



IBM Software Group

Discovering business application services, featuring IBM WebSphere Application Server ND V7.0

Flexible Management

An IBM Proof of Technology



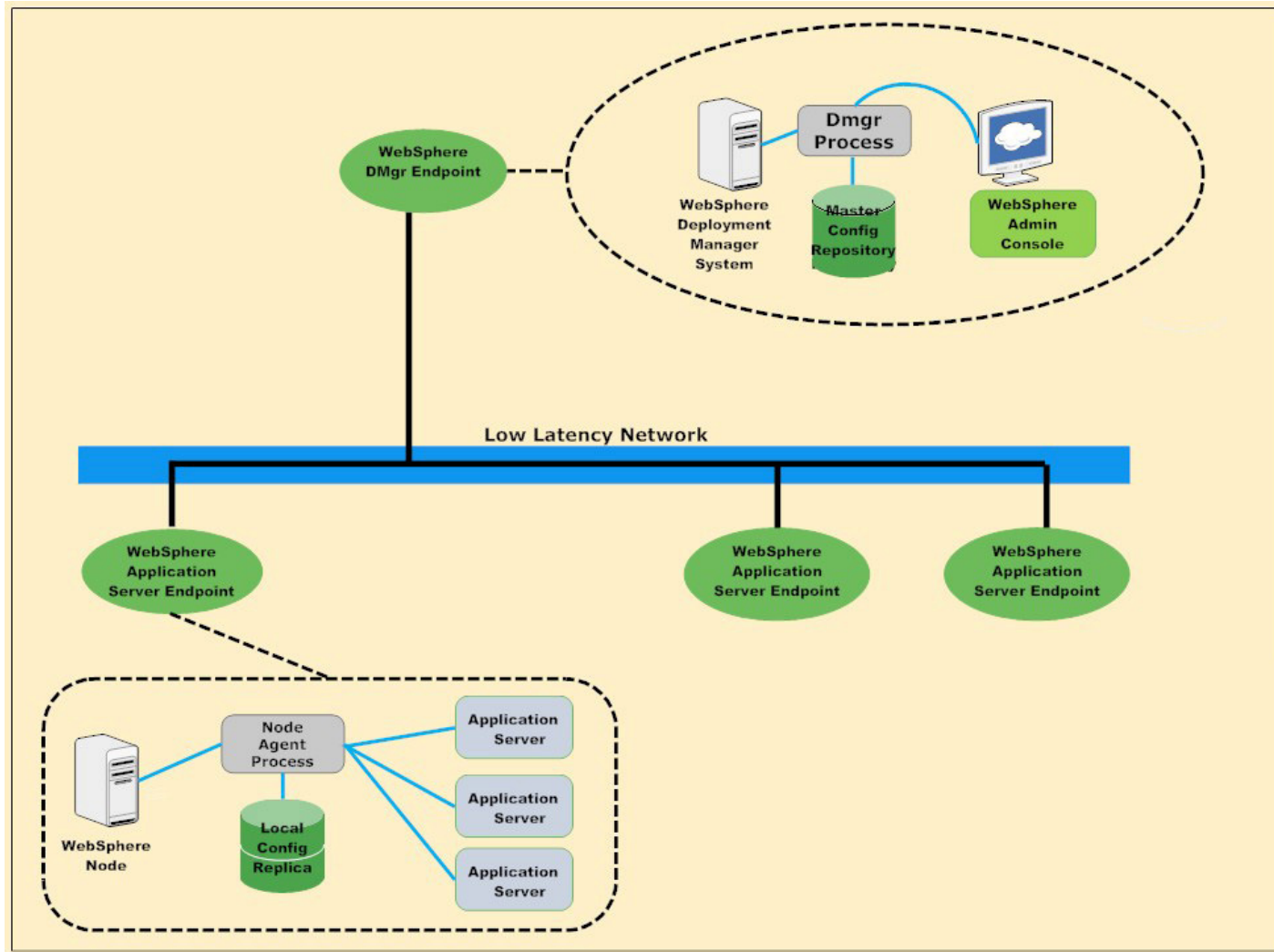
@business on demand.

