Oracle BRM Training

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Oracle Billing & Revenue Management

- Participants Introduction
- Prerequisite for this course
- Course Overview
- Agenda for Day 1

Introduction

- Tell us a little about yourself:
  - Your Name
  - Your Role
  - Your total experience
  - Your familiarity with:
    - BRM
    - UNIX
    - Programming (C, Perl)
    - Text editors, such as vi
  - What are your learning expectations for this course?

Pre-requisite for this course

- **This course has very simple prerequisite requirements**
  - ❖**C language / java / C++**
  - ❖**SQL[DML & DDL]**
- **Familiarity with simple UNIX commands is useful but not essential**
- **Download putty & sql developer online.**

Oracle Billing & Revenue Management

AGENDA

- About BRM
- Revenue Management Life Cycle
- BRM Architecture
- BRM System Setup
- BRM Directory Structure
- Configuration files & Information
- Components Start & Stop

About BRM

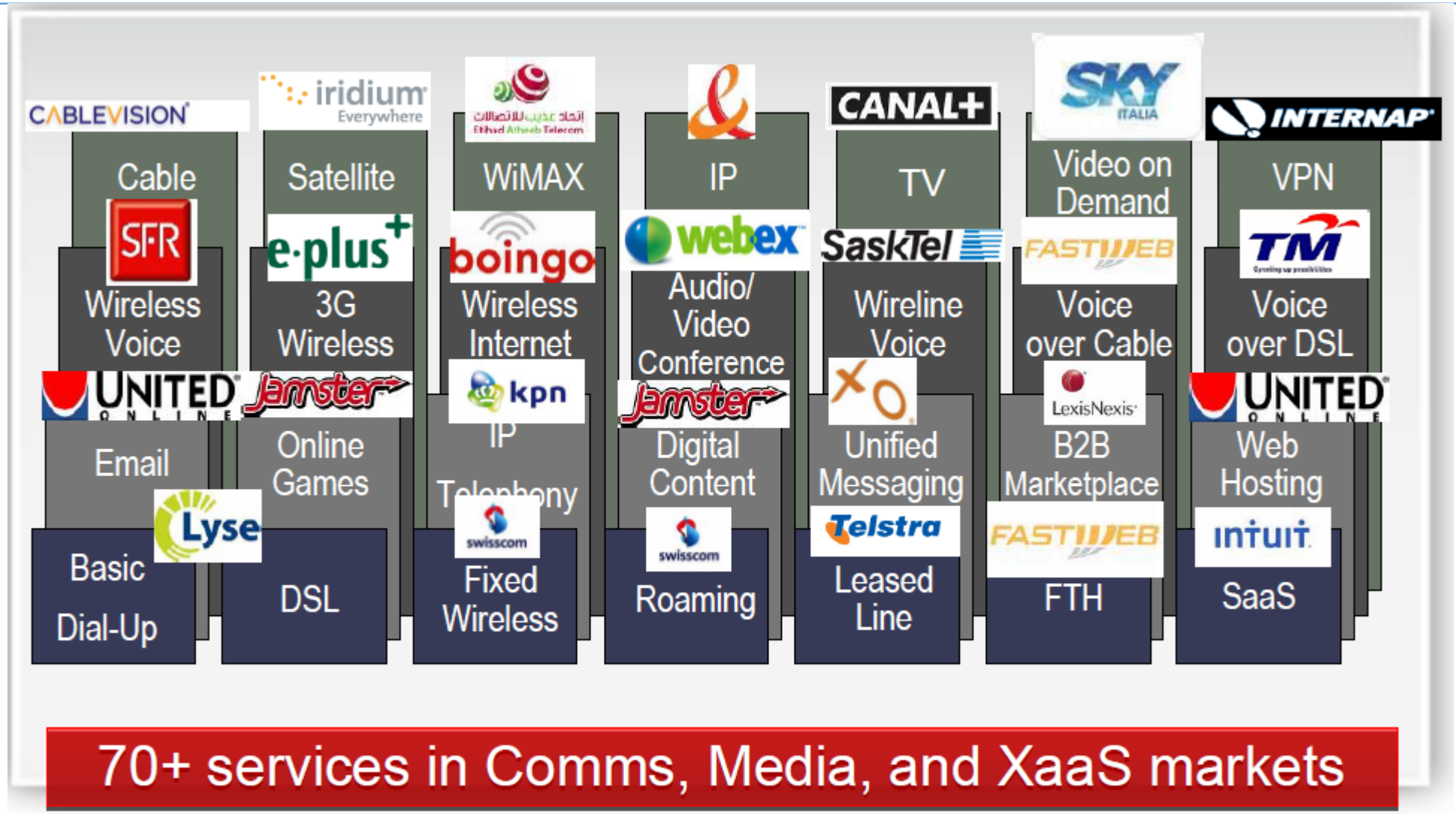
- Oracle Billing & Revenue Management is a product from oracle used by communication and media companies to bill and invoice their customers.
- It is a COTS [Commercial off-the-shelf] product which communication & media companies uses rather than the commissioning of custom-made solution.

Features of BRM

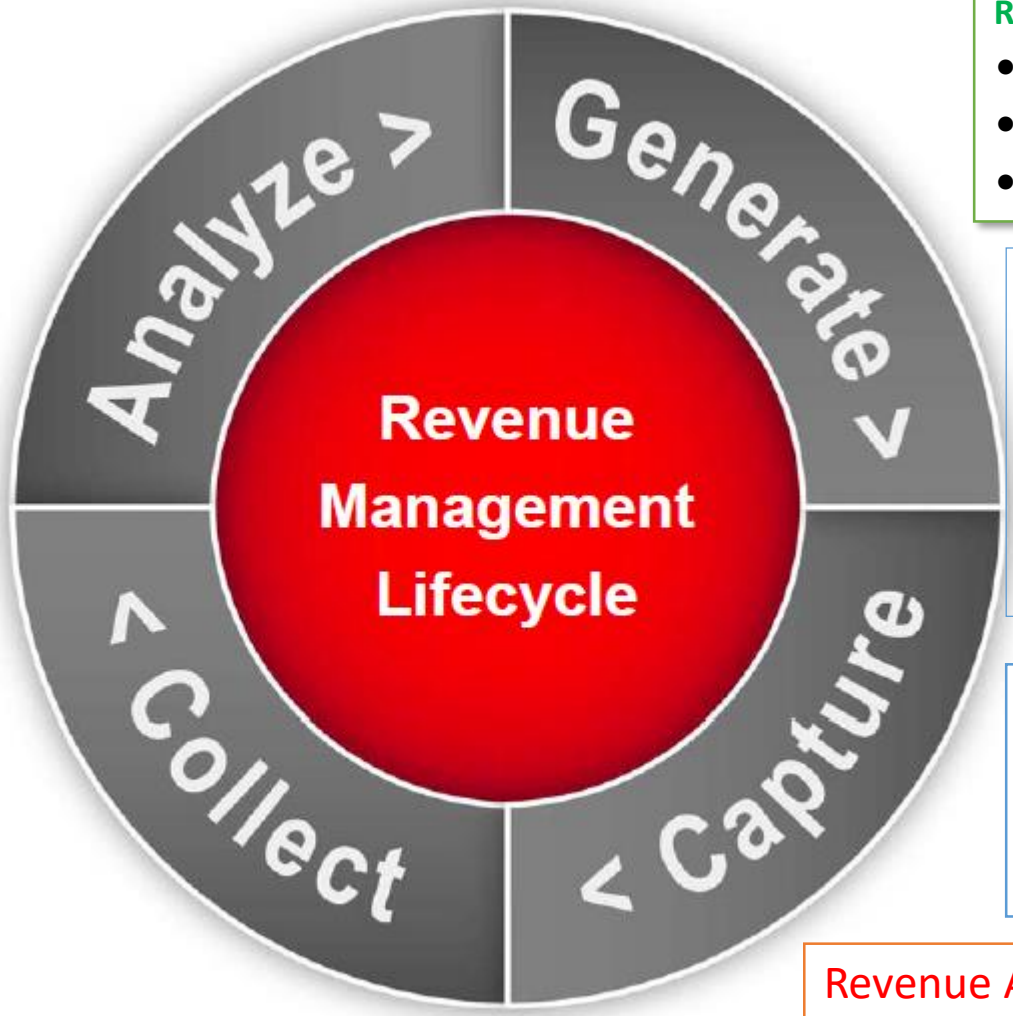
- Rating/pricing of high volumes of transactions
  10s of millions of transactions per day
- Sophisticated pricing, discounting and promotions
- Real-time balance management
- On-demand billing & flexible billing cycles
- Complex account hierarchies
- Re-rating due to price changes, bundling, or errors, etc.
- Ease of integration to existing infrastructure
- Order & financial management
- Taxation, invoicing

