



Servidores de aplicaciones

Sesión 1:
Introducción a los servidores de aplicaciones.
Instalación de BEA WebLogic



Índice

- Introducción
- Conceptos básicos de aplicaciones de empresa
- ¿Qué es un servidor de aplicaciones?
- Descripción de conceptos
- Instalación del servidor BEA WebLogic
- Arranque y configuración

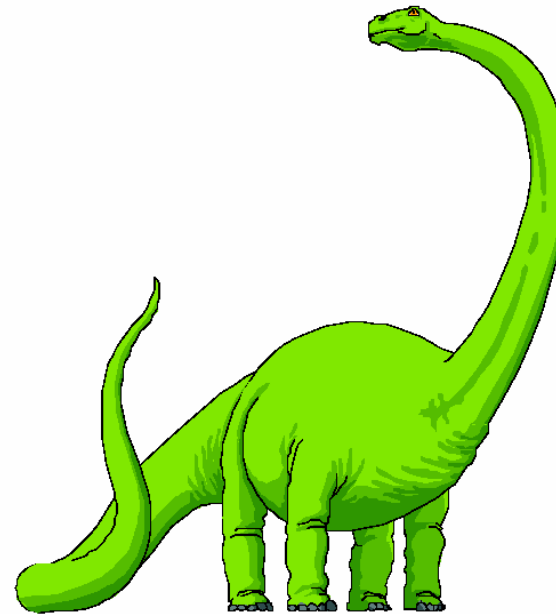


Sistemas distribuidos

- Los sistemas distribuidos dividen una aplicación en distintos módulos independientes
- El fallo de un módulo tiene menos impacto en el sistema completo, lo que los hace más:
 - disponibles
 - escalables
 - mantenibles



**Sistemas distribuidos:
pequeños, ágiles y adaptables**

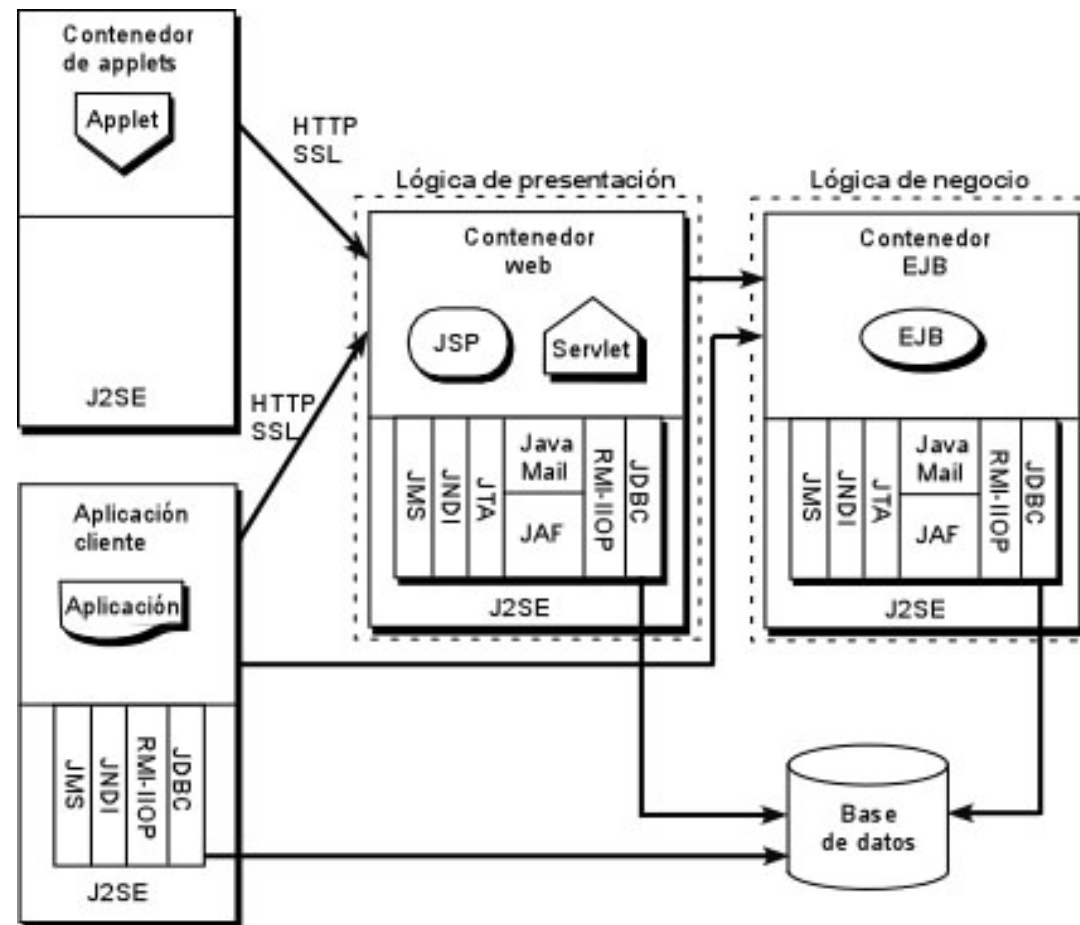


**Sistemas
monolíticos:
grandes,
Inflexibles e
inadaptables**



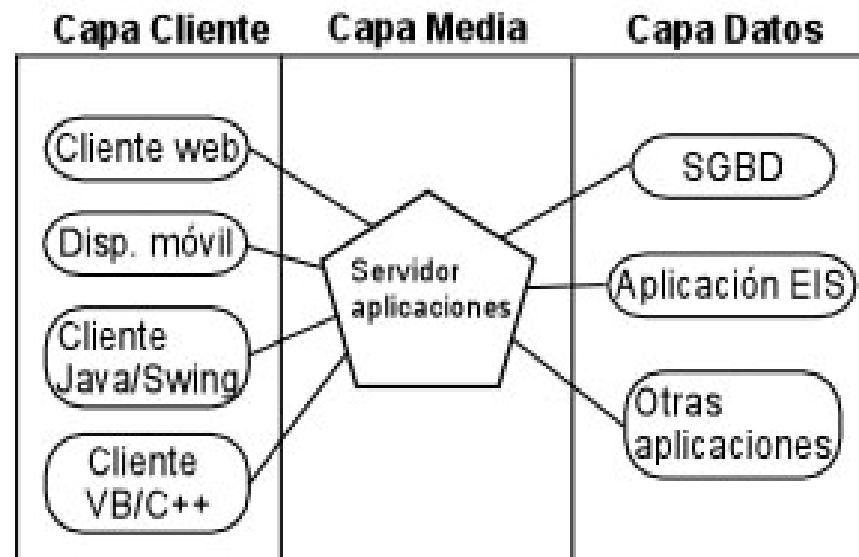
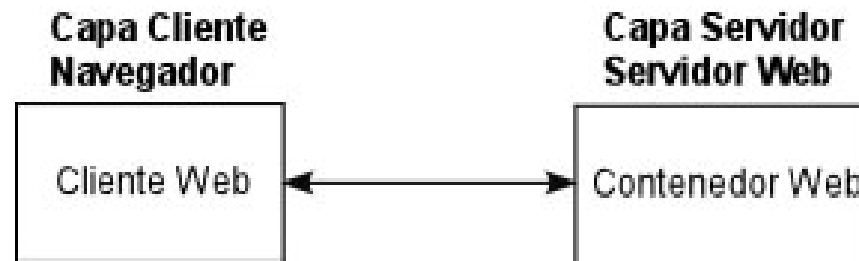
¿Qué es un servidor de aplicaciones?

