

Deep Dive into

Oracle ADF

— *Nandakumar Purohit*

Agenda

- ❖ What is Oracle ADF
- ❖ ADF Architecture
- ❖ Oracle Fusion Applications

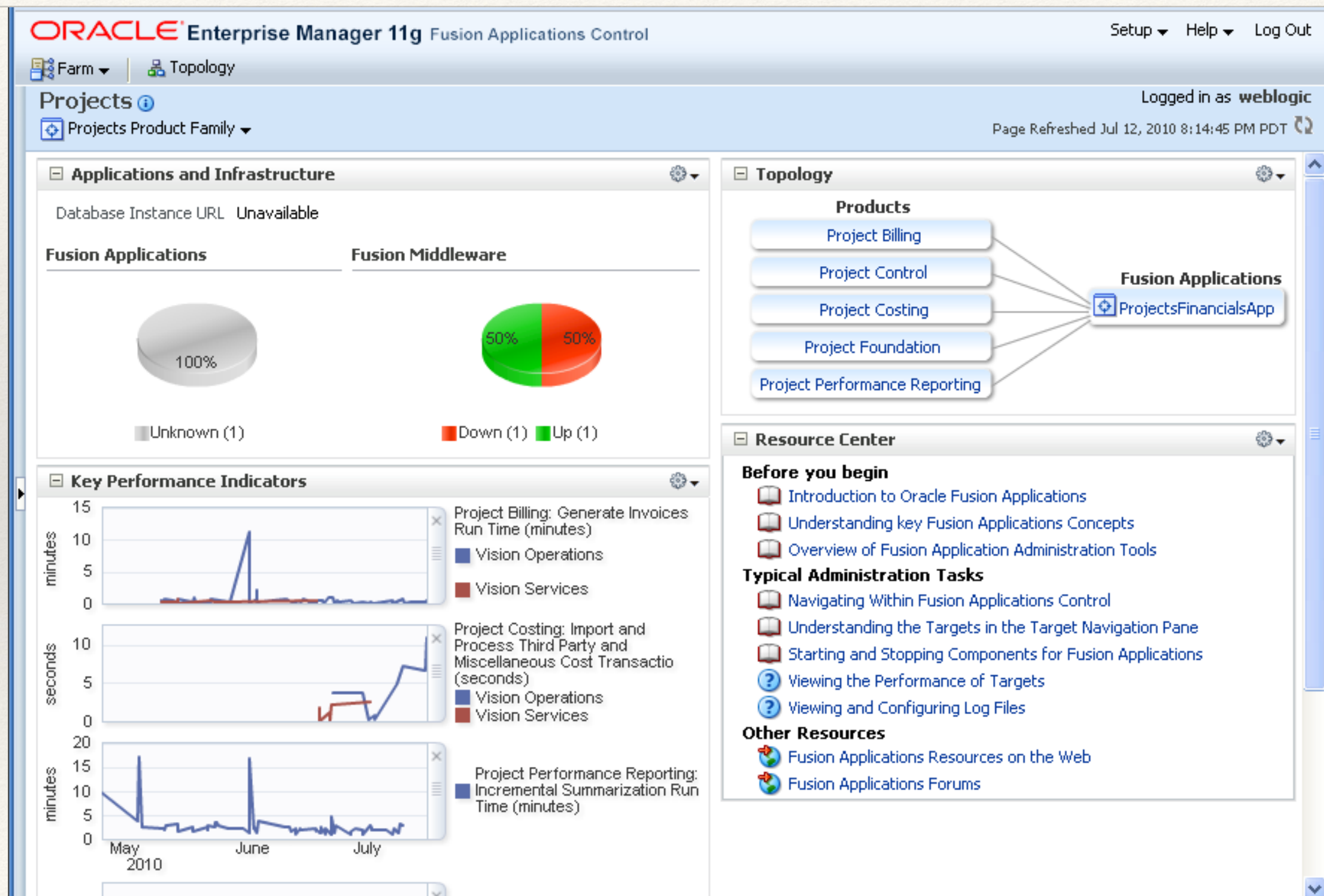
What is Oracle ADF

- ❖ Rapid Application Development (RAD)
 - ✓ Declarative development
 - ✓ Partially built application
- ❖ Promotes re-usability and standards
 - ✓ Follows MVC Architecture
 - ✓ Java EE, SOA, etc.,
- ❖ Helps to build End-to-End Application
 - ✓ ADF Security
 - ✓ User personalization & customization
 - ✓ Generate SOAP Web Services
 - ✓ Excel ADI, Mobile Apps

Who is using ADF?

