in *QA & Migration* screen, select the newly created batch from the drop-down list.
12. Select objects in the batch to restore to original folder.
13. Click the "*Restore to Original Folders*" button (under *QA & Migration* tab). A screen pops up and displays generated Command Manager scripts. If you have Command Manager installed on your machine, you can click the *Run* button to run scripts there. If you don't have Command Manager installed on your machine, you can save scripts to a file and run it in another machine. Please note that not all objects can be scripted. There are certain object types Command Manager does not support, such as Consolidation. You can find out which objects did not get scripted by reviewing the newly generated *Restore To Original Folder* batch. If an object is unchecked, script is not generated.
14. For new objects migrated to Prod, you can use the *Move Objects* button in *Command Manager Action* tab to generate scripts to move objects to desire folder.

Verify user's Access Rights on selected objects

When a user is unable run a report, often times it is due to permission issues on the report or on its components. The Access Rights function allows you to list access rights available to a given user. Below steps illustrate the usage:

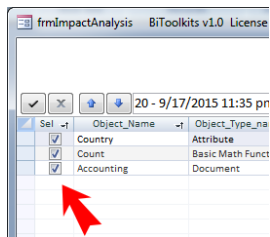
1. This function is under *Object Analysis* screen and *User Object Inventory* screen.
2. Select desire objects you want to view access rights.
3. Under *Impact Analysis* tab on the bottom of the screen (see screen print below), perform the followings:
 - Check the *Nested Level* checkbox if you want to include all components. This option will create a new batch which includes selected objects and all their components.
 - Uncheck the *Next Level* checkbox if you don't want to include. This option does not create a new batch.
 - Click *Access Rights* button and enter a desire MicroStrategy login ID when prompted.
4. Results are displayed under the *Access Right* column. The access rights can be implicitly or explicitly. They are explained below:
 - Implicit Access Right -- Permissions were granted to a user group you belong. It is displayed in the format of "UserID->Permssion".
 - Explicit Access Right -- Permissions were granted to the user account directly. It is displayed in the format of "UserID=>Permssion".
 - If the user has both implicit and explicit access rights, the explicit access right format will be shown.
 - If an object has multiple permissions, only one permission is displayed (selected in following order: Custom, Full, Modify, and View).



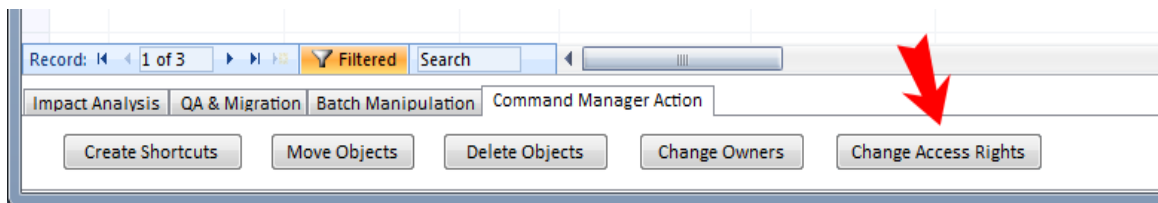
Change object permissions for a user

Utilizing Command Manger scripts, BiToolkits can change object permissions for a desired user on selected objects in one batch. Please follow steps below:

