

The Cost of Complexity:

How BI Workflow Automation Can Save Costs (and your sanity)





A bit about me

- Atul Chowdhury
 - Been BOBJ'ing since 1999
- Founded Infolytik in 2009 to help customers like yourself maximize the potential of the BI platform
- Love being back in Pittsburgh and having the chance to present to you today!



Why MetaMiner

Infolytik's Mission

To enhance BI teams with metadata centralization and cutting edge software tools that allow them to provide faster, better, deeper, and more reliable business intelligence to their enterprise.

MetaMiner

A single solution that centralizes BI4 platform metadata and provides simplicity and automation to repetitive and complex BI4 administration functions.

- True single Instance, multi-tenant, multi-version BI4 solution
- We mine more and deeper BI4 metadata than anyone else*
- **A single solution**, not a set of utilities



Complexity

- Complex systems phenomenon:
 - As systems evolve and grow increasingly challenging to administer, as does the ability to innovate on the very platform for this reason, and resources become constrained and distracted with time-intensive but low-value tasks.



But wait...

- Isn't this a good thing? ... yes!
 - Lumira
 - BI4
 - Predictive Analysis
 - HANA
 - Better BI Platform tooling

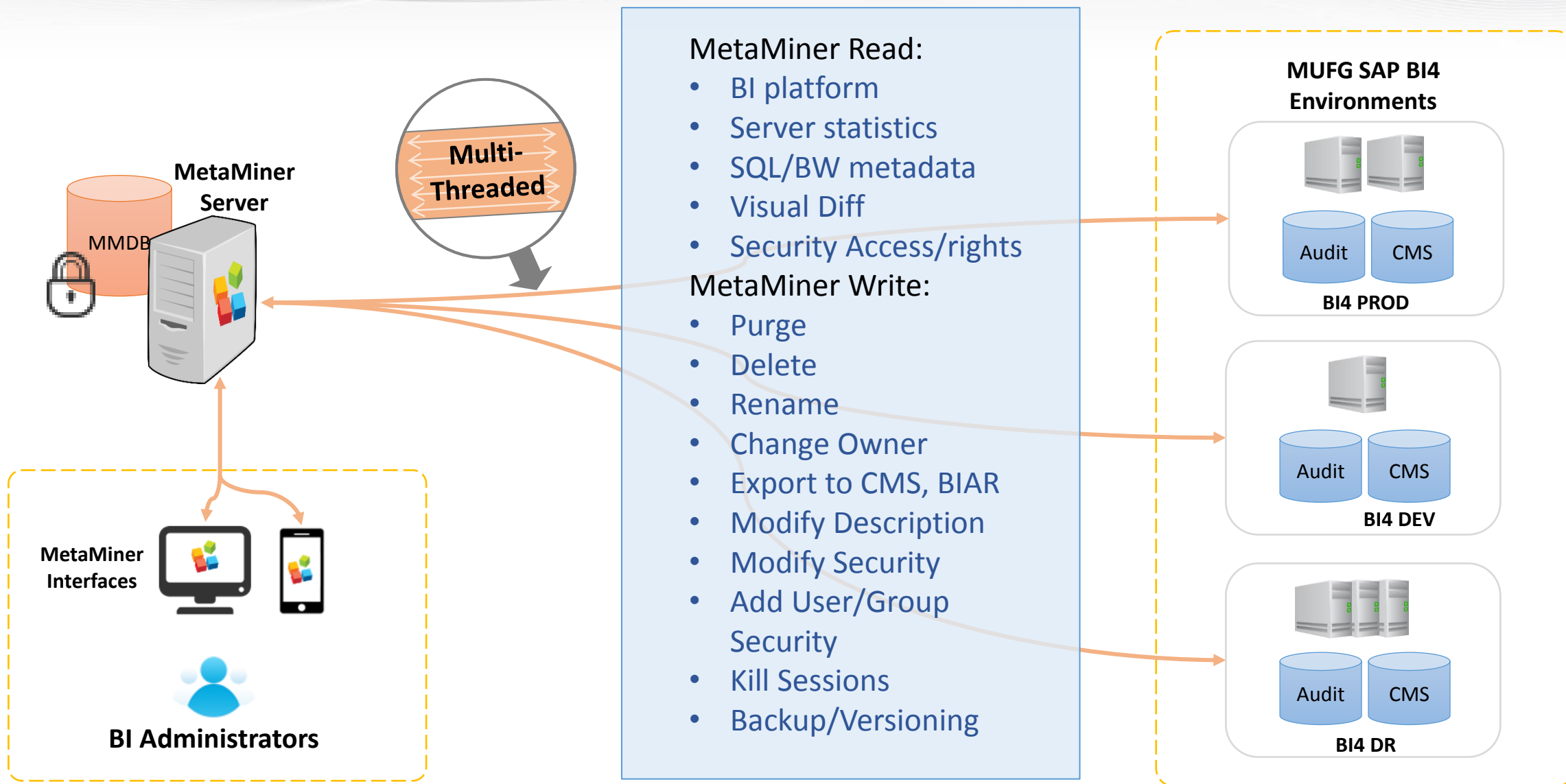


But not always...

- Multi-environment management
- Quality access to ever-increasing volume of metadata
- More “knobs to turn” but little instrumentation to monitor



MetaMiner Architecture : High Performance, Ultra Scalable



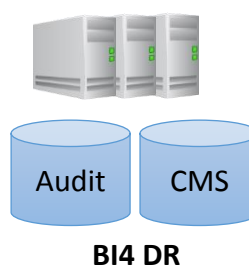
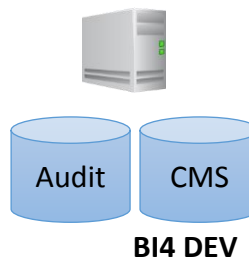
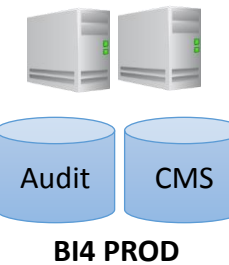
MetaMiner Read:

- BI platform
- Server statistics
- SQL/BW metadata
- Visual Diff
- Security Access/rights

MetaMiner Write:

- Purge
- Delete
- Rename
- Change Owner
- Export to CMS, BIAR
- Modify Description
- Modify Security
- Add User/Group Security
- Kill Sessions
- Backup/Versioning

MUFG SAP BI4 Environments





MetaMiner Priority #1 - Data Integrity

- MetaMiner is the only solution that helps guarantee data consistency between it's metadata façade/repository and source SAP BI4 platform metadata through built-in verification systems (see below)
- Data Integrity prevents haphazard analysis or compromising extraction results by continuously monitoring the delta service between MM and BI4.