- ❖ Oracle Fusion Application Development Team
- ❖ Oracle Support Development Team
- ❖ Oracle Enterprise Manager Development Team
- ❖ Oracle Partners who develop applications for their verticals ([Retail](#), [Healthcare](#), [Automotive](#), [Finance](#))
- ❖ All of Oracle ERP Customers & Partners

ADF Usage - Oracle Fusion Applications



ADF Usage - Oracle Fusion Applications

ORACLE Fusion Applications Personalization Help Sign Out Brooklyn Anderson

Home Navigator Recent Items Favorites Tags Watchlist Group Spaces

Person Gallery Gallery Organization Chart My Portrait **Maria Williams**

Maria Williams, Accountant Tags Maria Williams Notes

Hide Person Information

Department: System Support Hire Date: 2/14/2008

Manager: Timothy Watson

Personal Status

Activities and Interests Availability

Contact Information

Work phone: 1-333-737-331
Home E-Mail: mwilliams@vision.com
Organization Chart

Work Location

Meadow Vista

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Timothy Watson Director

Manager Name: Thomas Mathis
Department: US Payroll
E-Mail: Brian.Joseph@fusion.dss
WorkPhone: 1-650-675-5120
Local Time: 8:00 PM PDT
Work Address: 300 Ralston Ave, REDWOOD CITY, CA 94065 US

no recent updates

Chat
View portrait
Add as connection
Add to my address book

Done

Connections

HR Specialist: Timothy Watson, Gracie Roberts, Hunter Hayes, Patrick Carrisimo, Logan Morgan, Oliver White, Brenda McGoy, Brian Vaughan, Patricia Simpson

Availability

Vacation Plan: 4 Days

Carryover: 45 Ceiling: 60

Sick Plan: 0.66 Days

Carryover: 30 Ceiling: 20

Employment

Assignment Name: ACC400.Accountant
Reports: 0 Directs, 0 Total

Length of Service Comparison

Years of ...

Comparison Group: Maria Williams, Peer Average, Peer Median

Experience and Qualifications

Areas of Expertise

HCM, Payroll, Benefits, Human Resources, Human Capital Management, Payroll Accounting