- Implementación total o parcial de la especificación J2EE





Estructura en tres capas versus dos capas





Implementaciones disponibles

- *BEA WebLogic*
- IBM WebSphere
- *JBoss*
- ¿TomCat?
- Otros



Conceptos

- *Servidor proxy*: centraliza peticiones de clientes y las redistribuye entre otras máquinas (balanceo de carga, seguridad)
- *Máquina*: unidad física donde reside un servidor. Unix o no Unix (Windows, Mac, etc.)
- *Servidor*: instancia de la clase *weblogic.Server* ejecutándose en una *jvm*. Puede haber más de un servidor en una máquina.
- *Dominio*: unidad administrativa. Contiene servidores, máquinas, aplicaciones, etc.

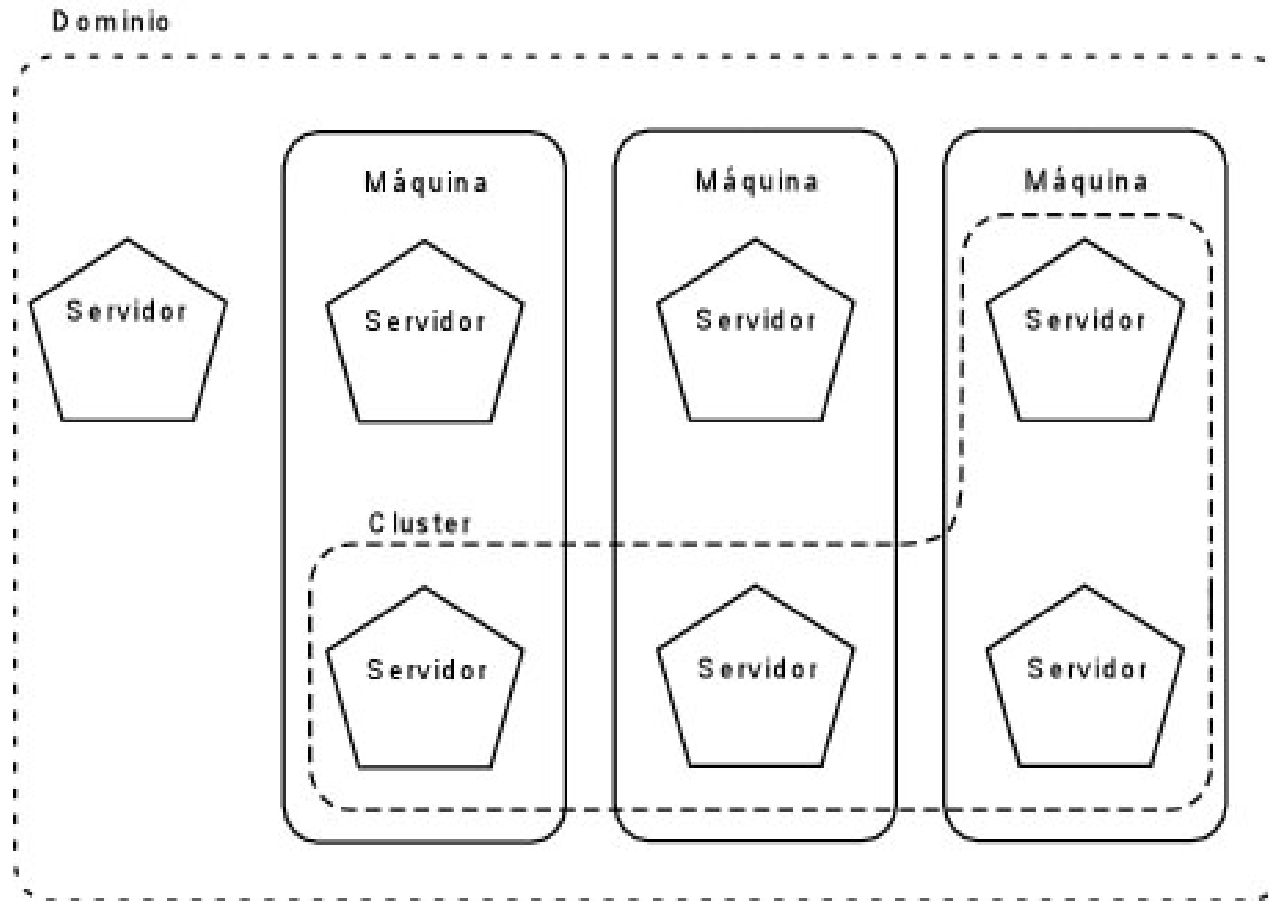


Conceptos

- *Clustering*: un *cluster* es una asociación de máquinas y/o servidores para que respondan como una única entidad. Permitirá el balanceo de carga y la recuperación ante fallos
- *Balanceo de carga*: permite distribuir las peticiones entre todos los servidores de nuestro dominio.
- *Failover (recuperación ante fallo)*: es la recuperación frente a la caída de un servidor
- *Modo producción/modo desarrollo*
- *Puerto de escucha*: dirección dentro de una dirección URL donde se puede “escuchar” y “pedir”. Algunos puertos están reservados (del 0 al 1023) y otros los podremos utilizar (1024 al 65536).
`http://dirección:puerto/direc`



Ejemplo de dominio





Instalación de WebLogic

- Se siguen tres pasos para instalar y configurar WebLogic
 - Instalación del software: descomprimir los ficheros y crear la estructura de directorios
 - Definición de un dominio: creación de la estructura del dominio
 - Configuración: modificación y/o ampliación del dominio creado