1: All environments are summarized in the Data Integrity Status page

2, 3: Each environment can be drilled down into and reveal the current delta between MetaMiner and the source BI4 system

MetaMiner Data Integrity Statistics: Environment Summary

Select any of the CMS Identification links to retrieve object count statistics that help monitor the consistency of metadata between the CMS and MetaMiner Database.

SAP BusinessObjects Environments Connected to MetaMiner

Server	Unique ID
XI3001	1443022615038
BI4001	1443025411754 1
BI4002	1444309870843
BI4003	1450374933548

Launchpad/InfoView or some other tool, then you would see a -1 indir

How often does MetaMiner refresh itself?

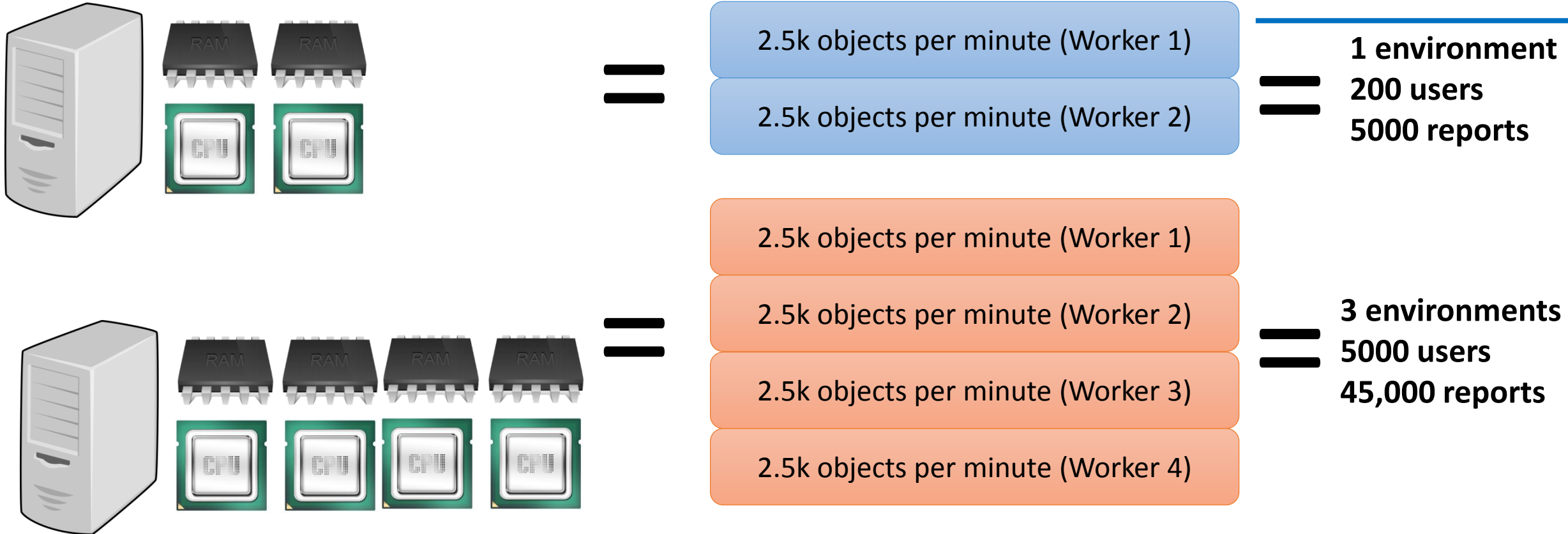
MetaMiner's highly multithreaded architecture allows it to maintain yo BI asset movement: additions, deletions, updates and backdated (BI/ lightweight pulse across your environments to detect any changes as within 7 minutes and can be modified through [Advanced Settings](#).

CMS pull status

Data Type	CMS ID	CMS Object Count	MMDB Object Count
USERS	BI4001	12	12
GROUPS	BI4001	11	11

MetaMiner Priority #2 - Scalability

- Adaptive service bus scales instantly by adding additional RAM or CPU





MetaMiner Priority #3 - Simplicity

- Installation => to => Analysis in **under 1 hour**

MetaMiner Administrator 5.2 Enterprise Edition

License File: [Request a key](#)

SAP BusinessObjects Environments

Enab...	Name	CMS Host	Version	Username	Status	Audit DB...	Audit Host
<input checked="" type="checkbox"/>	SRP-DEV-001	XI3001	Undefined	metamineradmin		ORACLE	XI3001
<input checked="" type="checkbox"/>	SRP-PROD-LINUX	BI4001	14.1.5.1501	metamineradmin		SQL Serve	BI4001
<input checked="" type="checkbox"/>	SRP-PROD-WIN	BI4002	14.1.5.1501	mmadmin		SYBASE	bi4002
<input checked="" type="checkbox"/>	TINY-BI4003	BI4003	14.1.4.1327	metamineradmin			

MetaMiner Database Configuration

Active DB Type: DBMS Host: Port:

Service: User: Password:

MetaMiner Server Settings

Server Port:

[Test and save](#) [Stop Server](#) [Close](#)

MetaMiner 5.2 Enterprise Edition

Environments

- SRP-DEV-001
- SRP-PROD-LINUX
- SRP-PROD-WIN
- TINY-BI4003

Name	Created	Action On	Updated	Size KB	# Docs
audit_db_oracle_xi3	06 Nov, 15 15:45		06 Nov, 15 16:46		1
Auditing Connection	22 Sep, 15 22:16		22 Sep, 15 22:36		1
CA_AOM2	08 Apr, 11 02:18		23 Sep, 15 12:50		1
CA_DPM	08 Apr, 11 02:18		23 Sep, 15 12:50		1
club	22 Sep, 15 22:16		22 Sep, 15 22:16		1
club-webkit	22 Sep, 15 22:16		22 Sep, 15 22:16		1
Conversion Audit Connection	22 Sep, 15 22:16		22 Sep, 15 22:16		1
efashion	22 Sep, 15 22:16		22 Sep, 15 22:16		1
efashion-webkit	22 Sep, 15 22:16		22 Sep, 15 22:16		1
GBIP_DWP_WHP	04 Feb, 11 14:53		21 Nov, 15 18:09		2
metaminer-xi3-oracle-secure	08 Nov, 15 21:55		29 Nov, 15 19:17		5
PeopleSoft	20 Apr, 07 15:00		15 Aug, 14 02:27		1
PeopleSoft ODS	04 Aug, 08 21:43		15 Aug, 14 02:38		2
PeopleSoft_U1	31 May, 07 14:57		15 Aug, 14 02:21		1
SFDC_DEV	29 Jul, 11 06:59		29 Apr, 15 16:54		1
2emgep					1
1EM					0
2EM					0
dd					1
-1_New Web Intellige...	25 Nov, 15 00:53	22 Jan, 16 03:34	11 Dec, 15 01:23		44
Administrator					3

