

# Introduction to Weblogic for developers and Forms managers

Yair Opochinsky

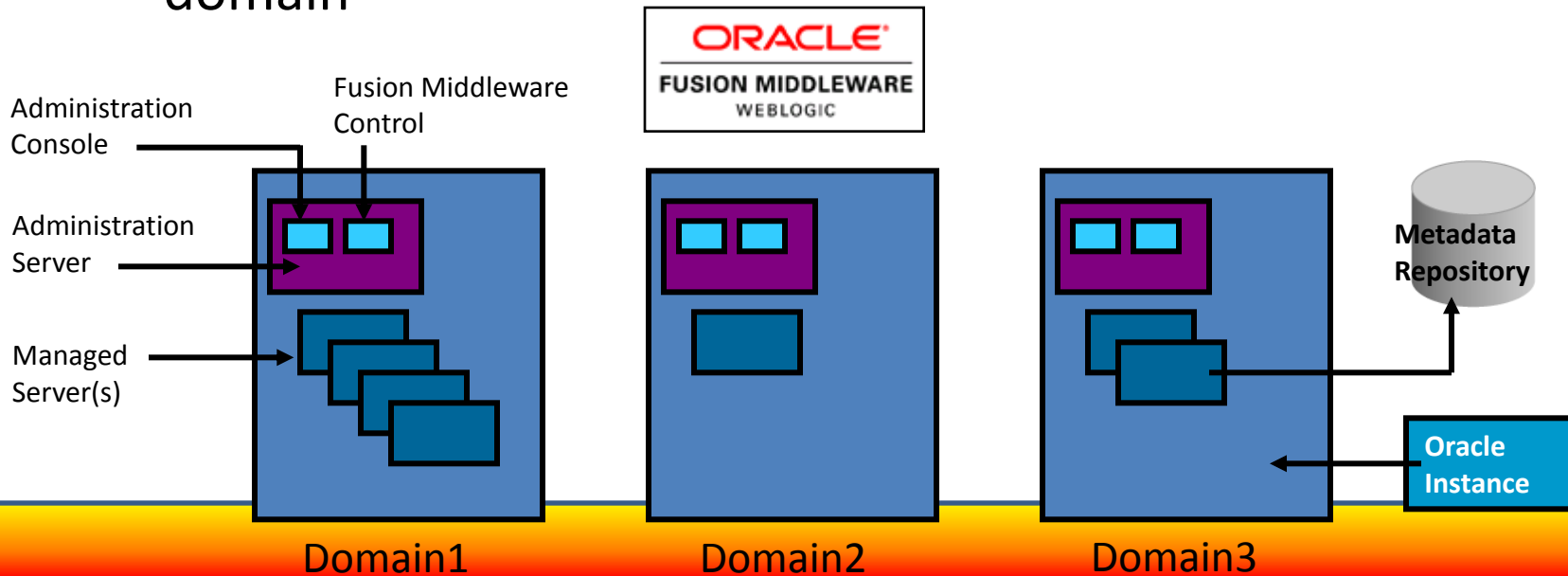


# Roadmap

- Weblogic Base Architecture
  - Domain Definition
  - Administration Server and Managed Servers
  - Oracle HTTP Server (OHS)
- How to manage forms and reports servers
- Starting and stopping services
- Monitoring user sessions using weblogic

# Oracle WebLogic Server

- Oracle WebLogic Server:
  - Is Oracle's application server for running and administering Forms (and other) applications
  - Defines manageable environments called domains
  - Uses an administration server to centrally manage a domain



# Why Do You Need Two Types of Servers?

- **Administration Server**

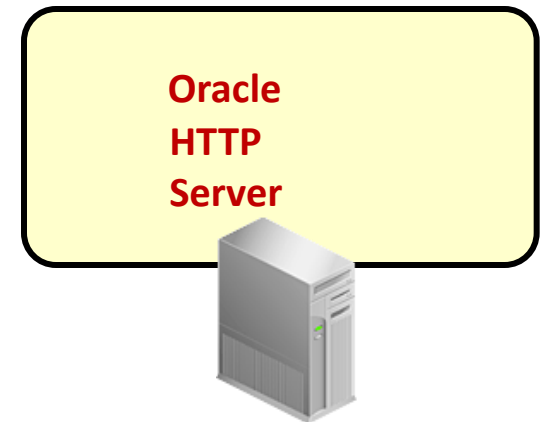
- Provides configuration for all servers in a domain
- Monitors managed servers
- Enables use of tools for managing the domain

- **Managed Servers**

- Get configuration from Admin Server
- Host application components and resources
- Perform business logic
- Log data to Admin Server

