



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

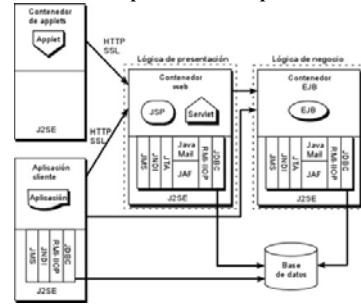


Sistemas monolíticos:
grandes,
Inflexibles e
inadaptables

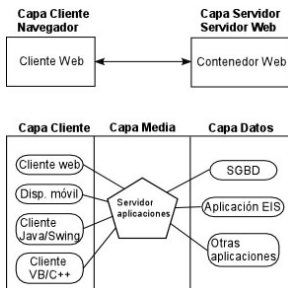
¿Qué es un servidor de aplicaciones?



- **Implementación total o parcial de la especificación J2EE**



Estructura en tres capas versus dos capas



Implementaciones disponibles



- **BEA WebLogic**
- **IBM WebSphere**
- **Sun One (de libre distribución)**
- **Oracle IAS**
- **¿TomCat?**

Conceptos



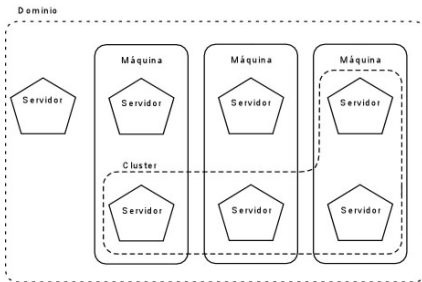
- **Servidor proxy:** centraliza peticiones de clientes y las redistribuye entre otras máquinas (balanceo de carga, seguridad)
- **Máquina:** unidad física donde reside un servidor. Unix o no Unix (Windows, Mac, etc.)
- **Servidor:** instancia de la clase *weblogic.Server* ejecutándose en una *jvm*. 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 8.1 bajo Linux



- **Memoria:** 256Mb (aconsejable 512Mb).
- **Espacio en disco:** 400Mb (200 temporales)
- **Versión de Java 1.4.1 o superior** (se instala junto con el servidor).
- **No es necesario ser root** para instalar y/o ejecutar. Cada usuario puede instalarse el software de forma local
- **Instalación:** ejecutamos el fichero `server811_linux32.bin`

Instalación: Paso 1



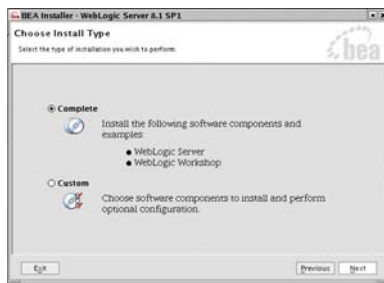
Instalación: Paso 2



Instalación: Paso 3



Instalación: Paso 4



Instalación: Paso 5



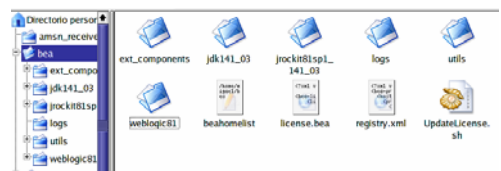
Instalación: Paso final



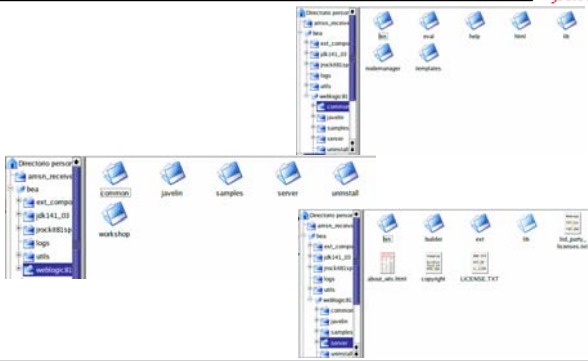
Estructura de directorios creada



- `jdk141_03`: Java jdk (podemos usar la nuestra)
- `logs`: directorio log de instalación
- `utils`: utilidades que iremos viendo
- Fichero `license.bea` contiene nuestra licencia