Performance Evaluations

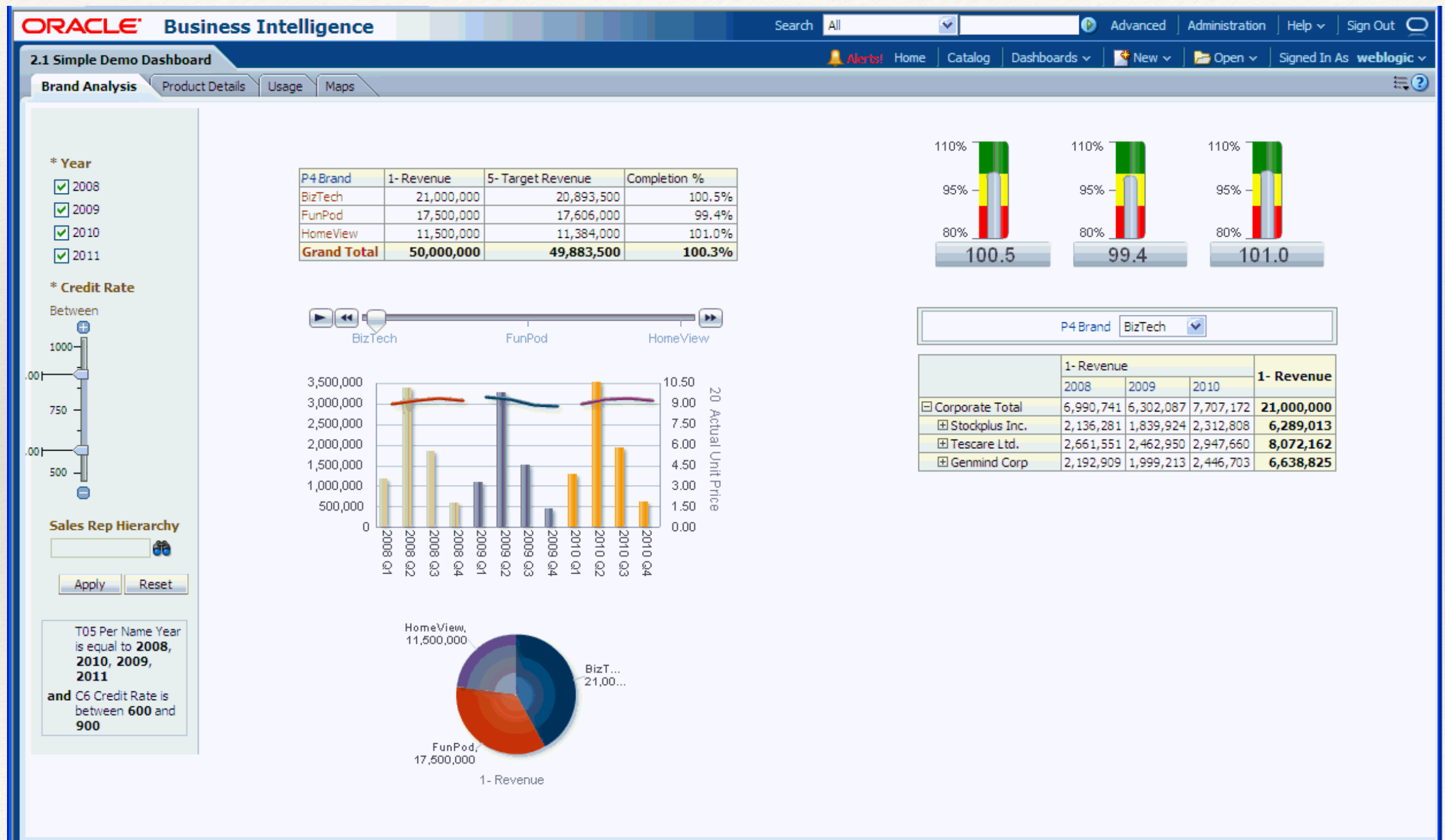
Performance Rating

2008Yr End 2009Yr End 2010Yr End

ADF Usage - Oracle Fusion Applications



ADF Usage - Oracle Fusion Applications



Who is using ADF?

Company	Website	Country	Revenue	Employees
Oracle Corporation	oracle.com	United States	>1000M	>10000
Cooper Companies Inc	coopercos.com	United States	>1000M	>10000
ViaSat Inc	viasat.com	United States	>1000M	5000-10000
USfalcon Inc.	usfalcon.com	United States	50M-100M	200-500
Cummins Inc.	cummins.com	United States	>1000M	>10000

ADF Usage - My Oracle Support

The screenshot shows the My Oracle Support dashboard. A large orange arrow pointing right, labeled "Personalized View", is overlaid on the left side of the page. The dashboard includes a top navigation bar with links like "Dashboard", "Knowledge", "Service Requests", "Patches & Updates", "Community", "Certifications", "Managed Cloud", and "CRM On Demand". The main content area is divided into several sections: "News" with a list of recent updates, "Knowledge Base" with a search bar and a list of articles, "Bug Tracker" with a table of open bugs, and "Service Requests" with a "Create SR" button. The "Bug Tracker" table has columns for Bug Number, Summary, Product, Status, Severity, Last Updated, and Related. The "Service Requests" section has a "Support Identifier" field and a "Create SR" button.

