WebSphere Application Server for z/OS

Objectives

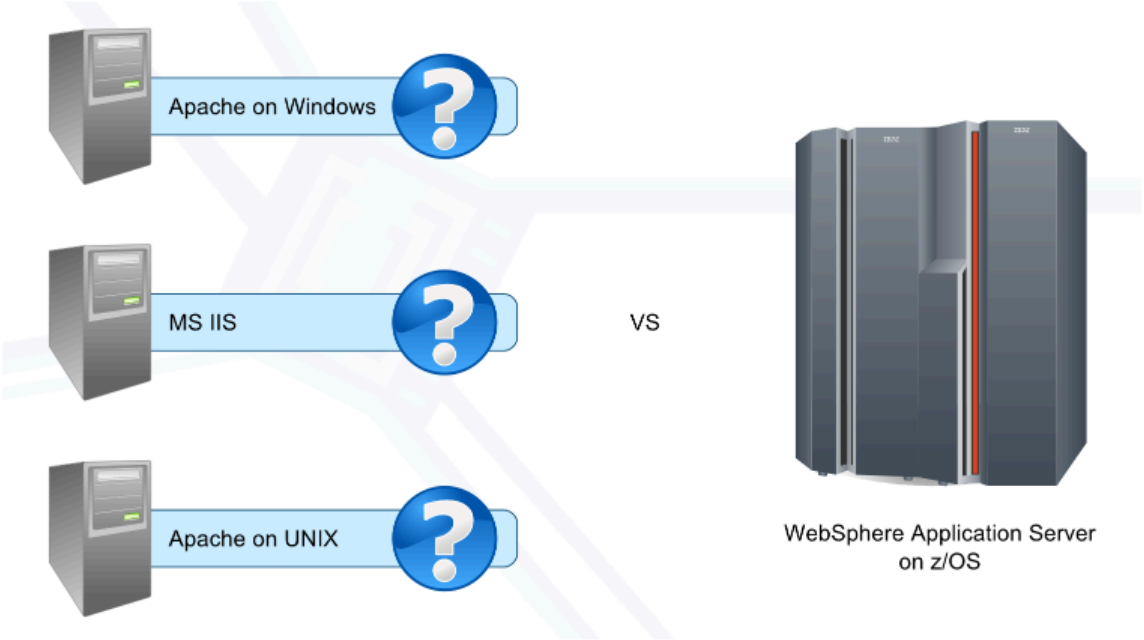
WebSphere Application Server for z/OS

In this module, you will explore WebSphere Application Server for z/OS, which delivers all the functionality of WebSphere Application Server Network Deployment with unique platform integration into z/OS.

You will also take a brief look at some connectors that enable WebSphere Application Server to interface with other z/OS subsystems, such as CICS, DB2, and IMS.

After completing this module, you will be able to:

- Identify the Benefits of WebSphere Application Server for z/OS
- Recognize the Connectors to CICS, IMS, and DB2