Estructura de directorios creada: weblogic



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Introducción a los S.A.-19

Revisión de conceptos



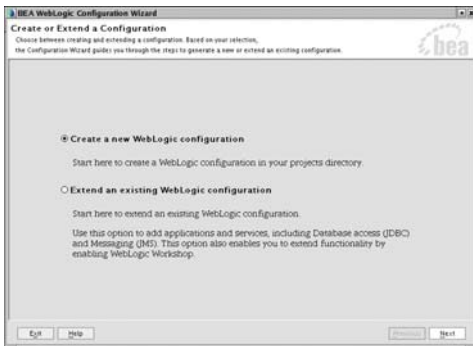
- **Dominio:** unidad de trabajo
- **Servidor de administración:** se encarga de gestionar el dominio y contiene una aplicación para configuración (*console*). Es único en el dominio
- **Servidores administrados (*managed*):** responden a aplicaciones y/o realizan tareas específicas. Podemos tener tantos como queramos
- Para crear un dominio utilizamos `$HOME_BEA/weblogic81/common/bin/config.sh`

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Introducción a los S.A.-20

Creación de dominio: paso 1



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Introducción a los S.A.-21

Creación de dominio: paso 2



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Creación de dominio: paso 3

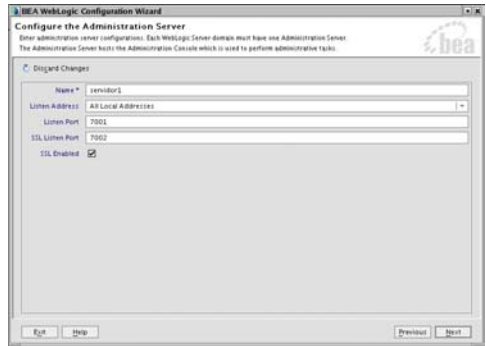


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Creación de dominio: paso 4

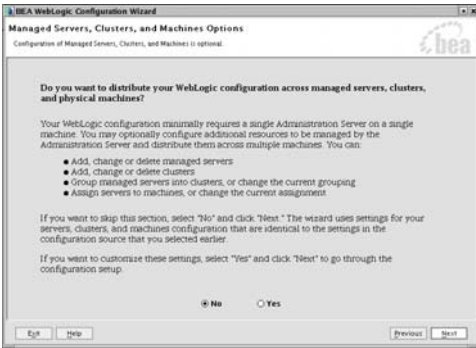


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Creación de dominio: paso 5



Managed Servers, Clusters, and Machines Options
Configuration of Managed Servers, Clusters, and Machines is optional.

Do you want to distribute your WebLogic configuration across managed servers, clusters, and physical machines?

Your WebLogic configuration minimally requires a single Administration Server on a single machine. You may optionally configure additional resources to be managed by the Administration Server and distribute them across multiple machines. You can:

- Add, change or delete managed servers
- Add, change or delete clusters
- Group managed servers into clusters, or change the current grouping
- Assign servers to machines, or change the current assignment

If you want to skip this section, select "No" and click "Next." The wizard uses settings for your servers, clusters, and machines configuration that are identical to the settings in the configuration source that you selected earlier.

If you want to customize these settings, select "Yes" and click "Next" to go through the configuration setup.

No Yes

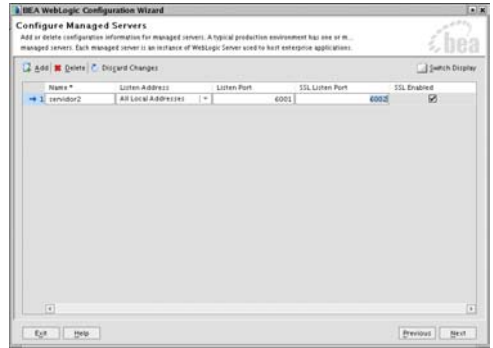
Exit Help Previous Next

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Introducción a los S.A.-25

Creación de dominio: paso 6



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.

Name *	Listen Address	Listen Port	SSL Listen Port	SSL Enabled
server2	All Local Addresses	6001	6002	<input checked="" type="checkbox"/>

Exit Help Previous Next

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Creación de dominio: paso 7



Configure Clusters
A cluster contains multiple WebLogic Server instances (servers) that run simultaneously and work together to provide increased stability and reliability. A cluster appears to be a single WebLogic Server instance to clients.

Name *	Multicast Address	Multicast Port	Cluster Address
--------	-------------------	----------------	-----------------

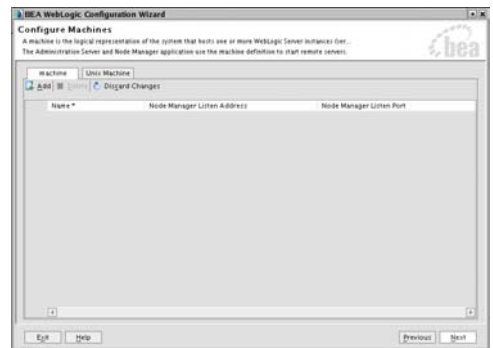
Exit Help Previous Next

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Introducción a los S.A.-27

Creación de dominio: paso 8



Configure Machines
A machine is the logical representation of the system that hosts one or more WebLogic Server instances (i.e., the Administration Server and Node Manager application use the machine definition to start remote servers).