Personalized View

Oracle MY ORACLE SUPPORT PowerView is Off Switch to Cloud Support Miriam (Available) (0) Contact Us Help

Dashboard Knowledge Service Requests Patches & Updates Community Certifications Managed Cloud CRM On Demand More...

Dashboard Give Feedback... Customize Page...

News

- Welcome MICROSOFT Customers and Dealers
- Join the Oracle Customer Advisory Panel
- Rolled-up Patch Sets for Oracle Financial Services Software Products
- Oracle Critical Patch Update for January 2017
- Trace File Analyzer (TFA) 12.1.2.8.4 is Now Available for Download
- My Oracle Support Portal

Knowledge Base

Search & Browse Recently Viewed Recent Searches Favorite Articles

Select a product or product line

Solaris Operating System

Enter search terms

Go directly to the best match

- Information Center: Master Index for Sun Technology - Tools [1602585.2]
- Information Center: Master Index for Sun Technology - Servers [1602595.2]
- Information Center: Overview of Sun Patches and Updates [1589780.2]
- Information Center: Master Index for Sun Technology - Enterprise Computing [1602586.2]
- 情報センター: SPARC用のOracle VM Server (LDoms)概観 [1592337.2]
- Show More
- Information Center: Overview of Oracle VM Server for SPARC (LDoms) [1589473.2]

Bug Tracker

View Add Bugs... Search Advanced

Bug Number	Summary	Product	Status	Severity	Last Updated	Related
22935197	RES 3700 5.4MR3-ON	Oracle Hospitality RES 3700	92 - Closed, Not a Bug	3	Jan 21, 2017 4:54 AM	
20756525	FUSE -TALED INTEGR	Oracle Taleo Platform Cloud Service - Small	92 - Closed, Not a Bug	2	Sep 23, 2016 5:45 PM	
19047712	UNABLE TO LAUNCH	Oracle Taleo Mobile Cloud Service	93 - Closed, Not Verified by Filer	2	Nov 1, 2015 8:56 PM	

Service Requests

Ask in Community... or Create SR

Support Identifier Type name, number, description

ADF Usage - Oracle Fusion Applications

Create Service Request: Problem

Problem Solutions More Details Severity/Contact

Save as Draft Back Next Cancel

What is the Problem? Service Request language is set to English-American Edit

* Problem Summary

* Problem Description

Error Codes

Note: In the Description field, do not submit any personal information of European residents, protected health information subject to HIPAA, or any other sensitive personal information (such as payment card data) that requires protections greater than those specified in the Oracle GCS Security Practices link below.

[Oracle GCS Security Practices](#)

Tip

A good Problem Description would include the following information:

- Describe the loss of functionality
- Describe the sequence of events that occurred
- What is the expected or acceptable result?
- Is there a workaround?
- Provide business impact information, estimated number of users affected, the significance of loss, associated milestones

Note: You may be asked for additional information in Step 2.

Where is the Problem? Autofill this section using: [SR Profile](#) or [Existing SR](#)