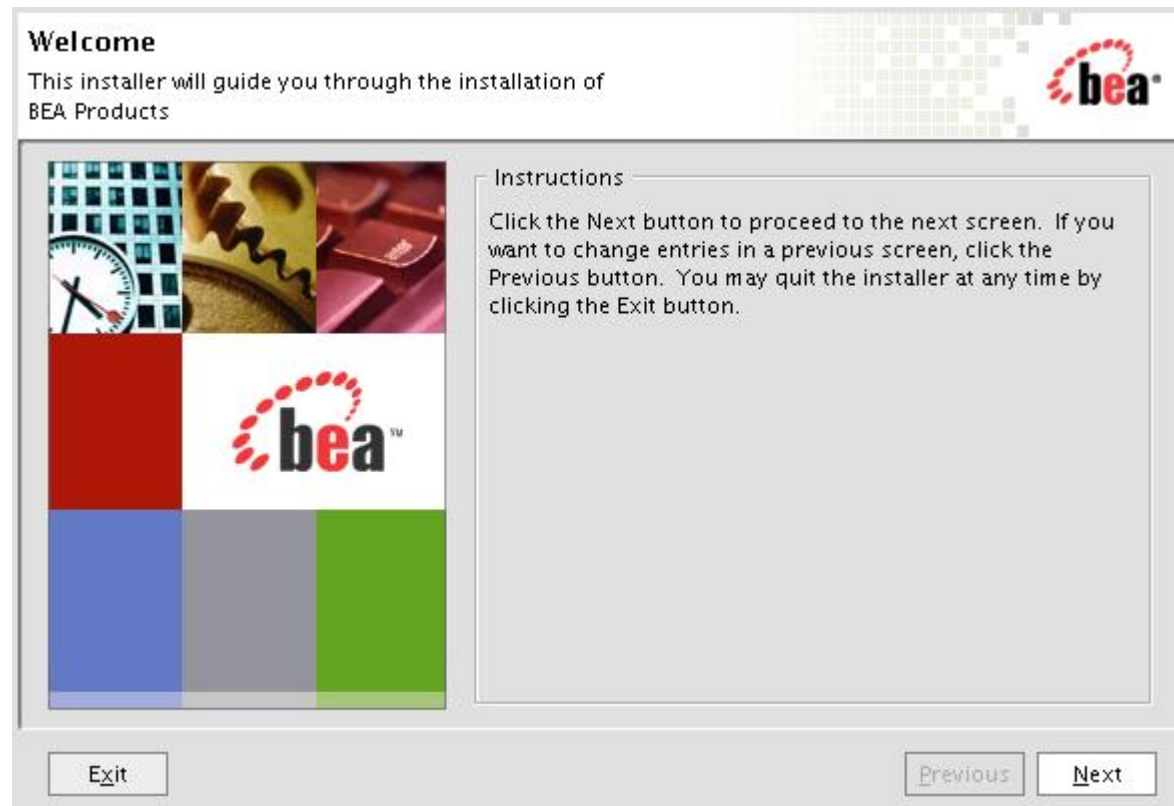


Requisitos para la instalación de WebLogic 9.2 bajo Windows

- Memoria: 1Gb (aconsejable 2Gb).
- Espacio en disco: 800Mb
- Versión de Java 1.5 o superior (se instala junto con el servidor).
- No es necesario ser administrador para instalar y/o ejecutar. Cada usuario puede instalarse el software de forma local
- Instalación: ejecutamos el fichero ***server921_win32.exe***



Instalación: Paso 1





Instalación: Paso 2





Instalación: Paso 3

Choose BEA Home Directory
Specify the BEA Home where you wish to install BEA Products.

BEA Home Type

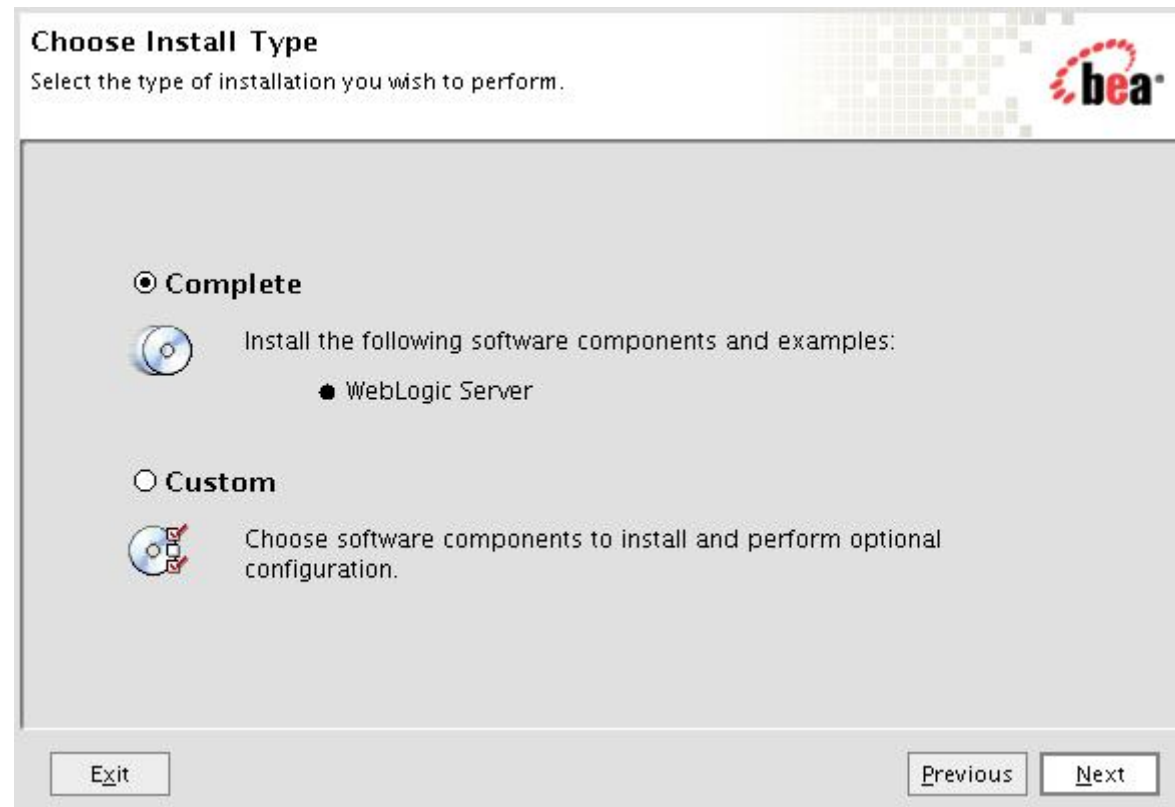
Use an existing BEA Home

Create a new BEA Home

BEA Home Directory



Instalación: Paso 4







Instalación: Paso 5

Choose Product Installation Directories

Provide the directories where you wish to install BEA Products.



[Discard Changes](#)

BEA Home Directory
C:\bea

Product Installation Directories

The Default Product Home will contain WebLogic Server, any other products and components for which unique directories are not set, and shared utilities.

