IBM Software Group

IBM® WebSphere® Everyplace® Deployment V6

Device Management Overview

e business on demand.

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Introduction

WebSphere Everyplace Deployment Device Manager is used to enroll devices into a database and perform many tasks for managing devices, such as:

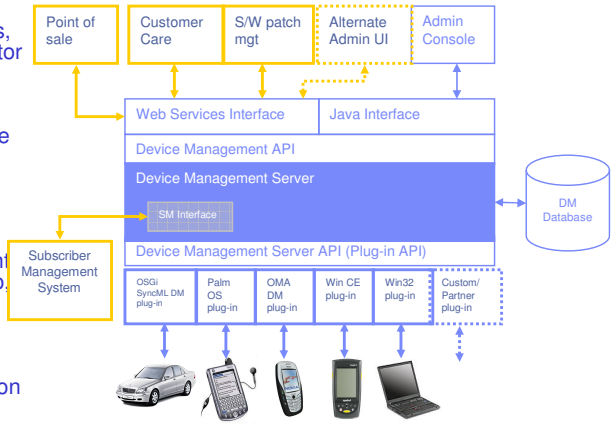
- Device configuration - - setting device parameters for hardware or software
- Inventory collection - - collecting hardware and software information about the device
- Software distribution - - distributing, installing, and removing software or data files for the device

Supported devices include:

- Palm and Microsoft OS (WinCE, Pocket PC), PDAs/ and handheld PCs,
- OSGi enabled devices, including Windows 32 devices.

WebSphere Everyplace Device Manager Overview

- Device Management Server
  - Manages DM jobs. Information about jobs is stored in the DM database, and the Device Manager Server executes these jobs variously in response to triggers (e.g. when a device connects, API calls; or as a result of administrator actions)
- Device “plug-ins”
  - Provides the logic that handles device identification, communications, job processing, and other high-level management tasks
- Device Manager database
  - Repository for all device management information e.g., Devices, Device Info, Jobs, Package Meta Data
- Device Management API
  - Programming interface between the Device Manager Server, administration clients or external applications (Web Services & Java)



Server to Device Communication

- Device agents communicate with the Device Manager server using HTTP or HTTPS.
- The protocol running on top of HTTP is either a proprietary protocol, which is used with Microsoft Pocket PC and Palm OS devices, or a standard protocol, such as the OMA DM protocol.
- With HTTP and HTTPS communications between devices and Device Manager, requests and responses can pass through various network elements, such as firewalls.

Device Enrollment

Enrollment is when a device first becomes known to the device management system

- Enrollment can be action manually or programmatically
  - Manual enrollment takes place when an administrator or customer service representative creates a new device entry
  - This can be done programmatically, e.g., by a workflow process
- Devices may enroll themselves upon their first connection to the device management system, as long as:
  - The device provides a valid subscriber id and credentials,
  - And, the system is configured to allow devices to enroll themselves
- At the time of first connection, a set of jobs are automatically processed for these (new) devices.
  - Dynamically-evaluated criteria for each such “enrollment job” determine whether it should be run for the new device

Management Jobs

Management actions/tasks are called *jobs*.

- Jobs can be initiated through the Administration Console or its APIs and are performed on a device or group of devices.
- Job types include jobs such as device configuration, inventory collection, and software distribution.
- WebSphere Everyplace Device Manager implements job types as Java classes
- Jobs can be scheduled to occur in the future, including setting expiration times for jobs (i.e., don't run after this date/time) and to re-try in the event of failures.

Management Jobs

- Jobs can be applied to or targeted to a single device, or a group of devices.
- Groups of devices are defined by a list of devices, or by characterizing the group, such as by the device owner, owner group, some attributes of the device inventory, or a combination of characteristics.
- Jobs are targeted to a device and the job is run when the device connects to the Device Manager server.
- The server maintains a history of jobs status for all jobs and all devices. Job Success/failure tracked on a per-device basis

Job Progress

- Display information about the progress of a job as it runs, or attempts to run, on its target devices.
- Information includes any informational, warning, or error messages logged about the job processing on a target device.
- Obtain and view the job progress using the Device Manager console, the Administration commands, and the Administration API.
- Display a job progress summary for any job. The summary is most useful in understanding the progress of jobs submitted to multiple devices; that is, jobs submitted to a device class or to more than one device.
- Provides a call-back feature from the Device Manager server to the device agent so job events, such as when Device Manager starts processing a job, job completion status, and job expiration, can be monitored.
- The job events are posted to a Java Message Service topic.

Management Jobs

Job Types vary by device class, examples include:

- **Device configuration**
- **Inventory collection**
- **Software distribution**
- **Registry editing**
- **Registry retrieval**
- **Node discovery**
- **Bundle control**
- **Command script**
- **Custom command**

Inventory Job

- For a device, inventory is typically collected for hardware, software, and the configuration of the device.
- The inventory information is specific to each device class.
- Inventory information can include items such as the computer model, installed cards, memory size, battery type, and others.
- An inventory collection job obtains the inventory information from the device agent, returns the information to the Device Manager server, and stores the inventory information in the appropriate Device Manager database.

Device Configuration

- Every device has configuration parameters that are specific to that device.
- Configuration parameters identify:
  - Device and the device user (such as a device name and user ID),
  - Network connection (such as a phone number, DNS address, and IP address),
  - Services (such as a printer address, POP server address, and time server address), and others.
- When a device enrols, an administrator can set the configuration parameters for that device to initial values with a device configuration job.
- As appropriate, you can also change the configuration parameters at a later date with another device configuration job.

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