

OBIEE - Secured!

Discussion on various options to secure your BI deployment

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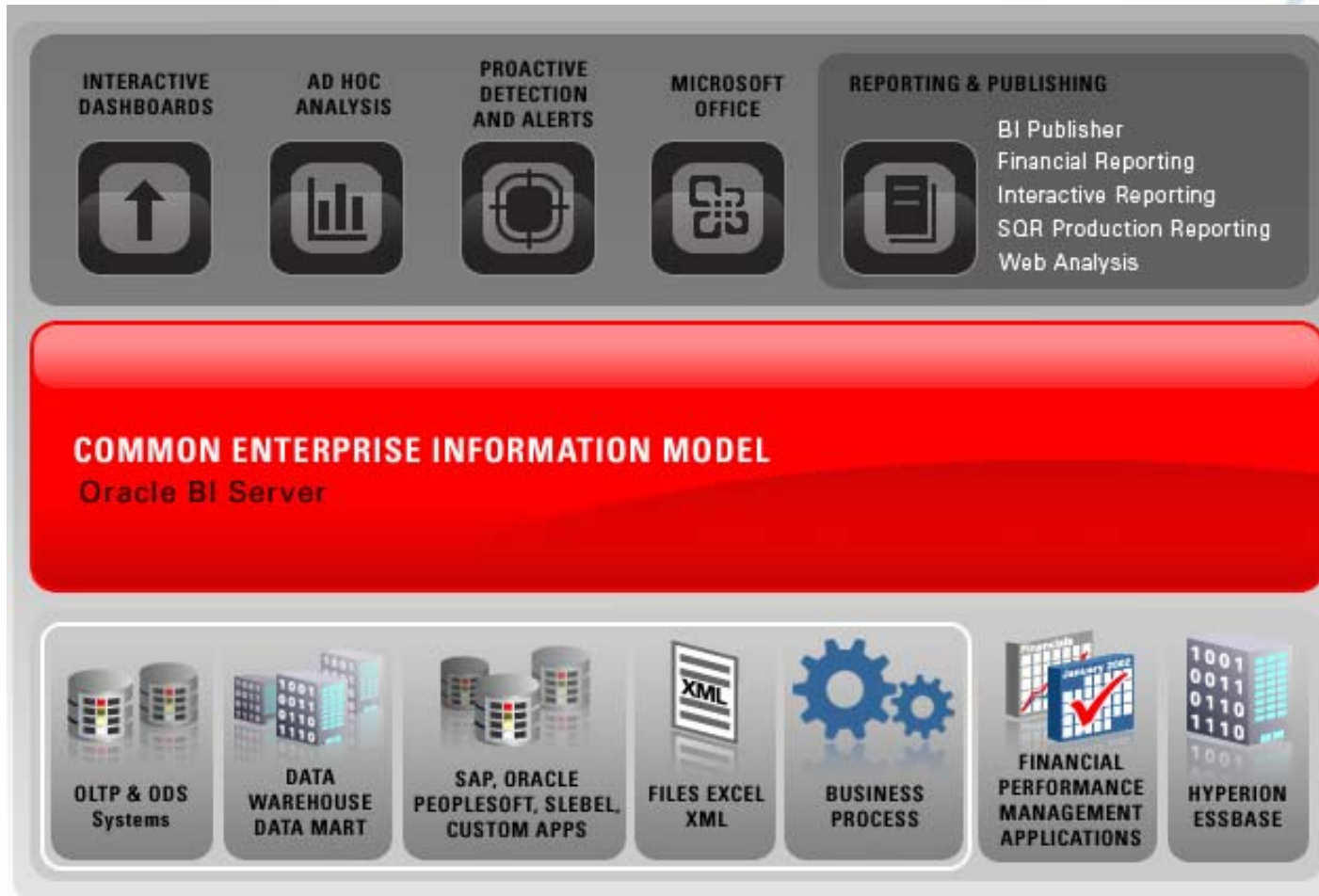
Outline

- Aspects of security
- Overview of OBI security options
- How to integrate security with E-Business Suite
- Encryption of sensitive data

Security: Different Aspects

- **Authentication:** Who should get access?
- **Authorization:** What data may be accessed?
- **Monitoring:** Is usage being audited?
- **Integration:** Does a common security model need to apply between your OBIEE deployment and eBS implementation?
- **Encryption:** Is sensitive data protected?

