Desktop Configuration Management

Operations Guide

Version 6.0

April 25, 2007
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## Revision History

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| Table 1 Revision History |
1.0 DCM General Information and Disclaimer

Note that there is not a BigFix client for Macs.

The DCM application is a RealBasic application compiled for both PC and Mac. It reads from configuration files that define DCM Best Practices items, renders those items in its user interface, allows the user to select and deselect certain items, and automates the application of those items.

Figure 1 Loading Screen

2.0 Program execution

2.1 At program execution time the application performs the following functions:

a. If a new configuration file is available from the network, download the configuration file. This permits the addition or removal of configuration items in/to a central location, and as required, have those new settings take effect immediately.

b. Reads all of the information from the configuration file so that the required settings will be correctly applied.

c. Ensures that the latest version of the DCM Application and the location of its installer is available on the network.

d. Determines the network location and the latest version number of the support files (helper apps, dlls, and so on).

e. Determines the location of the XML files that will define the registry changes which will be applied.

f. Details regarding all of the configuration settings that can not be accommodated by registry changes ("DCM Custom Actions")

1  Display text
2  Help text
3  Helper app, check function, change function
4  The operating systems that support the change
5  If the user will be able to undo or deselect the item
6  If the item is for info only (the tool will not attempt to change it)
7  Applicability of the setting:
8  New or redeployed computers only
9  New, redeployed and existing computers
10 Troubleshooting item
11 If the computer has not been associated with a group, display a window that will allow the user to select a group:

2.2 For computers not associated with a group

a. A display window which will permit the user to select a group.

![Group - Sub-Group Selection](image)

**Figure 2 Group - Sub-Group Selection**

b. Using the following logic, the group and sub-group selected by the user will be used to apply group/sub-group specific items (if they exist).

1. If there is an XML file that is named UserSelectedGroup.XML, and there is no XML file named, UserSelectedGroup-UserSelectedSubGroup.XML, then the settings in UserSelectedGroup.XML will be applied.

2. If there is a UserSelectedGroup-UserSelectedSubGroup.XML file, then its settings will be applied.

c. Group settings can be added to site-wide settings, or supersede site-wide settings. The DCM Application accommodates this by

1. Loading all site-wide settings

2. Loading all group-specific settings

d. For each group setting

1. If a setting with the same “id” as the group setting exists in the site-wide settings group, replace the site-wide value with the group-specific value.

2. If the user checks the “This is a Category-A computer” check box, then Category-A specific settings will be applied. Category A settings
will replace any group settings or site-wide settings with a matching “id”. See 3 and 4 below.

3 Note: if a setting exists in both site-wide context and group-wide context, the group-wide context setting takes precedence.

4 Note: If a setting exists in a Category-A context and any other context (site or group), the Category-A setting takes precedence.

e. Load all of the settings details (site-wide, group, Category A)

2.3 For each support file that is listed in the configuration file:

a. Retrieve the previously installed version of the file.

b. Compare this version to the version designated as the required version in the configuration file.

c. If the local version is lower than the required version, download the new file.

d. If the application has been run before, gather the computer identification data to display in the UI:

1 Computer Owner

2 Is the computer located on campus?

3 Was the computer purchased by Stanford?

4 The computer property tag
e. Display the Step 1 of 5 window

![Figure 3 Computer Owner Information](image)

1 **Name of computer owner.** Enter the name of the individual or organization (school, department, and so on) that is responsible for this computer.

2 **Stanford Property Tag** If desired, enter a unique string that identifies the computer. This information is not currently being used, but could be used later (in conjunction with the BigFix inventory collection process) for asset tracking.

3 **This computer was purchased by Stanford:** If the computer was purchased using Stanford University funds, check this box. If the computer was purchased by the client, uncheck this box. Only computers that are owned by Stanford University will be maintained by BigFix.

4 **This computer will only be used on campus:** If the computer will only be used on campus (is not a laptop that will be used both on and off campus, and is not a computer that is used exclusively off campus), check this box. This information is not currently being used, but could be used later (in conjunction with the BigFix inventory collection process) for asset tracking.