Clients who are using BRM around the world

Clients who are using BRM around the world



Revenue Management Life Cycle



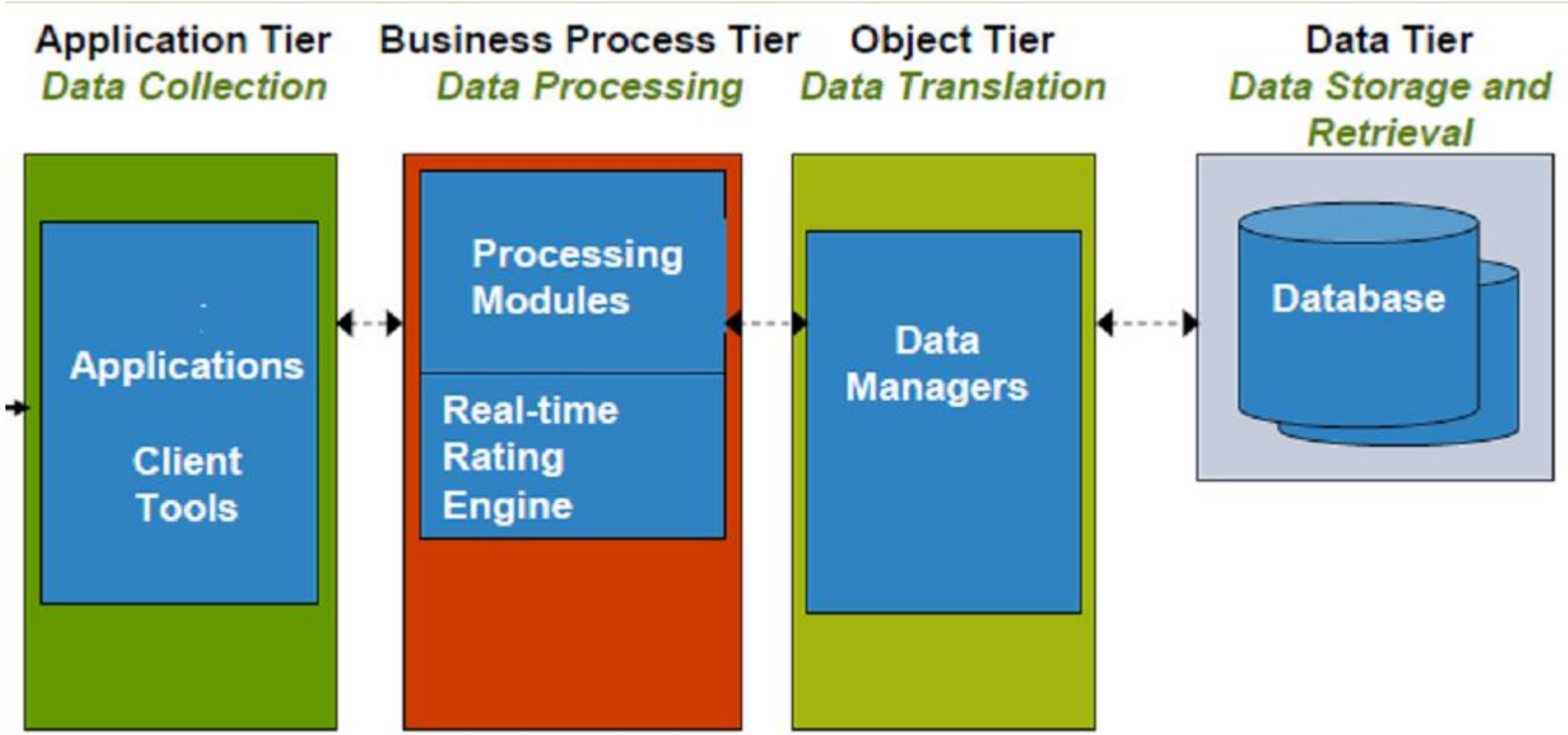
Revenue Generation Rapidly create new offerings and bundles
- Build sophisticated corporate and residential plans
- Connect new partners quickly, • Support diverse business models
- Enable no-touch order fulfilment & provisioning.

Revenue Capture Real-time event-to-cash
- Convergent customer balance management
- Real-time credit limit management and control
- Sophisticated discounts and promotions
- Network grade service authorization
- Integrates to network elements and service delivery

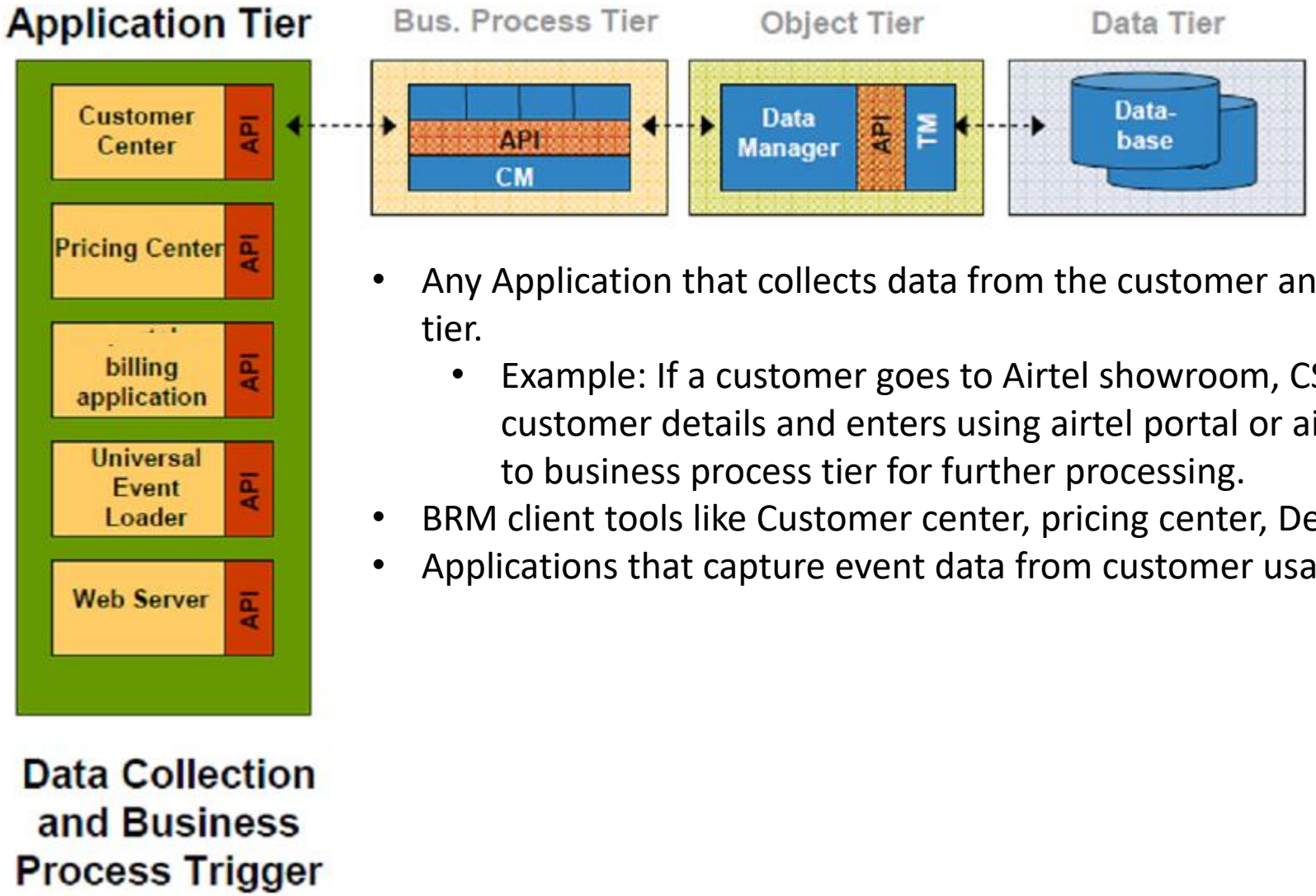
Revenue Collection Flexible billing cycle management
• Complex A/R and G/L management • Comprehensive payments and collections • Partner settlements • Integrates to Enterprise Financials applications