OBIEE Plus

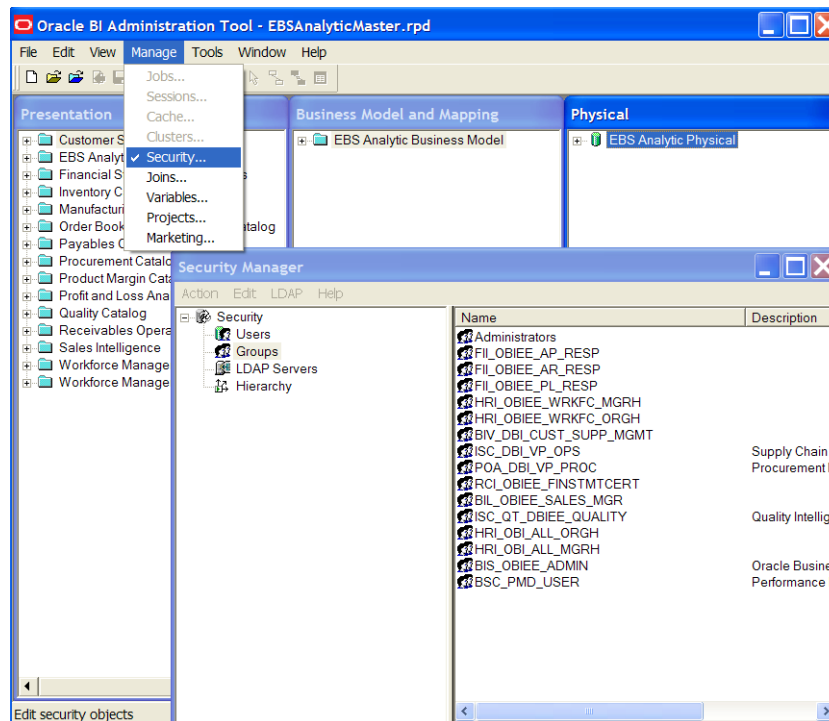


Authentication

- Validate logon / password
- Use Oracle BI Security Manager to manage security

for a repository.

- Set up users / groups
- LDAP users / groups
- Supports OID, SSO



Authorization

- Manage query execution
 - Restrict query access to specific objects, including rows and columns, or time periods
 - Control runaway queries by limiting queries to a specific number of rows or maximum run time
 - Limit queries by setting up filters for an object (typically for facts)

Access Restrictions

- Access to subject areas, column-level security

The screenshot displays the Oracle BI Administration Tool interface. The main window is titled "Oracle BI Administration Tool - EBSAnalyticMaster.rpd". The "Presentation" tab is active, showing a tree view of subject areas. The "Discount" column is selected and circled in red. A "Presentation Column - Discount" dialog box is open, showing the "General" tab. The "Name" field is set to "Discount", and the "Permissions..." button is circled in red. A "Permissions - Discount" dialog box is also open, showing a list of users and groups with their permissions. The "Read" column is circled in red, and all users have the "Read" permission checked.

User/Group	Read
Everyone	<input checked="" type="checkbox"/>
BIL_OBIEE_SALES_MGR	<input checked="" type="checkbox"/>
BIS_OBIEE_ADMIN	<input checked="" type="checkbox"/>
BIV_DBI_CUST_SUPP_MGMT	<input checked="" type="checkbox"/>
BSC_PMD_USER	<input checked="" type="checkbox"/>
FII_OBIEE_AP_RESP	<input checked="" type="checkbox"/>
FII_OBIEE_AR_RESP	<input checked="" type="checkbox"/>
FII_OBIEE_PL_RESP	<input checked="" type="checkbox"/>
HRI_OBI_ALL_MGRH	<input checked="" type="checkbox"/>
HRI_OBI_ALL_ORGH	<input checked="" type="checkbox"/>
HRI_OBIEE_WRKFC_MGRH	<input checked="" type="checkbox"/>
HRI_ORIFF_WRKFC_ORGH	<input checked="" type="checkbox"/>

Access Restrictions

- Restrict access to answers in the catalog

The screenshot shows the Oracle Business Intelligence Catalog Manager interface. The main window displays a tree view on the left with 'Supply Chain Intelligence' expanded to show 'Answers'. The main pane shows a table of items under '/shared/Supply Chain Intelligence/Answers'. A 'Permissions' dialog box is open over the 'Current Production Backlog' item. The dialog shows a list of users and groups with a dropdown menu for 'Permission' set to 'Traverse'. The 'Additional users and groups' list includes 'Authenticated Users', 'BIL_OBIEE_SALES_MGR', 'BIS_OBIEE_ADMIN', 'BIV_DBI_CUST_SUPP_...', and 'BSC_PMD_USER'. The 'Show groups only' checkbox is checked.

Name	Type	Permissio...	Date Created	L
Current Production Backlog	Request	Full	Wed Jun 04 23...	V
Material Usage Variance	Request	Full	Wed Jun 04 23...	V
Material Usage Variance(Category)	Request	Full	Wed Jun 04 23...	V
Material Usage Variance Detail	Request	Full	Wed Jun 04 23...	V
Material Usage Variance Detail: Prompt	Dashboard ...	Full	Wed Jun 04 23...	V
Material Usage Variance Trend	Request	Full	Wed Jun 04 23...	V
Most Late Order Lines Request	Request	Full	Wed Jun 04 23...	V
Non-Contract Purchases By PO Number	Request	Full	Wed Jun 04 23...	V
Non-Contract Purchases Navigation	Request	Full	Wed Jun 04 23...	V
OBFA_Overview_Graph_1	Request	Full	Wed Jun 04 23...	V
OBFA_Overview_Graph_2	Request	Full	Tue Jan 09 17:...	T
OBFA_Overview_Graph_3	Request	Full	Tue Jan 09 17:...	T
OBFA_Overview_Guided_Navigation	Request	Full	Tue Jan 09 17:...	T
OBFA_Overview_Prompt	Dashboard	Full	Tue Feb 20 18...	T

Data Security: Object filters

- Determine securing attribute
- Create an init. block to retrieve allowable values
- Assign the filter to objects and grant to the users or groups

The screenshot displays the Oracle BI Administration Tool interface. The main window is titled "Oracle BI Administration Tool - EBSAnalyticMaster.rpd". The "Security Manager" window is open, showing a tree view of security objects. The "Group - ISC_DBI_VP_OPS" window is also open, showing the group name and a "Permissions..." button. The "User/Group Permissions - ISC_DBI_VP_OPS" window is open, showing a table of permissions for the group. The table has columns for Name, Status, and Business Model Filter. Two rows are visible, both with a status of "Enable". The Business Model Filter for the first row is: "EBS Analytic Business Model"."Inventory Organization". The Business Model Filter for the second row is: "EBS Analytic Business Model"."Inventory Organization".

