



IBM Software Group

# IBM WebSphere® Application Server V6

## *System Management*

### *Configuration Repository - Details*



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This presentation will cover the details of the configuration repository structure and files.

## Goals

- Describe the configuration repository in detail
- Pre-requisites – covered in other presentations:
  - ▶ Basic understanding of the IBM WebSphere Application Server V6 architecture, topology and terminology

The goals for this presentation include describing and enumerating the files that comprise the repository.

## Agenda

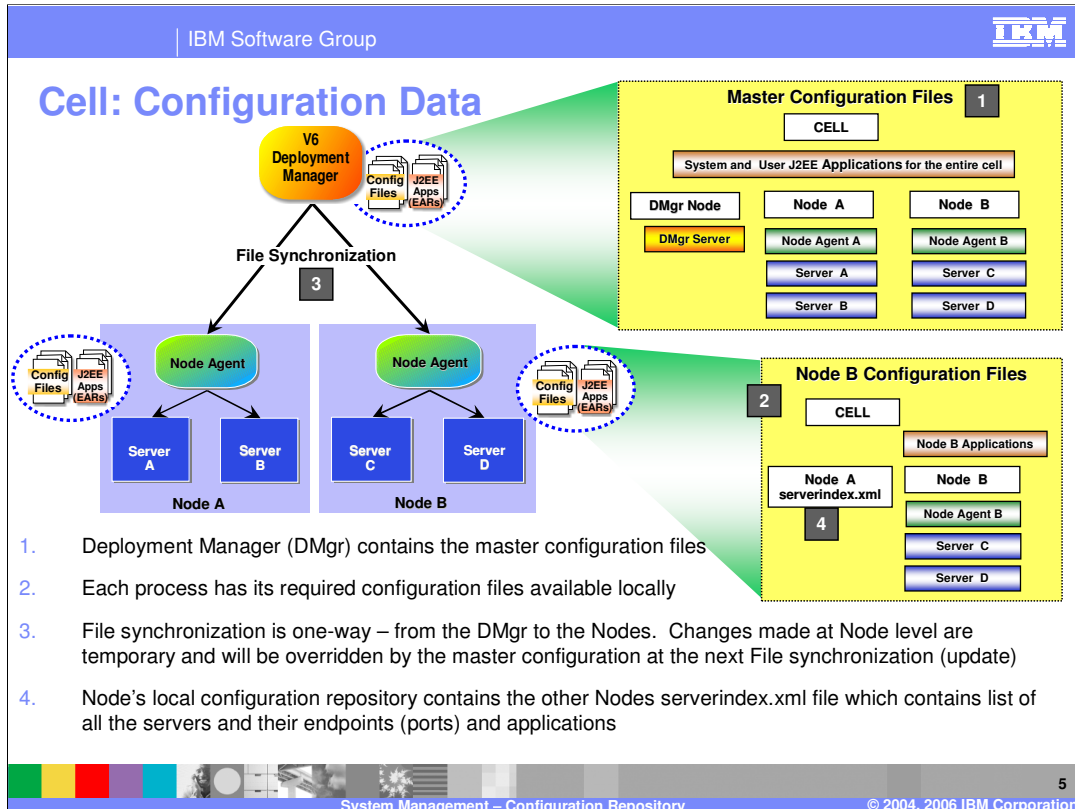
- For Cell
  - ▶ Configuration Repository structure for:
    - Deployment Manager
    - Managed Nodes
  - ▶ Adding custom file to registry
- For Stand-alone Application Server
  - ▶ Configuration Repository structure
- Auditing repository changes
- Appendix contains details on files and directories

The agenda for this presentation is to first cover the repository for the Network Deployment cell, then explain the differences for the stand-alone node, and finally discuss auditing repository changes.

## Section

# ***Configuration Repository for Deployment Manager and Managed Node***

This section will explain the repository files that are used in the Network Deployment cell.