Machine	Unix Machine	
Name *	Node Manager Listen Address	Node Manager Listen Port

Exit Help Previous Next

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Creación de dominio: paso 9



Database (JDBC) Options
Configuration of Database components is optional.

Do you want to define JDBC components, such as Connection Pools, Data Sources, and MultiPools?

Most WebLogic applications require database access. The wizard will let you specify attributes and properties for JDBC components; these will then be available to deploy to servers and clusters. You can:

- Create or modify Connection Pools and/or MultiPools
- Create or modify Data Sources
- Specify how Data Sources are bound to Connection Pools or MultiPools

If you want to skip this section, select "No" and click "Next." The wizard uses settings for your database configuration that are identical to the settings in the configuration source that you selected earlier.

If you want to customize these settings, select "Yes" and click "Next" to go through the configuration setup.

No Yes

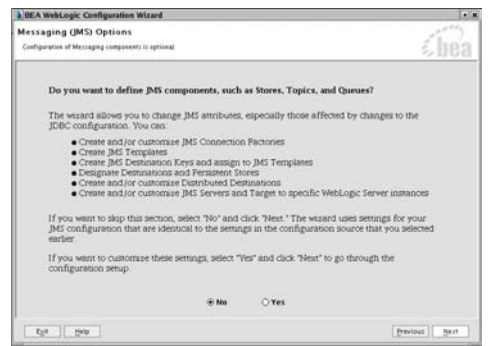
Exit Help Previous Next

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Creación de dominio: paso 10



Messaging (JMS) Options
Configuration of Messaging components is optional.

Do you want to define JMS components, such as Stores, Topics, and Queues?

The wizard allows you to change JMS attributes, especially those affected by changes to the JDBC configuration. You can:

- Create and/or customize JMS Connection Factories
- Create JMS Templates
- Create JMS Destination Keys and assign to JMS Templates
- Designate Destinations and Persistent Stores
- Create and/or customize Distributed Destinations
- Create and/or customize JMS Servers and Target to specific WebLogic Server instances

If you want to skip this section, select "No" and click "Next." The wizard uses settings for your JMS configuration that are identical to the settings in the configuration source that you selected earlier.

If you want to customize these settings, select "Yes" and click "Next" to go through the configuration setup.

No Yes

Exit Help Previous Next

Servidores de aplicaciones

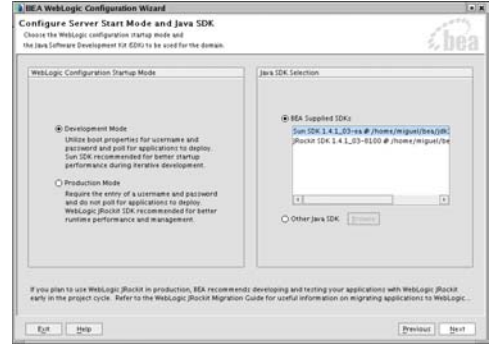
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Introducción a los S.A.-30