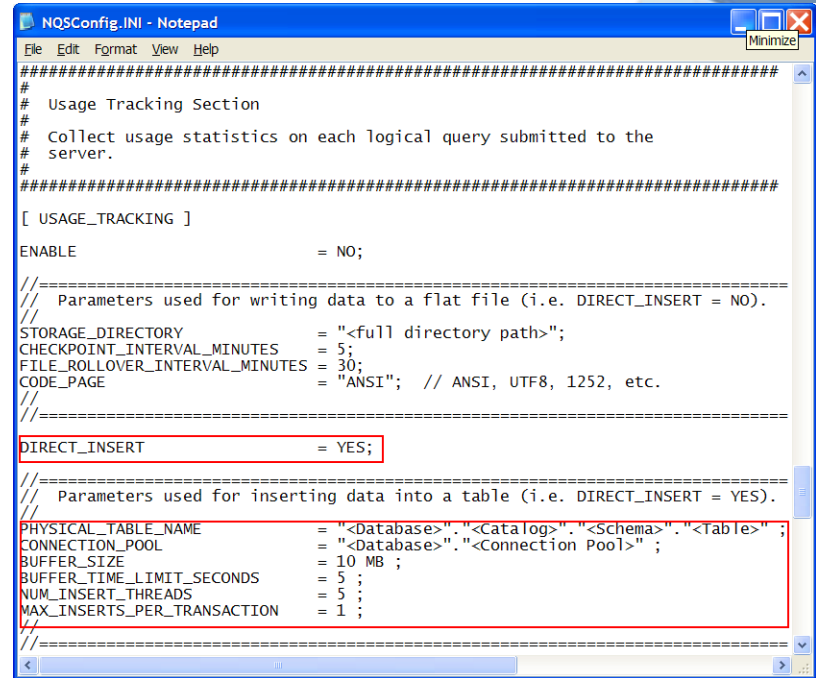
Name	Status	Business Model Filter
"EBS Analytic Business Model"."Inventory Organization"	Enable	"EBS Analytic Business Model"."Inventory Organization". "Inventory Organization ID" = VALUEOF(NQ_SESSION."ORG_LIST")
"EBS Analytic Business Model"."Inventory Balance"	Enable	"EBS Analytic Business Model"."Inventory Organization". "Inventory Organization ID" = VALUEOF(NQ_SESSION."ORG...

Monitoring Usage

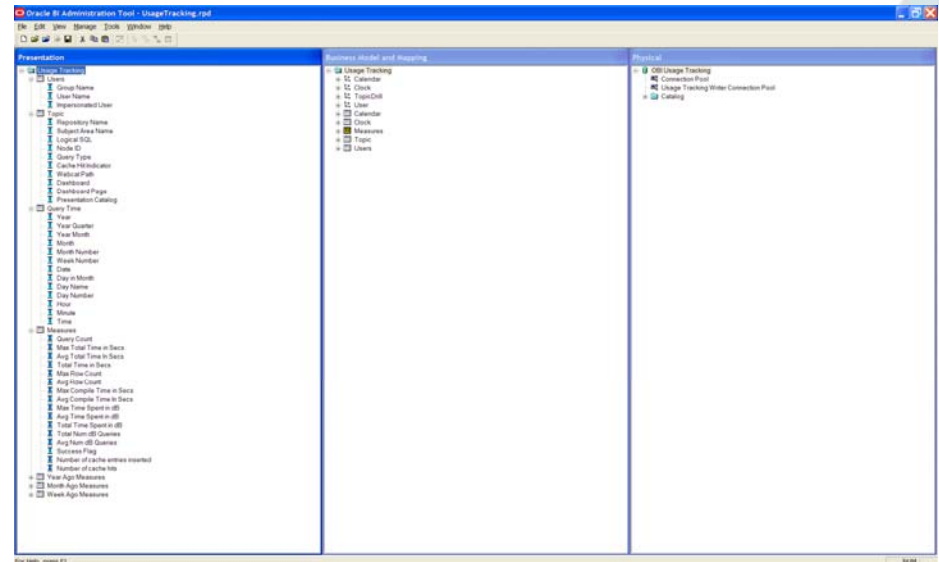
- Track usage to optimize
 - Database for queries
 - Aggregation strategies
 - Billing users / groups based on usage
- Two methods
 - Insert usage data into database tables (*recommended*)
 - Insert usage data into log files

Monitoring Usage

- Modify NQSCONFIG.INI parameters
- Create reporting on usage tracking table S_NQ_ACCT



```
#####  
#  
# Usage Tracking Section  
# Collect usage statistics on each logical query submitted to the  
# server.  
#####  
[ USAGE_TRACKING ]  
ENABLE = NO;  
//=====  
// Parameters used for writing data to a flat file (i.e. DIRECT_INSERT = NO).  
STORAGE_DIRECTORY = "<full directory path>";  
CHECKPOINT_INTERVAL_MINUTES = 5;  
FILE_ROLLOVER_INTERVAL_MINUTES = 30;  
CODE_PAGE = "ANSI"; // ANSI, UTF8, 1252, etc.  
//=====  
DIRECT_INSERT = YES;  
//=====  
// Parameters used for inserting data into a table (i.e. DIRECT_INSERT = YES).  
PHYSICAL_TABLE_NAME = "<Database>". "<Catalog>". "<Schema>". "<Table>";  
CONNECTION_POOL = "<Database>". "<Connection Pool>";  
BUFFER_SIZE = 10 MB;  
BUFFER_TIME_LIMIT_SECONDS = 5;  
NUM_INSERT_THREADS = 5;  
MAX_INSERTS_PER_TRANSACTION = 1;  
//=====
```