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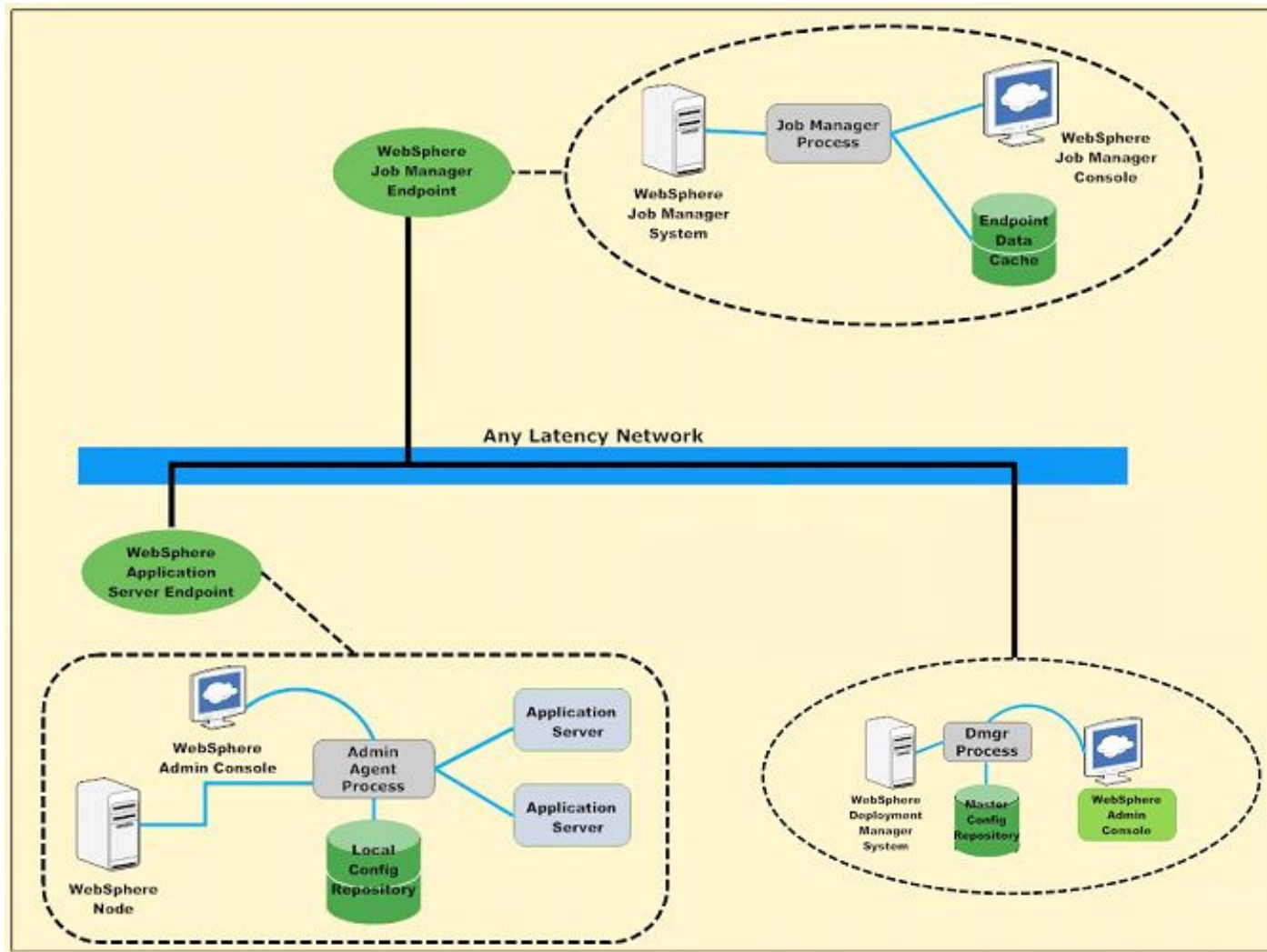
Agenda

- Flexible Management
 - ▶ New Topologies
 - ▶ Usage Scenarios
 - ▶ Administrative Agent
 - ▶ Job Manager
 - ▶ Flexible Management versus WAS-ND Cell Mgmt

WebSphere ND V5/V6 Topology



WebSphere ND V7 Topology with Flexible Mgmt



Flexible Management Characteristics

- Loose coupling of various pieces
- Offers asynchronous job queuing mechanism for administration purposes
- Not meant to replace the existing deployment manager or base servers
- Offers administrators additional management options not previously available

New flexible management capabilities

- Management of multiple base servers, up to a server farm containing hundreds of base servers
- Coordinate management actions across multiple Network Deployment (ND) deployment managers
- Management of branch servers geographically dispersed and reachable only through low bandwidth, high latency network
- Asynchronous administrative job submissions that
 - ▶ Take effect at a specified time
 - ▶ Expire after a specified time
 - ▶ Recur at a specified time interval
 - ▶ Notify the administrator through email when job is complete