Loaded at 16:11 | Items shown: 99,560 | Selected: 0 | 18:05:44 | 93M of 280M



What MetaMiner is **not**

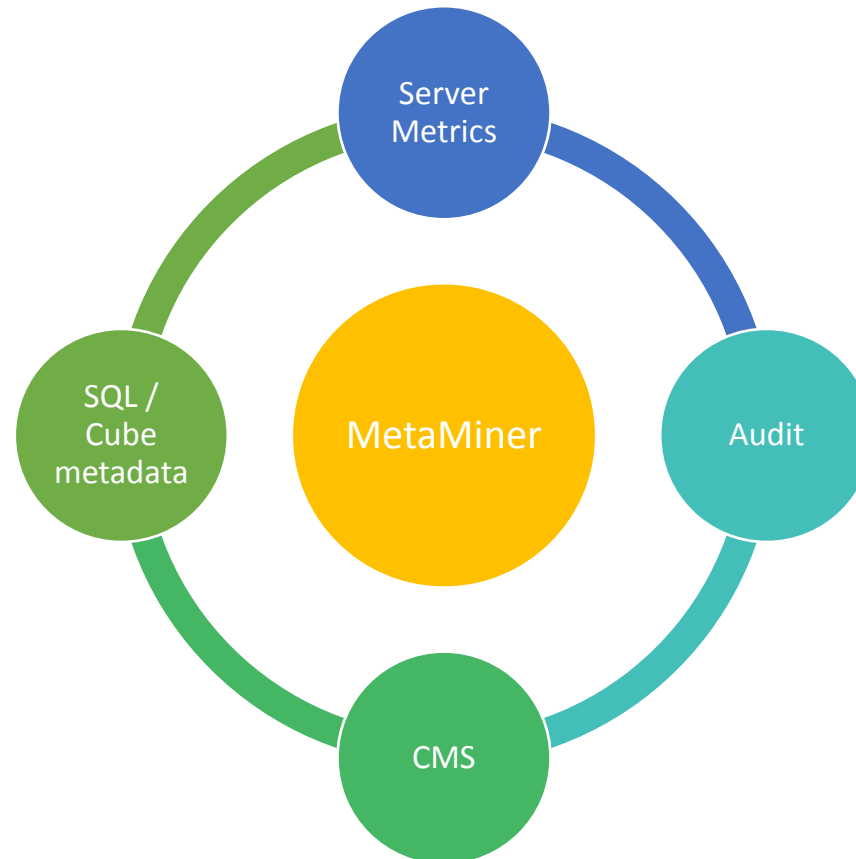
- MetaMiner is **not** a “scrape and dump” solution that works by scheduling jobs that perform heavy weight extractions which don’t reveal “what was extracted, what wasn’t, and why it wasn’t”





What MetaMiner is

- MetaMiner is a real-time façade that fuses your BI4 landscape together through high-performance middleware, allowing analysis and write-back to all source systems from a single entry point





Complex Stuff: Long running queries

- ORA-DBA: We got some long-running queries in our system according to
- BOBJ: Let me take a look (start running long audit reports)
- BOBJ: I have to contact the user (2 days later)
- USER1: I never ran that report; it's a publication someone else is running that is delivered to me
- BOBJ: OK, let me find that person instead (2 days later)
- USER2: Yes, that's me – but that's not the long running report; anyway, what were the prompts the report ran with? (2 days later)
- BOBJ: Ok, these are the prompts
- USER2: I'll review the report (3 days)
- USER2: This isn't the report that should be running; the one that should be used was in my favorties but I think I deleted it...
- BOBJ: can you recreate it?



Complex Stuff: Finding and deleting unread inbox content over 2 years old

- Query Builder
- Excel Outputs
- Contact users, send email, beg/plead/negotiate
- (OR, MAYBE) SDK programming to delete the SI_IDs found by this criteria
- Re-run query builder and confirm deletions



Complex Stuff: Surgically researching object use and returning back to developers precise reports for modification

- Simply not doable (without SDK or manual open/stare/compare)



Complex Stuff: Automated Landscape Harmonization

- HUH?
- Ok, less complicated than it sounds, but still complex under the covers!
- Requirement: Ensure that content for a specific project/team/group is continuously synchronized based on arbitrary dynamic criteria (new instances available, new content created, etc.)
- Helps in nearly all scenarios: Migration cut-over, ongoing multi-platform use, disaster recovery, keeping environments current (**and usable**)!



Complex Stuff: Whodunnit? Universe changes...

- Bob wants to please his management team at a meeting happening in two hours, so he quickly performs a rogue modification to a universe based on input given to him by his boss **directly in Production** and pats himself on the back when the meeting goes great and he's able to show some great new metrics
- ... but now a bunch of stuff is broken, reports are throwing exceptions and...



Yay!

DEMOS!



MetaMiner Features

- Impact Analysis (*Data lineage, DB & universe level object usage*)
- SQL content browser
- Meta-Query (*Direct SQL access to MetaMiner's fully documented universe through an interface that allows you to export, tree-ify, and actionize results within the UI*)
- Alerting & Monitoring Framework
- Object Workflow (backup/delete/archive arbitrary content based on rich business rules)
- Visual Compare (*Side by side comparison of folders, documents, trees, reports & universes*)
- Versioning (*Automatically versions all UNX/UNV/WEBI assets w/ instant restore*)
- License / Session Utilization
- Security Auditing and bulk administration of access assignment/revocation
- Real-time monitoring & metrics dashboard **

** February 2016



Focus: Database & Universe Object Impact Analysis

MetaMiner can identify many granular aspects of BI assets (Webi, Crystal, Design Studio, Analysis Office, Lumira (2016Q2):

- Field names (SELECT)
- Tables (SELECT)
- Universe Connections
- Universe Objects
- Dataprovider Data
- Report Layout

Component

Category

1. Field names ("SELECT")
2. Field names & table * ("SELECT" & "WHERE")

by Field names & Tables

3. Universe Connections & Objects
4. Universe Connections
5. Universe Objects

by Universe Attributes

6. Dataproviders
7. Dataproviders & Report Layouts

by Dataprovider / Report Layout

* Demo: SQL & database object search and discovery

* **Full SQL Parsing** (nested object references; derived table SQL)