Default Product Home:
C:\bea\weblogic92 [Browse...](#)

Workshop for WebLogic Platform:
C:\bea\workshop92 [Browse...](#)



[Exit](#) [Previous](#) [Next](#)



Instalación: Paso 6

Choose Shortcut Location

The installer creates shortcuts to BEA components, samples, and tools. As a user with administrative privileges, you can specify where these shortcuts are created.



Select the Start Menu folder in which you want to create BEA shortcuts:

"All Users" Start Menu folder (recommended)

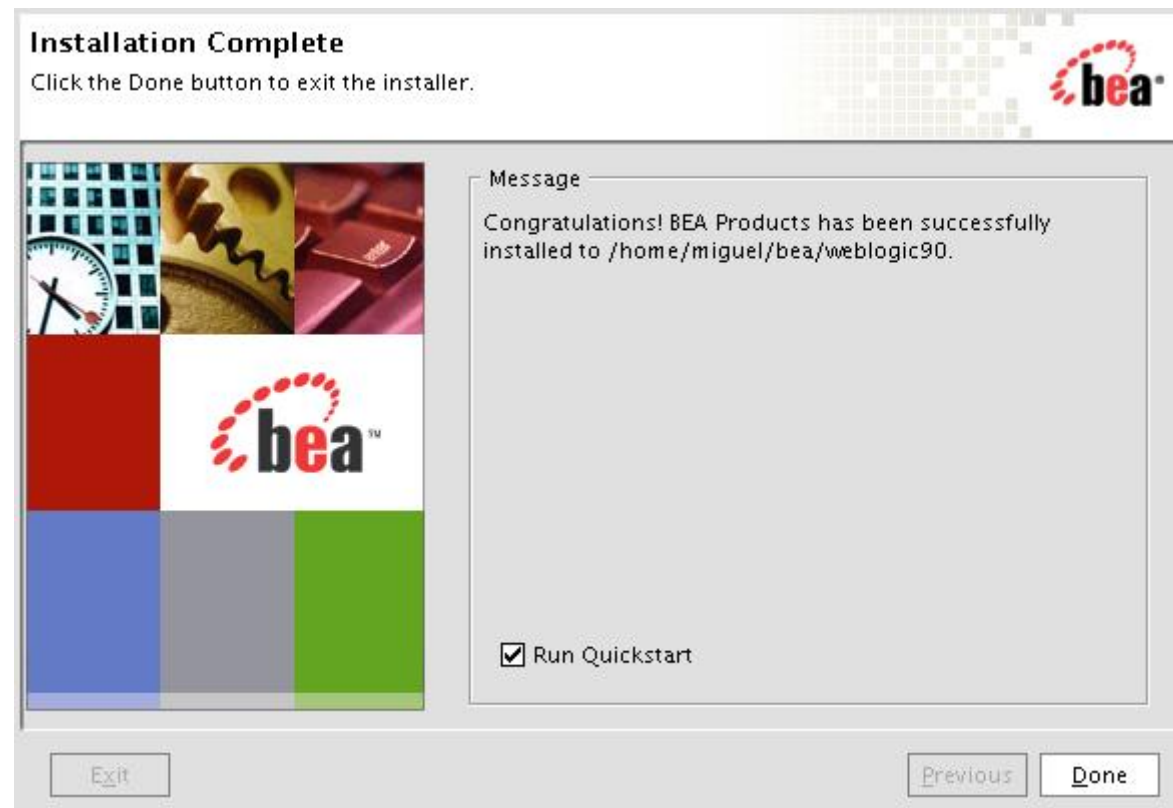
If a user without administrative privileges uses the BEA Configuration Wizard in this installation to create domains, the user may have to create Start menu shortcuts manually. Refer to the documentation for more information.

Local user's Start Menu folder

Select this option if you need to ensure that other profiles registered on this machine will not have access to these shortcuts.



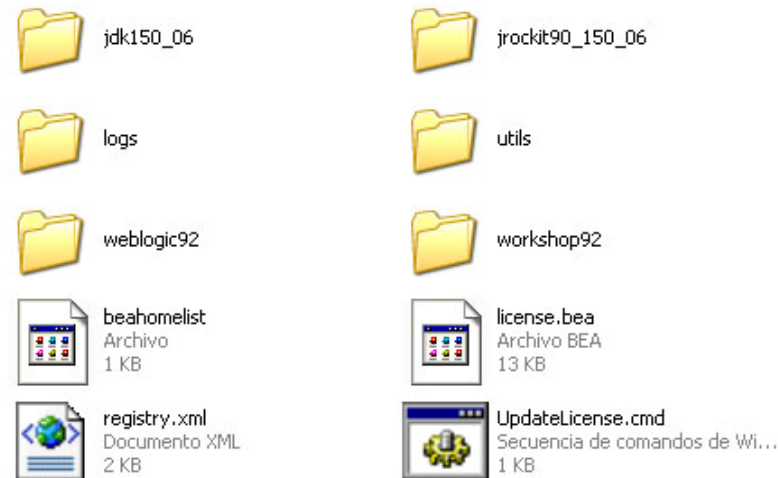
Instalación: Paso final





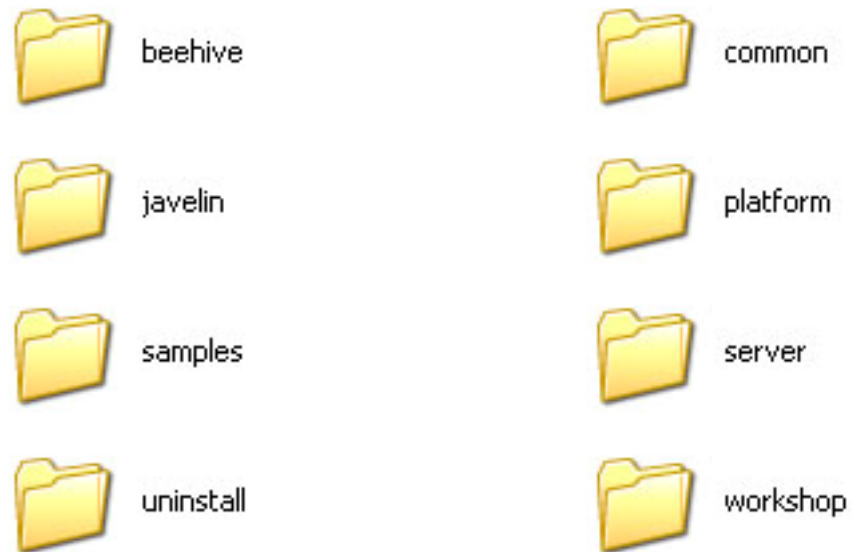
Estructura de directorios creada

- jdk150_06: Java jdk (podemos usar la nuestra)
- jrocket90: distribución de java propia de Bea
- logs: directorio log de instalación
- utils: utilidades que iremos viendo
- Fichero *license.bea* contiene nuestra licencia
- Workshop92: Eclipse para desarrollo con Weblogic