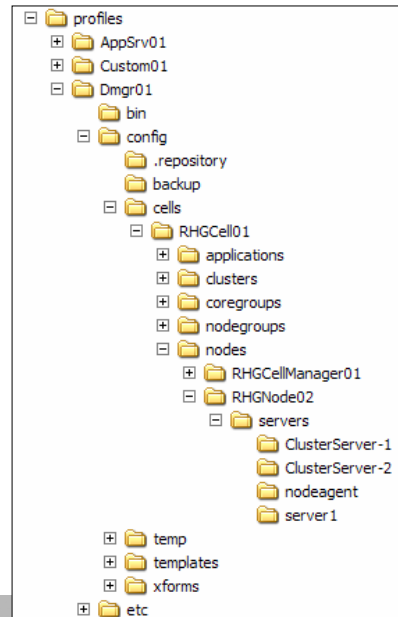


This slide shows the configuration and application binary data in the network deployment environment. Each server has access to its own configuration files and application binary files needed for the server to start. The configuration data is in XML files, and the application data in EAR files. The servers read these files in during server startup which allows the servers to initialize themselves with the appropriate configuration.

The deployment manager maintains a master configuration repository at the cell level. This master repository contains all of the configuration files and EAR files for the entire cell. Node A contains the subset of XML files from the master repository that are needed for the servers running on that node, having the Server A and Server B configuration files, but not having the Server C and Server D configuration files. Although not specifically illustrated, that is also true of the EAR files, with Node A only having the EAR files needed for Servers A and B.

It is important to understand the relationship between the files in the master repository and those out at the nodes. Using wsadmin with the 'conntype=none' parameter, you can update files at the node level. However, those changes will only be temporary and will be overridden the next time there is a file synchronization between the deployment manager and node agent for that node. Generally, this is not recommended.

## Configuration Repository: Structure



This slide describes the directory structure used for the repository. The structure is the same for both the stand-alone node and for the ND cell.

## Differences: Master and Managed Node Repository

- Applications directory
  - ▶ Master: Contains information for all application in the cell
  - ▶ Managed Node: Contains information for application for all servers under that node
  
- Node information
  - ▶ Master: Contains all information for all nodes in the cell
  - ▶ Managed Node: Contains all information for that node, plus the serverindex.xml for all other nodes in the cell



Some differences between the Deployment Manager master repository and the managed node repositories include that the node repositories contain only the local node information, not an entire copy of the master repository. Each node, however, does contain contact information for each of the other nodes, which includes endpoint addresses and ports

## Section

# ***Adding Custom files to the Repository (Network Deployment Cell)***

This section covers adding files to the repository.



## ND Cell: Adding Custom File to the Repository

- Custom files can be added to the Configuration repository
  - ▶ WebSphere Application Server does not manage the file
    - Does not know if the file has been modified
  - ▶ Full synchronization needed to distribute the files to the nodes
- Cell level custom files are distributed to all the nodes
- Node level custom files are distributed only to that specific node




You can have the Deployment Manager distribute files for you by copying them into the repository and performing a full synchronization.


## Section

# ***Configuration Repository for Stand-alone Application Server***

This section will explain the repository as used in a stand-alone node.

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## Stand-alone Application Server: Repository Recap



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As in the Network Deployment cell, the repository consists of XML files. However, for the stand-alone node, the local copy is the master copy.

Administrative Clients provide for local and remote communication to manipulate the configuration files.

## Differences: Master Repository of a Cell and Stand-alone Application Server Repository

- Stand-alone Application Server will not have the following:
  - ▶ Cluster definition
  - ▶ Deployment Manager node or other user created nodes
  - ▶ Node Agent or other application Servers
- stand-alone Application Server repository is similar to a Cell level Master repository

This slide details the differences between the Deployment Manager. The files in the stand-alone node configuration are a subset of the Network Deployment files.

## Section

# *Auditing Repository Changes*

The next section covers auditing repository changes.

## Auditing Configuration Changes



In the log files, changes to the repository will show up as listed here.