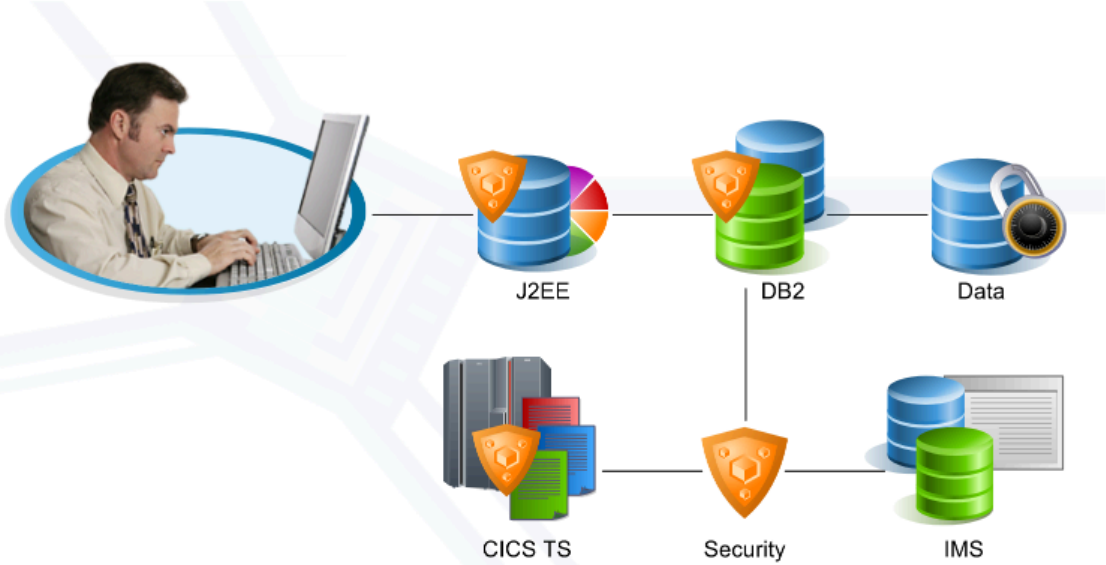


Although there are numerous web and web application servers available, WebSphere Application Server has many advantages when running critical e-business applications.

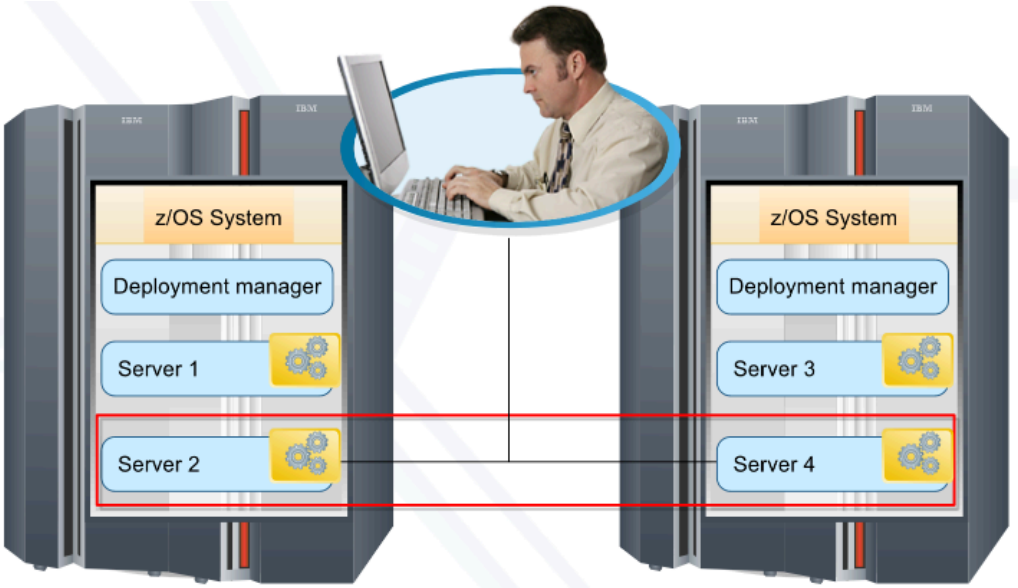
Mainframe

A mainframe can be used to consolidate the workloads of many individual servers. Managing many individual servers usually incurs a large overhead, but in a single server environment, the mainframe can manage these workloads much more efficiently.

Mainframes also present a single view of the administration, performance, and recovery of applications, and the use the mainframe's services during execution.