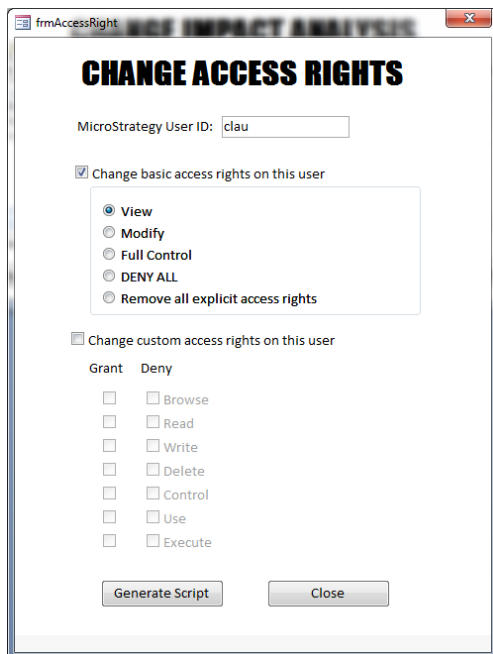
1. Select desire objects



2. Click Change Permissions under “Command Manager Action” tab

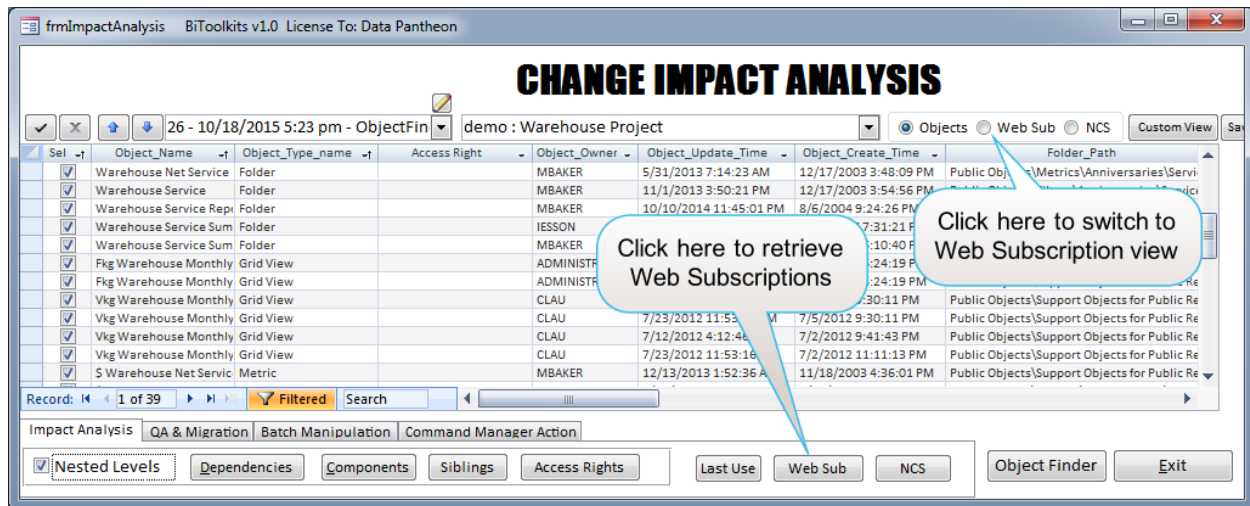


3. Enter desire user and select desire permissions



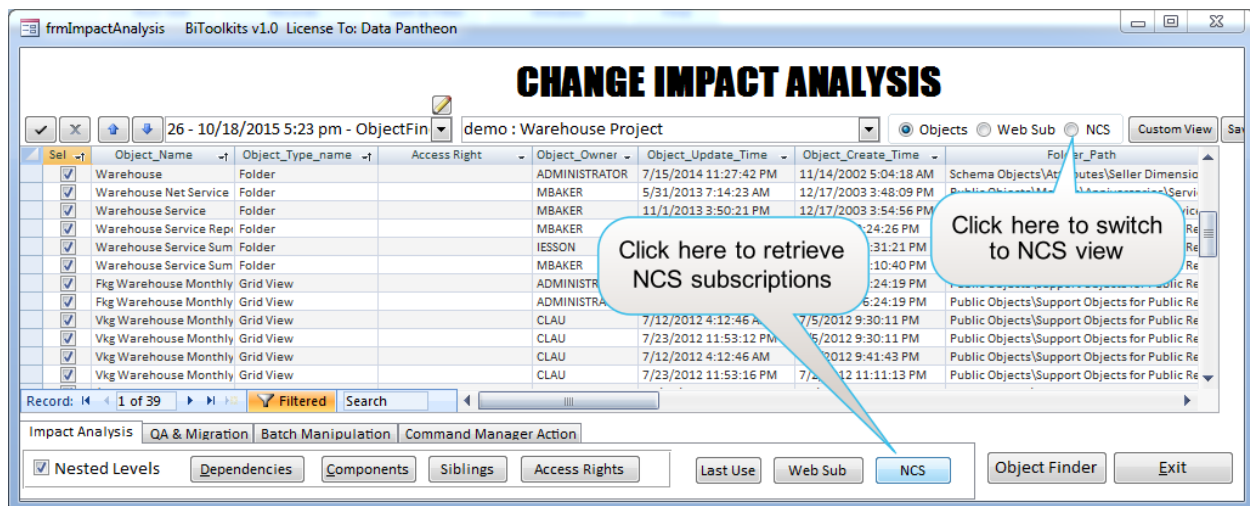
Find Web Subscriptions

The Web Subscription button (see screen print below) finds Web subscriptions on selected reports. The matching algorithm is based on the report's object ID.