Impact Analysis for the Enterprise

- Global Luxury Jewelry / Retailer
 - Changing product hierarchies
 - Required deep insights into universe usage within reports to identify impact as they change how their company's products are being defined in different channels/categories
- Large U.S. Bank
 - Upgrading General Ledger system and needed to review 30,000 Webi reports and identify the usage of 600 tables and columns for impact
- Large Scandinavian Bank
 - Upgrading from UNV to UNX, wanted to discover optimizations (unused objects) and develop more useful universes once they moved to UNX



MetaMiner Modernizes the BI Platform

- Middleware for the SAP BusinessObjects Landscape
 - Continuously indexed datastore of BI and non-BI metadata
 - High performance UI enables enterprise search & discovery (“needle in a haystack” problems, root cause analysis, etc.)
 - Pluggable architecture allows single-instance multi-tenant deployment and lowers TCO of BI platform administration
- Accelerates fact-finding by orders of magnitude
 - As BI platform evolves, traditional discovery severely impacted, $O(n^2)$
 - MetaMiner performs regardless of size , $O(1)$
- Key Unique Features
 - Automated rule-based object management



Example MetaMiner Standard Reports

- User Group Listings
- Infrequent / Inactive Users
- Actions by Folder
- Scheduling Statistics
- Webi/Deski Report Metadata
- Connections Used in Reports
- Orphaned Reports
- Duplicate Reports
- Similar Reports
- Report Usage over Time
- Outdated Instances
- Universe Connection Performance
- Universe Restrictions
- Universe Complex Joins
- Universe Usage Last 12 Months
- Universe Usage Over Time
- Universe Object Impact Analysis
- Universes Used in Reports

Not a comprehensive list of reports in MetaMiner's Report Library (v2.1)



MetaMiner Universe

- **1200+ universe objects, 2100 database fields, 32 canned reports**

(sampling)

The screenshot displays the MetaMiner51 interface with a tree view of objects and fields. The tree is organized into several main categories:

- MetaMiner51**
 - Documents & Objects
 - CMSID
 - Type
 - Author
 - Document CUID
 - Document ID
 - Document CMS Object ID
 - Document Name
 - Document Type
 - Description
 - is Instance?
 - is Marked as Read?
 - Keyword
 - Owner
 - Owner ID
 - Parent CUID
 - Parent Folder CUID
 - Parent ID
 - Created
 - Updated
 - Created Year
 - Created Month/Year
 - Created Month
 - Created Month/Year Date
 - Nbr Documents (Distinct)
 - Nbr Documents
 - Nbr Days Ago Created (avg)
 - Folder Path Details
 - File Details
 - Data Connection
 - Events
 - Folders
 - User
 - User Group
 - Semantic Layer
 - Universe Restrictions
 - Server
 - Metadata - Crystal Reports
 - Metadata - Desktop Intelligence
 - Metadata - Webi
 - BI4
 - CMS ID
 - Document ID
 - Must fill contexts?
 - Must fill prompts?
 - Processing Error
 - Report Tab Name
 - Report Tab Ordinal
 - Dataproviders
 - Query Nodes
 - Result Objects
 - Variables
 - Metadata - UNX
 - CMSID
 - Comments
 - Created
 - Description
 - Hierarchies
 - ID
 - is Deleted?
 - Kind
 - Last Submitter
 - Modification Date
 - UNIX CUID
 - UNIX Object ID
 - UNIX Parent ID
 - UNIX Name
 - Updated
 - Version Number
 - UNIX Classes
 - UNIX Connections
 - UNIX Objects
 - UNIX Columns
 - UNIX Tables
 - UNIX Contexts
 - UNIX Joins
 - Metadata - UNV
 - Metadata - Connections
 - Sessions - CMS
 - Sessions - Audit
 - All Audits
 - Audits Last 12 Months
 - Auditing (BI4)
 - Auditing (XI3)
 - MetaMiner Reports - DO NOT MODIFY
 - MetaMiner System Data



User Logon Activity

METAMINER																
Last Refresh: 9:23:31 AM GMT-08:00											MM-User-Last-Logon-Activity: User Last Logon 12mos					
CMSID	User Name	Last Logon Time	Days Ago Logon	Days Ago Logon												
				1 Month	2 Months	3 Months	4 Months	5 Months	6 Months	7 Months	8 Months	9 Months	10 Months	11 Months	12 Months+	
BI4002	mmadmin	12/16/15	44		●											
BI4001	MetaMinerAdmin	12/16/15	44		●											
XI3001	MetaMinerAdmin	12/16/15	44		●											
BI4002	Administrator	12/16/15	44		●											
BI4001	Administrator	12/14/15	46		●											
XI3001	Administrator	11/27/15	63			●										
BI4001	JERRY	11/25/15	65			●										
XI3001	Dmitry	11/18/15	72			●										
XI3001	AuditTester1	11/6/15	84			●										
BI4002	LCHEN	10/27/15	94				●									
BI4001	BENSON	10/24/15	97				●									
BI4001	KRISHNA	10/24/15	97				●									



Folder Security

METAMINER

Last Refresh: 7:42:59 AM GMT-08:00

MM-1500-Folder-Security-Matrix: Folder Security Worksheet (Requires Security Captur

BI4001

Parent Path Complete	User or Group Name	Access Level (Role)	is Inherited?	is Inherited from	is Inherited via	is Inherited via Folder?	Role
Connections/CommonConnections	Administrators	Full Control	NO	NO	YES	YES	EXPLICIT
Connections/CommonConnections	Everyone	No Access	NO	NO	NO	NO	EFFECT
Connections/CommonConnections	Universe Designer Users	Full Control	YES	YES	YES	YES	EFFECT
Connections/Infolytik	Administrators	Full Control	YES	YES	YES	YES	EFFECT
Connections/Infolytik	Everyone	No Access	YES	NO	YES	YES	EFFECT
Connections/Infolytik	Universe Designer Users	Full Control	YES	YES	YES	YES	EFFECT
My Favorites/Administrator/~WebIntelligence	Administrators	Full Control	YES	YES	YES	YES	EFFECT
My Favorites/Administrator/~WebIntelligence	Everyone	Full Control (Owner)	YES	YES	YES	YES	EFFECT
My Favorites/ANDREA/~WebIntelligence	Administrators	Full Control	YES	YES	YES	YES	▲ EFFECT



UNIX/UNV Documentation

METAMINER
Last Refresh: 8:31:52 AM GMT-08:00 MM-All-Universe-UNIX-Documentation: Classes and Objects