# Oracle HTTP Server

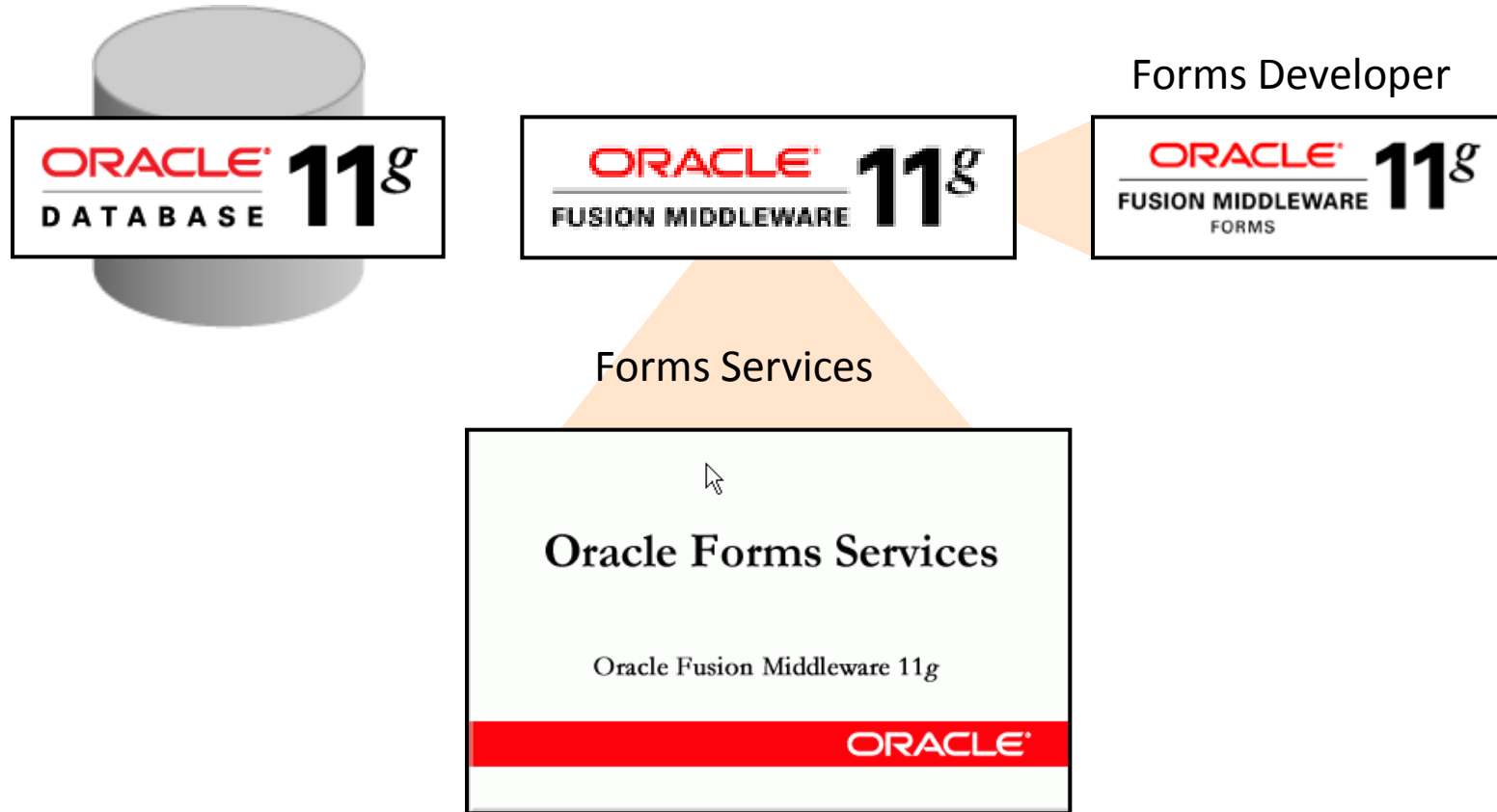
- The Oracle HTTP Server (OHS):
  - Provides a Web listener for WebLogic Server
  - Routes requests for processing
  - For Forms applications:
    - Receives request and routes to managed WebLogic server
    - Routes continued communication between Forms Services and client machine