5 **Continue for New of Rebuilt Computer:** Some DCM settings are appropriate for all computers, and some are only appropriate for new and redeployed computers. For example, although we want to set the default browser to Internet Explorer for new or redeployed computers, we do not want to change an existing computer’s default browser to Internet Explorer if the client has expressed a preference for another browser. We would like to encourage clients to use Internet Explorer...
because typically it tends to work better with Administrative applications, so insuring that the default is IE for a redeployed computer is desirable. However, a client that prefers Firefox may not appreciate having that preference arbitrarily changed for them. Click on this button only if you are running this on a new computer or one that is being transferred to a new owner.

6 **Continue for Existing Computer:** Click on this button when running the tool on a computer that is currently being used (the client may have changed non-essential configuration setting to reflect a personal preference that we do not want to change).

---

![Figure 4 Set Administrative Account Passwords](image)

**Figure 4 Set Administrative Account Passwords**

f. This window will allow you to set one or more Administrator account passwords to the Password Web generated password.

1 You can select an administrator account from the “Existing Administrator Name” dropdown box, enter the existing password in “Existing Administrator Password” and “Confirm Existing Administrator Password”, enter the new password in “Password Web Password” and “Confirm Password Web Password”, and change the password by clicking on the “Change Administrator Password” button.

2 **Get Password from Web:** This will launch the default browser and take you to the Password Web site when you can generate a password from the computer host name. See the password Web documentation for more information.

3 **Back** This returns you to the previous Window (Step 1 of 5).

4 **Use Exiting Password:** Click on this button if you want to move on to the next step without assigning a password.
5 Continue: Once you have changed the administrator password click here to continue.

![Figure 5 Non-Compliant Settings](image)

The DCM App will check all of the applicable settings (Site-wide, group-specific, category A) and display the items that do not comply with the standard on this screen.

1 Initially, all items will be checked (except for “info only” items).

2 Items that will be maintained by BigFix or that can not be returned to their previous values will be displayed in bold type and will have “No” listed next to their description in the “Setting can be undone” column. Items that can be returned to their previous values will have “Yes” in this column. Clicking the checkbox next to an item that can not be undone, will not change the status of the checkbox (it will remain checked).

3 Items that are “info only” (the changes can not be automated by the DCM Tool) will be displayed with a yellow text background, and “N/A” will be displayed next to their description in the “Setting can be undone” column. Clicking the checkbox next to an “info only” item, will not change the status of the checkbox (it will remain unchecked).

4 Back: Return to Step 2 of 6

5 Check All: Change the state of the item’s check box to checked for all items except for “info only” items.

6 Uncheck All: Change the state of the item’s check box to unchecked for all items except for required items.

7 Review Changes: Continue to the next step.
h. This step displays only those items that were checked on the previous screen. You can review the change that will be made to the computer one last time before the changes are made.

1. **Back**: Return to Step 3 of 6
2. **Apply Changes**: Apply all of the selected items, and go to Step 5.
Figure 7 Applied Settings

i. Once all of the settings have been applied, this screen will be displayed.

1 Back: Return to Step 4 of 6
2 Continue: Go to step 6 of 6
2.4 **View the activity log:** The DCM App writes all program activity to a log file. On Windows computers, it is C:\Program Files\Common Files\Stanford\Config\DCM\Logs\dcm_activity_log.txt. On Macs it is /Library/Management/Stanford/DCM/Logs/dcm_activity_log.txt. This will load the file in the default text viewer application. It is the same as selecting “View” + “Activity Logs” from the DCM App menu.

2.5 **View the report of the changes made:** This will launch the default browser and display a detailed report that will include all computer information (owner, operating system, etc.), and the state of every DCM configuration setting (compiles, does not comply, was changed, was not changed, etc.). It is the same as selecting “View” + “Report of changes” from the DCM App menu.

2.6 **Undo:** Takes you to Step 1 of Undo Changes where you can return the items that are not enforced or required to their previous settings.