Integrating with E-Business Suite

- Integration aspects
 - Single Sign-On / Authentication
 - Application Data Security
 - Drill to Transactions

Pre-Requisites

- Two ATG patches (5556799, 5473858). Both are part of 11i.ATG_PF.H RUP5
- Client browser should accept cookies
- OBI (10.1.3.2 or higher) installed on the same domain

Authentication Integration

ORACLE E-Business Suite

Login

Username
Password

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- Budget User - CEO, Vision Operations
 - Daily Business Intelligence Administrator
 - Daily Commodity Intelligence
 - Daily Interaction Center Intelligence
 - Daily Payables Intelligence
 - Daily Procurement Intelligence
 - Daily Product Intelligence
 - Daily Project Intelligence
 - Daily Quoting Intelligence
 - Daily Sales Intelligence
 - Daily Service Contracts Intelligence
 - DBI Incremental Request Sets
 - Employee Self-Service
 - HR Line Manager
 - iExpenses
 - iRecruitment Employee
 - iRecruitment Manager
 - Manager Self-Service
 - Manufacturing and Distribution
 - Marketing Manager
 - Oracle Marketing Administration
 - Oracle Marketing Super
 - Preferences SSWA
 - Procurement Manager
 - Profit Center Manager
 - Sales Manager
 - Self Service Time and Billing
- Intelligence Overviews
 - Sales Forecast Management
 - Sales Management
 - Opportunity Management
 - Product Revenue Bookings and Backlog
 - Oracle Sales
 - Sales Forecasting
 - Opportunities
 - Leads
 - OBI EE Dashboard
 - OBI EE Dashboard

ORACLE Interactive Dashboards My Dashboard Order Management

Welcome, WTUCKER! Dashboard

Order Management

Overview Forecast Revenue Effectiveness Customer Customer Report Exceptions

Quarter: 2001 Q 4' Product Hierarchy: [Dropdown] Go

If invoice revenue is not keeping pace with order revenue, click here to find the products contributing the most to the revenue gap.
[Top Contributors to Gap Between Order and Invoice Revenue](#)

Cumulative Order and Invoice Revenue

Select View Chart [Dropdown]

Cumulative Order Revenue

Select View

Cumulative Order Revenue Cumulative Invoice Revenue

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Authentication Integration: EBS

- Login into EBS
- Set profile option "FND: Oracle Business Intelligence Suite EE base URL" to
`http://[hostname.domain_name]:[port_number]`
- The OBIEE link is `[base_url]/analytics/ saw.dll? [module_invoked] &acf=`
 - `[module_invoked]` = Dashboard or Answers and `[acf_id]` is a 10 digit number generated by EBS.
- EBS sends a cookie to the browser

Authentication: Presentation config

- Modify instanceconfig.xml for external authentication

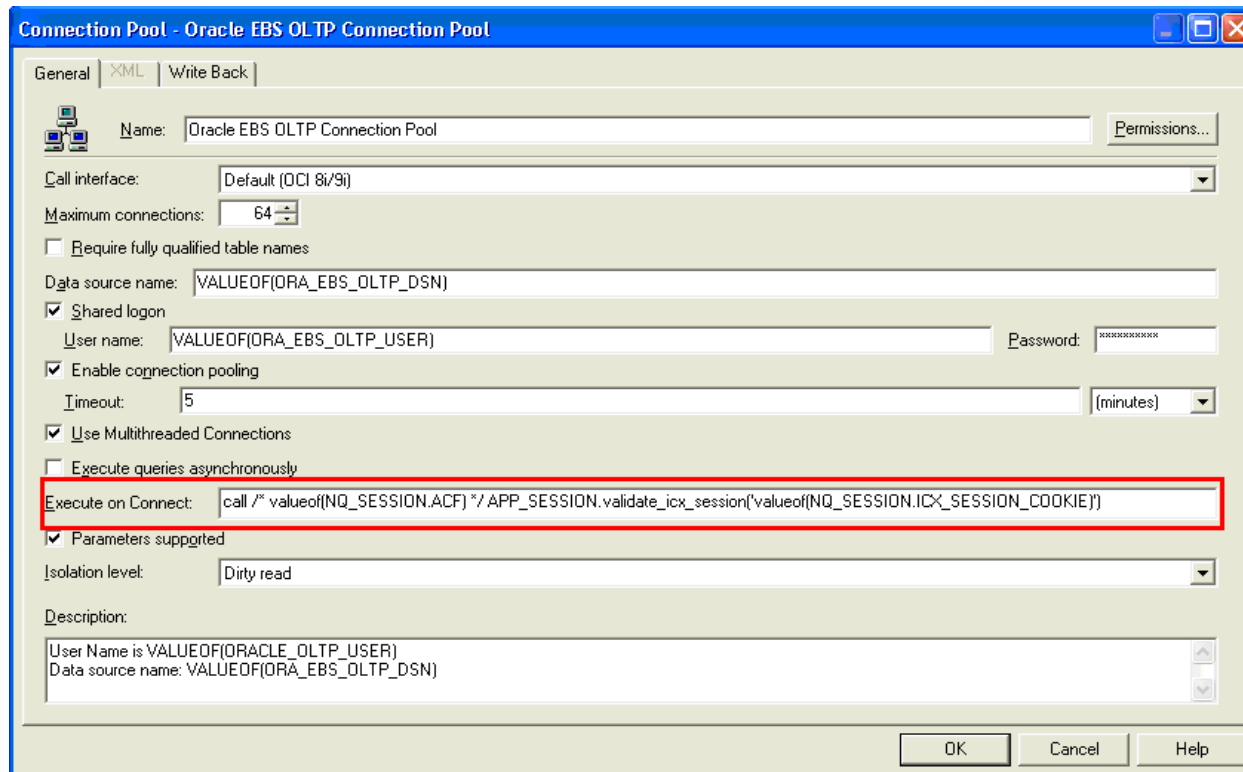
```
<Auth>
  <ExternalLogon enabled="true">
    <ParamList>
      <Param name="NQ_SESSION.ICX_SESSION_COOKIE"
        source="cookie"
        nameInSource="EBSAppsDatabaseSID"/>

      <Param name="NQ_SESSION.ACF"
        source="url"
        nameInSource="ACF"/>
    </ParamList>
  </ExternalLogon>
</Auth>
```