UNIX Name: mm-bl.unx

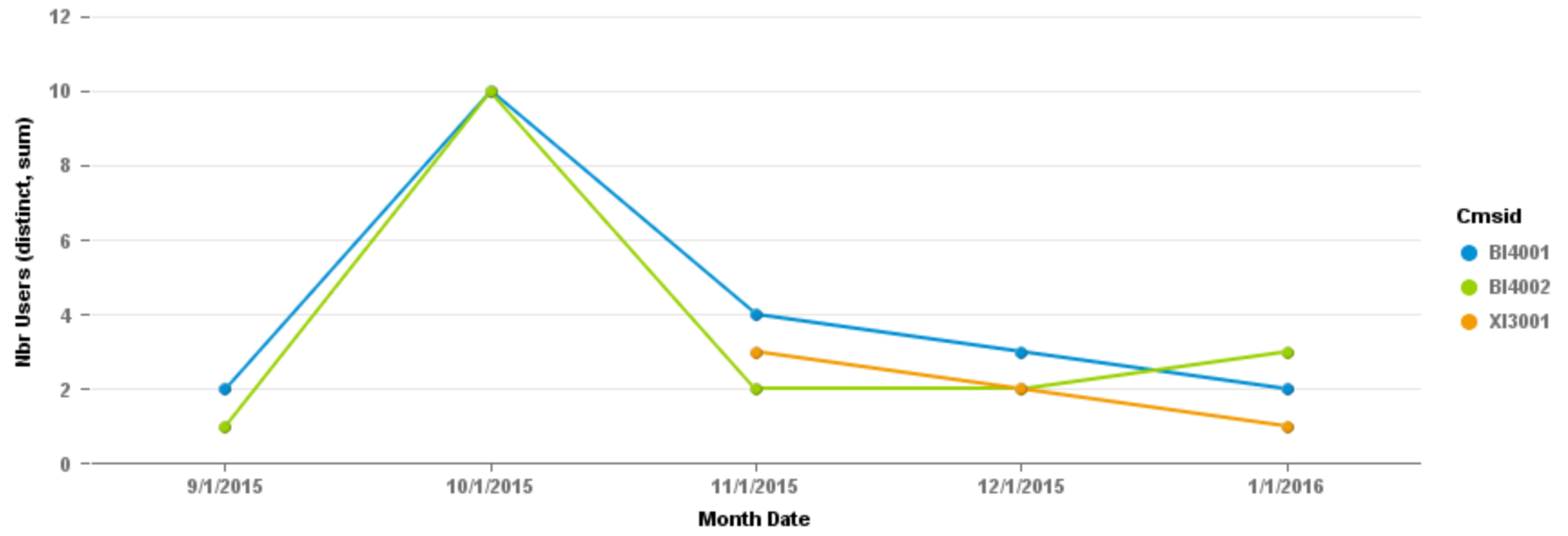
Class name	Object Name	Qualification	Condition?	Select Expression	Where Expressoin
Documents & Objects	Author	DIMENSION		V_DOCUMENTS.AUTHOR	
	Calendarid	DIMENSION		V_DOCUMENTS.CALENDARID	
	Cmsid	DIMENSION		V_DOCUMENTS.CMSID	
	Created	DIMENSION		V_DOCUMENTS.CREATED	
	Data Category	DIMENSION		V_DOCUMENTS.DATA_CATEGORY	
	Day Of Mon Start	DIMENSION		V_DOCUMENTS.DAY_OF_MON_STAR T	
	Day Of Week Start	DIMENSION		V_DOCUMENTS.DAY_OF_WEEK_STA RT	
	Days Ago Created	DIMENSION		V_DOCUMENTS.DAYS_AGO_CREATE D	
	Description	DIMENSION		V_DOCUMENTS.DESCRPTION	
	Documents Cuid	DIMENSION		V_DOCUMENTS.DOCUMENTS_CUID	
	Documents Id	DIMENSION		V_DOCUMENTS.DOCUMENTS_ID	

Classes and Objects | Joins | Contexts | Tables and Columns | Portrait



Sessions Analysis – Landscape Wide

Global Sessions Summary - Use Input Controls to Filter by Environment





Dead-simple Impact Analysis, Universe/UNIX-based

The screenshot shows a software interface with a tree view on the left and a table on the right. The tree view is titled "Environments" and contains the following items:

- SRP-PROD-WIN
- UNIX testing
 - mm-bl.unx
 - Documents & Objects
 - Documents Id (circled in red)
 - Documents Cuid
 - Documents Objectid
 - Cmsid
 - Folders Cuid
 - Folders Id
 - Folders Objectid
 - Data Category
 - FolderPathcomplete

A red arrow points from the "Documents Id" entry in the tree view to the first row of the table below.

The table is titled "Impacted Universe Objects" and has the following data:

Environment	Object Name	Universe	Class	Data Provider	Folder	Document	Kind	Last Access By	Last Access On
SRP-PROD...	Documents Id	mm-bl.unx	Documents & Objects	Query 1	My Favorites/mmadmin/~WebI...	-1_New Document_...	WEBI	mmadmin	22 Jan, 16 19:...



Dead-simple Impact Analysis, SQL-based

Multi-Line Text Viewer for column SQLTEXT and row 1

Format SQL

Q- inv

```
1 SELECT DISTINCT
2   substring(PURTG.TG003,1,4),
3   substring(PURTG.TG003,1,6),
4   substring(PURTG.TG003,5,2),
5   PURTG.TG003,
6   CMSMC.MC002,
7   INVMB.MB001,
8   INVMB.MB002,
9   INVMB.MB003,
10  PURTH.TH008,
11  PURTH.TH007,
12  PURTH.TH015,
13  PURTH.TH034,
14  INVMA.MA003
15 FROM
16  PURTG INNER JOIN PURTH ON (PURTG.TG001=PURTH.TH001 and PURTG.TG002=PURTH.TH002)
17  LEFT OUTER JOIN INVMB ON (PURTH.TH004=INVMB.MB001)
18  LEFT OUTER JOIN INVMA ON (INVMB.MB005=INVMA.MA002 and INVMA.MA001='1')
19  LEFT OUTER JOIN CMSMC ON (PURTH.TH009=CMSMC.MC001)
20
21 WHERE
22  (
23  PURTG.TG013 = 'Y'
24  AND
25  substring(PURTG.TG003,1,4) = @prompt('輸入進貨年度:', 'A', '進貨日期\年度', Mono, Free,
```

?