## Auditing Operational Changes

- Operational change audits will have message IDs like ADMN1\*\*\*|
  - ▶ Example: [6/24/04 17:39:59:360 CDT] 24865373  
AdminHelper A ADMN1020I: Attempt made to stop the server1 server. (User ID = u1)
- Configuration option on the repository service to control configuration change auditing
  - ▶ In Administrative Console: Deployment Manager -> Administrative Services -> Repository Services
  - ▶ Default: Is ON



Operational changes, such as stopping an application, will be visible in the log files as shown.

## Summary

- The configuration repository contains the configuration and application files for Cells, stand-alone servers, Managed Nodes



## Appendix

# ***Configuration Repository for DMgr (Master Repository) and Managed Node***

## ***Main Directories and Files***

This section will explain the repository files that are used in the Network Deployment cell.

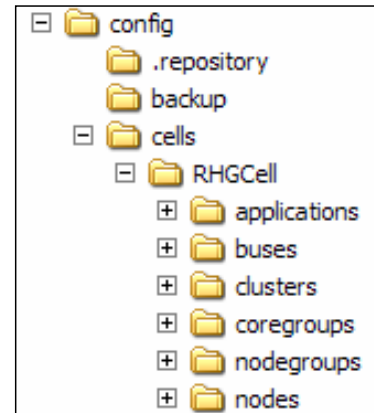
## Configuration Repository Details

- The next few slides will show you the different directories and files within the repository
- Hand editing the repository files is strongly discouraged
  - ▶ Use the Administrative clients to make changes
- The repository details are shown for understanding purposes only
  - ▶ May help in extreme problem determination

## Cell: Directories

- Applications for DMgr master repository or Stand-alone Node
  - ▶ Contains the EAR file and the deployment information (in file deployment.xml)
- buses – contains Service Integration Bus definitions
- clusters – contains cluster definitions
- Core Groups – contains core group definitions
- Node groups – contains node group definitions
- nodes – defines configuration for the nodes
  - ▶ User defined Nodes and DMgr Node

Repository at DMgr (Master) and Managed Node



**Underlined Directories and Files are new to V6**

This slide details the contents of various cell level directories.

## Cell: Files

Repository at  
DMgr (Master)  
and Managed  
Node

- admin-autz.xml – Authorization for Administration
- cell.xml – defines cell information, like name, discovery protocol
- corebridge.xml – Core group bridge (communication between core groups) definitions
- filter.xml – Java 2 Security filters so as to prevent permissions to key resources
- multibroker.xml – Data Replication Service settings
- namestore.xml – Cell wide persistent info of Namespace
- naming-autz.xml – Authorization for Naming
- pmirm.xml – Performance monitoring instrumentation
- resources.xml - cell wide resource definitions (like JDBC, JMS)
- security.xml – Global security definitions
- variables.xml – cell wide environment variable definitions
- virtualhosts.xml – defines global virtual hosts – applications are ties to a specific virtual host
- ws-security.xml – default cell wide global Web Services security bindings



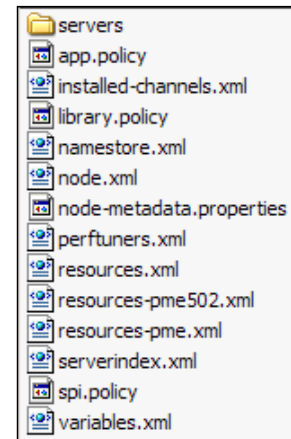
**Underlined Directories and Files are new to V6**

This slide details the purpose of files at the cell level.