Find Narrowcast Subscriptions

The NCS button (see screen print below) finds Narrowcast subscriptions on selected reports. The report matching algorithm is based on report name; thus, if the report name is changed in the Intelligent Server but was not changed in Narrowcast, it will not find a match. The report name is stored in the Document type object in Narrowcast. Using Document Editor, you can change the report name under the document's Advanced Properties, General tab, and Name field. Or if you use NCS publication, it is embedded in the Publication.



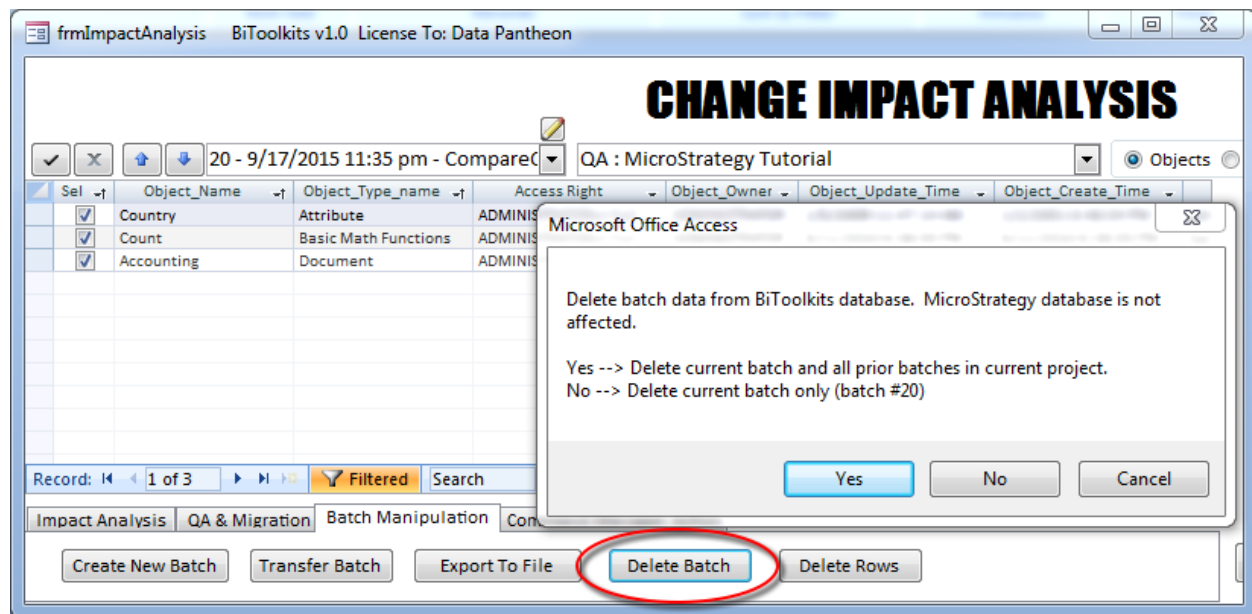
System Maintenance Functions

To keep BiToolkits operating at optimal speed, it is necessary to perform database maintenance functions listed below at a regular interval.

Delete unused batches

The *Delete Batch* function is located under *Batch Manipulation* tab. This function allows you to delete one or more batches. When click the *Delete Batch* button, you will be prompted to delete current batch only or current batch and all prior batches (base on batch number). If you deleted a large number of batches, you might want to perform *Repair & Compact Database* function (see below) to reclaim disk space.