Close



Session Duration Hourly, Group-wise



Last Refresh: 10:09:48 PM GMT-08:00


MM-1400-Sessions-Analysis: Session Time-Group-Hour

Hourly Total Session Duration (hours) [Note: Multiple groups per user are multiplicative]

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Administradores	35	13	25	67	46	210	81	32	37	98	10	22	92	9	83	96	84	89	195	38	37	37	37	14
Administrators	290	280	385	453	256	376	342	277	197	293	139	225	327	350	637	390	596	383	830	434	284	349	579	145
BI Specialists	0															0	1	1	0					
Cryptographic Officers	7	59	8	7	21	8	3	14	0		4	6	10	6	81	45	151	49	254	20	10	22	8	2
Demo Users			1	1	2	1						2						2	1		1			
Everyone	310	456	411	474	318	401	351	320	198	293	153	243	358	368	880	524	1051	532	1592	492	313	416	601	151
Financial Analysis (Users)			1	1	2	1						2						2	1		1			
MIS			1	1	2	1						2						2	1		1			
Todos	35	13	27	71	46	675	81	32	37	98	10	22	92	9	83	97	91	89	197	38	37	37	37	14
Total:	677	819	859	1074	692	1673	858	675	469	782	317	522	879	742	1765	1152	1974	1150	3070	1022	685	861	1263	326



Webi Impact Analysis

 MM-604-Webi-BI4-Impact-Analysis: Webi-BI4-Impact					
<i>Last Refresh: 8:30:22 AM GMT-08:00</i>					
Folder Path Complete	Document Name	Universe Name	Result Object Name	is Condition Object	is Filter?
My Favorites/Administrator/~WebIntelligence	-1_New Document_0	MetaMiner51	CMSID	No	No
	-1_New Document_0	MetaMiner51	Document Type	No	No
	-1_New Document_0	MetaMiner51	Nbr Documents	No	No
	-1_New Document_0	MetaMiner51	Nbr Documents (Distinct)	No	No
Public Folders/Complex Reports (X13 Webi)	webi-complex-xi3	MetaMiner51	Author	No	No
	webi-complex-xi3	MetaMiner51	Cmsid	No	No
	webi-complex-xi3	MetaMiner51	CMSID	No	No
	webi-complex-xi3	MetaMiner51	Created Month	No	No
	webi-complex-xi3	MetaMiner51	Document Type	No	No
	webi-complex-xi3	MetaMiner51	Nbr Days Ago Created (avg	No	No
	webi-complex-xi3	MetaMiner51	Nbr Documents (Distinct)	No	No
	webi-complex-xi3	MetaMiner51	Nbr Sessions (sum)	No	No
	webi-complex-xi3	MetaMiner51	Owner	No	No
	webi-complex-xi3	MetaMiner51	Path 1	No	No
	webi-complex-xi3	MetaMiner51	User Name	No	No
	webi-complex-xi3	MetaMiner51	Author	No	No



Versioning is “baked” into the platform – Restoring content

The screenshot displays the Infolytik platform interface. At the top, there are navigation tabs for Security Diff, Impact Analysis - DB, Alerts, Meta Query, and Impact Analysis - Universe. Below these are CMS Explorer, Users, Servers, and Visual Diff. A search bar contains the text 'large' and a 'Content mode (BETA)' toggle is visible. The left sidebar shows a tree view of environments, with 'SRP-PROD-LINUX' selected, containing 'Public Folders' and 'Operations and Logistics'. The 'Operations and Logistics' folder is expanded to show 'UNIX Test (large report)'. The main area is titled 'Visual Diff Targets' and contains two large dashed boxes labeled 'Left Target' and 'Right Target'. Below this, a table shows the versioning information for 'UNIX Test (large report)'. The table has columns for MetaMiner ID, Author, Description, md5, Version Number, and Last Updated. A single row is visible with the following data: MetaMiner ID: 2505, Author: (empty), Description: (empty), md5: 09d452ded0fa3300..., Version Number: 2505, Last Updated: 20 Jan, 16 21:10. A yellow 'Restore' button is positioned below the 'Author' and 'Description' columns. Two red circles with white numbers '1' and '2' are overlaid on the image: '1' is over the 'Version Number' column, and '2' is over the 'Author' column.

MetaMiner ID	Author	Description	md5	Version Number	Last Updated
2505			09d452ded0fa3300...	2505	20 Jan, 16 21:10



Visual Diff – Metadata (Universe, UNX, Webi, Crystal, Design Studio)

MetaMiner 5.2 Enterprise Edition

File Find View Help

CMS Explorer Users Servers Visual Diff Security Diff Impact Analysis - DB Alerts Meta Query Impact Analysis - Universe

Global

- Hide all
- Hide all properties

Classes

- Show classes
- Show objects

Contexts

- Show contexts

Joins

- Show joins
- Show cardinality
- Show outer join type
- Show isShortCut field

Parameters

- Show parameters
- Show parameter values

Tables

- Show tables
- Show columns

SRP-PROD-WIN/Universes/UNIX Conversions/eFashion.unx

- Quantity sold
- Margin
- Discount
- Sales present
- Sales not present
- JOINS
 - promotion_lookup.Promotion_id=product_promotion_facts.Promotion_id
 - product_promotion_facts.Week_id=Calendar_year_lookup.Week_id
 - Outlet_Lookup.Shop_id=Shop_facts.Shop_id
 - Article_Lookup_Criteria.Article_id=Article_lookup.Article_id
 - Article_lookup.Article_id=Shop_facts.Article_id
 - Article_lookup.Article_id=product_promotion_facts.Article_id
 - Article_Color_Lookup.Article_id=Shop_facts.Article_id and Article_Color_Lookup.Article_id=product_promotion_facts.Article_id
 - Shop_facts.Week_id=Calendar_year_lookup.Week_id
 - product_promotion_facts.Article_id=Shop_facts.Article_id
- CONTEXTS
 - Promotions
 - promotion_lookup.Promotion_id=product_promotion_facts.Promotion_id
 - product_promotion_facts.Week_id=Calendar_year_lookup.Week_id
 - Article_Lookup_Criteria.Article_id=Article_lookup.Article_id
 - Article_lookup.Article_id=product_promotion_facts.Article_id
 - Shop facts
 - Outlet_Lookup.Shop_id=Shop_facts.Shop_id
 - Article_lookup.Article_id=Shop_facts.Article_id
 - Article_Color_Lookup.Article_id=Shop_facts.Article_id and Article_Color_Lookup.Article_id=product_promotion_facts.Article_id
 - Shop_facts.Week_id=Calendar_year_lookup.Week_id
 - product_promotion_facts.Article_id=Shop_facts.Article_id
- TABLES
 - Outlet_Lookup
 - Shop_id
 - Shop_name
 - Address_1
 - Manager
 - Date_open
 - Long_opening_hours_flag
 - Owned_outright_flag
 - Floor_space
 - Zip_code
 - City
 - State
 - Shop_facts
 - Shop_id
 - Shop_name
 - Address_1
 - Manager
 - Date_open
 - Long_opening_hours_flag
 - Owned_outright_flag