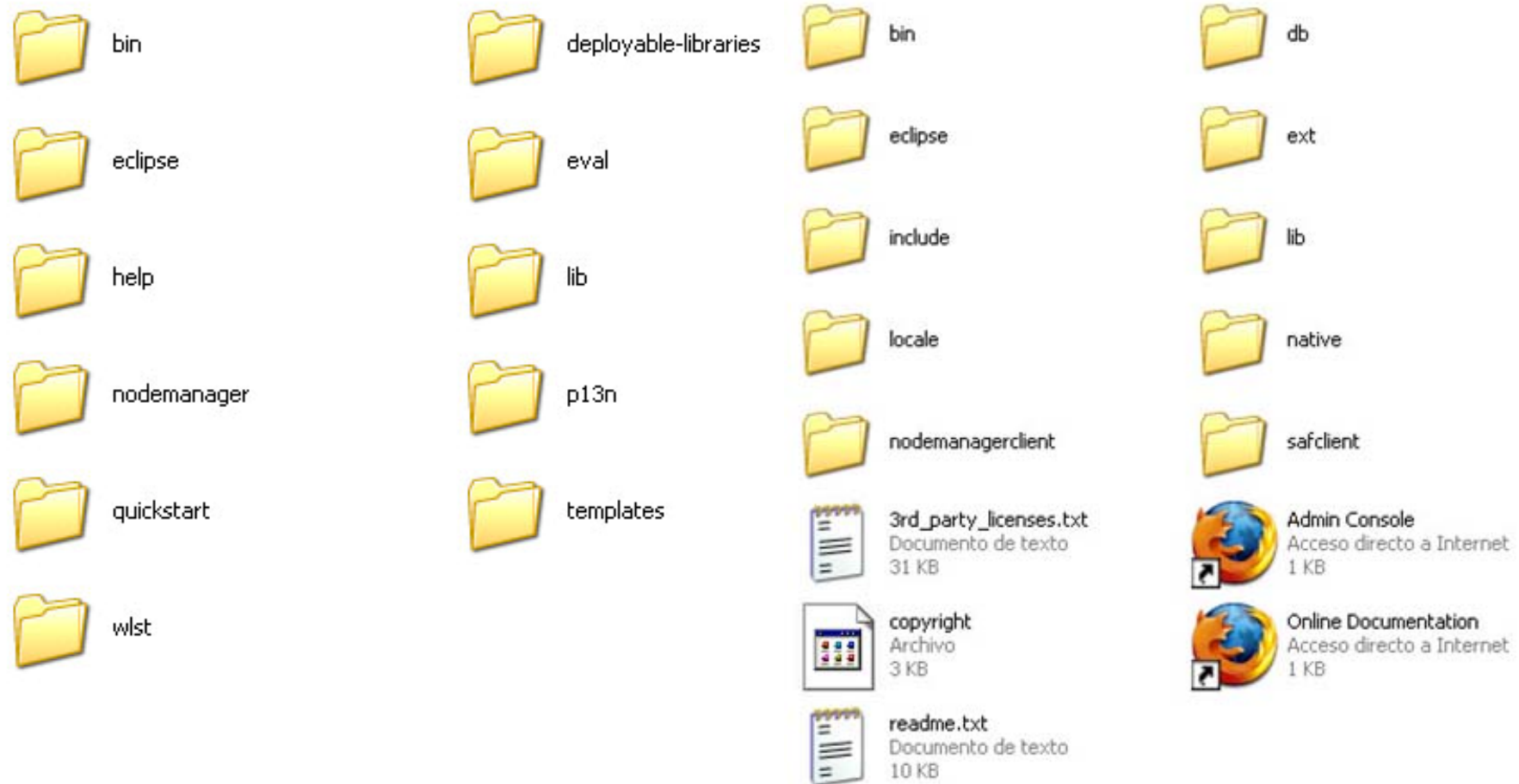


Estructura de directorios creada: weblogic





Estructura de directorios creada: *common y server*





Revisión de conceptos

- Dominio: unidad de trabajo
- Servidor de administración: se encarga de gestionar el dominio y contiene una aplicación para configuración (*console*). Es único en el dominio
- Servidores administrados (*managed*): responden a aplicaciones y/o realizan tareas específicas. Podemos tener tantos como queramos
- Para crear un dominio utilizamos
`$HOME_BEA/weblogic92/common/bin/config.cmd`
o bien Bea products -> Tools -> Configuration Wizard



Creación de dominio: paso 1

Welcome

Choose between creating and extending a domain. Based on your selection, the Configuration Wizard guides you through the steps to generate a new or extend an existing domain.



Create a new WebLogic domain

Create a WebLogic domain in your projects directory.

Extend an existing WebLogic domain

Extend an existing WebLogic domain.


Use this option to add applications and services, or to override existing database access (JDBC) and messaging (JMS) settings. You can also incorporate additional functionality in your domain, for example, by including AquaLogic Service Bus.



Creación de dominio: paso 2

Select Domain Source

Select the source from which the domain will be created. You can create the domain by clicking on the required components or by selecting from a list of existing domain templates.



Generate a domain configured automatically to support the following BEA products:

- WebLogic Server (Required)
- Apache Beehive

Base this domain on an existing template


Template location:




Creación de dominio: paso 3

Configure Administrator Username and Password

Create a user to be assigned to the Administrator role.
This user is the default administrator used to start development mode servers.



 Discard Changes

*User name:

*User password:

*Confirm user password:

Description:



Creación de dominio: paso 4

Configure Server Start Mode and JDK

Choose the WebLogic domain startup mode and the J2SE Development Kit (JDK) to be used for the domain.

To use WebLogic JRockit in production, BEA recommends developing and testing your applications with WebLogic JRockit early in the project cycle. For information about WebLogic JRockit, see the WebLogic JRockit documentation.

WebLogic Domain Startup Mode

Development Mode
Utilize boot.properties for username and password and poll for applications to deploy. Sun JDK recommended for better startup performance during iterative development.

Production Mode
Require the entry of a username and password and do not poll for applications to deploy. WebLogic JRockit JDK recommended for better runtime performance and management.

JDK Selection

BEA Supplied JDKs

- JRockit SDK 1.5.0_03 @ /home/miguel/bea/jrockit90_
- Sun SDK 1.5.0_03 @ /home/miguel/bea/jdk150_03


Other JDK
Location:



Creación de dominio: paso 5

Customize Environment and Services Settings

If desired, you can customize your domain by changing some of the configuration settings already defined in your domain source.