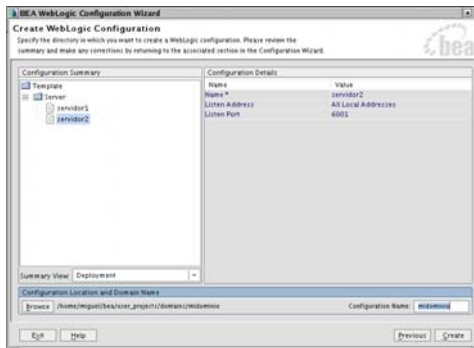
Creación de dominio: paso 11



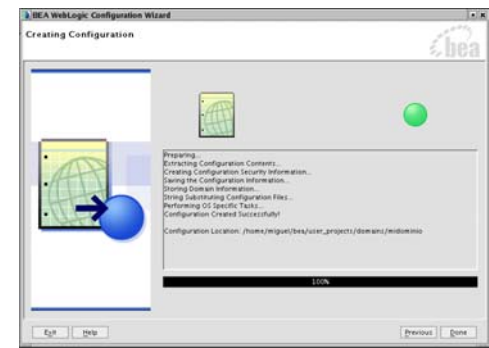
Creación de dominio: paso 12



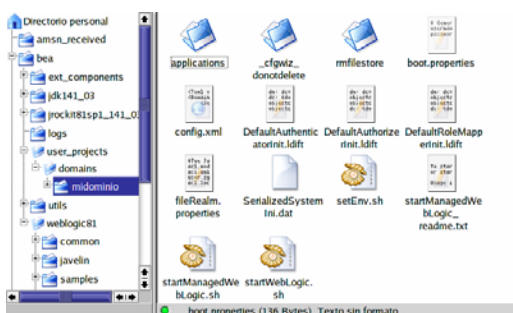
Creación de dominio: paso 13



Creación de dominio: paso 14



Estructura de directorios creada



Arranque del dominio



- `cd $HOME_BEA/user_projects/midominio`
- Arrancamos el servidor de administración: `./startWebLogic.sh`
- Cuando aparece: `<Server started in RUNNING mode>` ya está funcionando
- Para arrancar un servidor administrado: `./startManagedServer.sh nombre_servidor dirección_admin ./startManagedServer.sh 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



Applet de la izquierda



- El applet contiene todos los elementos configurables de nuestro dominio
- Pinchando con el botón izquierdo nos aparecerá a la derecha las opciones a configurar
- Con el botón derecho nos aparecerá un menú con ciertas opciones (variables)

Elemento console



Versiones



Opciones para el dominio



Opciones avanzadas

Opciones avanzadas del dominio



Advanced Options [Hide]

This page allows you to set additional configuration options for this WebLogic Server domain's Administration Console.

- Console Enabled**
Specifies whether the Administration Console should be auto-deployed.
- Console Context Path:** console
The context path for the Administration Console. (This field is relevant only if you check the Console Enabled box.)
- Archive Configuration Count:** 5
The number of archival versions of `config.xml` saved by the Administration Server each time the domain configuration is modified.

Solapa Logging



Because each WebLogic Server domain can run concurrent, multiple instances of WebLogic Server, Web services collect messages that are generated on multiple server instances into a single, domain-wide message log. This page allows you to configure the message log for this WebLogic Server domain.

Domain File Name:

The name of the file that stores this WebLogic Server domain's current log messages. If the absolute path is assumed to be relative to the root directory of the machine on which the Server is running.

Rotation Type:

The criteria for moving old log messages to a separate file.

Maximum File Size: k

The size (between 1 and 10235 kilobytes) that triggers the Administration Server to move log messages. After the log file reaches the specified maximum size, the machine the Administration checks the file size. It will rename the current domain log file and create a new one to store messages. (This field is relevant only if you set Rotation Type to `By Size`.)

Rotation Time:

The start time for a time-based rotation sequence of the log file, in the format `h:m`, where `h` is only relevant if you set Rotation Type to `By Time`.

File Time Spaced: hours

The interval (between 1 and 24 hours) at which this WebLogic Server domain saves old log messages to another file.

Last Number of Retained Log Files

Specifies whether the number of files that this WebLogic Server domain creates to store old logs is limited. After the limit is reached, the oldest file will be overwritten.

Log Files To Retain:

The maximum number of log files that this WebLogic Server domain creates when it rotates the relevant log if you check the Last Number of Retained Log Files box.

Visualización del log



[Customize this view...](#)

MessageID	Timestamp	Server	Severity
BEA-000355	06-ene-2004 20:47: CET	servidor2	Notice Web
BEA-000360	06-ene-2004 20:47: CET	servidor2	Notice Web
BEA-000355	06-ene-2004 20:47: CET	servidor2	Notice Web
BEA-000332	06-ene-2004 20:47: CET	servidor2	Notice Web
BEA-000298	06-ene-2004 20:47: CET	servidor2	Notice Web

```

Version: V
Subject: DN=Class 2 Public Primary Certification Authority, O="VeriSign, Inc."
Signature Algorithm: MD5withRSA, OID = 1.2.840.113549.1.1.2
Key: com.sun.net.ssl.internal.ssl.ISA_RSAPublicKey#2
Validity: [From: Mon Jan 29 01:00:00 CET 1996
          To: Thu Jan 08 00:59:59 CET 2004
          Issuer: DN=Class 2 Public Primary Certification Authority, O="VeriSign, Inc.",
          SerialNumber: 1 b58c94c 0c38266 876c8e4 4053920d]
Algorithm: MD5withRSA
Signature
0000: B6 00 1F 93 57 A4 07 47 40 CE 65 40 3F 55 5E ED ... 9 e890
0010: FF PA C4 d0 a5 10 0c 21 70 c3 87 FF 83 83 10 1F ... 77 0 1
    
```