SRP-PROD-WIN/Universes/webi universes/eFashion-contexts

- Quantity sold
- Margin
- Discount
- Sales present
- Sales not present
- JOINS
 - promotion_lookup.Promotion_id=product_promotion_facts.Promotion_id
 - product_promotion_facts.Week_id=Calendar_year_lookup.Week_id
 - Outlet_Lookup.Shop_id=Shop_facts.Shop_id
 - Article_Lookup_Criteria.Article_id=Article_lookup.Article_id
 - Article_lookup.Article_id=Shop_facts.Article_id
 - Article_lookup.Article_id=product_promotion_facts.Article_id
 - Article_Color_Lookup.Article_id=Shop_facts.Article_id and Article_Color_Lookup.Article_id=product_promotion_facts.Article_id
 - Shop_facts.Week_id=Calendar_year_lookup.Week_id
 - product_promotion_facts.Article_id=Shop_facts.Article_id
- CONTEXTS
 - TABLES
 - Outlet_Lookup
 - Shop_id
 - Shop_name
 - Address_1
 - Manager
 - Date_open
 - Long_opening_hours_flag
 - Owned_outright_flag
 - Floor_space
 - Zip_code
 - City
 - State
 - Shop_facts
 - Shop_facts_id
 - Article_id
 - Color_code
 - Week_id
 - Shop_id
 - Margin
 - Amount_sold

34 changes

Changed Inserted Deleted

Loaded at 09:50 Items shown: 20 Help 10:53:48 130M of 303M

Filters: 3

TABLES

- ID=9999999
- Parent ID=10
- Class=UnxTa
- This is a cont
- Client env id:
- Model index=



Alerting & Monitoring Framework- Manage complex workflows

The screenshot displays the MetaMiner 5.2 Enterprise Edition interface. The main window shows a list of alerts with columns for Environment, Name, Type, Modified By, Modified On, Last Fired, Count, Check Every, Enabled, and Email/SMS. The 'Instance Failures - 2' alert is selected. An 'Edit Alert' dialog is open, showing the configuration for this alert, including its name, description, environment, type, message, and SQL query. A 'Modify SQL Script' dialog is also open, showing the SQL query used for the alert.

Environment	Name	Type	Modified By	Modified On	Last Fired	Count	Check Every	Enabled	Email/SMS
Global	Every 15 min Schedule Status	SQL Script	Atul	28 Jan,16 13:44	28 Jan,16 13:37	4	1m	<input type="checkbox"/>	<input type="checkbox"/>
Global	Instance Failures - 2	SQL Script	Atul	22 Jan,16 17:57	22 Jan,16 20:14	13	1m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Global	Universe Backups	SQL Script	Atul	22 Jan,16 10:25	22 Jan,16 10:31	1	5m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Global	bi4003 not esponsive	URL	Atul	23 Jan,16 11:42	06 Jan,16 16:21	0	1m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Global	Recurring Instances Backup	SQL Script	Atul	09 Nov,15 13:21	09 Nov,15 12:29	54	10m	<input type="checkbox"/>	<input type="checkbox"/>
Global	Long Running Reports	SQL Script							
Global	Server Stopped!	SQL Script							
Global	Server Stopped1	SQL Script							
Global	bi4003 not esponsive - 2	URL							
Global	bi4003 not esponsive2	URL							
Global	Instance Failures	SQL Script							

Edit Alert

Name: Instance Failures - 2

Description:

Environment: Global

Type: SQL Script

Message: instance failure!

SQL: SELECT V_DOCUMENTS.CMSID, V_DOCUMENTS.KIND, V_DOCUMENTS.NAME, V_DOCUMENTS.OWNER,

Email: atul.chowdhury@infolytik.

Modify SQL Script

```
Format SQL
11 V_DOCUMENTS.JOB_ENDTIME,
12 EVENTS.NAME EVENT_TRIGGER,
13 case when V_DOCUMENTS.FILESIZE is null
14 'NO (empty)' else 'YES' end as HAS_DATA,
15 V_DOCUMENTS.FILESIZE
16 FROM
17 V_DOCUMENTS
18 left outer JOIN OBJECT_EVENTS ON
19 OBJECT_ID
```



Data Validation: Test Report Changes (upgrades/promotions)

MetaMiner 5.2 Enterprise Edition

File Find View Help

Security Diff Impact Analysis - DB Alerts Meta Query Impact Analysis - Universe

CMS Explorer Users Servers Visual Diff

Compare another Synch scrolling

SRP-PROD-LINUX/Public Folders/Sales Reports/Comparisons/Sales Summary - 10pt uplift

Year	Quarter	Sales revenue	Quantity sold	Year	Quarter	Sales revenue	Quantity
2004	Q1	2660709.5	18136	2004	Q1	2660699.5	18136
2004	Q2	2278693.4	14408	2004	Q2	2278693.4	14408
2004	Q3	1367840.7	10203	2004	Q3	1367840.7	10203
2004	Q4	1788580.4	10331	2004	Q4	1788580.4	10331
2005	Q1	3326182.2	21135	2005	Q1	3326172.2	21135
2005	Q2	2840650.8	17152	2005	Q2	2840650.8	17152
2005	Q3	2879303	19224	2005	Q3	2879303	19224
2005	Q4	4186120	22344	2005	Q4	4186120	22344
2006	Q1	3742998.9	22537	2006	Q1	3742988.9	22537
2006	Q2	4006717.5	22846	2006	Q2	4006717.5	22846
2006	Q3	3953395.3	26263	2006	Q3	3953395.3	26263
2006	Q4	3356041.1	18650	2006	Q4	3356041.1	18650

SRP-PROD-LINUX/Public Folders/Sales Reports/Comparisons/Sales Summary - unadjusted

Year	Quarter	Sales revenue	Quantity sold	Year	Quarter	Sales revenue	Quantity
2004	Q1	2660699.5	18136	2004	Q1	2660699.5	18136
2004	Q2	2278693.4	14408	2004	Q2	2278693.4	14408
2004	Q3	1367840.7	10203	2004	Q3	1367840.7	10203
2004	Q4	1788580.4	10331	2004	Q4	1788580.4	10331
2005	Q1	3326172.2	21135	2005	Q1	3326172.2	21135
2005	Q2	2840650.8	17152	2005	Q2	2840650.8	17152
2005	Q3	2879303	19224	2005	Q3	2879303	19224
2005	Q4	4186120	22344	2005	Q4	4186120	22344
2006	Q1	3742988.9	22537	2006	Q1	3742988.9	22537
2006	Q2	4006717.5	22846	2006	Q2	4006717.5	22846
2006	Q3	3953395.3	26263	2006	Q3	3953395.3	26263
2006	Q4	3356041.1	18650	2006	Q4	3356041.1	18650

4 changes Changed Inserted Deleted

Highlight Exact Change

Loaded at 09:50 Items shown: 9 Help 10:57:19 85M of 303M

Regression testing of report data: WYSIWYG
verification across multiple environments, reports



Security Administration across any folder/object matrix

The screenshot displays the MetaMiner 5.2 Enterprise Edition interface. The main window shows a tree view of environments and a matrix of permissions for Administrators, Data Federation Administrators, and Everyone. A red circle with the number '1' highlights the 'BO Analytics' folder. A red arrow points from the text below to the 'Monitoring Report Sample' folder. An 'Assign Access Levels' dialog box is open, showing a list of roles with checkboxes. A red circle with the number '2' is placed over the dialog box. The status bar at the bottom indicates 'Loaded at 09:50', 'Items shown: 21', 'Selected: 1', and '88M of 308M'.