- Restart the Presentation server.
- Note: Once the Presentation Server is setup as above, it will only support external authentication. You will no longer be able to login directly into Presentation server using <http://hostname/analytcs>. You will need to log in to EBS first.

Authorization: Repository Config

- Set up Connection Pool property



Connection Pool - Oracle EBS OLTP Connection Pool

General | XML | Write Back |

Name: Oracle EBS OLTP Connection Pool Permissions...

Call interface: Default (OCI 8i/9i)

Maximum connections: 64

Require fully qualified table names

Data source name: VALUEOF(ORA_EBS_OLTP_DSN)

Shared logon

User name: VALUEOF(ORA_EBS_OLTP_USER) Password: *****

Enable connection pooling

Timeout: 5 (minutes)

Use Multithreaded Connections

Execute queries asynchronously

Execute on Connect: call /* valueof(NQ_SESSION.ACF) */ APP_SESSION.validate_icx_session('valueof(NQ_SESSION.ICX_SESSION_COOKIE)')

Parameters supported

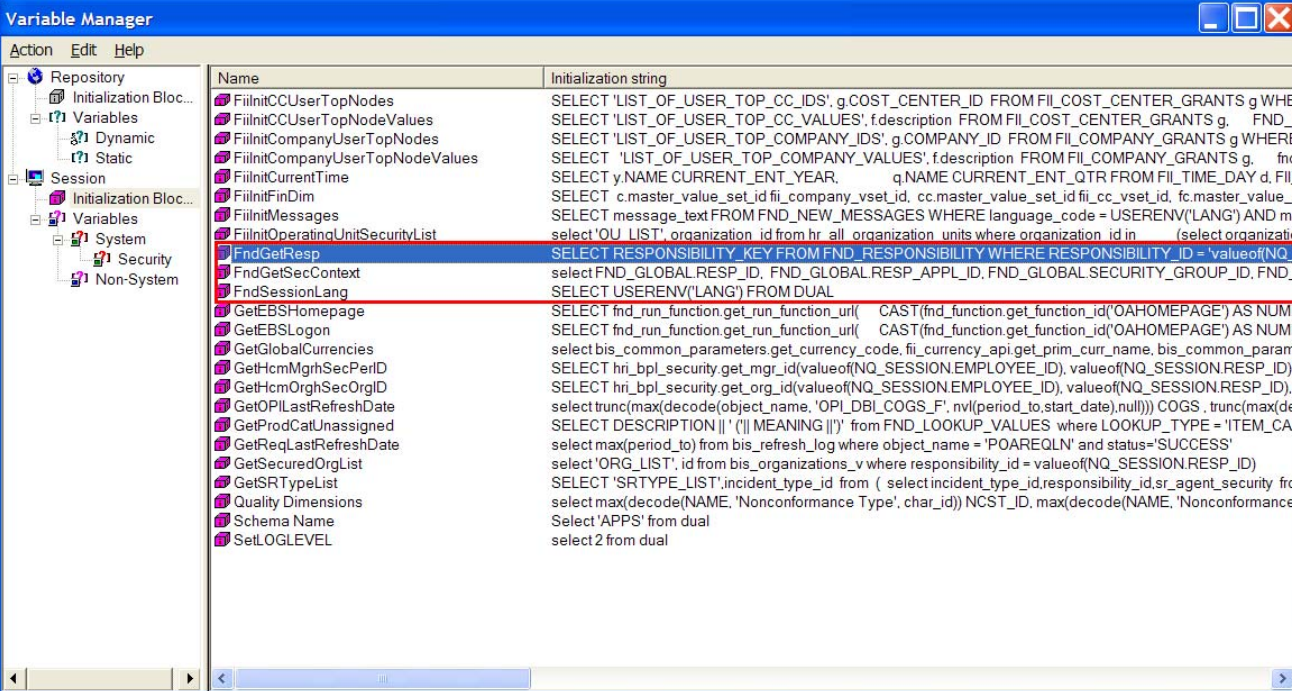
Isolation level: Dirty read

Description:
User Name is VALUEOF(ORACLE_OLTP_USER)
Data source name: VALUEOF(ORA_EBS_OLTP_DSN)

OK Cancel Help

Authorization: Repository Config

- Create Initialization blocks for:
 - Security Context
 - Responsibility
 - Language