Revenue Analyze Real-time revenue verification, reporting, and control
- Usage and subscription analytics • Revenue assurance analytics
- Customer behaviour analytics

BRM System Architecture

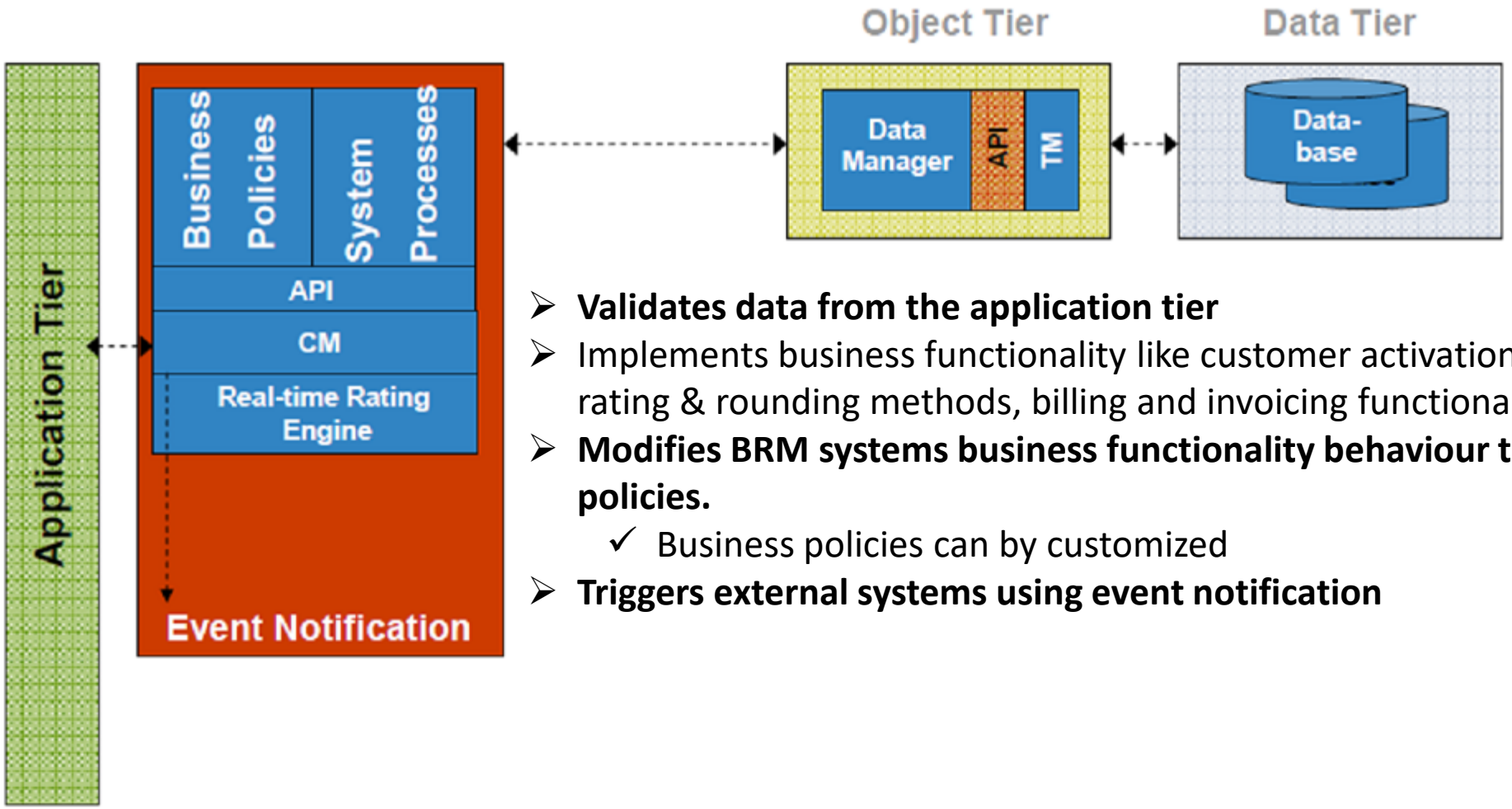


BRM System Architecture – Application Tier



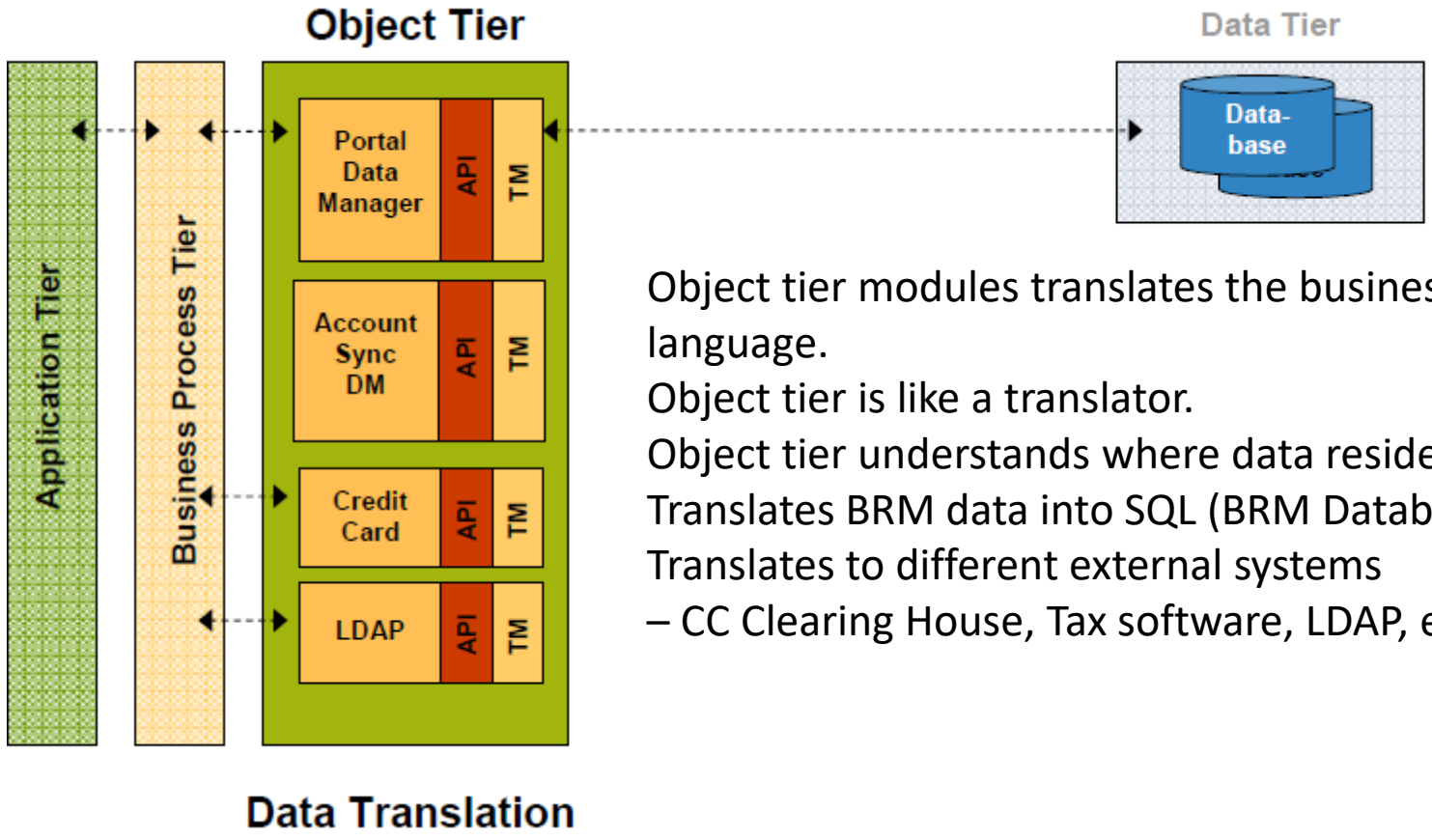
- Any Application that collects data from the customer and feeds to business process tier.
  - Example: If a customer goes to Airtel showroom, CSR will ask to provide the customer details and enters using airtel portal or airtel MobileApp and sends data to business process tier for further processing.
- BRM client tools like Customer center, pricing center, Developer Center etc.
- Applications that capture event data from customer usage subsystems.

BRM System Architecture – Business Process Tier