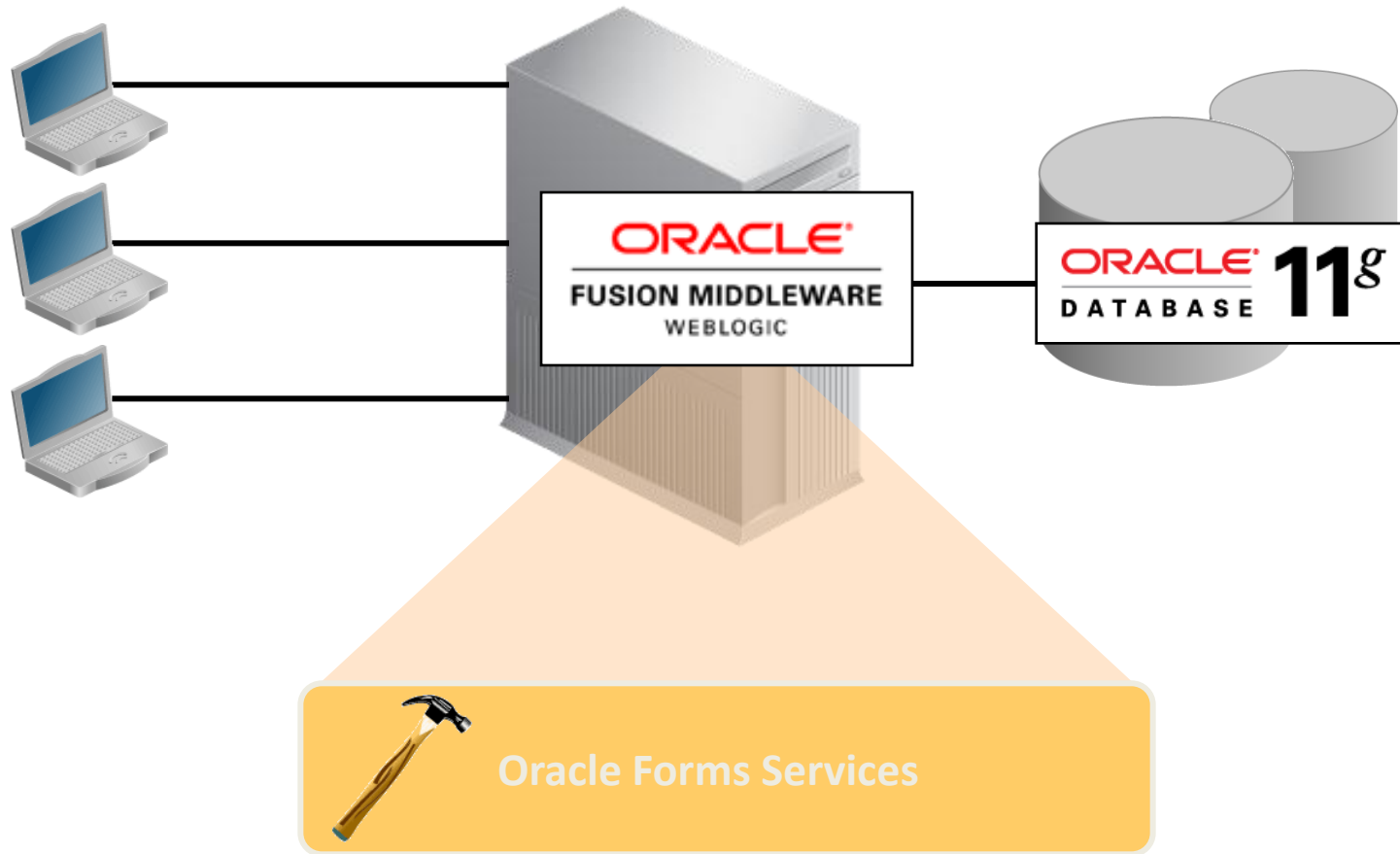
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# Oracle 11g Products and Forms Development