2.7 **Back:** Returns to Step 4 of 6

2.8 **Close:** Exit the DCM App
3.0 Undo Step 1

3.1 If items have been changed that can be undone, the DCM App will save the item values that were in effect before the DCM change was made. These items will be added to a list of items that can be returned to their previous values (undo.txt). All items in the undo.txt file will be displayed in this Window.

3.2 Back: Return to the previous Window

3.3 Review Changes: Go to Undo Step 2
4.0 Undo Step 2

![Review Undo Changes](image)

**Figure 10 Review Undo Changes**

4.1 This is a summary of the items that you have selected to return to their pre-DCM change values.

4.2 **Back**: Return to Undo Step 1

4.3 **Apply Changes**: Return all values to their previous values and continue to Step 3
5.0  Undo Step 3

![Figure 11 Undo Step 3](image)

5.1  **Back**: Return to Undo Step 2

5.2  **Continue**: Return to pre-undo DCM App Window
6.0 DCM Application Menu Items

6.1 “View” + “Activity Logs”

6.2 Load the activity log file (dcm_activity_log.txt) in the default text viewer application. “View” + “Report of Changes”

6.3 Launch the default browser and display a detailed report that will include all computer information (owner, operating system, etc.), and the state of every DCM configuration setting (compiles, does not comply, was changed, was not changed, and so on).

6.4 “View” + “Computer Info” Display computer specific information (Operating System, Owner, Group, and so on.). Example:

![Figure 12 Computer Info Display](image)

6.5 “View” + “Settings Statistics” Display configuration settings totals. Example:

![Figure 13 View Statistics](image)
6.6 “Tools” + “Update DCM” The DCM App is self-updating in that each time the program is run, it first checks the network to see if there is a newer version of itself available for download. If there is, the user will be asked if they wish to upgrade to the new version. If they answer in the “Yes”, a new installer is downloaded to a temporary directory, and executed. Selecting this menu item will cause the DCM App to check the network to see if a newer version is available. Example:

![Figure 14 DCM Tool Version #](image)

**Figure 14 DCM Tool Version #**

![Figure 15 Download and Install](image)

**Figure 15 Download and Install**

6.7 “Tools” + “Undo or Reset Settings” Takes you to Step 1 of Undo Changes where you can return the items that are not enforced or required to their previous settings.

6.8 “Tools” + “Launch Email Config. Tool” Starts the Email configuration wizard.

6.9 “Tools” + “Common Solutions to Problems”
7.0 Computer Troubleshooting

7.1 Some computer problems can be resolved quickly by simply repeating an action that has worked in the past for a similar problem even before beginning a problem analysis. For example, some third-party Mac OSX installers might fail if a previous installation attempt's temporary files (files in /tmp/uid/TemporaryItems) have not been deleted before the next program installation attempt. Simply deleting those files before attempting to run the OSX installer can resolve the problem.

7.2 This window is where these kinds of solutions can be placed. Since the DCM App updates all of its settings and support files automatically during program load time, we can add new solutions to this window when we discover them. This will allow us to make practical use of knowledge that is gained from computer support activities. For example, if we determine next week that Kronos will fail if a certain version of Java is installed on Windows XP Sp2 machines and that copying a file to the Windows directory will solve that problem, we can create a custom action to do that, update the DCM App settings file on the network, and the solution is instantly available to all support personnel through the DCM App.