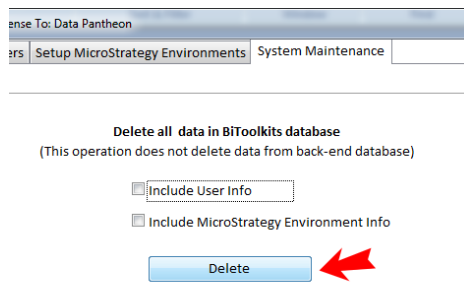
WARNING: DATA CANNOT BE RECOVERED ONCE DELETED. PLEASE BACKUP THE DATABASE BEFORE DELETE.



Database Reset – delete all data

If there is a need to reset BiToolkits database, you can go to Setup tool and click the Delete button under *System Maintenance* tab. Please note this action can only be performed by a BiToolkits administrator. Also note that this action does not delete any data from your metadata database. It only deletes data loaded in BiToolkits database. You may also want to perform *Repair & Compact Database* function (see below) to reclaim disk space.

WARNING: DATA CANNOT BE RECOVERED ONCE DELETED. PLEASE BACKUP THE DATABASE BEFORE DELETE.



The screenshot shows the 'Setup MicroStrategy Environments' window with the 'System Maintenance' tab selected. The main heading is 'Delete all data in BiToolkits database' with a sub-note: '(This operation does not delete data from back-end database)'. Below this, there are two unchecked checkboxes: 'Include User Info' and 'Include MicroStrategy Environment Info'. At the bottom, there is a blue 'Delete' button, which is highlighted by a red arrow.

Delete Temp Tables in Back-end database

BiToolkits uses temp tables in MicroStrategy's metadata database to cache data. These temp tables are overridden each time a process is run; however, if there is a need to delete these temp tables, go to Setup tool and click the *"Delete Temp Tables in Back-end DB"* button under *System Maintenance* tab. Please note this action can only be performed by a BiToolkits administrator.

The screenshot shows the 'Data Pantheon' interface with the 'System Maintenance' tab selected. The main content area is titled 'Delete all data in BiToolkits database' with a note: '(This operation does not delete data from back-end database)'. Below this are two unchecked checkboxes: 'Include User Info' and 'Include MicroStrategy Environment Info', followed by a 'Delete' button. A horizontal line separates this section from the 'Database Maintenance' section below. In the 'Database Maintenance' section, the 'Delete Temp Tables in Back-end DB' button is highlighted with a red arrow. Other buttons in this section include 'Re-link BiToolkits Database' and 'Repair & Compact Database'.

To: Data Pantheon

Setup MicroStrategy Environments System Maintenance

Delete all data in BiToolkits database
(This operation does not delete data from back-end database)

☐ Include User Info
☐ Include MicroStrategy Environment Info

Delete

Database Maintenance

Delete Temp Tables in Back-end DB

Re-link BiToolkits Database

Repair & Compact Database

Re-link BiToolkits Database

If you need to change BiToolkits database (such as change to a backup database), you can use the *Re-link BiToolkits Database* function (see screen print below) to point to a different database file. Please note the database change only affects you. It does not affect other users. Also note that all system files must reside in the same folder where your active database file is located.

The screenshot shows a web-based interface for system maintenance. At the top, there is a navigation bar with a dropdown menu currently set to 'e To: Data Pantheon'. Below this, there are two tabs: 'Setup MicroStrategy Environments' and 'System Maintenance'. The 'System Maintenance' tab is active. The main content area is divided into sections. The first section is titled 'Delete all data in BiToolkits database' with a note '(This operation does not delete data from back-end database)'. It contains two checkboxes: 'Include User Info' and 'Include MicroStrategy Environment Info', both of which are unchecked. Below these is a 'Delete' button. The second section is titled 'Database Maintenance' and contains three buttons: 'Delete Temp Tables in Back-end DB', 'Re-link BiToolkits Database' (which is highlighted in blue and has a red arrow pointing to it), and 'Repair & Compact Database'.

e To: Data Pantheon

Setup MicroStrategy Environments System Maintenance

Delete all data in BiToolkits database
(This operation does not delete data from back-end database)

