Chapter 2

SYSTEM MANAGEMENT

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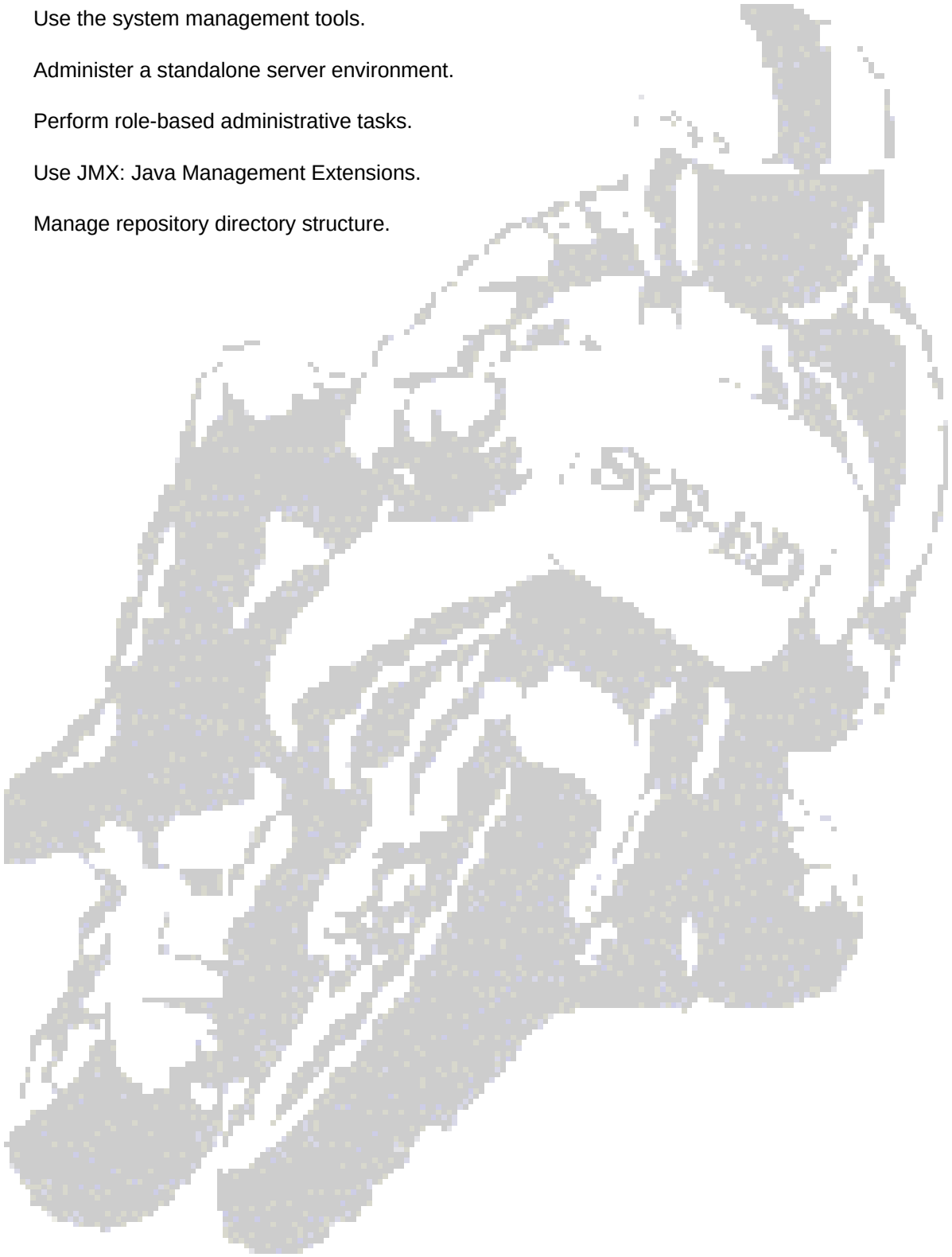
Objectives

You will learn to:

- Use the system management tools.
- Administer a standalone server environment.
- Perform role-based administrative tasks.
- Use JMX: Java Management Extensions.
- Manage repository directory structure.



1 System Management Tools

The IBM WebSphere Application Server administration tools include:

- WebSphere administrative console.
- Command-line operational tools.
- WebSphere scripting using wsadmin.
- Java-based JMX APIs that can be accessed directly by custom Java applications.