Name	Administrators	Data Federation Administrators	Everyone
Environments			
TINY-BI4003			
Public Folders	Full Control; Rights		Rights
AUX Reports 1	Full Control		Rights
Orade	Full Control		Rights
SQL Server	Full Control		Rights
BO Analytics	Full Control		Rights
Compare Reports with Epic	Full Control		Rights
Cardiology Reconciliation	Full Control		Rights
Data Federation	Full Control	Full Control	View; Rights
Epic-Crystal	Full Control		Rights
Ambulatory EMR	Full Control		Rights
for deletion 1	Full Control		
Hepatitis C	Full Control		
Infolytik	Full Control		
Infolytik WIP	Full Control		
Large Reports	Full Control		
LCM	Full Control		
Promotion Jobs	Full Control		
MetaMiner Reconciliation	Full Control		
Recurring instance vs. events	Full Control		
Monitoring Report Sample	Full Control		

Selected roles: 0

- awefa
- Full Control
- Full Control (Owner)
- Schedule
- View
- View On Demand

Inherit from parent folders
 Inherit from parent groups

OK Cancel

Selective, matrix-based real-time security assessment and management (writeback)



High-performance object management

- **Backup, Promote, Secure or Modify** any content across your landscape (multiple environments) through a single entry point across millions of objects

The screenshot displays the MetaMiner 5.2 interface. The main window shows a table of backup jobs. A red box highlights the 'Backup/Restore' button in the top toolbar. Another red box highlights the job '[PGHBOUG] Sales Executives autosync favorites' in the table. Below this, a 'Restore from Backup to TINY-BI4003' dialog is open, showing a tree view of environments and folders. A red circle with the number '1' is placed over the 'Favorites Folder' in the source tree, and another red circle with the number '2' is placed over the 'Favorites Folder' in the target tree.

Source Environment	Backup Job Name	Type	Modified By	Modified On	Last Fired	Count	Schedule	Enabled	Email/SMS
SRP-PROD-WIN	vladtestzzz	Wizard-based	vlad	16 Jul, 16 00:20	16 Jul, 16 00:24	5	3 m	<input checked="" type="checkbox"/>	
Global	[PGHBOUG] Sales Executives autosync favorites	SQL-based	Atul	14 Jul, 16 11:00	14 Jul, 16 11:01	1	1 m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Global	Capital Projects Universe v1.1 + overloads	SQL-based	Atul	05 Jul, 16 11:50	05 Jul, 16 11:51	1	1 m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Global	Big Backup	SQL-based	ddudin	20 Jun, 16 06:45	20 Jun, 16 06:46	2	1 m	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Name	Updated (Source)	Updated (Target)	Status
Environments			
CMS HOST: BI4003 (TINY-BI4003)			
Favorites Folder	16 Dec, 15 23:04	16 Dec, 15 23:04	Updated
Administrator	21 Sep, 15 23:37	21 Sep, 15 23:37	Updated
~WebIntelligence	20 Sep, 15 20:15	20 Sep, 15 20:15	Updated
452120_HR - New Hires (unx bas...	28 Jun, 16 08:08	28 Jun, 16 08:08	Updated
452122_Active Sales Reporting - ...	28 Jun, 16 08:08	28 Jun, 16 08:08	Updated
485173_HR - New Hires (unx bas...	28 Jun, 16 08:08	28 Jun, 16 08:08	Updated
636071_Multi-UNIX Test - Large D...	28 Jun, 16 08:08	28 Jun, 16 08:08	Updated
636074_SAP BW - Forecasting - A...	28 Jun, 16 08:08	28 Jun, 16 08:08	Updated
636075_Global Supply Chain Me...	28 Jun, 16 08:08	28 Jun, 16 08:08	Updated



Native Application Security for MetaMiner BI teams

Define User Based Security

Users count: 8

User	SRP-DEV-001	SRP-PROD-LINUX	SRP-PROD-WIN	TINY-BI4003
atul	Read Only	Administrator	Administrator	Administrator
atul1	Administrator	Administrator	Administrator	Administrator
ddudin	No Access	â-role	No Access	No Access
vlad	Administrator	Administrator	no tabs	Administrator
vlad2	Administrator	Administrator	Administrator	Administrator
vlad3	Administrator	Administrator	Administrator	Administrator
vlad4	Administrator	Read Only	Read Only	Read Only

Define Security Roles

Roles count: 6

Role	Permissions
Administrator	MMC, Paste, Delete, Export, Rename, Modify Owner, Modify Description, Save As
No Access	
Read Only	MMC, Alerts Tab, Meta Query Tab
no tabs	MMC
tabs role	MMC, Alerts Tab, Meta Query Tab
â-role	MMC, Delete

Edit Role

Name: no tabs

Description:

(All permissions) Selected permissions: 1

- Add New Folder
- Alerts Tab
- Change Access Level
- Change User License Type
- Delete
- Disable User
- Enable User
- Export
- Kill Sessions
- Meta Query Tab
- MMC
- Modify Description
- Modify Owner
- Paste
- Purge Dataprovider
- Rename
- Save As BIAR Backup
- Save As File
- Send Email
- View Audit History

Buttons: OK, Cancel



Technical Support & Documentation

Customer Support¹

- Our technical support team is available 7 days a week, from 8am – 10pm CST/CDT
- License comes with on-site training²
- Next version and EOL schedule

Documentation

- Online support and help (publicly available at www.infolytik.com/metaminer)
 - Best practices and use cases
 - Universe data dictionary
- Customer specific data documentation available

¹ More details and specific terms in Infolytik's Support Terms and Conditions Agreement

² At least two days on-site and one day remote training and custom report writing sessions (depending upon license)

³ Customers purchasing MetaMiner 5.x after 3/31/15 and who are also current and active on Maintenance and Support for MetaMiner 5.x will receive a free upgrade to MetaMiner 6.0 at the time of its release.



Would you like to try this on your own system? Just ask!

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