Configuration Hardware **Software** Cloud Managed Cloud Services

* Product MICROS Caterwide

* Product Version

* Product Languages English

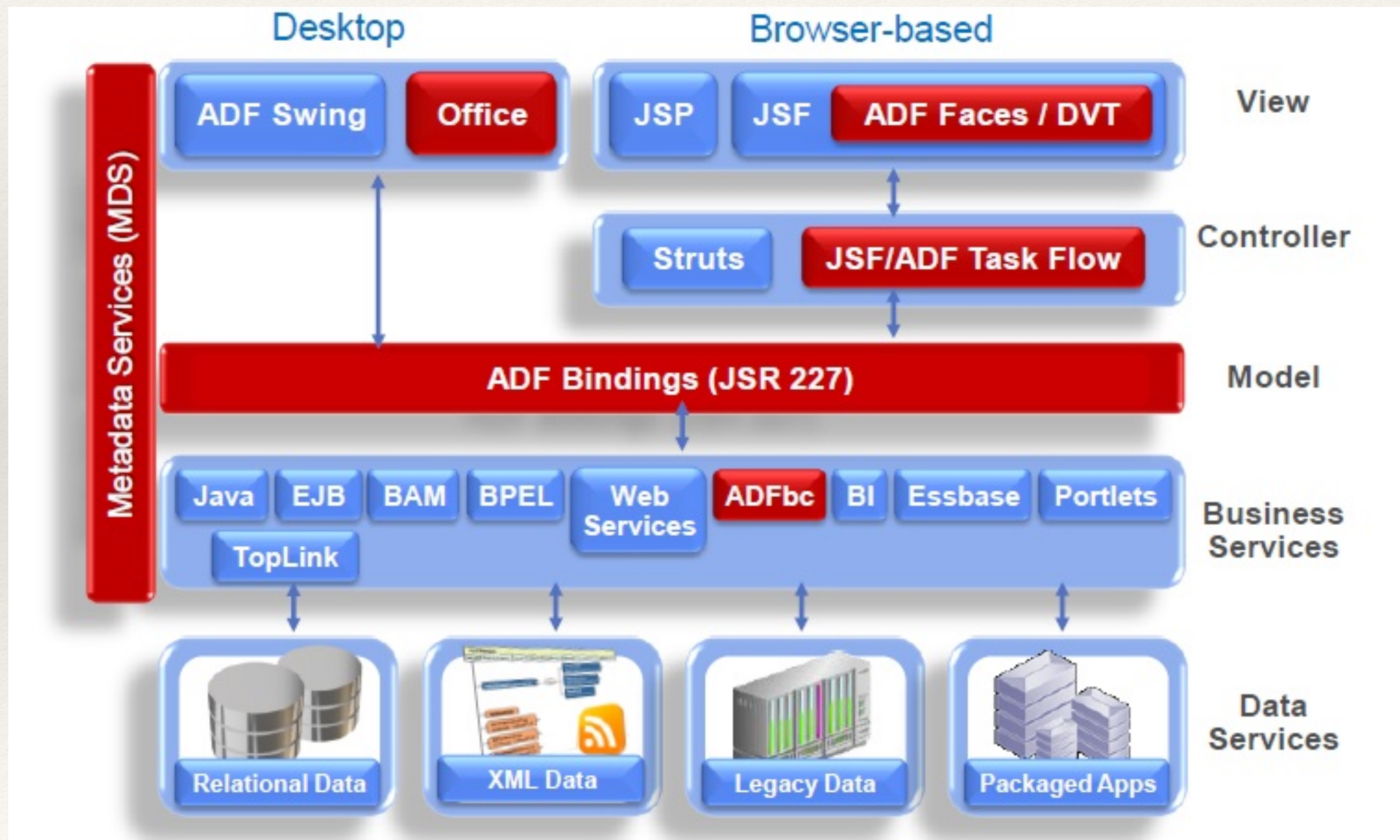
* Operating System/Version Choose Operating System/Version

* Problem Type Choose Problem Type

ADF Key Concepts

- ❖ **Rich Component** sets for web, mobile, and desktop clients
- ❖ Declarative and reusable business logic and validation
- ❖ Declarative data binding
- ❖ Separation of UI-related and data-related elements (MVC architecture)
- ❖ Enhanced page flow functionality, including modular and reusable task flows
- ❖ Declarative security on ADF resources
- ❖ Customer level and developer level customization through metadata

ADF Architecture



ADF Architecture

ADF Business Components

- ❖ ADF Business Components are prebuilt application objects on Java EE design patterns and best practices and which simplify the development and maintenance of complex, high-performance, and database-centric services.
- ❖ When you create an ADF Business Components application module, the services that it encapsulates are exposed through ADF Model as data controls, which you can then use to create data bound components on web pages and other user interfaces.