☐ Include User Info

☐ Include MicroStrategy Environment Info

Delete

Database Maintenance

Delete Temp Tables in Back-end DB

Re-link BiToolkits Database

Repair & Compact Database

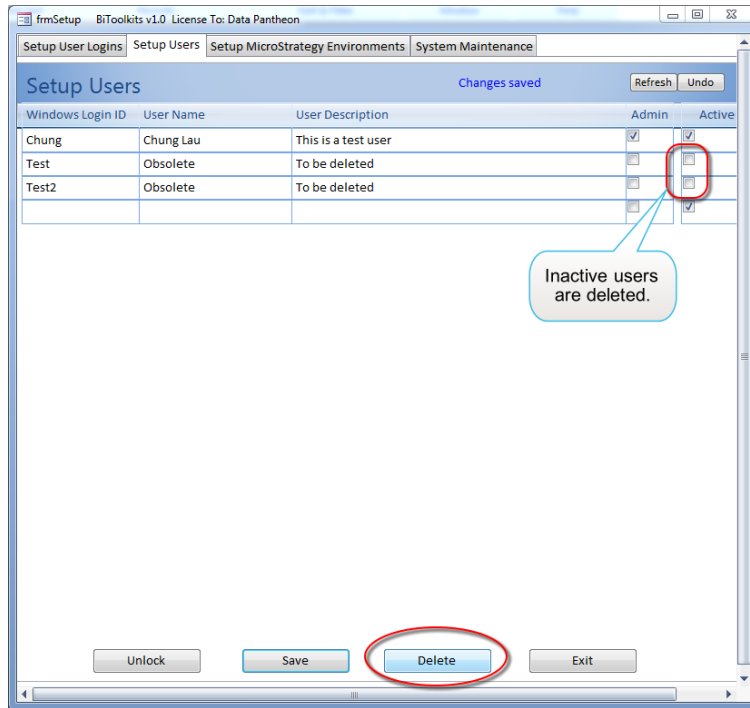
Repair & Compact Database

If you encounter BiToolkits database errors or you have deleted large number of batches, you may want to try the “Repair & Compact Database” function. To use this function, go to Setup screen and click the “Repair & Compact Database” button under System Maintenance tab. Please note this action can only be performed by a BiToolkits administrator. Also note that this action does not change data stored in the BiToolkits database. It simply re-organizes the database storage.

The screenshot shows the 'System Maintenance' tab in the BiToolkits interface. At the top, there are two tabs: 'Setup MicroStrategy Environments' and 'System Maintenance'. Below the tabs, there is a section titled 'Delete all data in BiToolkits database' with a note '(This operation does not delete data from back-end database)'. This section contains two checkboxes: 'Include User Info' and 'Include MicroStrategy Environment Info', both of which are unchecked. Below these checkboxes is a 'Delete' button. Further down, there is a section titled 'Database Maintenance' which contains three buttons: 'Delete Temp Tables in Back-end DB', 'Re-link BiToolkits Database', and 'Repair & Compact Database'. The 'Repair & Compact Database' button is highlighted in blue and has a red arrow pointing to it from the right.

Delete inactive users

The delete inactive users function is located under *Setup* Users tab in Setup screen. This function allows you to delete all inactive users (no option to pick and choose). All data associated with the users are also deleted from the BiToolkits database. Please note this action can only be performed by a BiToolkits administrator.



Frequently Asked Questions

When BiToolkits program is running, why it is not shown on Windows toolbar?

This is a known issue with current version of BiToolkits. If BiToolkits is hidden under other windows, Use Control-Tab key to switch to BiToolkits program. Also, you can re-launch BiToolkits. If the program is already running, it will be brought to the foreground; the second instance of the program is automatically terminated.

How are the different Login IDs used in the *Setup* tool?

BiToolkits needs three login IDs. It is explained below:

- BiToolkits Login ID – This login ID is used for BiToolkits license verification. The login ID is setup by BiToolkits administrator. It is the same as Windows Login ID where you use it to login to your workstation.
- Database Login ID – This login ID is used to login to your MicroStrategy Metadata database.
- MicroStrategy Login ID – This login ID is used for MicroStrategy user verification.

Can I use a different User ID to login to BiToolkits?

No. BiToolkits is integrated with Windows sign-on. Your BiToolkits User ID must be the same as Windows Login ID.

Do I need to enter MicroStrategy Login Password in *Setup My Profile* tab?