Modificar la visualización del log



Categories:

Available	Checked
machine	message
user	server
thread	server
transaction	severity

Servers:

Available	Checked
servidor2	
servidor2	

Subsystems:

Available	Checked
Application Filter	
Debugger	
CI_Comp null	
Cluster	

Severities:

Available	Checked
Emergency	
Alert	
Critical	
Error	

Solapa de aplicaciones



Configuration | Monitoring | Control | Notes

General | JTA | SNMP | Logging | Applications

This page allows you to define how applications in this WebLogic Server domain

Auto Update Interval:

The auto-update interval (in milliseconds) for the Application Manager applications across a WebLogic Server domain.

[View domain log](#) [View Domain-wide Security Settings](#)

Solapa de monitoreo



Configuration | Monitoring | Control | Notes

Servers

This page allows you to monitor the runtime status of servers that are part of this WebLogic Server domain. You can customize the information that is presented by clicking the [Customize this view...](#) link.

[Customize this view...](#)

Name	Machine	Listen Address	Listen Port	State	SSL Listen Port
servidor1	n/a	n/a	7001	RUNNING	7002
servidor2	n/a	n/a	6001	RUNNING	6002

[View domain log](#) [View Domain-wide Security Settings](#)

Solapa de control



Configuration | Monitoring | Control | Notes

This page allows you to change the state of the servers that are part of this WebLogic Server domain. Control operations on Managed Servers require starting of the Node Manager. Starting Managed Servers in standby mode requires the domain-wide administration port.

[Start all Managed Servers...](#)

[Resume all Managed Servers...](#)

[Graceful shutdown of all Managed Servers...](#)

[Force shutdown of all Managed Servers...](#)

Name	State	Transition Activity			Controls
		Status	Start Time	End Time	
servidor1	RUNNING	n/a	n/a		Start/Stop
servidor2	UNKNOWN	n/a	n/a		Start/Stop



Configuration | Monitoring | Control | **Notes**

This page allows you to include any additional information that describes

Notes:

[View domain log](#) | [View Domain-wide Security Settings](#)

Opciones avanzadas de seguridad



Configuration | **Compatibility**

General | Advanced | Filter | Embedded LDAP

This page allows you to define the general security settings for this WebLogic Server domain.

Default Realm: myrealm

Select the security realm that should be used as the default (active) realm for this *

Anonymous Admin Lookup Enabled

Specifies whether anonymous, read-only access to WebLogic Server MBeans should be allowed via the MBean API. With this anonymous access, you can see the value of any MBean marked as protected by the WebLogic Server MBean authorization process. This is for backward compatibility.



Configuration | **Compatibility**

General | File Realm | Passwords | Advanced

Compatibility security refers to the capability to run security configurations from the WebLogic Server. In Compatibility security, you configure 6x security realms, de-protection of user accounts, and install custom auditing providers. The only security realm is the CompatibilityRealm. This page allows you to define the general configuration for a Server domain.

Audit Provider Class:

The name of the Audit provider class that should be used in this Web

Guest Disabled

Specifies whether guest logins can be used to access WebLogic res

Refresh



Configuration | **Compatibility**

General | **File Realm** | Passwords | Advanced

This page allows you to define the security settings for a File realm in this WebLogic Server domain.

Caching Realm: (none)

The name of an alternate security realm to be used in this WebLogic server domain. A - only the File realm can be used.

Max Users: 1000

The maximum number of users (between 1 and 10000) supported by the File realm.

Max Groups: 1000

The maximum number of groups (between 1 and 10000) supported by the File realm.

Max ACLs: 1000

The maximum number of positive access control lists (ACLs) (between 1 and 10000) via A warning is issued when this number is reached.



Configuration | **Compatibility**

General | File Realm | **Passwords** | Advanced

This page allows you to define the password settings for this WebLogic Server domain.

Minimum Password Length: 8

The minimum number of characters required for any password in this WebLogic Server domain.

Lockout Enabled

Specifies whether this WebLogic Server domain tracks invalid login attempts and takes appropriate remedial steps (on this page are listed only if you check this box).

Lockout Threshold: 5

The number of failed logins (between 1 and 99999) that can be tried for a user before their account

Lockout Duration: 15

The number of minutes (between 0 and 99999) that a user's account remains inaccessible after he

Lockout Reset Duration: 15

The number of minutes (between 0 and 99999) within which invalid login attempts must happen in user's account to be locked

Lockout Cache Size: 10

The size of the cache (between 1 and 99999 kilobytes) used for invalid login attempts.