ADF Controller

- ❖ ADF Controller provides an enhanced navigation and state management model on top of JSF's controller layer.
- ❖ Using JDeveloper, you can declaratively create task flows that can manage application control between different types of activities, such as pages, methods on managed beans, declarative case statements, or calls to other task flows.

ADF Faces

- ❖ ADF Faces is a complete view framework that consists of over 150 Ajax-enabled JavaServer Faces (JSF) components, all built on top of the JSF standard.

ADF Desktop Integration

- ❖ ADF Desktop Integration enables developers to extend Fusion web applications so that end users can work with them using Microsoft Excel workbooks as a client.

ADF Architecture

ADF Security

- ❖ The ADF Security framework uses and extends the Oracle Platform Security Services (OPSS) architecture to simplify the securing of ADF applications and enables fine-grained access control for ADF resources such as bounded task flows.

Oracle Metadata Services

- ❖ The Oracle Metadata Services (MDS) framework allows you to create applications that your customers can further customize for their users or customers and which the end users can also customize without touching the source code or affecting the ability of the application to be patched or updated.

ADF Faces

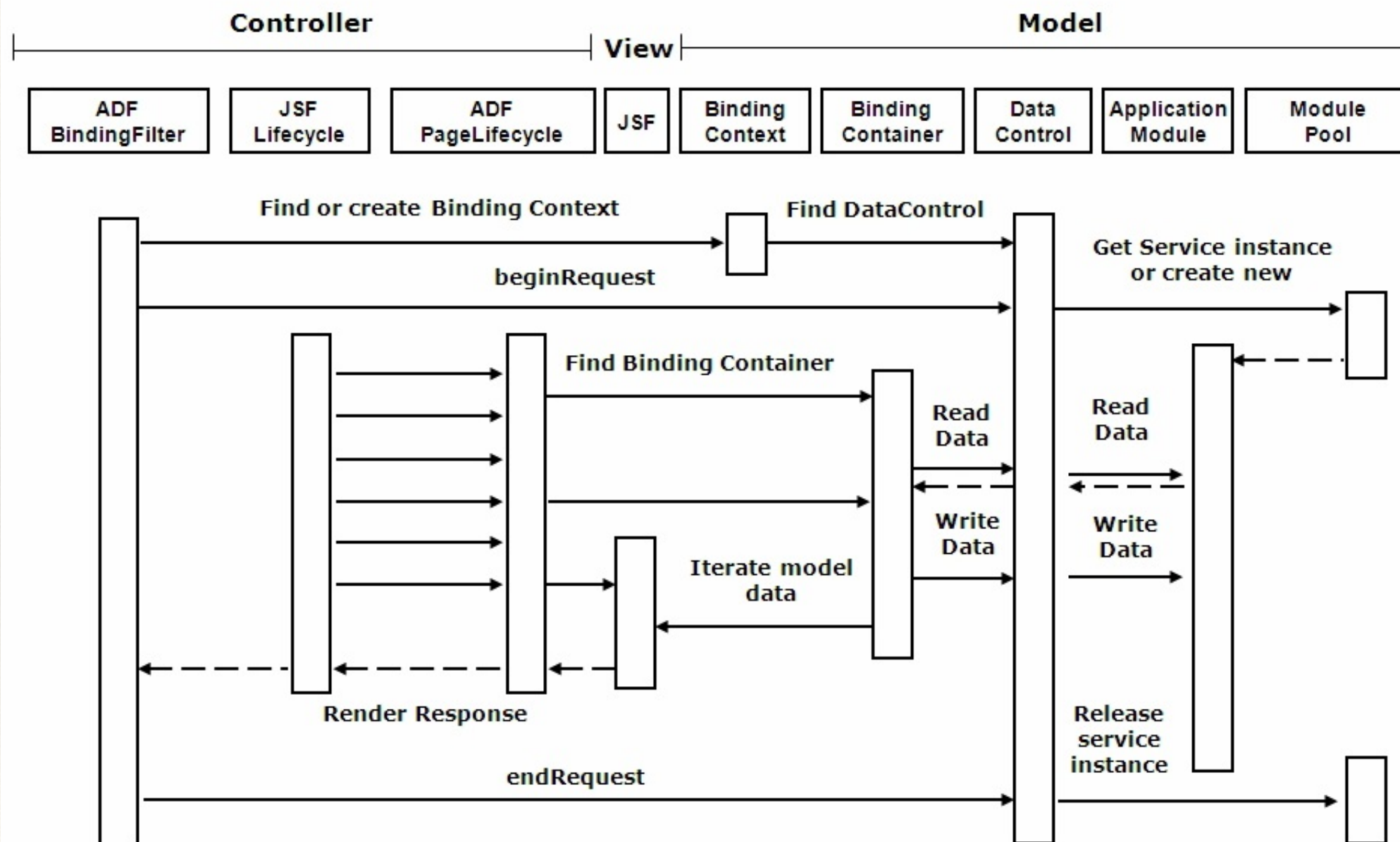
- ❖ ADF Faces is a complete view framework that consists of over 150 Ajax-enabled JavaServer Faces (JSF) components, all built on top of the JSF standard.