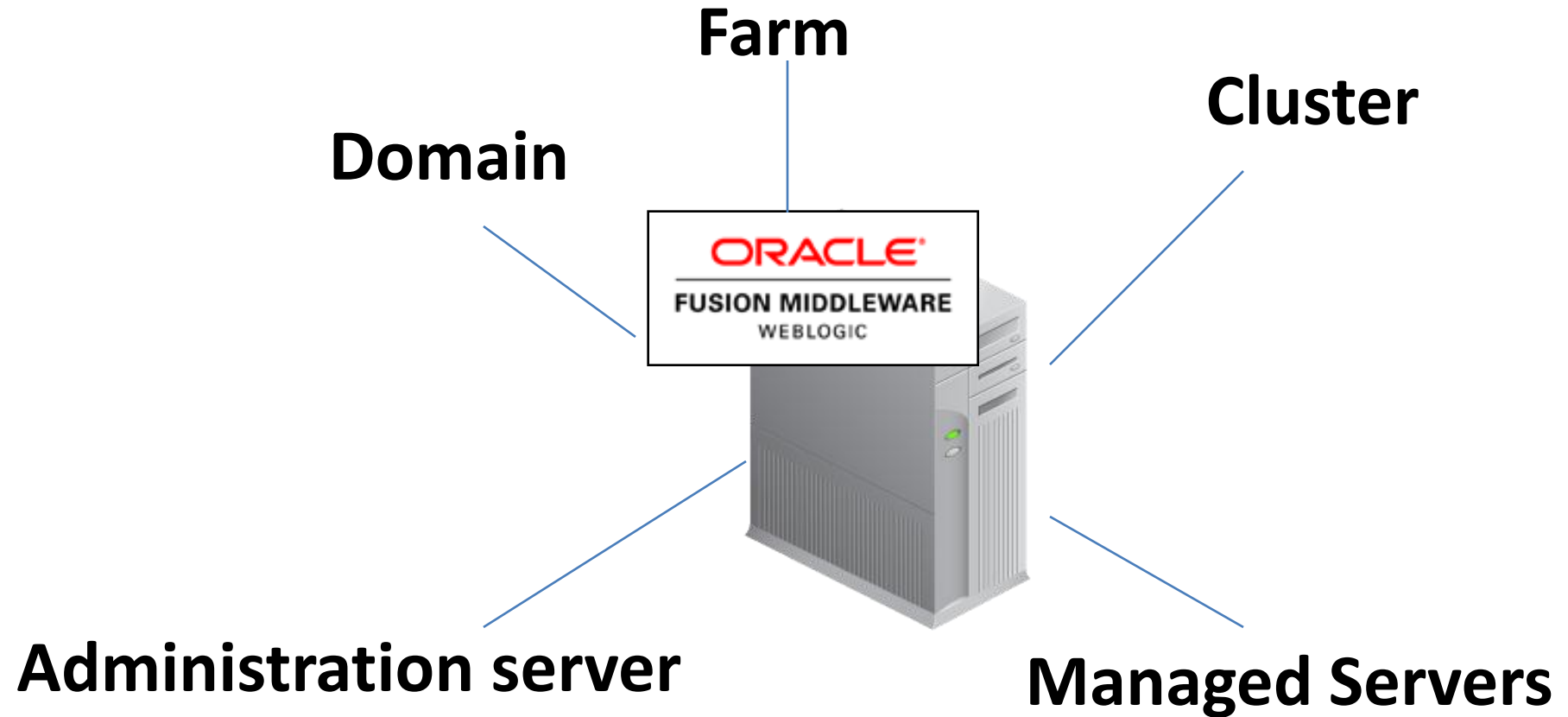
# Oracle Forms Services



- A component of Oracle WebLogic Server that enables web deployment of Forms applications



# Oracle Fusion Middleware Concepts



# Key Oracle Fusion Middleware Concepts

## **What is a Farm?**

A farm is a collection of components managed by Fusion Middleware Control. It can contain Oracle WebLogic Server domains, one Administration Server, one or more Managed Servers, and the Oracle Fusion Middleware components that are installed, configured, and running in the domain.

## **What Is Domain?**

An Oracle WebLogic Server domain is a logically related group of Java components. A domain includes a special Oracle WebLogic Server instance called the Administration Server, which is the central point from at which configuration and management of all resources in the domain occur. Usually, you configure an additional domain to include additional Oracle WebLogic Server instances called Managed Servers.

# Key Oracle Fusion Middleware Concepts

## **What Is the Administration Server?**

The Administration Server operates as the central control entity for the configuration of the entire domain. It maintains the domain's configuration documents and distributes changes in the configuration documents to Managed Servers. The Administration Server serves as a central location from which to monitor all resources in a domain.

Each domain must have one server instance that acts as the Administration Server. To interact with the Administration Server, you can use the Oracle WebLogic Server Administration Console.

## **What is the Managed Servers?**

Managed servers host business applications, application components, Web services, and their associated resources. To optimize performance, Managed Servers maintain a read-only copy of the domain's configuration document. When a Managed Server starts up, it connects to the domain's Administration Server to synchronize its configuration document with the document that the Administration Server maintains.

Managed servers are Java Virtual Machine (JVM) processes.

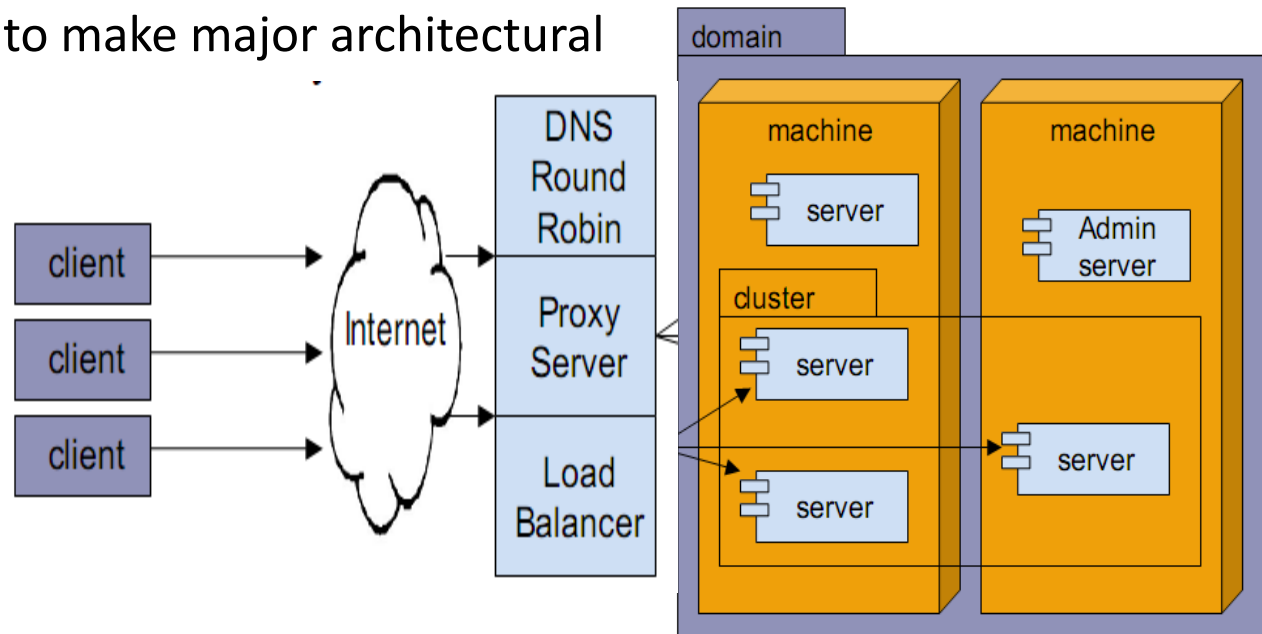
# Cluster Concept

Definition : **A cluster is a group of WebLogic Server instances, working in coordination.**

Clustering provides:

**High availability** - ensures that when a server (in a cluster) fails, there are other servers to take over the work so the client is not affected.