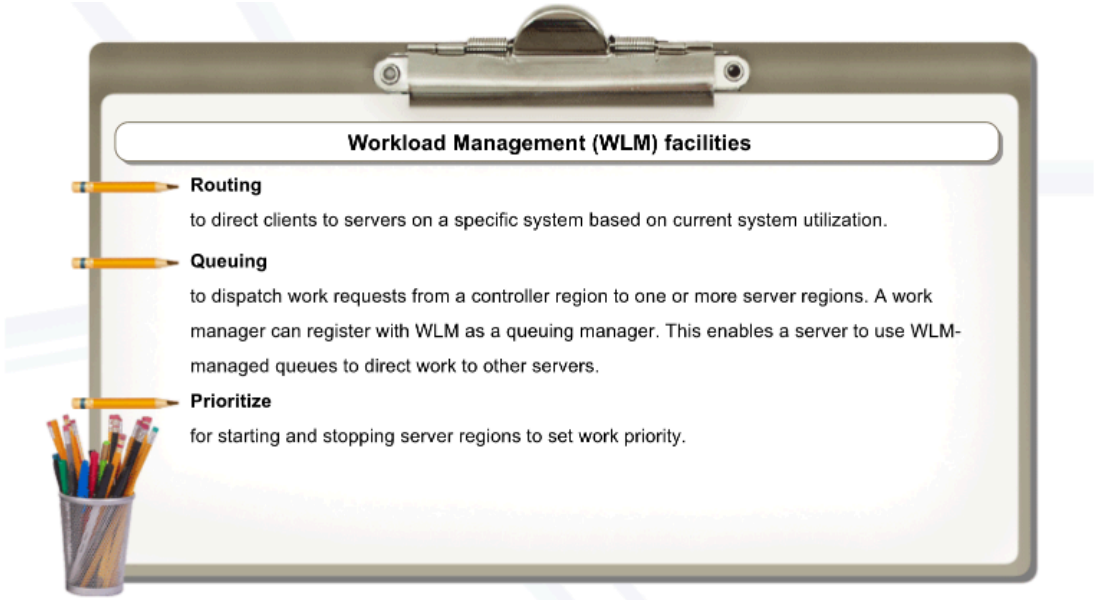


By combining the security incorporated in J2EE with the security provided by the mainframe, and using the integration tools and interfaces provided by mainframe subsystems such as RACF, WebSphere Application Server on z/OS can provide the highest level of application and data security. It can also manage it at a single point.



The mainframe environment has a long and proven history of providing high-availability processing. Business-level availability and performance can be assured when web applications are based on this architecture.

WebSphere Application Server provides features such as clustering, automatic restart manager, the ability to identify and prioritize work based on requirements and SLAs, and the ability to make changes to the software and software environment without disrupting the service.



WebSphere Application Server for z/OS provides consistently high performance by using the facilities of z/OS, such as workload management schemes, dynamic LPARs, and parallel sysplex.

NOTE: It is still important to design efficient applications because these may still run poorly no matter how good the hardware and software they run on.

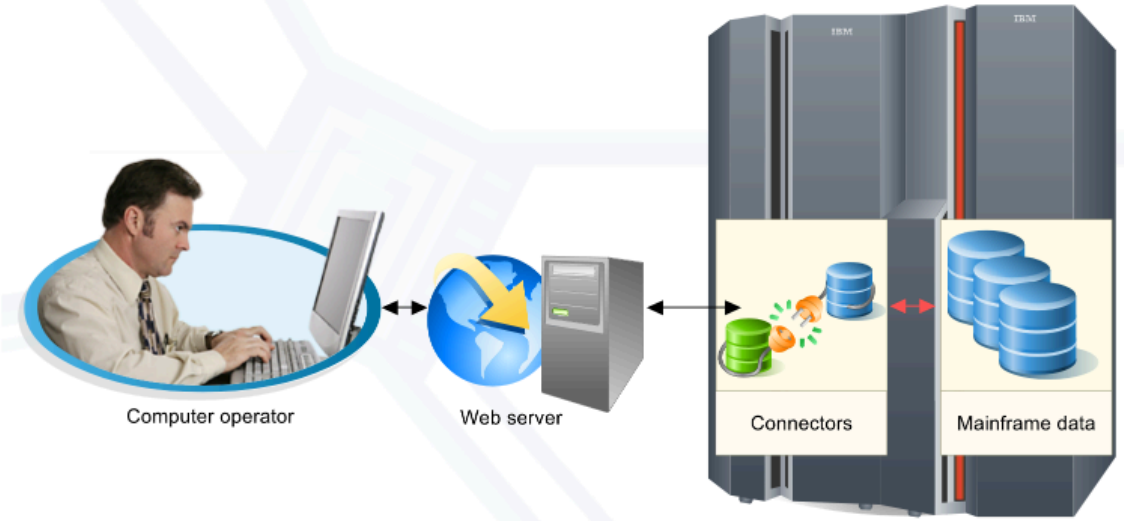
Web-based applications must deliver the data held and maintained in mainframe systems to the user or business associate. They must do this while still retaining the ability to process data with mainframe efficiency, which helps sustain investment in mainframe systems.