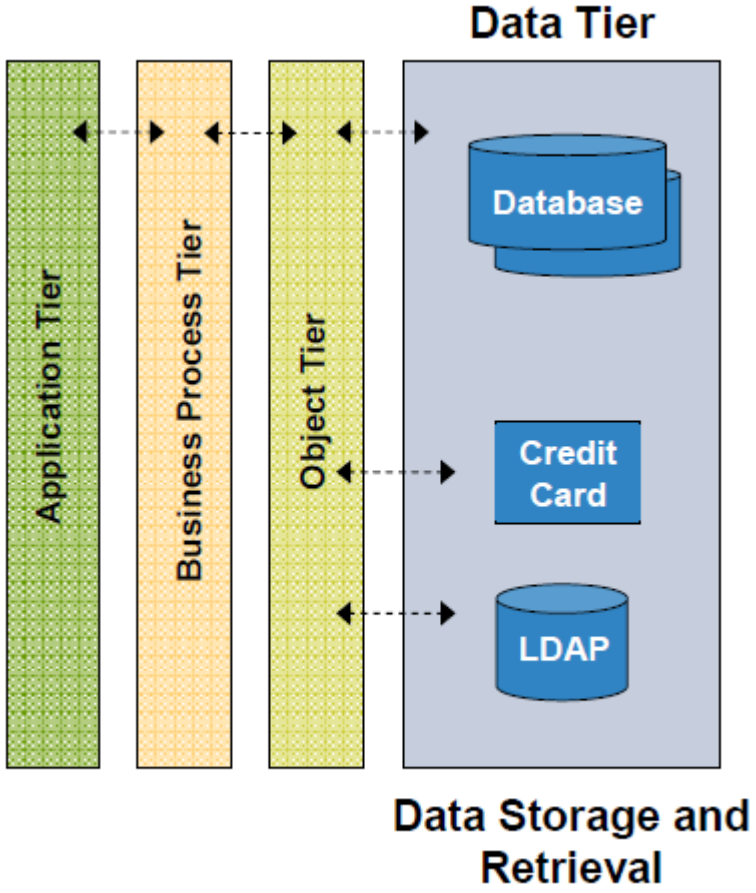
- **Validates data from the application tier**
- Implements business functionality like customer activation decision & rules, rating & rounding methods, billing and invoicing functionality.
- **Modifies BRM systems business functionality behaviour through business policies.**
  - ✓ Business policies can by customized
- **Triggers external systems using event notification**

BRM System Architecture – Object Tier



Object tier modules translates the business process data to data tier language.
Object tier is like a translator.
Object tier understands where data resides, complexity is hidden from user
Translates BRM data into SQL (BRM Database)
Translates to different external systems
– CC Clearing House, Tax software, LDAP, etc.