**Scalability** - is the ability to provide more capacity for an application, in this case, by adding additional servers without having to make major architectural changes.



# Oracle Enterprise Manager: The Farm Home Page

## Farm Home Page

**Farm menu**

**Navigation panel**

**Deployments panel**

**Fusion Middleware panel**

**Resource panel**

**Navigate to Forms Home Page**

The screenshot displays the Oracle Enterprise Manager interface for a Fusion Middleware Farm. The top navigation bar includes 'Setup', 'Help', and 'Log' options. The main content area is divided into several panels:

- Navigation panel:** A tree view on the left showing the hierarchy of the farm, including 'Farm\_ClassicDomain', 'Application Deployments', 'Internal Applications', 'WebLogic Domain', and 'Forms'. The 'forms' component is highlighted with a red circle.
- Deployments panel:** Shows the overall status of the farm as 'Up (9)' with a 100% green indicator. Below is a table of application deployments:

Name	Status	Target
Application Deployments		
Internal Applications		
formsapp(11.1.1)	Up	cluster_forms
formsapp(11.1.1)	Up	WLS_FORMS
formsapp(11.1.1)	Up	cluster_forms
formsconfigbeans	Up	WLS_FORMS

- Fusion Middleware panel:** Shows the overall status of the Fusion Middleware as 'Up (6)' with a 86% green indicator and 'Down (1)' with a 14% red indicator. Below is a table of components:

Name	Status	Host	CPU Usage (%)
WebLogic Domain			
ClassicDomain			
AdminServer	Up	10.159.41.72	18.56
cluster_forms	Up		
WLS_FORMS	Up	pgamer-lap.us.or...	8.05
cluster_reports	Down		
WLS_REPORTS	Down		
Forms			
forms	Up	pgamer-lap.us.or...	
Reports			
Web Tier			

- Resource panel:** Contains a section titled 'Before You Begin' with links to 'Introduction to Oracle Fusion Middleware', 'Understanding Key Oracle Fusion Middleware Farm Concepts', and 'Overview of Oracle Fusion Middleware Administration Tools'. Below this is a section titled 'Typical Administration Tasks' with a link to 'Getting Started Using Oracle Enterprise Manager Fusion Middleware Control'.

# Oracle Enterprise Manager: The Forms Home Page

Forms menu

Deployments panel

Metrics panel

Resource panel

The screenshot shows the Oracle Enterprise Manager Forms Home Page. At the top, the breadcrumb navigation shows 'forms' and 'Forms'. The user is logged in as 'weblogic' on host 'myhost.com'. The page was refreshed on Jan 26, 2011 at 3:47:31 PM MST. The main content area is divided into three panels:

- Forms Deployments:** A table showing deployment details for 'formsapp' on WLS Instance 'WLS\_FORMS'. The status is 'Up' (green arrow). It shows 3 Forms Sessions and a Servlet URL of 'http://pgamer-lap.us.oracle.com:9001/forms/'. A 'Logs' link is visible.
- Response And Load:** A line graph showing 'Average Response Time (millisec)' (blue line) and 'Number Of Sessions' (red line) over time from 03:34 PM to 03:48 PM on January 26, 2011. The response time shows a sharp spike at 03:36 PM, followed by a steady decline. The number of sessions shows a step-wise increase from 0 to 3.
- Resource Center:** A list of links for 'Before You Begin' (About Oracle Forms, Introduction to Managing Oracle Forms), 'Typical Administration Tasks' (Modifying Configuration Parameters, Environment Variables, Trace Variables, Icon And Font Mapping Variables, JVM Controller Variables, Managing Forms User Sessions), and 'Other Resources' (Oracle Forms on the Oracle Technology Network, Java EE for Oracle Forms Developers).

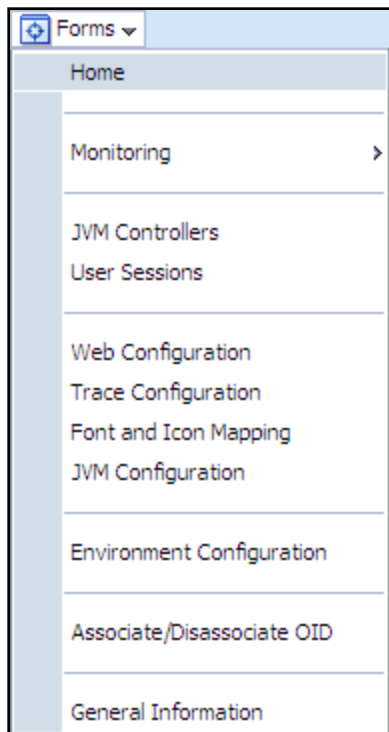
Red arrows point from the labels above to the corresponding elements in the screenshot: 'Forms menu' points to the breadcrumb, 'Deployments panel' points to the table, 'Metrics panel' points to the graph, and 'Resource panel' points to the Resource Center.

