Package installation system flow

ManageSoft knowledge base article 100625.

This article outlines the process of installing packages on managed devices. It assumes that packages have already been distributed to distribution locations. For details of that process, refer to the *ManageSoft Reference: System Reference*.

Introduction

This article provides an overview of the package installation process on managed devices. Package installation can be triggered by application of policy, or by users choosing to install a package.

Each major step of the process is discussed to help ManageSoft administrators better understand ManageSoft at a technical level and to assist with troubleshooting.

The diagram *Package installation system flow diagram* on page 2 illustrates the package installation process as a sequence of steps. Each step is described more fully later in the article.

## What is *not* in this article?

Instructions for packaging

This article does not describe the processes for creating packages. Details about creating packages are available in the *ManageSoft Packaging Guide*.

Instructions for using third-party tools

Some parts of ManageSoft integrate with other installation software such as Windows Installer, SD (on HP-UX), RPM (on Linux), and the Solaris software packaging technology. More detail about the interaction between ManageSoft and third-party packaging technologies is available in the *ManageSoft Packaging Guide*.

Package installation system flow diagram
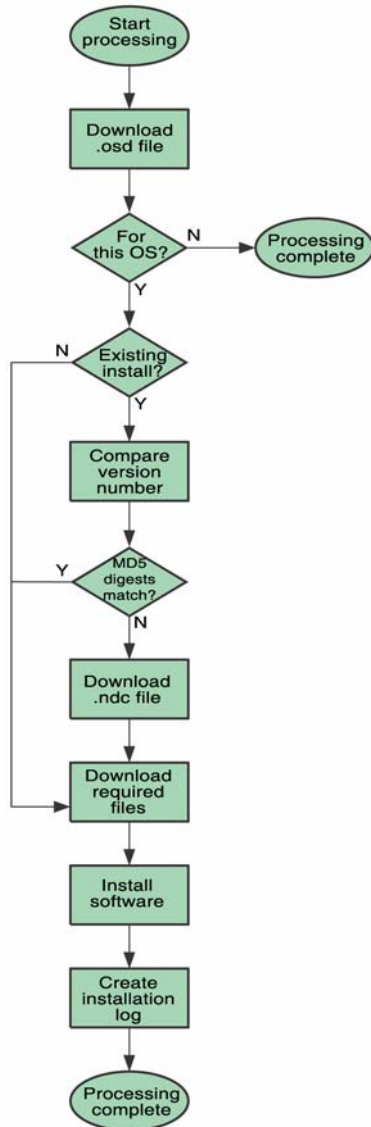
Step 1: Download .osd file

Type: ManageSoft action

Location: Managed device

When package installation is triggered, ManageSoft on the managed device downloads the `.osd` file for the package from the local distribution location (`ManageSoftDL$` or `ManageSoft\Staging\Common\Packages\*` on the distribution server).

Step 2: Check operating system

Type: ManageSoft action

Location: Managed device

ManageSoft for managed devices reads the package's target operating system(s) from the downloaded `.osd` file. If current machine's operating system is not one of the target operating systems, no further action is required.

Step 3: Check for existing installation

Type: ManageSoft action

Location: Managed device

ManageSoft for managed devices reads the package name from the downloaded `.osd` file, and uses it to determine whether or not there is an existing installation of the package on this computer:

▸ If a folder `C:\Program Files\ManageSoft\Launcher\Cache\Common\<Package Name>` or `C:\Program Files\ManageSoft\Launcher\Cache\System\<Package Name>` exists, it indicates that the package has previously been installed for all users of this computer (machine policy)

▸ If a folder `C:\Program Files\ManageSoft\Launcher\Cache\Username\<Package Name>` exists, it

indicates that the package has been previously installed for this user (user policy).

If none of these folders exists, the package has not previously been installed on this computer. Proceed to *Compare MD5 checksums for .ndc files* on page 4.

Step 4: Compare version numbers

Type: ManageSoft action

Location: Managed device

If ManageSoft identified an existing installation at the previous step, it then reads the package version from the downloaded .osd file, and compares it with the version number from the cached version of the application. If the version numbers match, the current installation is the correct version, and later ManageSoft checks that its files have not been corrupted (requiring self-healing) – see *Step 6: Check and download required files, install software* on page 5.

If the version numbers differ, an upgrade or downgrade of the package is required.

Step 5: Compare MD5 checksums for .ndc files

Type: ManageSoft action

Location: Managed device

If ManageSoft identified an existing installation at step Step 3: *Check for existing installation*, and the version number of the installed package matches the version number from the downloaded .osd file, ManageSoft checks the MD5 checksum of the local (cached) .ndc file against the MD5 checksum for the .ndc file recorded in the downloaded .osd file.

If the MD5 checksums differ, ManageSoft downloads the .ndc file for the package from the local distribution location (ManageSoftDL$ or ManageSoft\Staging\Common\Packages* on the distribution server) to the local cache.

Step 6: Check and download required files, install software

Type: ManageSoft action

Location: Managed device

ManageSoft on the managed device uses the .ndc file to determine whether additional files must be downloaded. The contents of the .ndc file and the process for checking what additional files may be required varies according to how the package was created.

▸ Packages created from **Windows Installer** files.

ManageSoft first checks for the existence of the product key for the Windows Installer file in the MSI cache:

- If the product key is there, it indicates a previous installation, and the Reinstall command from the current package is run.

  The Windows Installer file may be downloaded or run across the network depending on the configuration in the package (refer to the *ManageSoft Packaging Guide* for more details about possible configurations).

- If the product key does not exist, the Install command from the current package is executed.

▸ Packages created from other **third-party installer** files.

On Windows platforms, packages created from third-party installer files have a Run Once registry key specified. If this key is not set on the managed device, the package source files are downloaded and the install command executed.

On UNIX platforms, ManageSoft uses the supported third-party software packaging/management tool to query whether or not the package is already installed. If the package is not already installed, installation is initiated using the appropriate third-party tool: rpm, swinstall, or pkgadd.

▸ Packages created in **other ways** (including from **installation snapshots**).

For packages created from installation snapshots, or by any other method not covered previously, the .ndc file contains a list of files required.

For each file listed in the .ndc file:

- If the **Checked fully for correctness on every run** box was checked when the software was packaged (refer to the *Files and managed devices* section of the *ManageSoft Packaging Guide* for further details), the MD5 checksum is verified for each file, and a new copy of the file is downloaded if the

checksum of the locally cached copy of the file differs from the one recorded in the .ndc file.

- Otherwise, ManageSoft checks the file size and modification date against the locally cached version of the file. If either the file size or the modification date is different, a new copy of the file is downloaded from the server.
- Any files that do not exist on the local system are downloaded.

Step 7: Generate installation log

When package processing is complete, an installation log file is sent to the local reporting location, from where it is uploaded to the administration server and processed into the ManageSoft database.