Name	Initialization string
FiInitCCUserTopNodes	SELECT 'LIST_OF_USER_TOP_CC_IDS', g.COST_CENTER_ID FROM FIL_COST_CENTER_GRANTS g WHERE
FiInitCCUserTopNodeValues	SELECT 'LIST_OF_USER_TOP_CC_VALUES', f.description FROM FIL_COST_CENTER_GRANTS g, FND_I
FiInitCompanyUserTopNodes	SELECT 'LIST_OF_USER_TOP_COMPANY_IDS', g.COMPANY_ID FROM FIL_COMPANY_GRANTS g WHERE
FiInitCompanyUserTopNodeValues	SELECT 'LIST_OF_USER_TOP_COMPANY_VALUES', f.description FROM FIL_COMPANY_GRANTS g, fnc
FiInitCurrentTime	SELECT y.NAME CURRENT_ENT_YEAR, q.NAME CURRENT_ENT_QTR FROM FIL_TIME_DAY d, FIL
FiInitFinDim	SELECT c.master_value_set_id, fi_company_vset_id, cc.master_value_set_id, fi_cc_vset_id, fc.master_value_
FiInitMessages	SELECT message_text FROM FND_NEW_MESSAGES WHERE language_code = USERENV('LANG') AND m
FiInitOperatngUnitSecurityList	select 'OU_LIST', organization_id from hr_all_organization_units where organization_id in (select organizati
FndGetResp	SELECT RESPONSIBILITY_KEY FROM FND_RESPONSIBILITY WHERE RESPONSIBILITY_ID = 'valueof(NQ
FndGetSecContext	select FND_GLOBAL_RESP_ID, FND_GLOBAL_RESP_APPL_ID, FND_GLOBAL_SECURITY_GROUP_ID, FND
FndSessionLang	SELECT USERENV('LANG') FROM DUAL
GetEBSHomepage	SELECT fnd_run_function.get_run_function_url(CAST(fnd_function.get_function_id('OAHOMEPAGE') AS NUMI
GetEBSLogon	SELECT fnd_run_function.get_run_function_url(CAST(fnd_function.get_function_id('OAHOMEPAGE') AS NUMI
GetGlobalCurrencies	select bis_common_parameters.get_currency_code, fii_currency_api.get_prim_curr_name, bis_common_param
GetHcmMgrhSecPerID	SELECT hri_bp_security.get_mgr_id(valueof(NQ_SESSION.EMPLOYEE_ID), valueof(NQ_SESSION.RESP_ID),
GetHcmOrghSecOrgID	SELECT hri_bp_security.get_org_id(valueof(NQ_SESSION.EMPLOYEE_ID), valueof(NQ_SESSION.RESP_ID),
GetOPLastRefreshDate	select trunc(max(decode(object_name, 'OPL_DBI_COGS_F', nvl(period_to_start_date, null))) COGS, trunc(max(de
GetProdCatUnassigned	SELECT DESCRIPTION ' (MEANING)' from FND_LOOKUP_VALUES where LOOKUP_TYPE = 'ITEM_CA'
GetReqLastRefreshDate	select max(period_to) from bis_refresh_log where object_name = 'POAREQLN' and status='SUCCESS'
GetSecuredOrgList	select 'ORG_LIST', id from bis_organizations_v where responsibility_id = valueof(NQ_SESSION.RESP_ID)
GetSRTypeList	SELECT 'SRTYPE_LIST', incident_type_id from (select incident_type_id, responsibility_id, sr_agent_security fr
Quality Dimensions	select max(decode(NAME, 'Nonconformance Type', char_id)) NCST_ID, max(decode(NAME, 'Nonconformance
Schema Name	Select 'APPS' from dual
SetLOGLEVEL	select 2 from dual

Drill to EBusiness Suite

Order and Invoice Revenue by Product

Select View: Chart

Legend: ■ Total Ordered Amount, ■ Total Invoiced Amount

Product Hierarchy 1 Name	Total Ordered Amount	Total Invoiced Amount
Computer Cases		
Data Storage Devices		
Software		
Notebook Computers		
Handheld Computers		
Desktop Computers		
Workstations		
Power Supplies		

Top 10 Orders

Sales Order Number	EBS Action Link	Customer Name	Source Order Status	Total Ordered Amount
100173	Link	Computer Service and Rentals	Closed	\$739,418
100174	Link	Business World	Closed	\$738,893
120043	Link	Imaging Innovations, Inc.	Closed	\$74,063

Diagnostics Home Logout Preferences Help

Home | Order Status | Delivery | Customer Service

Sales Order 100173
Printable Page

General

Customer Name: **Computer Service and Rentals**

Customer PO: [blank]

Order Date: **18-Dec-2001 04:25:06**

Need By Date: **18-Jan-2002 04:25:21**

Booked Date: **18-Jan-2002 04:27:35**

Status: **Closed**

Quality Plan: [View Quality Plan](#)

Invoice Information: [View Invoice Information](#)

Shipping

Freight Terms: **Prepaid**

Shipment Priority: [blank]

Delivery Summary: [View Delivery Summary](#)

Delivery Line Details: [View Line Details](#)

Billing

Bill To: **Duisburg
Duisburg, 43125, DE**

Payment Terms: **2/10, Net 30**

Price List: **EURO**

Total: **816,640.00 Euro**

Pricing Details: [View Pricing Details](#)

Lines

Line Num	Item	Item Description	Ordered Quantity	UOM	Fulfilled Quantity	Unit Price	Extended Price	Line Type	Status	Delivery Name	Expected Ship Date	Details	Return Request	Line Invoice Detail
1.1	f82000	Consulting/Training	420	Ea	420	1,150.00	483,000.00	DE Bill Only	Closed			Details	Return Request	Line Invoice Detail
2.1	f40000	Modem - Serial Control	1300	Ea	1300	170.00	221,000.00	DE Bill Only	Closed			Details	Return Request	Line Invoice Detail