# Managing Forms Services with Oracle Enterprise Manager

- Additional tasks:

- Monitoring and metrics
- Managing and configuring JVM controllers
- Managing user sessions
- Configuring tracing

} Discussed in this lesson

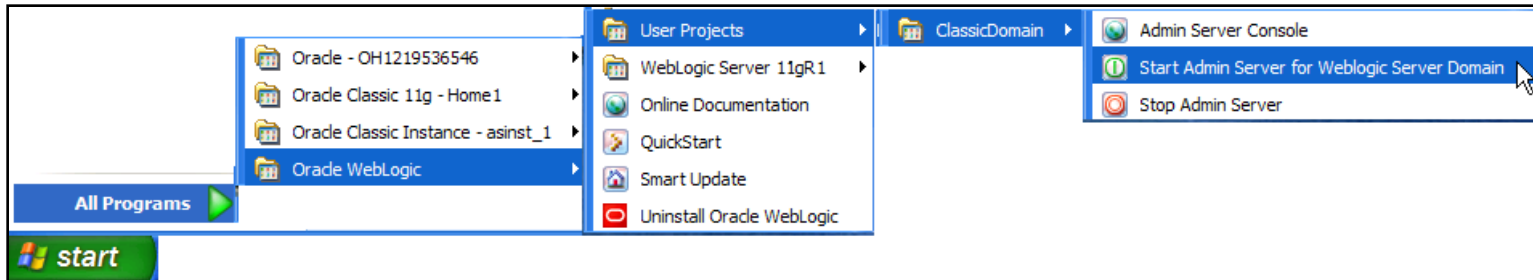


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# Starting and Stopping Oracle WebLogic Administration Server

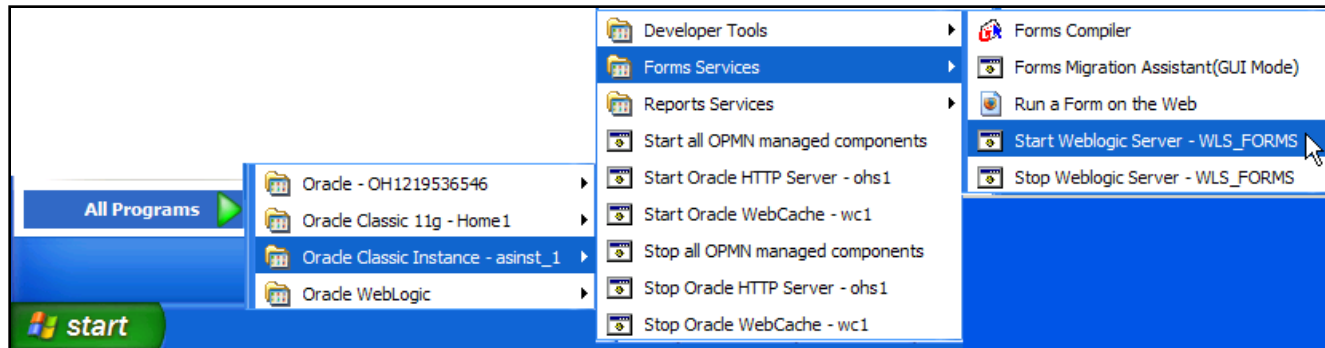


- Run the batch file: `startWebLogic.cmd` or `stopWebLogic.cmd` (can run from the Start menu).
- WebLogic Server starts in the command window:
  - Minimize the window.
  - Closing the window aborts the WebLogic Server.

A screenshot of a Windows command window titled "Start Admin Server for Weblogic Server Domain - C:\Forms11g\user\_projects\domains\ClassicDomain\bin\startWebLogic.cmd". The window shows the following log output:

```
8.197.192.168.1.100>
<May 26, 2009 7:58:38 AM MDT> <Notice> <Server> <BEA-002613> <Channel "Default[1]" is now listening on 1
op, t3, ldap, snmp, http.>
<May 26, 2009 7:58:38 AM MDT> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 192.
3, ldap, snmp, http.>
<May 26, 2009 7:58:38 AM MDT> <Notice> <Server> <BEA-002613> <Channel "Default[2]" is now listening on 1
, ldap, snmp, http.>
<May 26, 2009 7:58:38 AM MDT> <Notice> <WebLogicServer> <BEA-000329> <Started WebLogic Admin Server "Adm
running in Production Mode>
<May 26, 2009 7:58:45 AM MDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RUNNING>
<May 26, 2009 7:58:45 AM MDT> <Notice> <WebLogicServer> <BEA-000360> <Server started in RUNNING mode>
```

# Starting and Stopping Oracle WebLogic Managed Servers



- Run `startManagedWebLogic.cmd` or `stopManagedWebLogic.cmd` (can run from the Start menu).
- You can minimize the command window but do not close it.

```
Start Weblogic Server - WLS_FORMS
<May 26, 2009 1:19:16 PM MDT> <Notice> <Server> <BEA-002613> <Channel "Default" is now listening on 192
3, ldap, snmp, http.>
<May 26, 2009 1:19:16 PM MDT> <Notice> <WebLogicServer> <BEA-000358> <Started WebLogic Independent Mana
assicDomain" running in Production Mode>
<May 26, 2009 1:19:16 PM MDT> <Warning> <JMX> <BEA-149510> <Unable to establish JMX Connectivity with t
t <JMXServiceURL:null>.>
<May 26, 2009 1:19:16 PM MDT> <Warning> <Server> <BEA-002611> <Hostname "pgamer-us.us.oracle.com", maps
.239, 192.168.1.100>
<May 26, 2009 1:19:16 PM MDT> <Notice> <WebLogicServer> <BEA-000365> <Server state changed to RUNNING>
<May 26, 2009 1:19:16 PM MDT> <Notice> <WebLogicServer> <BEA-000360> <Server started in RUNNING mode>
```