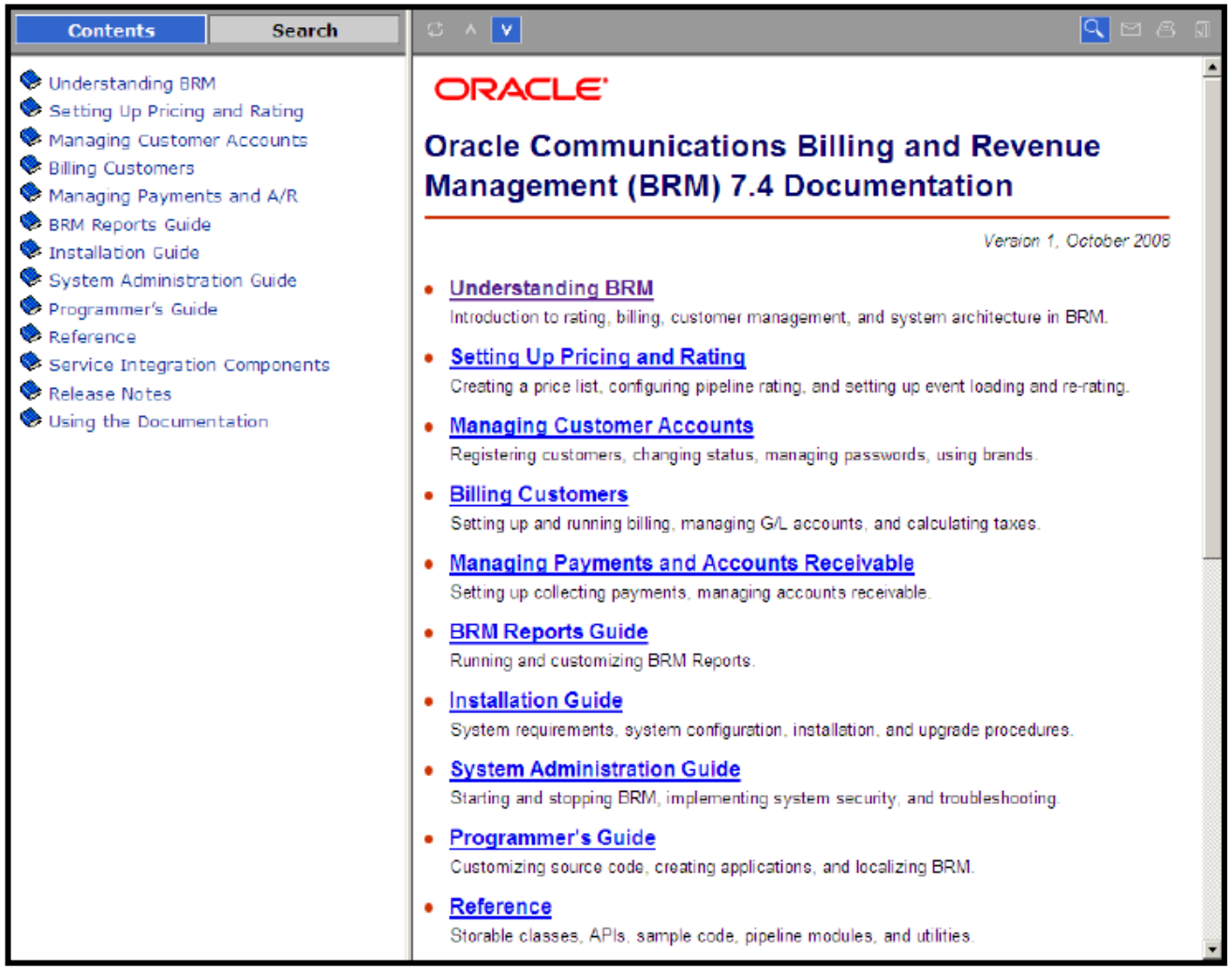
BRM System Architecture – Data Tier



Data tier is the place where data resides.
It can be a database, or file system.
Interfaces available to external systems, including payment, tax, email and directory servers
API provides access to *any* external system, including legacy databases.
One-way or two-way communication.

BRM Documentation

The BRM Documentation is available in either PDF or HTML format, arranged in topical categories. The HTML version includes a search capability



BRM System SetUp

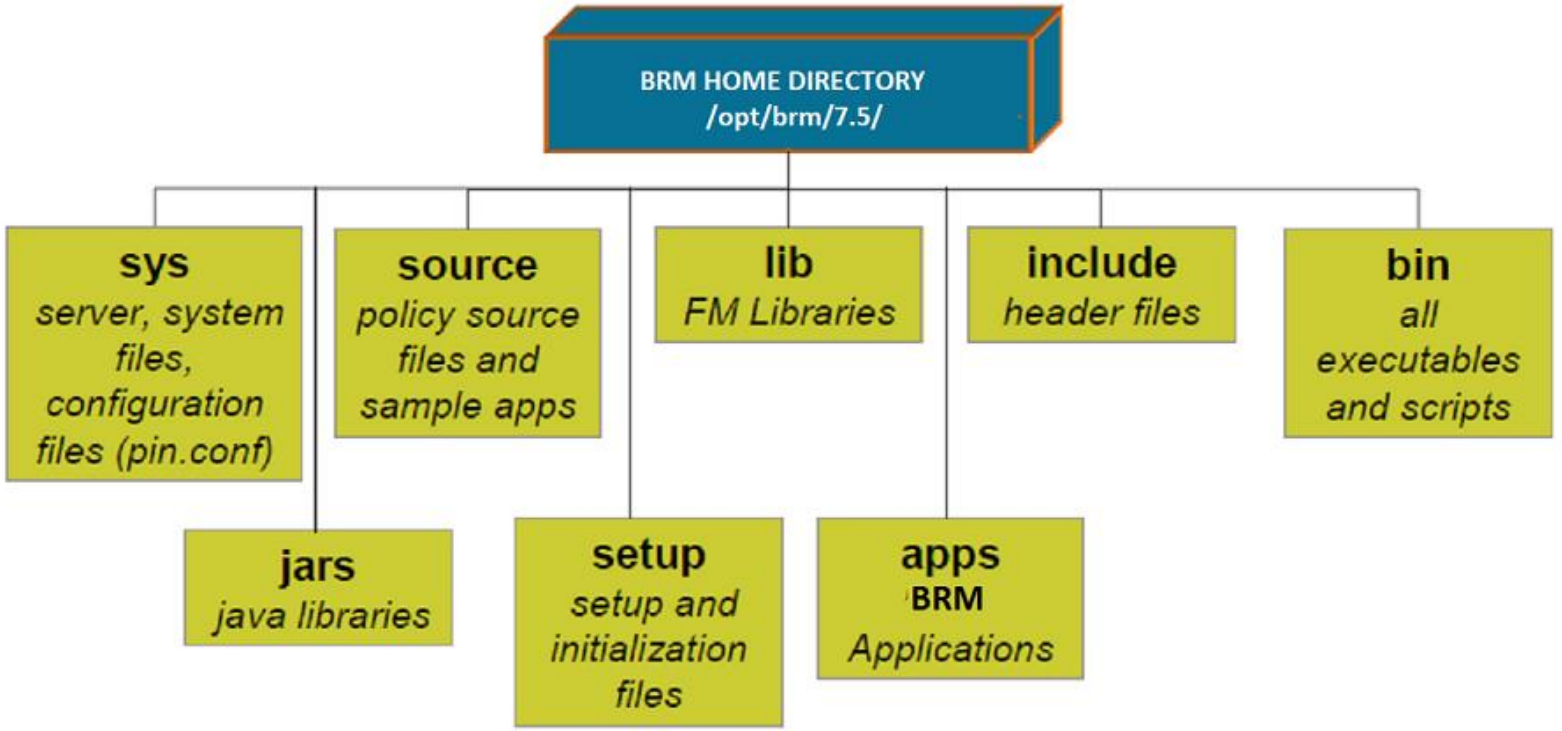
Root User details:

User Name: root
Password: oracle

BRM Application User:

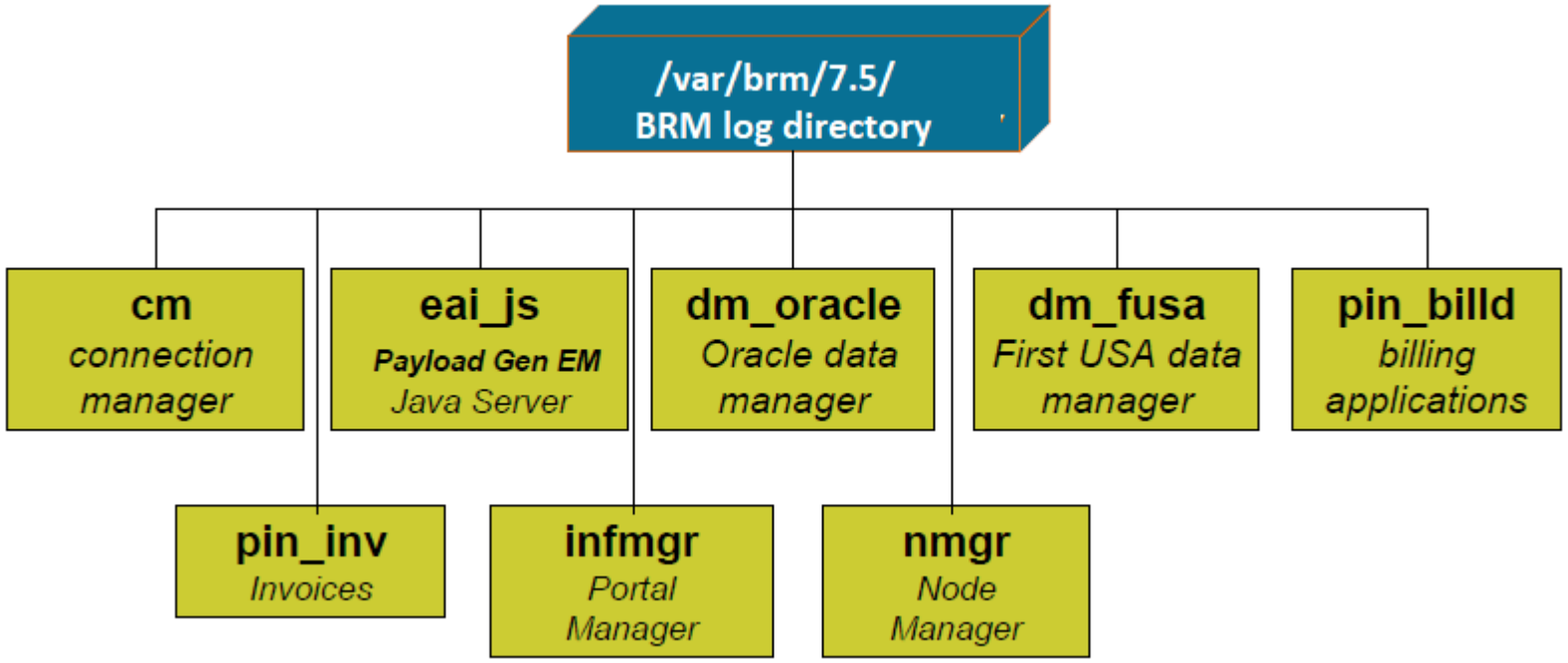
Username: pin12
Password: pin12

BRM Application Directory Structure



Every software application will have directory structure.
The directory structure helps to organize different files used by the application to store in different folders.
The path to main directory of the application in our example /opt/brm/7.5/ is called home directory.
The path can be stored in unix environmental variables for easy access for different functions of applications at the run time.
The standard variable for BRM application in all the implementations can be any one of the following.
$PIN_HOME or $BRM_HOME

BRM Application LOG Directory Structure

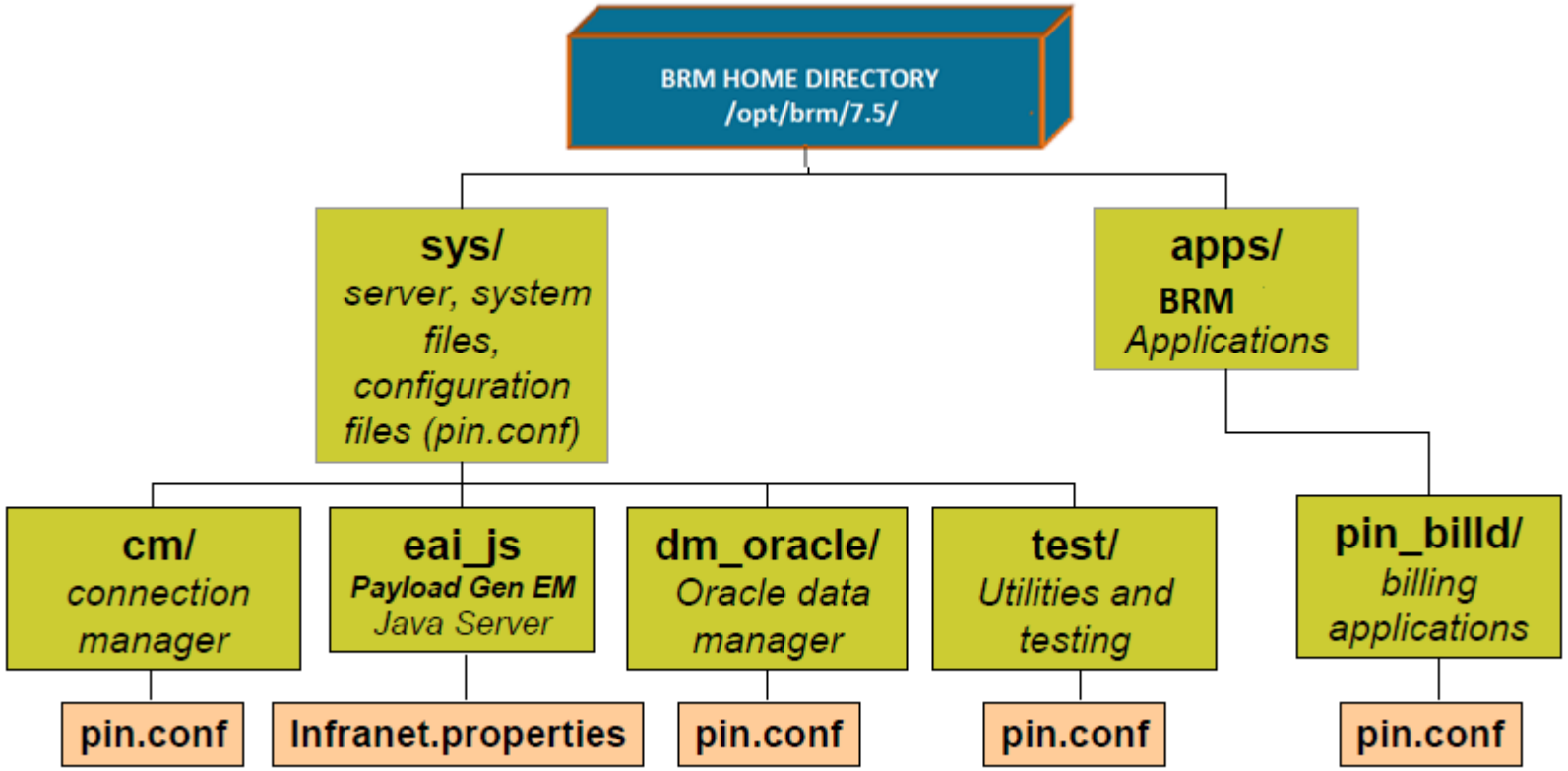


Every software application will have log directory structure.
The directory structure helps to organize different logs files of different BRM components used by the application to store in different folders.
The standard environmental variable for log directory in most of the implementations can be any one of the following.
$PIN_LOG or $BRM_LOG