The MicroStrategy login password is required to run Command Manager scripts. If you don't have Command Manager installed on your machine, you don't need to enter the MicroStrategy login password.

What happen if my database environment changed, such as metadata schema renamed or database platform changed?

If your database environment changed, you need to go to the *Setup MicroStrategy Environments* tab in *Setup* tool to update database information such as DB Connection String, Database Account, MicroStrategy Metadata Table Prefixes, etc. When changes are done, be sure to test database connections by clicking the *Test Connections* button on the bottom of the screen.

What if MicroStrategy database is stored in multiple schemas?

In a scenario where MicroStrategy database is stored in multiple schemas in Oracle or databases in Sql Server (for example: Intelligent Server metadata is stored in Schema A while Enterprise Manager data is stored in Schema B), your database login account must have View permission to all schemas/databases. Also, in the *Setup MicroStrategy Environments* tab in *Setup* tool, you also need to specify schema/database name as part of the Table Prefix.

What happen if my Windows user login ID changed?

If your Windows user login ID changed, you need to contact your BiToolkits administrator to change your existing login ID to the new login ID (under *Setup Users* tab in *Setup* tool). Additionally, you may need to go to *Setup My Profile* tab in *Setup* tool to change database login and MicroStrategy login information.

What happen if MicroStrategy Projects changed, such as a project is added, deleted, renamed, etc.?

If there is a change to MicroStrategy Project, you need to perform the *Import Projects* function to refresh your MicroStrategy Projects list stored in BiToolkits database. The *Import Projects* function is located under *Setup MicroStrategy Environments* tab in *Setup* tool. Please note this function can only be performed by a BiToolkits administrator. **Warning: Make sure you first backup the BiToolkits database as *Import Projects* function will wipe out previously loaded data on all projects in current MicroStrategy Environment.**

Can I change BiToolkits database file name?

The default BiToolkits database file name is BiToolkits_Data.accdb. You can rename the file as long as no one is connecting to the database. When users launch BiToolkits next time, it will prompt them to select the database file.

How do I backup/restore BiToolkits database?

You can simply use Windows Explorer to make copies of the BiToolkits database file (Bitoolkits_Data.accdb). Please make sure all users exited BiToolkits before making copies. To restore BiToolkits from a backup copy, simply replace existing database file with the backup copy.

How do I reduce the BiToolkits database when it gets very large?

Please perform the following two actions to trim down database file size.

- Delete unused batches
- Run Repair & Compact Database function to reclaim disk space.

What should I do when getting strange database errors?

Please run Repair & Compact Database first. If problems persist, contact BiToolkits support.

Why *Object Findertool* does not return any search results no matter what I search?

The MicroStrategy Project may have been changed. Please contact your MicroStrategy administrator to verify whether the Project Name or ID has been changed. If there are changes to the Project Name or ID, you need to contact BiToolkits administrator to import projects (click *Import Projects* button under *Setup MicroStrategy Environments* tab in *Setup* tool.)

I created a batch in BiToolkits while back. Now some of the objects have changed in MicroStrategy. How do I refresh object properties in the batch?

Select desired objects in the batch and click the *Create New Batch button* under *Batch Manipulation* tab. It will create a new batch with latest object properties. Note: if selected objects are already deleted in MicroStrategy, they will not be shown in the new batch.

How do I share a batch with other BiToolkits users?

For data integrity, you cannot truly share batches in BiToolkits; however, you can perform pseudo sharing by transferring a batch back and forth with another user using the *Transfer Batch* function (under *Batch Manipulation* tab). Please note that once a batch is transferred, it is disappeared from your batch list; thus, you may want to use the *Create New Batch* function to duplicate the batch before transferring.

How do I create a new batch using objects from existing batches?

It is easy to create a new batch from existing batches; in fact, you can create a new batch by selecting objects from different tools. Below is a list of steps of creating a new batch from existing batches:

1. Turn off record Filter on the bottom of the screen (next to Record Navigation buttons.)
2. Now objects from all tools are displayed.
3. Select desired objects (hint: right click on desired object properties to create filters to narrow down the object list.)
4. Click the *Create New Batch button* under *Batch Manipulation* tab.