# Other Ways to Start a WebLogic Server Instance

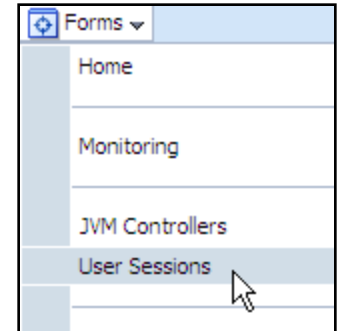
- You can also start a WebLogic Server instance by:
  - Using a Java command
  - Using the WebLogic Scripting Tool (WLST)
  - Using Node Manager
  - Using the Administration Console
  - Setting up the WLS instance as a Windows service

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- **Monitoring user sessions using weblogic**

# Managing User Sessions

- Enterprise Manager enables you to:
  - View information for each user session
  - Kill a user session
  - Enable or disable tracing
  - Search for a particular session



Home > User Sessions

### User Sessions

Forms User Sessions provides the ability to monitor and trace the Forms Sessions belonging to this Forms Instance

View ▾ Stop Enable Tracing... Disable Tracing Search Username [ ] [▶]

Process ID	Database	CPU Usage	Private Memory (KB)	IP Address	Username	Connect Time	Trace Group	Trace Log	Configuration Section
8100	db112	0	34384	10.159.49.10	summit	2011.02.08 at 05:37:49 MST			summit
6508		0	28020						summit_prestart
6492		0	28004						summit_prestart

- Monitor user's database session
- Disallow new connections: Set `allowNewConnections` parameter to `false` in default section of `formsweb.cfg`.

# Managing User Sessions

Oracle Enterprise Manager (weblogic) - Windows Internet Explorer

http://porafrm1.isracard.co.il:7001/em/faces/as/as/serverHome?target=/Farm\_FRMDomain/FRMDomain/WLS\_Fc

Oracle Enterprise Manager (weblogic)

ORACLE Enterprise Manager 11g Fusion Middleware Control

Setup Help Log Out

Farm Topology

forms

Forms

Home > User Sessions

User Sessions

Forms User Sessions provides the ability to monitor and trace the Forms Sessions belonging to this Forms Instance

View Stop Enable Tracing... Disable Tracing Search Username

Process ID	Database	CPU Usage	Private Memory (KB)	IP Address	Username	Connect Time	Trace Group	Trace Log
9888	TK01	0	40708	172.26.3.27	YDVORNIKOV	2012.10.16 at 08:06:51 IST		
7640	tk01	0	35104	172.20.22.7	BKORDOVA	2012.10.16 at 07:14:28 IST		
9556	SAPP	0	32568	172.20.91.207	LIORB	2012.10.16 at 08:27:52 IST		
12332	tk01	0	31012	172.20.21.16	MBENDAVI	2012.10.16 at 08:07:47 IST		
10680	tk01	0	35964	172.20.20.25	ETKELE	2012.10.16 at 09:44:10 IST		
10140	SAPP	0	36112	172.26.2.24	HRUTENBERG	2012.10.16 at 08:27:25 IST		
7180	tk01	0	30964	172.20.21.7	HFELCHER	2012.10.16 at 09:13:14 IST		
13396	SAPP	0	32700	172.20.92.32	SIMAM	2012.10.16 at 09:09:37 IST		
10964	SAPP	0	32400	172.20.3.38	YAZOULAY	2012.10.16 at 08:51:56 IST		
13948	tk01	0	31064	172.20.20.25	ETKELE	2012.10.16 at 09:44:14 IST		
13708	tk01	0	39004	172.20.94.15	SSHAAR	2012.10.16 at 08:14:05 IST		
10424	SAPP	0	36728	172.26.20.7	MMELER	2012.10.16 at 07:13:31 IST		
11020	SAPP	0	37004	172.26.2.62	YBODWAN	2012.10.16 at 10:01:26 IST		
11740	tk01	0	35224	172.20.22.103	SALFASI	2012.10.16 at 09:08:17 IST		
7436	tk01	0	36968	172.20.21.39	RKFIR	2012.10.16 at 08:26:07 IST		
11016	tk01	0	35356	172.20.21.18	EKASSAS	2012.10.16 at 08:20:58 IST		
6884	tk01	0	31120	172.20.21.32	SSHMENTOV	2012.10.16 at 10:09:08 IST		
12564	TK01	0	35536	172.24.1.33	MROZOV	2012.10.16 at 08:59:41 IST		
4432	TK01	0	39880	172.26.3.65	PGUTERMA	2012.10.16 at 08:05:33 IST		
640	TK01	0	38828	172.24.3.30	MBACHAR	2012.10.16 at 07:48:45 IST		
1336	tk01	0	75052	172.26.3.97	HANCO	2012.10.16 at 09:42:29 IST		