WebSphere Application Server enables this by providing connectors to mainframe data systems.

Common considerations
Creating a connection can be expensive, both in time and resources.
Connections must be secure.
Connections must perform well.
Connections must be monitorable.
Connections must provide methods for connecting to and working with a resource.
Connections must provide Atomicity, Consistency, Isolation, and Durability (ACID) to ensure quality of service and recoverability.

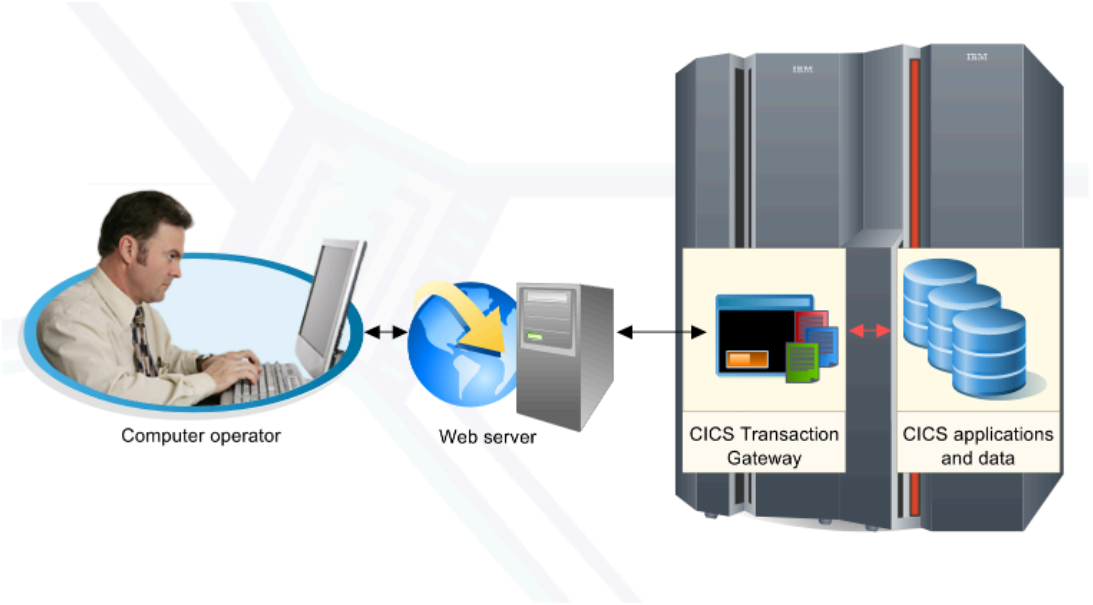
Enterprise resources are often older resources that were developed by businesses when the need to expose them to the outside world, through the Web or other means, was not apparent.

Each type of resource has thus developed its own connection protocol and proprietary set of interfaces. These must be adapted to be accessible from a Java application.



WebSphere Application Server provides the facilities to interface with other z/OS subsystems, such as CICS, DB2, and IMS.

We will now take a brief look at these three connectors.