Home | Order Status | Delivery | Customer Service | Diagnostics | Home | Logout | Preferences | Help
Printable Page

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Drill to EBusiness Suite: Action Link

- Identify the EBS Application page/function
- Identify the base EBS table and create view (query) in the metadata

(1): Function_id of the page you want to navigate to in EBS

(2): Security context

Physical Table - OE_ORDER_HEADERS_ALL

General | Columns | Keys | Foreign Keys

Name: OE_ORDER_HEADERS_ALL

Table Type: Select

Use database specific SQL

Default Initialization String

```
SELECT
HEADER_ID,
fnd_run_function.get_run_function_url
CAST(fnd_function.get_function_id('ISC_ORDINF_DETAILS_PMV') AS NUMBER); (1)
CAST(VALUEOFINQ_SESSION.OLTP_EBS_RESP_APPL_ID AS NUMBER); (2)
CAST(VALUEOFINQ_SESSION.OLTP_EBS_SEC_GROUP_ID AS NUMBER);
'HeaderId=||HEADER_ID||&pFunctionName=ISC_ORDINF_DETAILS_PMV&pMode=N
NULL) as ORDER_HEADER_ACTION_LINK_URL
```

Cacheable

Cache never expires

Cache persistence time

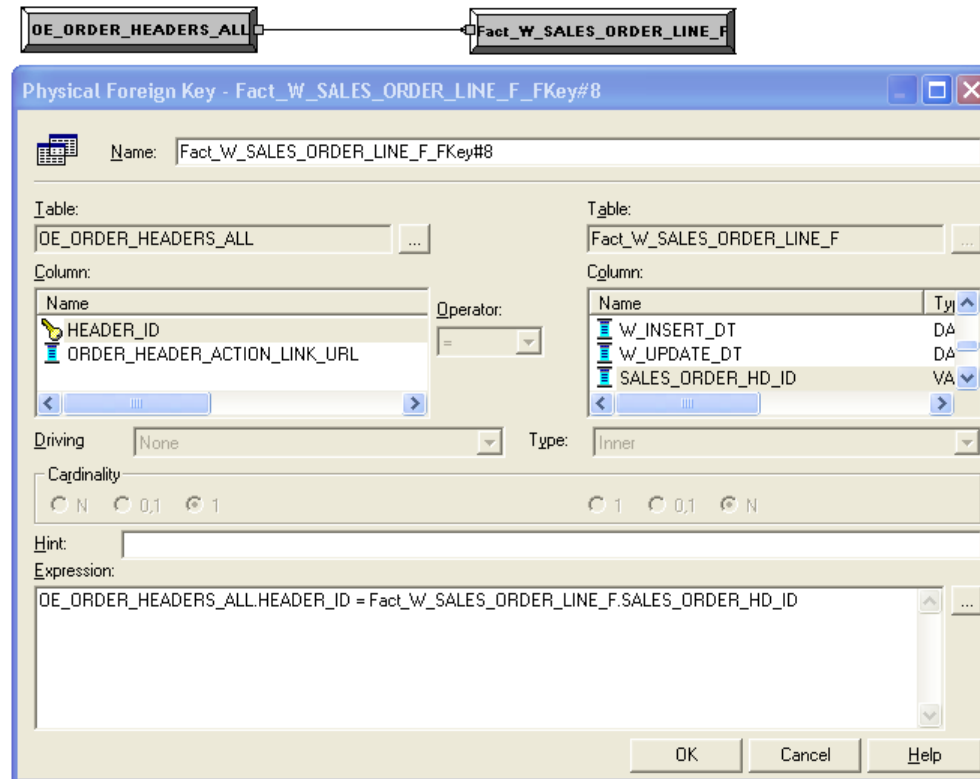
Hint:

Description:

OK Cancel Help

Drill to EBusiness Suite: Action Link

- Map Metadata View to Base Fact Table

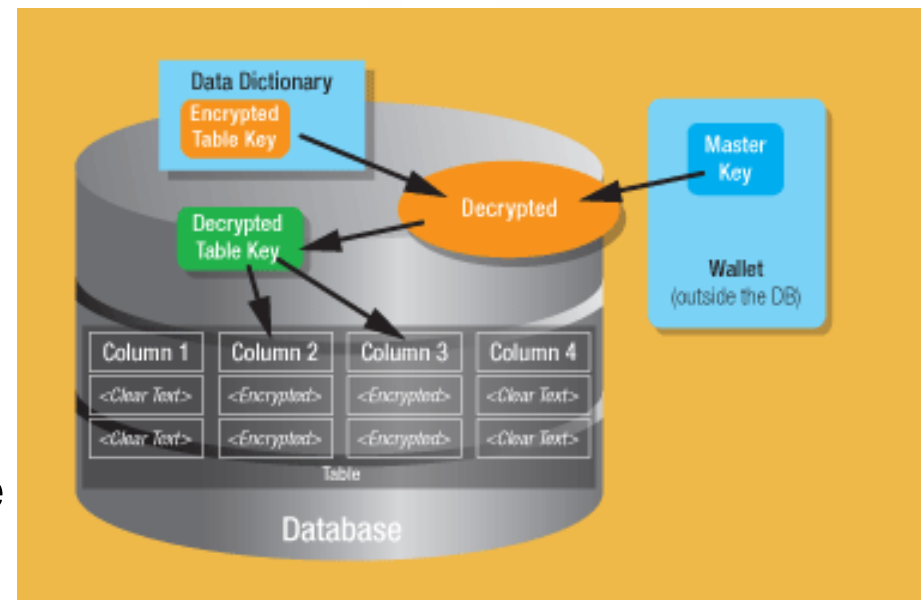


Data Encryption

- Encrypt your sensitive data (e.g. social security numbers)
- Store encryption key and data in separate places
 - Renders stolen data / tapes worthless
- Easiest to do this in the database, not in OBIEE. Use Transparent Data Encryption (TDE) feature of Oracle 10gR2 and above.