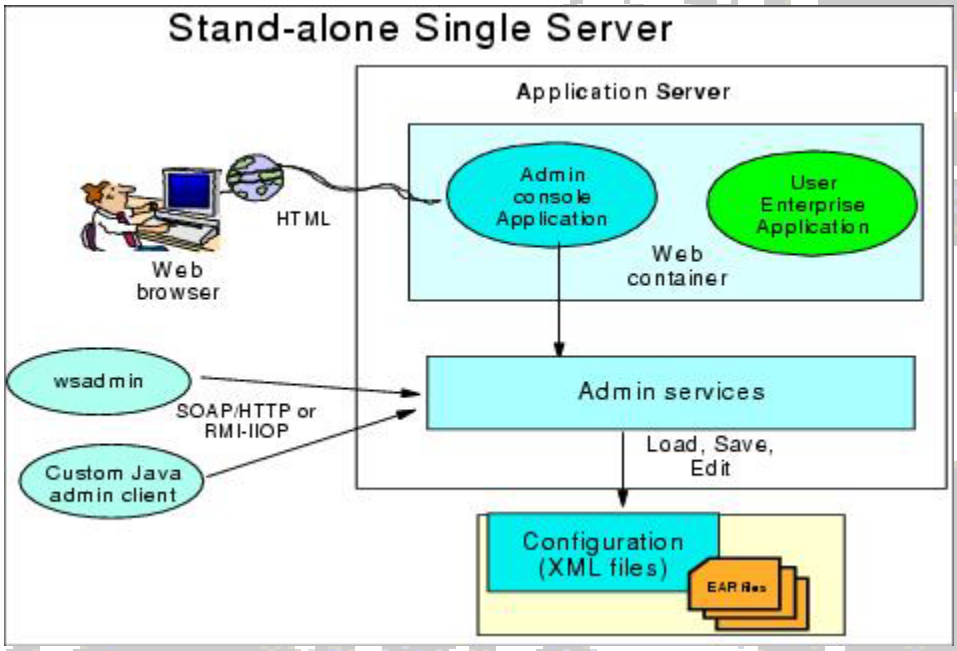
2 Standalone Server Environment

Each managed process has an administrative service that interacts with administration clients.

In a standalone server environment, both the administrative console application and the administrative service runs on the application server.

The configuration repository consists of one set of configuration files managed by the administrative service.

System management is simplified in the sense that the changes made by the administrator are applied directly to the configuration files used by the server.



3 Role-based Administration

WebSphere Application Server provides a granularity of access control through the provision of four administrative security roles:

Monitor	Views the system state and configuration data, but cannot make any changes.
Operator	Functions of Monitor as well as ability to make operational changes such as starting and stopping servers.
Configurator	Functions of Monitor as well as ability to make configuration changes.
Administrator	Functions of Operator and Configurator.

4 JMX: Java Management Extensions

The system management functionality of WebSphere Application Server is based on the use of JMX - Java Management Extensions.

JMX is a framework that provides a standard way of exposing Java resources, for example application servers, to a system management infrastructure. The JMX framework allows a provider to implement functions, such as listing the configuration settings, and allows users to edit the settings.

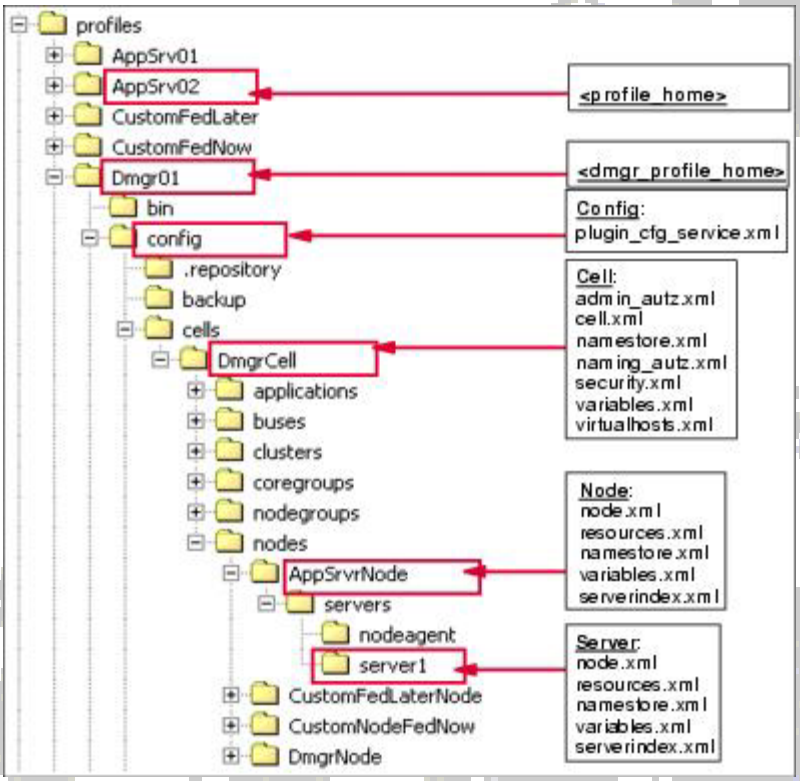
It also includes a notification layer that can be used by management applications to monitor events such as the startup of an application server.

5 Repository Directory Structure

With V6, the directory structure of a WebSphere Application Server installation is slightly different than in previous releases. The configuration files for defining a runtime environment are stored in profile directories.

Each node, deployment manager, and standalone application server has its own profile directory under the <was_home>/profiles directory.

The repository files are arranged in a set of cascading directories under each profile directory structure, with each directory containing a number of files relating to different components of the WebSphere cell.



The <profile_home>/config directory is the root of the repository for each profile.

It contains the following directory structure:

Directory	**Purpose**
cells/<cell>/	This is the root level of configuration for the cell. The directory contains a number of cell-level configuration settings files. Depending on the types of resources have been configured, you might see the following subdirectories:
cells/<cell>/applications/	Contains one subdirectory for every application that has been deployed within the cell.
cells/<cell>/buses/	Contains one directory for each service integration bus (bus) defined.
cells/<cell>/coregroups/	Contains one directory for each core group defined.
cells/<cell>/nodegroups/	Contains one directory for each node group defined.
cells/<cell>/nodes/	Contains the configuration settings for all nodes and servers managed as part of this cell. The directory contains one directory per node. Each cells/<cell>/nodes/<node> directory will contain node-specific configuration files and a server directory which in turn will contain one directory per server and node agent on that node.
cells/<cell>/clusters/	Contains one directory for each of the clusters managed as part of this cell. Each cluster directory contains a single file, cluster.xml, which defines the application servers of one or more nodes that are members of the cluster.