ADF Swing

- ❖ ADF Swing is a framework for developing databound Java clients that use ADF Model to access business services. You can use ADF Swing to work with a number of business services on the back end, including ADF Business Components, Enterprise JavaBeans components, and web services.

ADF Request Lifecycle

ADF Request Lifecycle



ADF Business Components

Entity Object

For Data
Persistence

Represents a Single
row in a Table

Encapsulates the
validation logic
using business rules

View Object

Representation of a
Query

Used for joining,
filtering & sorting

Can be based on an
Entity Object or
Static List or
Programmatic

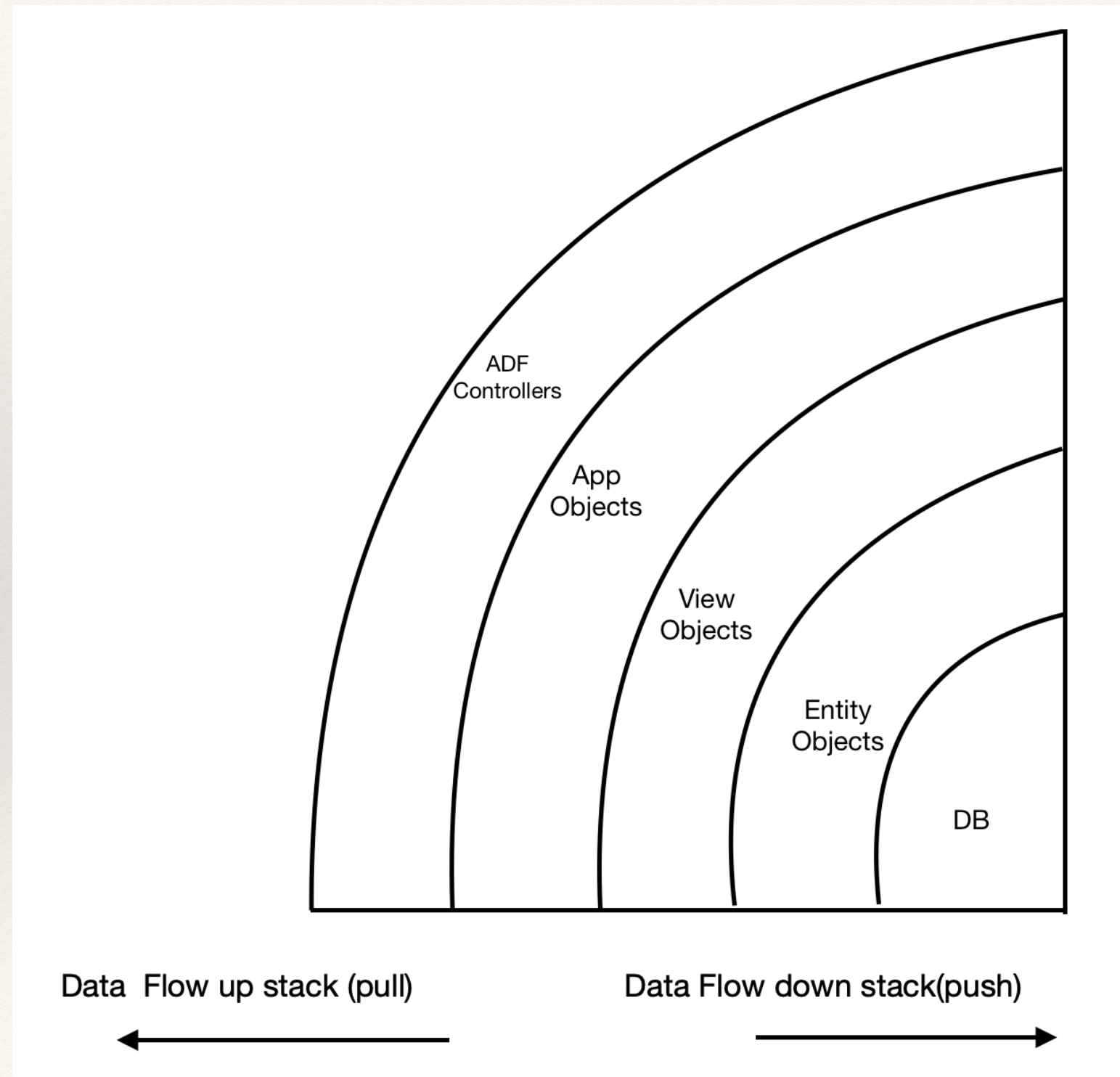
Application Module

Container for
related View Object
Instances

Maintains the
Transaction Context

Application Modules
can be nested

Data PUSH & Data PULL



Entity Object

- ❖ Handles **Data** persistence
- ❖ **Representation** of a table in Java Layer
- ❖ **Encapsulates** Validation Logic
- ❖ Add **additional features** through custom code
- ❖ Maps to a **single** row in a Table

Association

- ❖ Defines the **Relationship** between **Entity** Objects
- ❖ Can be created **automatically** based on **PK & FK** using business components from table
- ❖ Classic case is a **Master Detail Relationship**
- ❖ You can specify the **cardinality** of the join like One-to-One, One-to-Many and etc.,

View Object

- ❖ Provides the **view of the data** which can be used by the page or fragment
- ❖ Can be used for **joining, filtering** & sorting of data