Do you want to customize any of the following options?

- The configuration of the Administration Server, including listen address and listen ports
- The number of Managed Servers and attributes, including listen ports
- The number of clusters and cluster attributes
- The number of machines and machine attributes
- The assignment of servers to clusters and machines
- JDBC data sources (if defined)
- JMS file store directories (if defined)

To keep the settings defined in the domain source and proceed directly to creating your domain, leave No selected.

No Yes


Exit Help Previous Next




Creación de dominio: paso 6

Configure the Administration Server

Enter administration server configurations. Each WebLogic Server domain must have one Administration Server. The Administration Server hosts the Administration Console which is used to perform administrative tasks.



 Discard Changes

*Name:

Listen address:

Listen port:

SSL listen port:

SSL enabled:



Creación de dominio: paso 7

Configure Managed Servers

Add or delete configuration information for Managed Servers. A typical production environment has one or more Managed Servers. Each Managed Server is an instance of WebLogic Server used to host enterprise applications.

Add | Delete | Discard Changes Switch Display

	Name*	Listen address	Listen port	SSL listen port	SSL enabled
→ 1	servidor2	All Local Addresses	6001	6002	<input checked="" type="checkbox"/>

Exit Help Previous Next



Creación de dominio: paso 8

Configure Clusters

Add or delete configuration information for clusters. A cluster contains multiple WebLogic Server instances that run simultaneously and work together to provide increased scalability and reliability. A cluster appears to be a single WebLogic Server instance to clients.

Add | Delete | Discard Changes Switch Display

Name*	Multicast address	Multicast port	Cluster address
-------	-------------------	----------------	-----------------



Creación de dominio: paso 9

Configure Machines

Add or delete configuration information for machines. A machine is the logical representation of the system that hosts one or more WebLogic Server instances. The Administration Server and Node Manager application use the machine definition to start remote servers.

Machine **Unix Machine**

Add | Delete | Discard Changes

Name*	Node manager listen address	Node manager listen port
-------	-----------------------------	--------------------------


Exit Help Previous Next



Creación de dominio: paso 10

Review WebLogic Domain

Please review the summary and make any corrections by returning to the associated section in the Configuration Wizard.



Click on an item in the Domain Summary pane on the left (such as an EJB) to inspect its attributes in the Details pane below. If everything is satisfactory, click Next; if you need to make changes click Previous to return to a prior panel.

Domain Summary

Summary View: Deployment

- Domain
 - Server
 - AdminServer
 - servidor2

Details

Attribute	Value
Name	Basic WebLogic Server Domain
Description	Create a basic WebLogic Server domain without installing sample
Author	BEA Systems, Inc.
Location	/home/miguel/bean/weblogic90/common/templates/domains/w

Exit Help Previous Next



Creación de dominio: paso 11

Create WebLogic Domain
When you click Create the domain will be generated in the location specified.



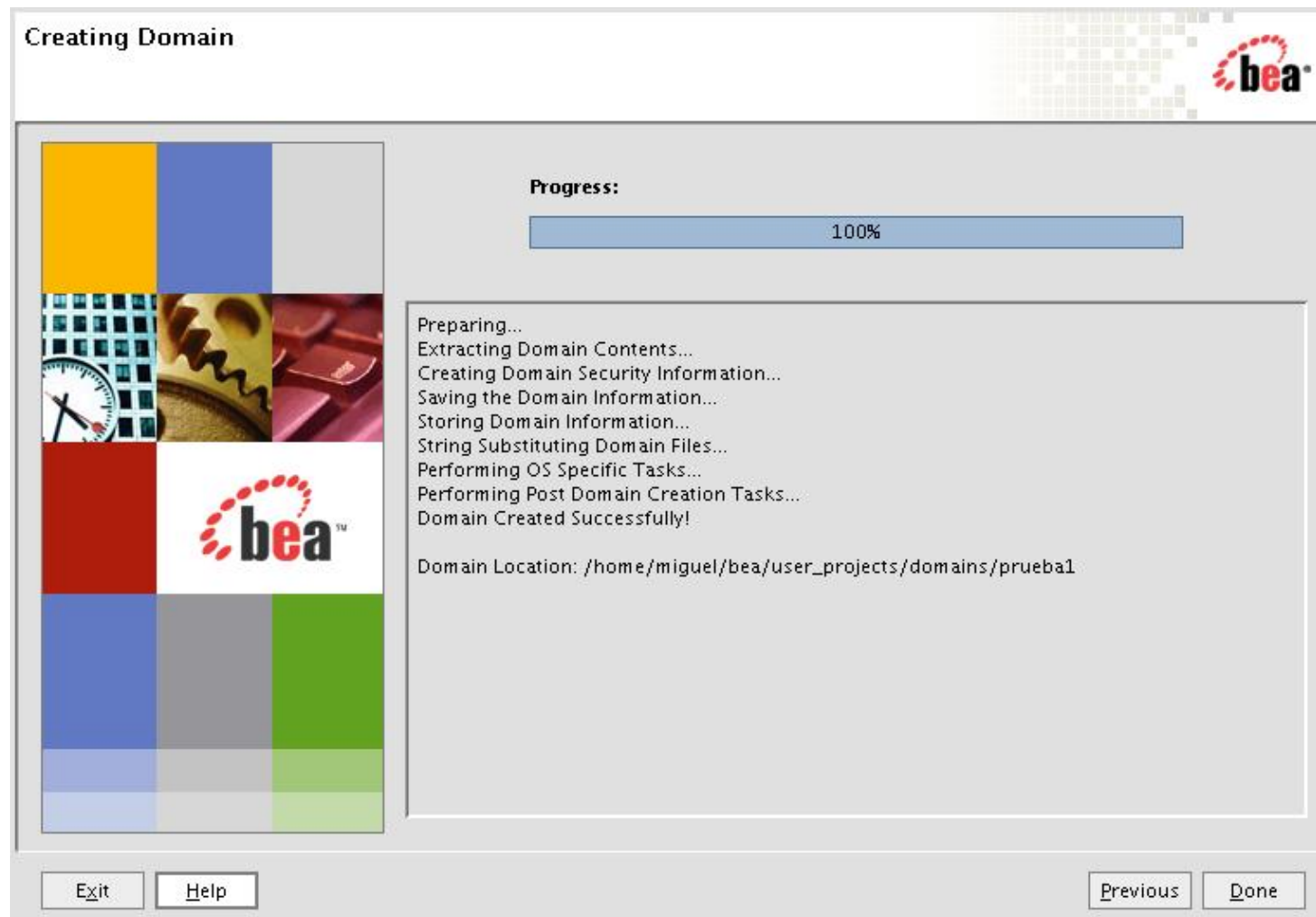
Enter the name and location for the domain:

Domain name:

Domain location:

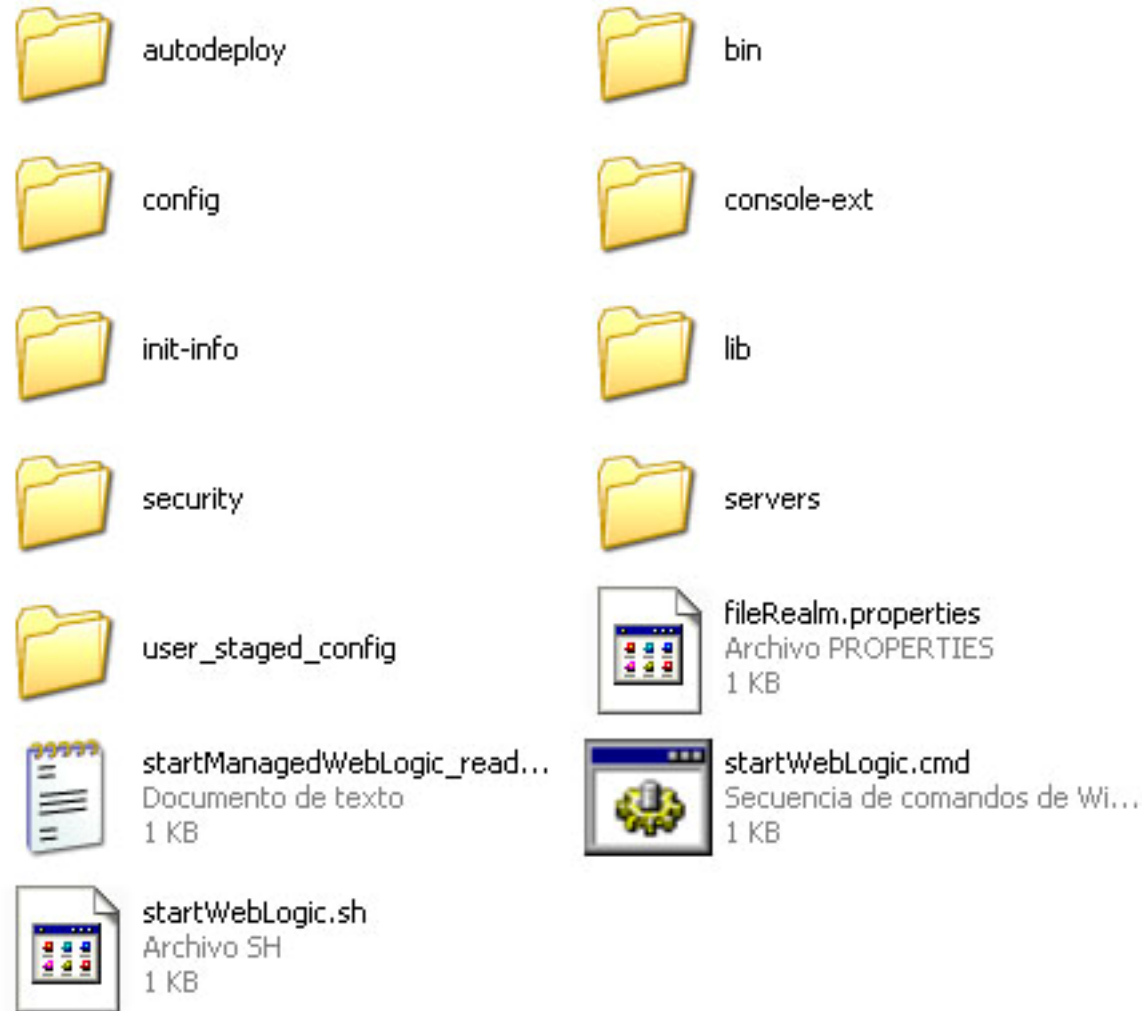


Finalización





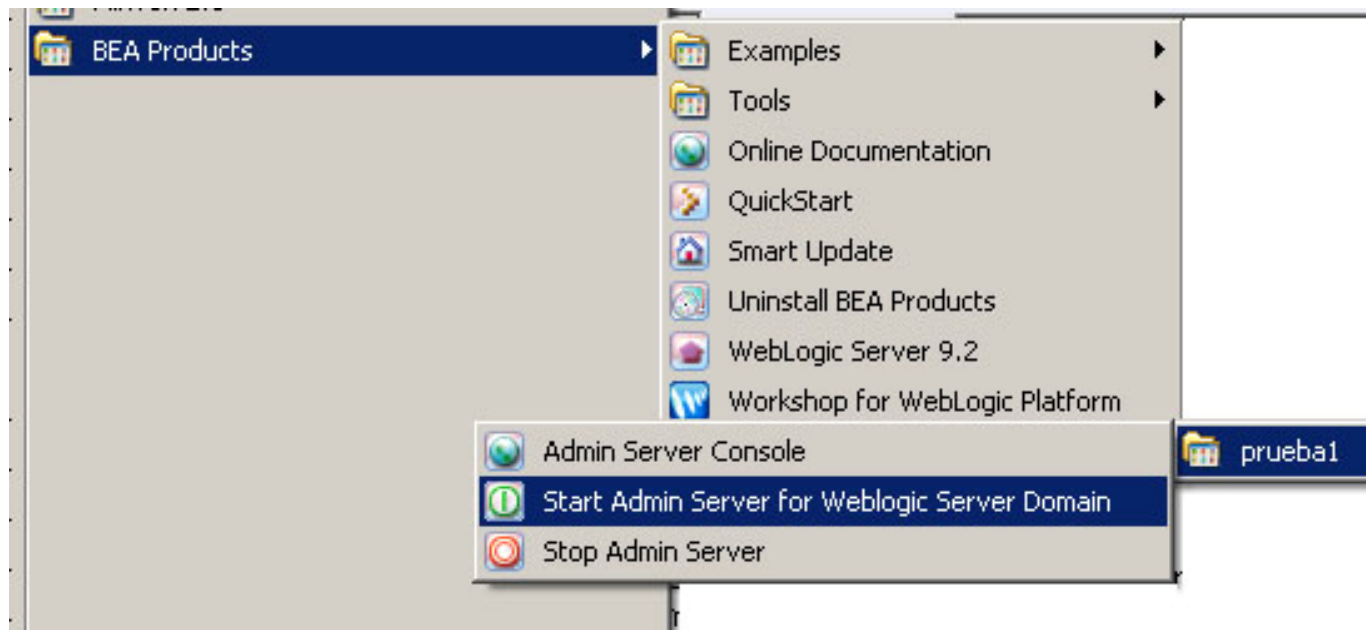
Estructura de directorios creada





Arranque del dominio

- `cd $HOME_BEA/user_projects/midominio`
- Arrancamos el servidor de administración:
`./startWebLogic.cmd`
- Cuando aparece: *<Server started in RUNNING mode>* ya está funcionando





Arranque del dominio

- Para arrancar un servidor administrado:
./startManagedServer.cmd nombre_servidor dirección_admin
./startManagedServer.cmd servidor2 <http://localhost:7001>
- Para modificar el dominio arrancamos la consola de administración. Desde un navegador <http://localhost:7001/console>
- Nos pide el usuario y la contraseña y aparecerá la siguiente ventana



Consola de administración

WEBLOGIC SERVER ADMINISTRATION CONSOLE

Welcome, system Connected to: prueba1 Home Log Out Preferences Help AskBEA

Change Center

View changes and restarts

Click the Lock & Edit button to modify, add or delete items in this domain.