How Encryption works

- Can encrypt any or all columns
- Single encrypted table key
- Stored in a separate location (wallet)
- “Salt” added to prevent same encrypted key for identical value



Encryption: Setup

- Specify wallet location Default:
 - `$ORACLE_BASE/admin/$ORACLE_SID/wallet`
- Create the wallet
 - `alter system set encryption key authenticated by "protege";`
- Open the wallet
 - `alter system set encryption wallet open authenticated by "protege";`

Encrypt Columns

```
SQL> desc accounts
```

Name	Type
ACC_NO	NUMBER
ACC_NAME	VARCHAR2(30)
SSN	VARCHAR2(9)

```
alter table accounts modify (ssn encrypt);  
Table altered.
```

```
SQL> desc accounts
```

Name	Type
ACC_NO	NUMBER
ACC_NAME	VARCHAR2(30)
SSN	VARCHAR2(9) ENCRYPT

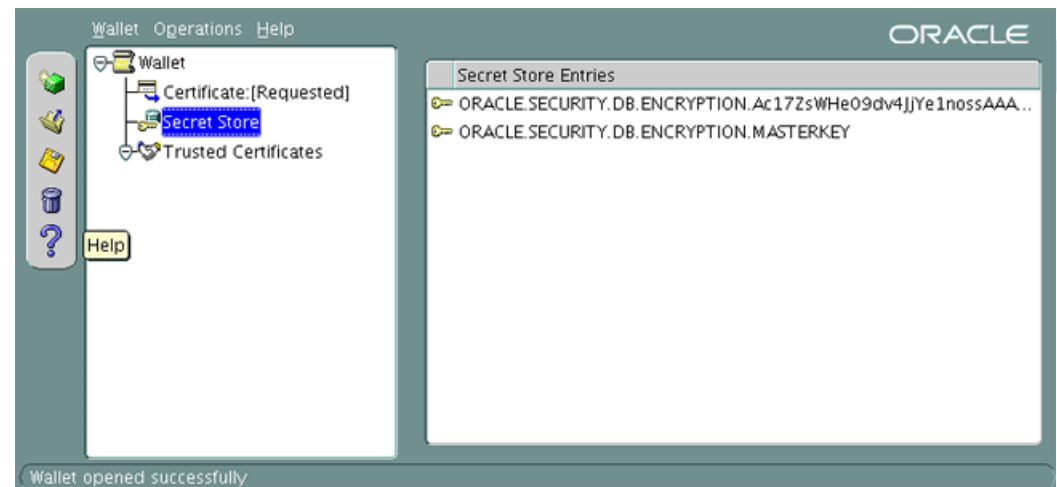
If there is a breach...

- If someone decrypts the keys, encrypt with a different algorithm

```
alter table accounts rekey using 'aes256';  
-- default is aes192
```

- If wallet password is leaked, use Wallet Manager to

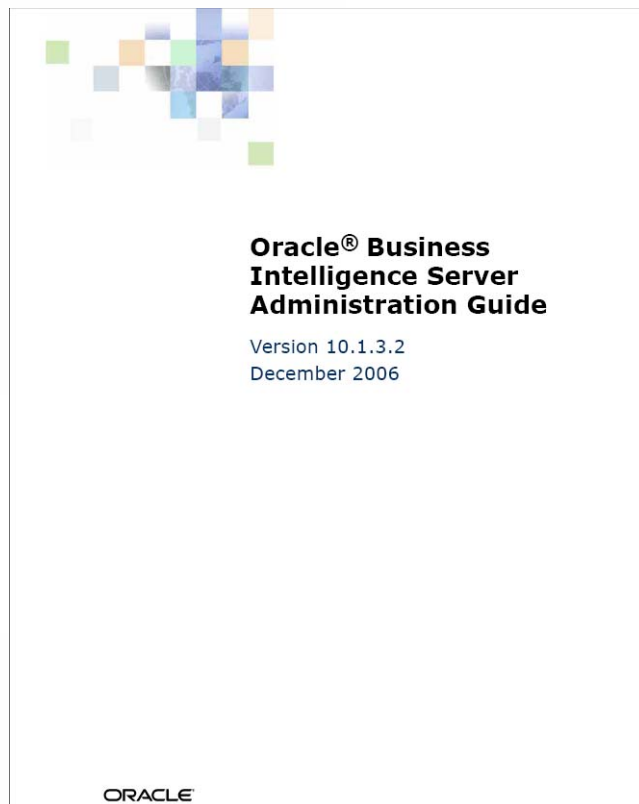
- Close the Wallet
- Change the wallet password
- Open the wallet for encryption
- Alter table to rekey



Recap

- Aspects of security - Authentication, Authorization, Monitoring, Integration with other systems (EBS), and Encryption
- Overview of OBI security options - Security Manager, Initialization Blocks, Filters, Access restrictions in the Catalog
- How to integrate security with E-Business Suite (SSO Authentication, Application Data Security, Drill down to transactions in EBS)
- Encryption of sensitive data in the database

For More Information..



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METALINK

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Protégé
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Thank You!!

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