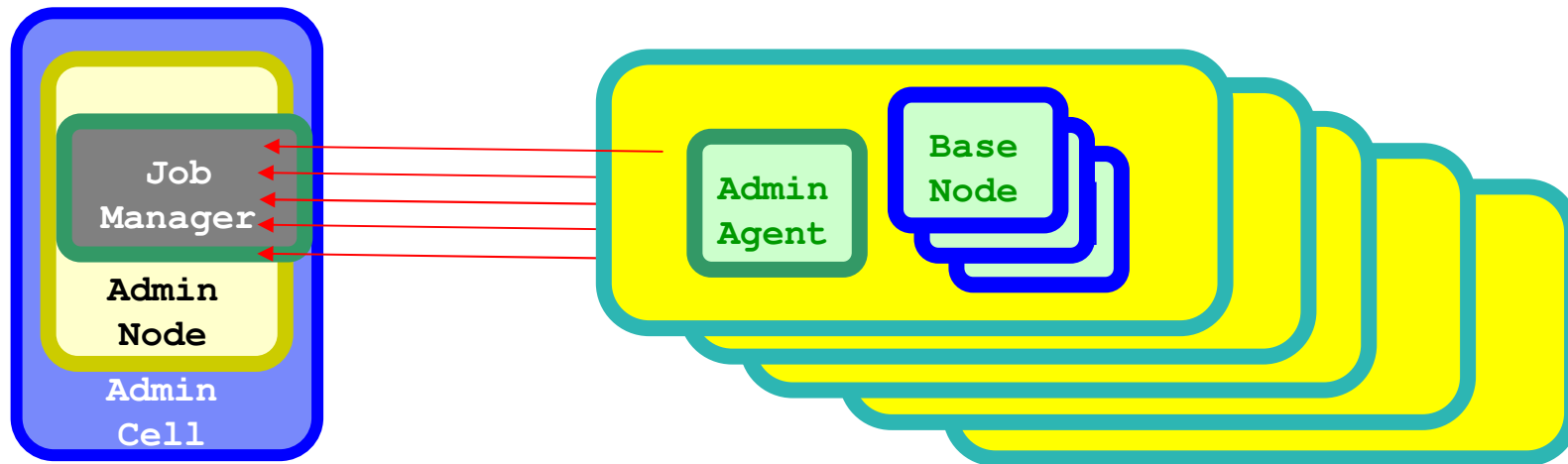
Flexible Management Usage Scenario 1:

Loosely coupled Job Manager

Local node “Autonomy” unlike ND topology

Loose federation – Not “slave” to Deployment Manager

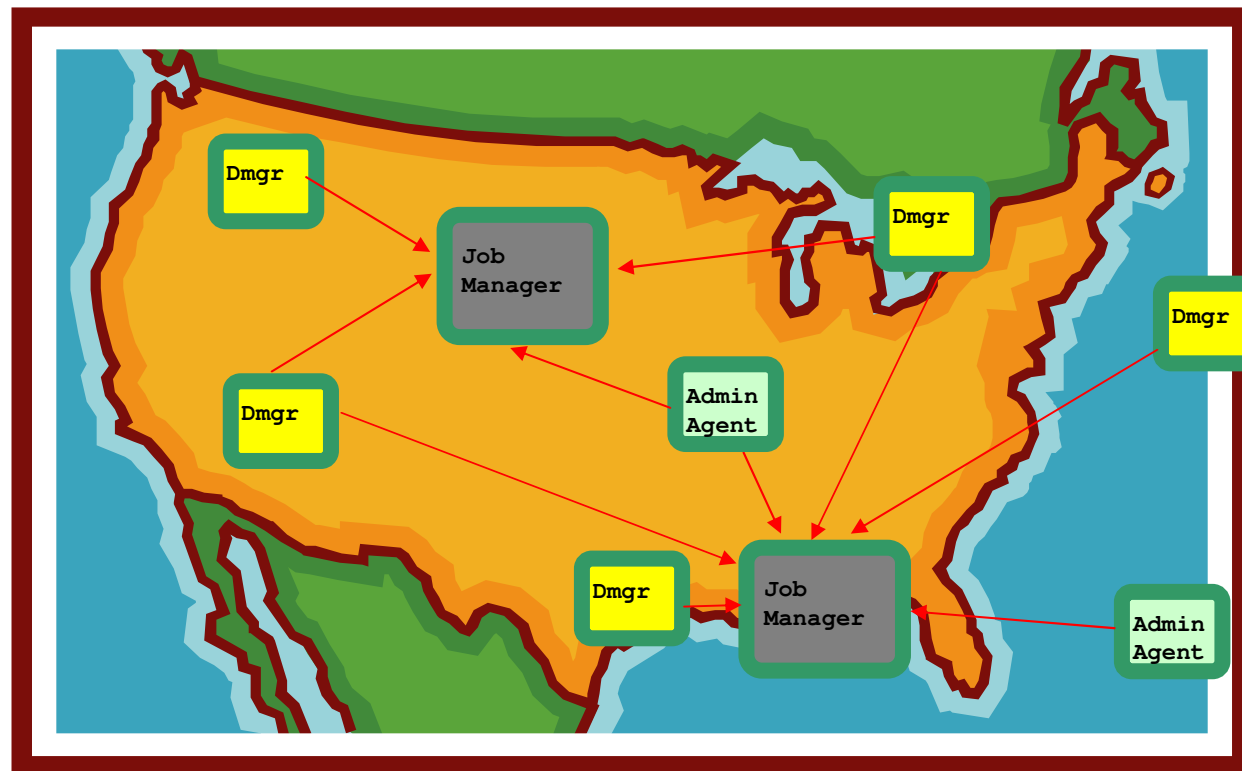
Develop/Unit Test/QA scenarios



Flexible Management Usage Scenario 2

Supports high latency remote branch servers or remote cells

- ▶ Asynchronous job execution – uses DMS* technology for job delivery



*DMS= Device Management Service

The Admin Agent

- A key component of Flexible Management
- New administrative process
- Admin Agent allows registration of profiles – not registration of servers
- When a profile is registered with the Admin Agent, it is called a Managed Node
 - ▶ Managed Nodes may contain multiple servers
 - ▶ Some code that used to be part of every server is kept in the Admin Agent, reducing footprint and startup time
 - ▶ Admin Agent polls for jobs from job manager on behalf of base nodes
- Note: dmgr will register with job manager directly – i.e., no admin agent will be used for registration. dmgr also polls job manager directly and does not rely on admin agent for this.

The Admin Agent (continued)

- True remote management through admin agent:
 - ▶ Create/start/stop/discovery/monitoring of servers
- Preserve existing management experience:
 - ▶ Base nodes retain their configuration: no master repository or node sync
 - ▶ Isolation between base nodes in admin agent
 - different connector ports for each node
 - different admin runtime instances for each node
- Reduce application server footprint; migrate admin functions to admin agent:
 - ▶ Configuration management
 - ▶ Application management
 - ▶ Command Manager
 - ▶ File transfer
 - ▶ Admin console (can optionally disable)

The Job Manager

- Value add of job manager:
 - ▶ Coordinate management action on group of nodes
 - For example: one flexible management job to install the same application on a group of nodes
 - ▶ Works with mixed platforms (Multiple Cells, Standalone Servers)
 - ▶ Can manage remote nodes

The Job Manager (continued)

- Base nodes retain their autonomy and isolation
 - ▶ User can still manage base nodes separately via admin agent, with or without job manager
 - ▶ Job Manager does not take over node's configuration

- Job Manager caches:
 - ▶ Metadata of jobs available at each node
 - ▶ List of available resources and their states, e.g., servers, applications.

- Job manager created as an option to the “management” profile template

The Job Manager (continued)

- Job Manager supports flexible management jobs:
 - ▶ Download application binaries
 - ▶ Install applications
 - ▶ create/start/stop application servers
 - ▶ wsadmin scripts
- A Flexible Management job
 - ▶ Has semantics tied to the underlying node
 - For example, application management jobs
 - ▶ Has few parameters
 - Most application installation bindings are stored with the application.
 - ▶ Is asynchronous, with activation, and expiration times, and may recur
 - ▶ Can send email notification upon completion
 - ▶ Has status that shows # of nodes succeeded, failed, or pending
- Scales to large number of nodes

The Job Manager (continued)

- Provides registration mechanism to allow profiles (not individual servers) to make themselves known to the job manager
 - ▶ **Registration is not the same as federation!**
- For appserver profiles, registration goes through admin agent
- For dmgr profiles, registration is directly to job manager – no admin agent is involved
- Once a profile is registered, administrators may queue up jobs directed at the base servers or deployment managers through the job manager

Flexible Management versus WAS-ND Cell Management

Flexible Management Extends WAS-ND Cell Management with Remote Administration and Scheduling of Administration Function ...

App Server Management	ND Cell	Flex Mgt
Remote Administration	√	√
Fine-grained administration via console	√	X
Administration when administrative process is down (local connectivity)	√	X
Clustering – Workload Management	√	X
Clustering – Failover	√	X
Plug-in based HTTP Request Routing	√	X
Data Replication (Memory-based session replication)	√	X
Centralized Backup/Restore of Configuration	√	X
Server Performance Monitoring	√	X
Scheduling of administrative function	X	√



Section

Summary

Flexible Management Summary

- Seen an overview of the Flexible Management model introduced by WebSphere Application Server V7.0 and were shown how it overcome some of the limitations inherent in the Network Deployment model
- Looked at two scenarios that would be used in Flexible Management environments
- Been introduced the core admin processes needed for Flexible Management
- Compared WAS-ND versus Flexible Management.