Lock & Edit

Release Configuration

Domain Structure

- prueba1
 - Environment
 - Deployments
 - Services
 - Security Realms
 - Interoperability
 - Diagnostics

How do I...

- Use the Change Center
- View pending changes
- Release the configuration lock
- Change Console preferences
- Monitor servers

Domain

Information and Resources


Helpful Tools <ul style="list-style-type: none">Configure applicationsRecent Task Status	General Information <ul style="list-style-type: none">Common Administration Task DescriptionsSet your console preferencesRead the documentation
--	--

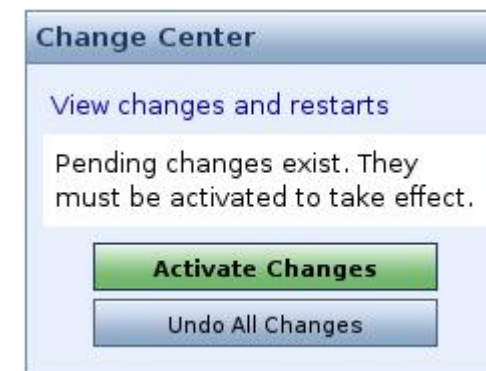
Domain Configurations

Domain <ul style="list-style-type: none">Domain	Services <ul style="list-style-type: none">Messaging<ul style="list-style-type: none">JMS ServersStore-and-Forward AgentsJMS ModulesBridgesJDBC<ul style="list-style-type: none">Data Sources	Interoperability <ul style="list-style-type: none">WTC ServersJolt Connection Pools
Environment <ul style="list-style-type: none">ServersClustersVirtual HostsMigratable Targets		Diagnostics <ul style="list-style-type: none">Log FilesDiagnostic ModulesDiagnostic Images



Change Center

- Permite cambiar la configuración de ciertos elementos.
- Si vemos algún campo que no se permite cambiar, debemos pinchar en *Lock & Edit*
- Una vez realizados los cambios, pinchamos en *Activate Changes*
- Si al lado de una opción aparece el símbolo  significa que el cambio no tendrá efecto hasta que reiniciemos el servidor





Estructura del dominio

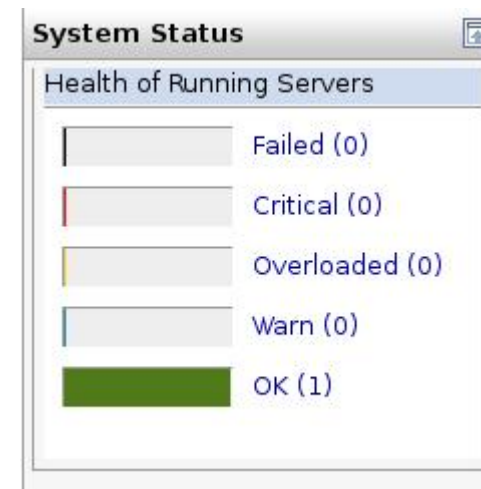
- Todos los elementos del dominio se encuentran en este árbol
- Hay dos opciones principales:
 - *Environment*: permite configurar los elementos (servidores, máquinas, etc.) del dominio
 - *Services*: permite configurar los servicios (JDBC, JNDI, JMS, etc.)





Ayuda y estado del sistema

- En cada momento se nos muestra una ayuda (*How do I*) asociada al elemento que estemos configurando
- El estado del sistema nos indica si todo va bien o por el contrario tenemos algún problema (y de qué tipo) en algún elemento





Preferencias generales

Welcome, system Connected to: prueba1 Home Log Out Preferences Help AskBEA

- Pinchamos en la parte superior

Preferences

Save

Use this page to specify preferences about Console behavior that apply globally to all users in this domain.

General Preferences

Show Inline Help

File Browser Start:

Remember Last Browsed Path

Show Advanced Sections

Refresh Interval:

Change Center Preferences

Warn If User Holds Lock

Perform Asynchronous Activation

Warn User Before Taking Lock

Save



Configuración del dominio (pinchamos en el nombre del dominio)

Settings for prueba1

Configuration | Monitoring | Control | Security | **WebService Security** | Notes

General | JTA | EJBs | Web Applications | SNMP | Logging | Log Filters

Save

A domain is a collection of WebLogic Server instances that is managed by a single Administration Server. Use this page to configure administrative options that apply to all servers in the current domain.

* Indicates required fields

*Name:	prueba1	The name of this WebLogic Server domain. More Info...
<input type="checkbox"/> Enable Administration Port		Specifies whether the domain-wide administration port should be enabled for this WebLogic Server domain. Because the administration port uses SSL, enabling the administration port requires that SSL must be configured for all servers in the domain. More Info...
Administration Port:	<input type="text" value="9002"/>	The common secure administration port for this WebLogic Server domain. (Requires you to enable the administration port.) More Info...
<input type="checkbox"/> Production Mode		Specifies whether the servers in this WebLogic Server domain run in production mode. This impacts subsystem features, such as the Application Poller, and influences default field values. More Info...
<input type="checkbox"/> Enable Cluster Constraints		Specifies that deployments targeted to a cluster succeed only if all servers in the cluster are running. More Info...

Advanced

Save



Opciones avanzadas del dominio

- Algunos elementos tienen la opción *Advanced* que muestra más opciones
- Las del dominio son:

Advanced

<input checked="" type="checkbox"/> Console Enabled		Specifies whether the Administration Server automatically deploys the Administration Console in the current domain. More Info...
Console Context Path:	<input type="text" value="console"/>	The context path that you want to use in URLs that specify the Administration Console. (Requires you to enable the Administration Console for the current domain.) More Info...
Console Extension Directory:	<input type="text" value="console-ext"/>	Returns the directory path that console extensions are loaded from. More Info...
Administration Protocol:	t3s	The default protocol for communicating through the administration port or administration channels. (Requires you to enable the administration port or to create an administration channel.) More Info...