- ❖ If based on an entity object, view objects can be used to **apply data changes** from UI to **entity object cache**
- ❖ Types are **SQL Query, Entity Object**, Static List or a programmatic one
- ❖ Supports **custom java code** as well in VOImpl.java, VORowImpl.java

View Link

- ❖ Represents the relationship between view objects
- ❖ Can be used on Association Object if the view objects are based on entity object
- ❖ Specially used in the scenario of Master Details Relationships

Application Module

- ❖ **Container** for related view object instances
- ❖ Maintains the **transaction** contexts
- ❖ Can be **nested** with other application modules
- ❖ View instances exposed in AM are available for drag & drop to UI from **Data Controls**

ADF - Training Contents

Development

Introduction to Oracle ADF

ADF Architecture

Quick App Development - ToDo App

Standard Search Page using AF Query

CRUD Page with ADF

Export to Excel/CSV from ADF Table

Oracle Forms Style Master Detail Page

Introduction to Taskflows

Search

Perform Validations

Dependent LoVs in ADF

ADF Dashboard with Charts & Graphs

I18N

Writing Custom Code

Introduction

Custom Code in Managed Bean

AMImpl

EOImpl

VOImpl

VORowImpl

Security

Implement Security for ADF Project

Web Services

Build REST API with ADF

Secure REST API

ADF - Training Contents

Best Practices for ADF Development

Enforce Standards

Auditing & History

Debug ADF Application

Fine tune JDeveloper

JDeveloper Tips

Course Project

Project Management Application

ADF ViewController

Faces Components

Skins & CSS

Complete ADF Application

School Application