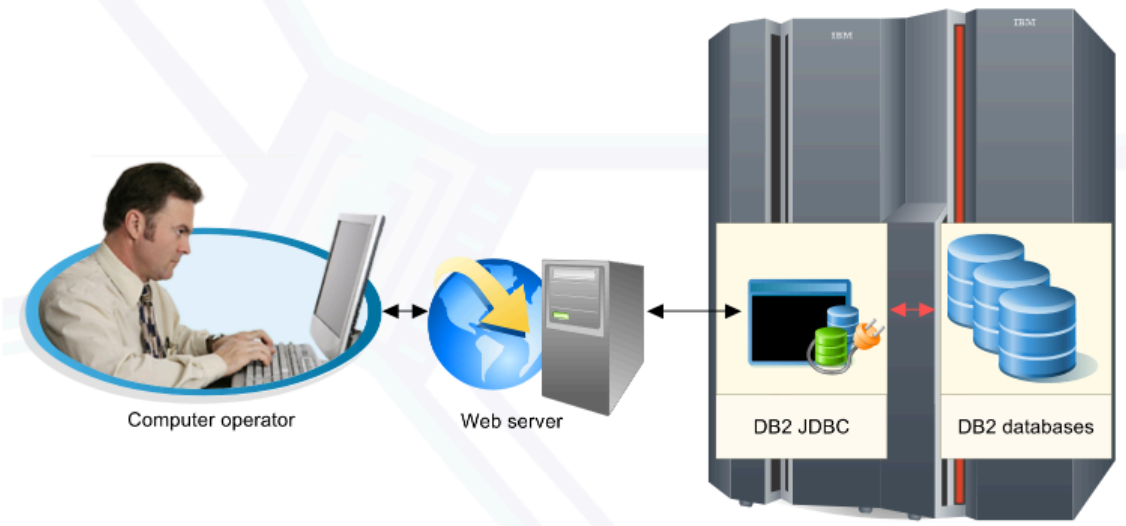


The connector provided for CICS Transaction Server is called CICS Transaction Gateway (CTG).

CTG provides the interface between Java and CICS application transactions. It consists of a set of client and server software components incorporating the services and facilities to access CICS from the application server.

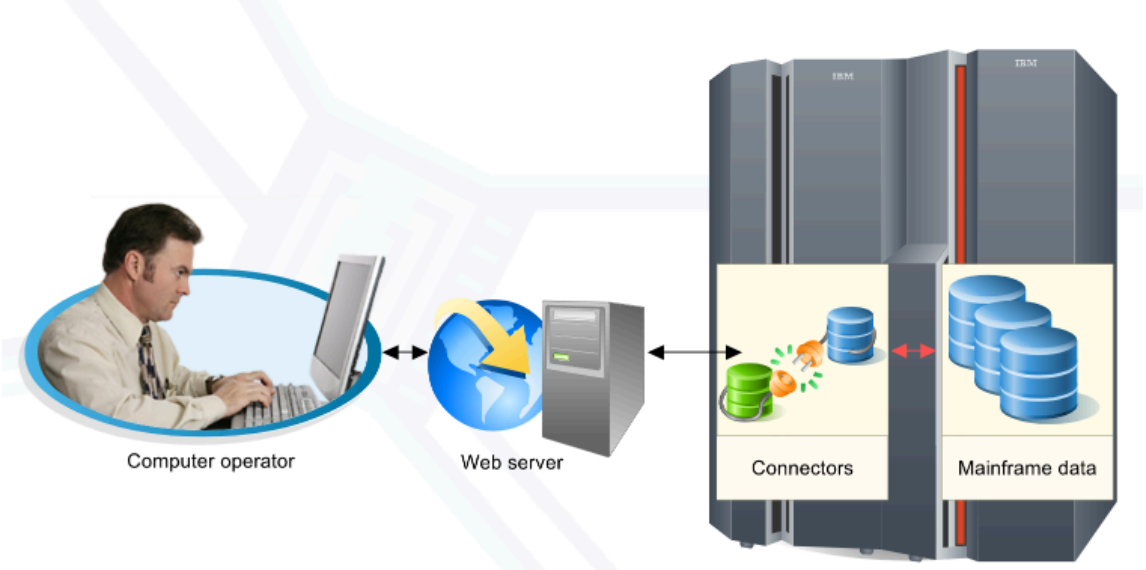
The connector provided by WebSphere Application Server to connect to IMS data is called IMS Connect.

IMS Connect is a TCP/IP server that enables a client to exchange messages with the IMS Open Transaction Manager Access (OTMA).



The connector provided for DB2 is DB2 JDBC. This is not a true connector but an implementation of the Sun Microsystems JDBC architecture for data connection.

JDBC connectivity is provided for many database systems. Implementing it for DB2 enables this data to be accessed in a standard way.



Although connectors provide interfaces to z/OS managed data from J2EE, that data is stored and managed by z/OS in the normal z/OS manner.

Hence, the methods and attributes available reflect the underlying system capabilities, particularly when it comes to collation order and transactional integrity.

Remember that connectors have a high overhead compared to native z/OS access so carefully avoid large batch-type processing that would be done more efficiently under z/OS.

Summary

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