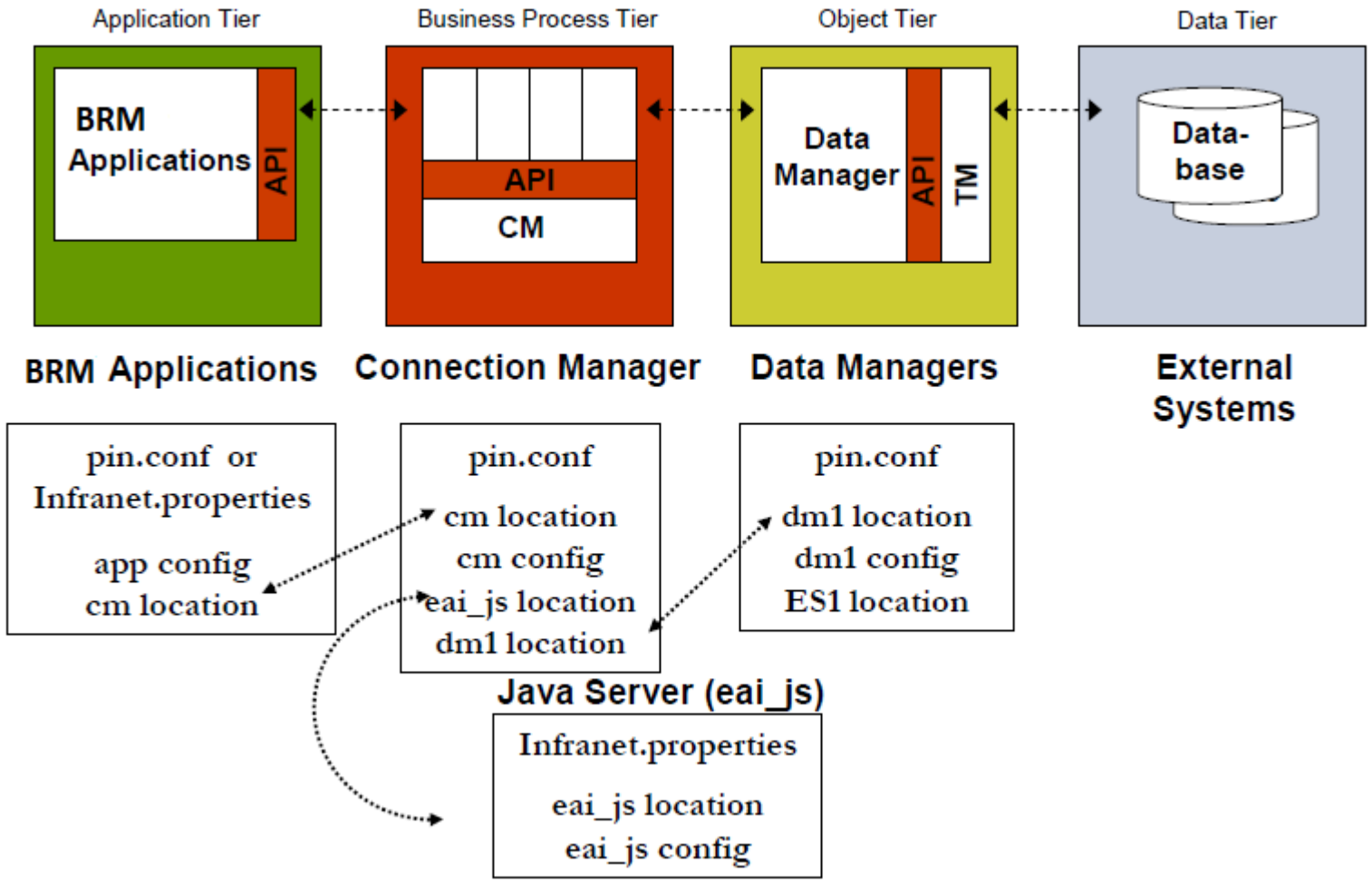
BRM Components – Configuration Files

BRM components read connection and configuration information from files

- **Properties** files are used by all BRM Java and Windows client programs
- **Configuration** files are used by all system processes and BRM Applications



BRM Application – Configuration Processes



BRM Application – Configuration Files

Syntax of pin.conf File Entries

[hostname]	[program]	[keyword]	[one or more values]

```
#------------------------------------------------------
# Example pin.conf entry
#------------------------------------------------------
- nap  cm_name  cabernet   # CM session leader hostname
- nap  cm_port  11000      # CM session leader port number
```

- **hostname** - processes running on server by the name of "hostname" should read the entry
  - A value of "-" means "any", i.e. processes running on any server
- **program** - processes by the name of "program" should read the entry
  - A value of "-" means "any", i.e. any process or application
  - A value of "nap" means "networked application", i.e. any BRM Application
- **keyword** - a string value that the process is looking for programmatically
  - Entries are read "programmatically" with the pin_conf() function
- **value** – a data value read by the process
  - cm_port entry has an additional tag pin; FM with matching tag is linked to that CM

CM pin.conf

pin.conf entries

- **Provides entries for:**
  - **Configuring the CM at startup**
    - Hostname and port number
    - Path/filename of pinlog file and error logging level
    - Entries with process_name of “cm” are read when the cm process is started
  - **Locating DMs**
    - Database #, hostname, port number for each DM
  - **FM Functionality**
    - Path/filename of FM shared libraries with which the CM should link
  - **Configurable FM Values**
    - Default business policy values
    - Entries with process_name of “fm_xxx” are read in real-time when the FM functionality is invoked

Example of cm pin.conf

```
#------------------------------------------------------
# Example pin.conf entry
#------------------------------------------------------
# Hostname and port number
- cm cm_name localhost
- cm cm_ports 11005 pin

# Path/filename of pinlog file and error logging level
- cm cm_loglevel 3
- cm cm_logfile /var/portal/7.0/cm/cm.pinlog

# Database #, hostname, port number for each DM
- cm dm_pointer 0.0.0.1 ip localhost 21005

# Path/filename of FM shared libraries with which the CM should link
- cm fm_module /opt/portal/7.0/lib/fm_cust.so fm_cust_config – pin
- cm fm_module /opt/portal/7.0/lib/fm_rate.so fm_rate_config – pin

# Configurable FM Values
- fm_cust_pol country USA
- fm_bill timestamp_rounding 1
```

BRM Configuration files for Java Applications

Syntax of Infranet.properties File Entries

[infranet.keyword] = [value]

```
#------------------------------------------------------
# Example Infranet.properties entry
#------------------------------------------------------
infranet.server.portNr=31005
infranet.log.file=/var/portal/7.0/js/js.pinlog
infranet.log.name=PCMJavaServer
infranet.log.level=3
```

- **Infranet.keyword** - a string value that the process is looking for programmatically
- **Value** - a data value read by the process

BRM Configuration files for Java Applications

Infranet.properties Example for eai_js

```
# java servers port number
infranet.server.portNr=30122

# the log file that the java server will log msgs to
infranet.log.file=/pinhome/pin122/var/portal/7.0/eai_js/eai_js.pinlog

# application name that the java server will use in its log msgs
infranet.log.name=PCMJavaServer

# log level
infranet.log.level=1

# defines the Publish Handler
infranet.opcode.handler.PUBLISH_GEN_PAYLOAD = com.portal.eai.PublishHandler

#defines config file for payload generator
infranet.eai.configFile =
  /pinhome/pin122/opt/portal/7.0/sys/eai_js/payloadconfig_ifw_sync.xml
```