## Node: Files for each User Defined Node

- app.policy, library.policy, spi.policy – Java 2 security policy files for application, Shared library and J2C resources
- installedChannels.xml – defines channel (communication protocols like TCP, SSL, HTTP, HTTP tunnel) defined for the WebSphere processes
- namestore.xml – persistent JNDI definitions for entire node
- node.xml – defines node information, like name, discovery protocol
- node-metadata.properties – properties of the node – product version, OS
- perftuners.xml – performance tuning rules
- resources.xml – node level resource definitions (like JDBC, JMS)
- resourcesPME.xml – node level PME resource definitions
- serverindex.xml – defines all the servers of the node, the server type and its ports
- variables.xml – node level environment variable definitions

Repository at DMGr (Master) and Managed Node



**Underlined Directories and Files are new to V6**

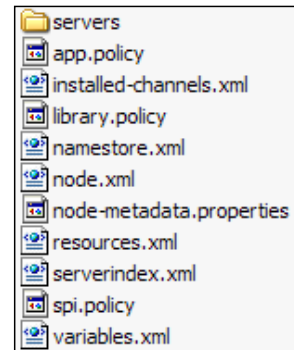
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At the node level, these are the repository files and their purposes

## Node: Files for DMgr Node

- app.policy, library.policy, spi.policy – Java 2 security policy files for application, Shared library and J2C resources
- installedChannels.xml – defines channel (communication protocols like TCP, SSL, HTTP, HTTP tunnel) defined for the WebSphere processes
- namestore.xml – persistent JNDI definitions for entire node
- node.xml – defines node information, like name, discovery protocol
- node-metadata.properties – properties of the node – product version, OS
- resources.xml – node level resource definitions (like JDBC, JMS)
- serverindex.xml – defines all the servers of the node, the server type and its ports
- variables.xml – node level environment variable definitions

Repository at  
DMgr (Master)  
and Managed  
Node

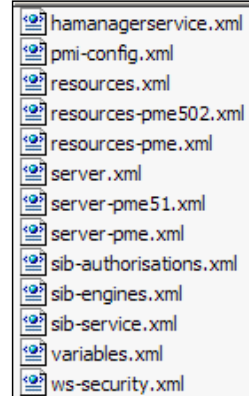


Because the Deployment Manager node does not have any subordinate Application Servers, there are fewer files than for the user defined nodes.

## Server: Files for each Application Server

- hamanagerservice.xml – defines the core group that the server belongs to for High availability, and defines HAManager fields like isAliveperiod
- pmi-config.xml – Performance monitoring instrumentation
- resources.xml – Server level resource definitions (like JDBC, JMS)
- resourcesPME.xml and resourcesPME.xml – Node level PME resource definitions
- server.xml – defines server information, like channels, server components and services, JVM process definition
- server-pme51.xml and server-pme.xml – PME definitions
- sib-authorisations.xml – Service Integration Bus authorization for this server
- sib-engines.xml –Service Integration Bus messaging engine definition
- sib-service.xml – Service Integration Bus services – enabled or not
- variables.xml – Server level environment variable definitions
- ws-security.xml – Server level Web Services security bindings – overrides cell level identical bindings

Repository at DMgr (Master) and Managed Node



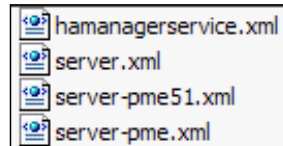
- hamanagerservice.xml
- pmi-config.xml
- resources.xml
- resources-pme502.xml
- resources-pme.xml
- server.xml
- server-pme51.xml
- server-pme.xml
- sib-authorisations.xml
- sib-engines.xml
- sib-service.xml
- variables.xml
- ws-security.xml

Each application server uses this set of files.

## Server: Files for DMgr Server

- hamanagerservice.xml – defines the core group that the server belongs to for High availability, and defines HAManager fields like isAliveperiod
- server.xml – defines server information, like channels, server components and services, JVM process definition
- server-pme51.xml and server-pme.xml – PME definitions

Repository at DMgr (Master) and Managed Node



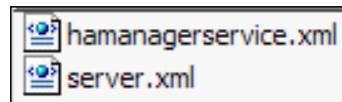
The Deployment Manager is itself an Application Server process, and uses these files.



## Server: Files for Node Agent

- hamanagerservice.xml – defines the core group that the server belongs to for High availability, and defines HAManager fields like isAliveperiod
- server.xml – defines server information, like channels, server components and services, JVM process definition

Repository at DMgr (Master) and Managed Node



The Node Agent and uses these files.

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