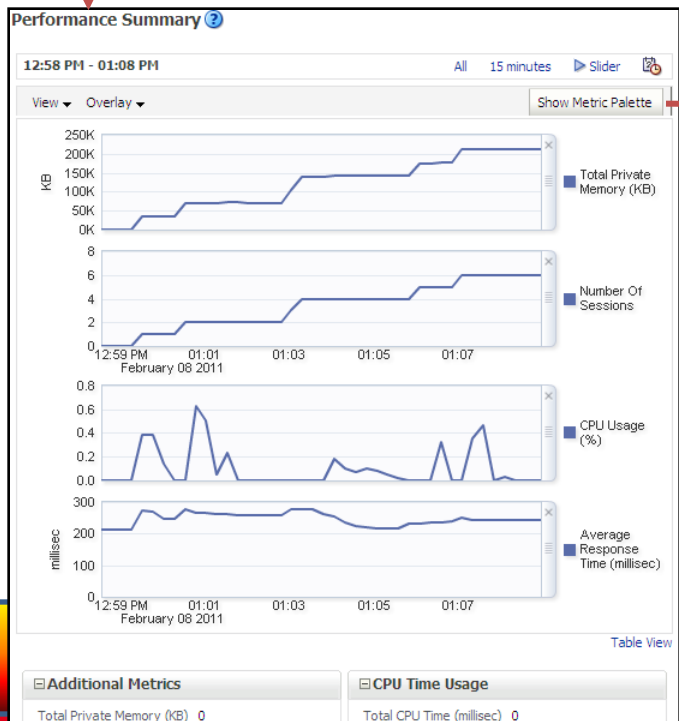
Columns Hidden 4

Number of sessions: 145

Start Inbo... Install Citri... W Doc... C:\... ...miro... 11g ... test ... Orac... 10:33

# Monitoring Performance Metrics in Oracle Enterprise Manager

- From the Forms home page you can navigate to details:
  - Performance summary
  - Servlet logs



Metric Search

- forms
  - Metrics
    - Average Servlet Response Time
    - Average Response Time (millisec)
  - Forms Application Deployments
    - Application state
    - Application status
    - Number of User Sessions
  - Forms Resource Usage
    - CPU Usage (%)
    - Total CPU Time (millisec)
    - Total Private Memory (KB)
  - FormsUserSessions
    - 6176.0
      - CPU Time (millisec)
      - CPU Usage (%)
      - Private Memory (KB)
    - 7940.0
  - JVM Controllers
  - Number of Sessions
  - Response
    - Number of Sessions
    - Servlet ResponseTime
      - Number of Tasks
      - Response Time (millisec)
      - Total Time
  - Members
  - Related Targets

Forms

- Home
- Monitoring
  - Performance Summary**
  - Servlet Log
- JVM Controllers
- User Sessions

Log Messages  
Broaden Target Scope Target Log Files... Manual Refresh

Search  
Date Range: Most Recent 24 Hours  
Message Types:  Incident Error  Error  Warning  Notification  Trace  Unknown  
Message: contains

Time	Message Type	Message ID	Message	Log File
Feb 8, 2011 7:39:35 AM MST	Error	FRM-91230	fatal error in runtime process: timeout on connect...	formsapp-dia...
Feb 8, 2011 7:39:35 AM MST	Error	FRM-91230	fatal error in runtime process: timeout on connect...	formsapp-dia...
Feb 8, 2011 11:43:04 AM MST	Notific...	FRM-93154	The Forms Servlet is not allowing new connections.	formsapp-dia...
Feb 8, 2011 11:44:59 AM MST	Notific...	FRM-93154	The Forms Servlet is not allowing new connections.	formsapp-dia...
Feb 8, 2011 3:23:36 PM MST	Error	FRM-91230	fatal error in runtime process: timeout on connect...	formsapp-dia...
Feb 9, 2011 7:16:14 AM MST	Notific...	FRM-93100	Initializing the Forms Servlet. Initialization paramet...	formsapp-dia...
Feb 9, 2011 7:16:33 AM MST	Notific...	FRM-93412	There are 2 prestarted runtime processes in the ru...	formsapp-dia...
Feb 9, 2011 7:16:33 AM MST	Notific...	FRM-93421	starting the timer for the runtime process pool for ...	formsapp-dia...

Rows Selected: 1 Columns Hidden: 20 Total Rows: 8

**Feb 8, 2011 3:23:36 PM MST (Error)**

Message ID	FRM-91230	Module	oracle.forms.servlet
Message Level	1	Host	pgamer-lap
SRC_CLASS	oracle.forms.servlet.RunformProcess	Host IP Address	10.159.53.42
SRC_METHOD	fromFrmwebToODL	User	<anonymous>
Relationship ID	0	Thread ID	12
Component	WLS_FORMS	ECID	00001s7NqQhB4x_S9_Alc1DKJmR00092
Message: fatal error in runtime process: timeout on connection to Java client			



# להתראות

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