BRM System – DM Configuration Files

pin.conf entries

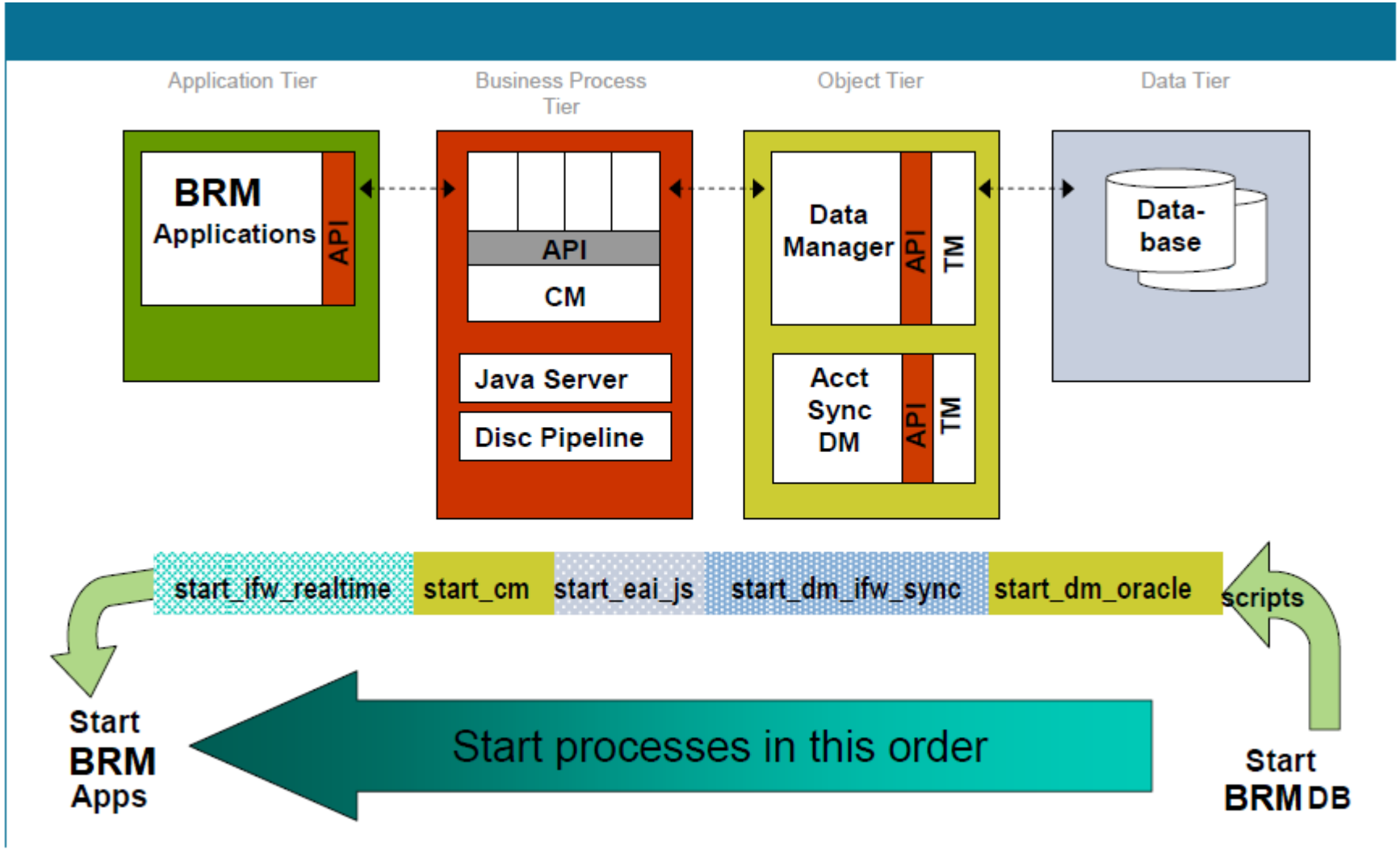
- **Provides entries for:**
  - **Configuring the CM at startup**
    - Hostname and port number
    - Path/filename of pinlog file and error logging level
    - Entries with process_name of "cm" are read when the cm process is started
  - **Locating DMs**
    - Database #, hostname, port number for each DM
  - **FM Functionality**
    - Path/filename of FM shared libraries with which the CM should link
  - **Configurable FM Values**
    - Default business policy values
    - Entries with process_name of "fm_xxx" are read in real-time when the FM functionality is invoked

Example of dm pin.conf

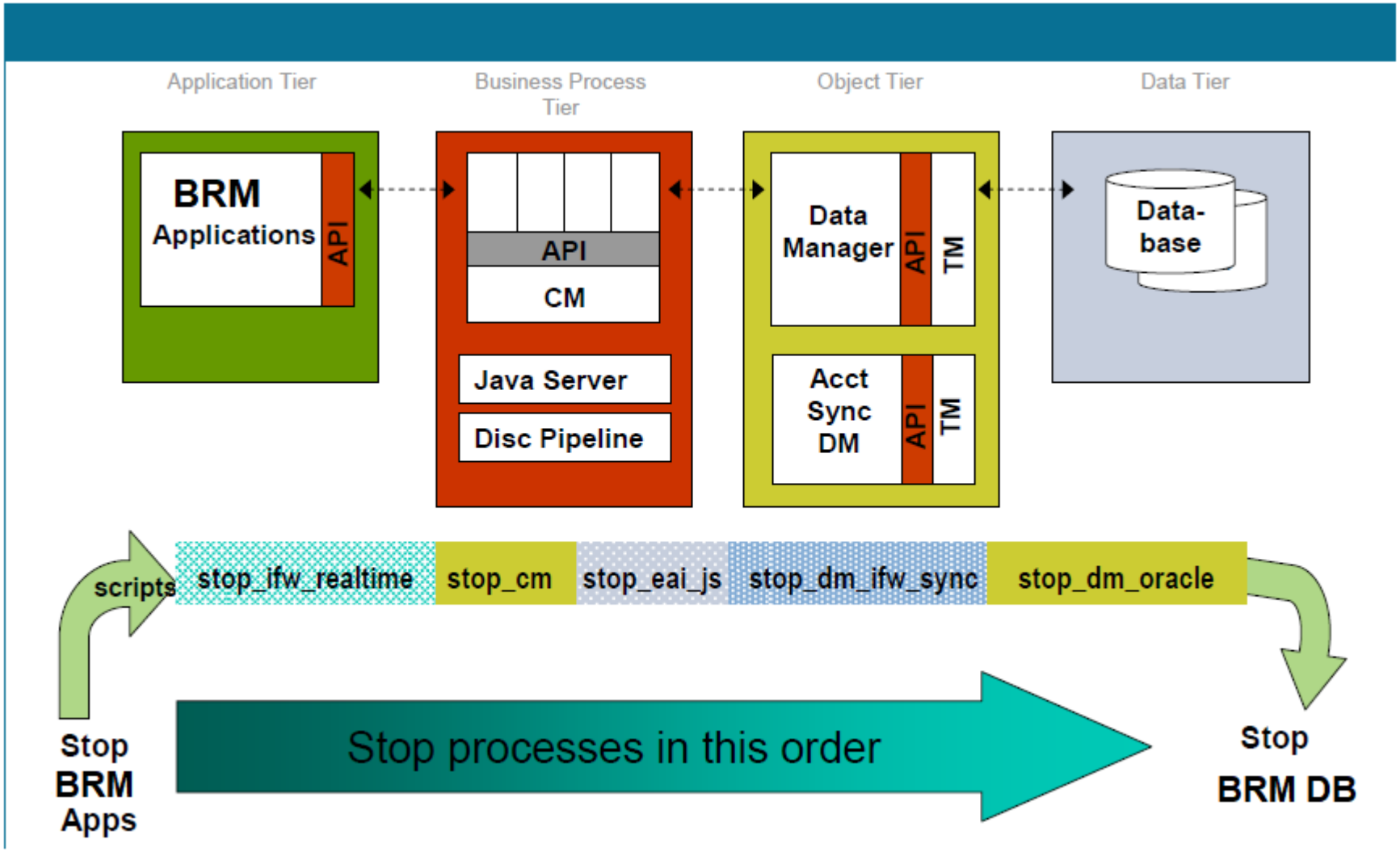
```
# Hostname, port number, and database number
- dm dm_name localhost
- dm dm_port 21005
- dm dm_db_no 0.0.0.1 / 0

# Path/filename of pinlog file
- dm dm_logfile /var/portal/7.0/dm_oracle/dm_oracle.pinlog

# Queuing Manager parameters
- dm dm_n_fe 1
- dm dd_write_enable_fields 1
- dm dd_write_enable_objects 1
```

Initially set to 0 to disable customizations

BRM System – Starting BRM Processes



BRM System – Stopping BRM Processes



Exercise 2

1. From BRM Documentation, Read in details about BRM Architecture
2. Identify the path of cm **pin.conf** file?
3. What is the cm ip address & port number?
4. What is log level of cm process?
5. What is the log file name of **dm_oracle**?
6. Specify the **dm_oracle** ip address & port number?
7. What is the database name?
8. Which components of BRM are using **Infranet.properties** file?
9. Specify the start sequence of BRM components?
10. Specify the stop sequence of BRM components?
11. In which directory all executables & scripts located?
12. In which directory the **dm_oracle** configuration file is located?
13. Where are FM libraries located?

“Thank You”