8.0 PC Registry Entries

8.1 The DCM App will manipulate the following registry keys and items. Most of these items are exclusively for the use of the DCM App itself.

a. **Group and SubGroup**: The computer group and subgroup are saved to the “HKLM\Software\BigFix\Enterprise\Settings\SU Group” and “HKLM\Software\BigFix\Enterprise\Settings\SU Subgroup” (REG_SZ “value”: Group name). These values will also be used by BigFix to assign console operator authority.

b. **Category-A Computer**: “HKLM\Software\Stanford\DCM” (REG_SZ “Category-A”: “1” or “0”)
c. **Used On Campus:** “HKLM\Software\Stanford\DCM” (REG_SZ “OnCampus”: “1” or “0”)

d. **Computer Owner:** “HKLM\Software\Stanford\DCM” (REG_SZ “Owner”: Owner name)

e. **Property Tag:** “HKLM\Software\Stanford\DCM” (REG_SZ “PropertyTag”: Property tag or asset tag)

f. **Stanford Owned Computer:** HKLM\Software\Stanford\DCM” (REG_SZ “StanfordOwned”: “1” or “0”)

g. **Will this computer be enforced by BigFix?:** “HKLM\Software\Stanford\DCM” (REG_SZ “Enforced”: “1” or “0”)

h. **DCM Runtime Registry Key:** The “HKCU\Software\Stanford\DCM” registry key is used by the DCM App and its help applications to keep track of runtime volatile data. The key does not contain any persistent data and can be deleted when the app is not running.

9.0 **DCM Persistent Files**

9.1 Some files located in the “C:\Program Files\Common Files\Stanford\Config\DCM” directory tree contain persistent data that is required for the DCM App to successfully undo settings and should not be deleted unless returning settings to their previous values is not required:

9.2 “C:\Program Files\Common Files\Stanford\Config\DCM\UNDO_*.XML”
Any file that starts with “UNDO_” and ends in “.XML” should not be deleted.
Files in the “C:\Program Files\Common Files\Stanford\Config\DCM\CustomActionUndo” directory should not be deleted.

10.0 **Limitations**

10.1 Since BigFix is running as a service it can not make changes to settings that are set at the user level (HKEY_CURRENT_USER). All BigFix enforced settings must be made to HKEY_LOCAL_MACHINE. We have made an enhancement request to BigFix and this ability might be added in the future.

10.2 The DCM App requires that the logged on user have administrative rights to the computer. If the logged on user does not have administrative rights, the DCM App will display an error message and end at program load-time.

10.3 If a setting is a user-level setting (HKEY_CURRENT_USER), the DCM App will only change the value of the setting for the currently logged on user.

11.0 **Network Directories**

11.1 +---data

a. Files will be written here for each run of the DCM App. The files will be named MAC_NetworkCardAddress.CSV or WIN_NetworkCardAddress.CSV (i.e. WIN_00-0C-49-9F-3A.csv or MAC_00-30-65-70-3c-24.csv). The files will contain the PC information data for the computer designated by the Network Card Address in the file name. The files can be combined into a single file and loaded into Excel or a database program to monitor program activity.

11.2 +---dll

a. This directory contains the support files that the DCM App requires.
11.3  +---mac  
a. The Mac support files will be located in this directory.

11.4  +---pc  
a. The PC support files will be located in this directory.

11.5  +---groups  
a. Group/Subgroup specific XML files are located in this directory.

11.6  +---install  
a. DCM App program installers (Mac and PC) will be located here and downloaded by the program when a self-update is required.

11.7  +---site  
a. This directory will contain all of the site-wide and Category-A configuration files.
12.0 Restore Required Settings Tool for Windows

12.1 If circumstances demand that all settings applied by the DCM App to a Windows computer, including mandatory settings enforced by BigFix, be restored to their original state, the Restore Required Settings tool supplements DCM App's own limited "Undo" function.

12.2 When the DCM App is run for the first time, it saves the current state of all settings that will be enforced, and that it cannot itself undo, to C:\Program Files\Common Files\Stanford\Config\DCM\Logs\required_settings.undo.

12.3 The Restore Required Settings tool, available from the same download location as the DCM App, will use this file, so long as it exists, in order to perform a few simple tasks:

   a. Restore all settings that cannot be undone by DCM App to their original state. Note that the Restore Required Settings tool will not touch settings that can be undone by the DCM App.
   b. Delete the registry key HKLM\SOFTWARE\Stanford\DCM and any child keys.
   c. Delete %ALLUSERSPROFILE%\Start Menu\Stanford if it is empty once settings have been restored.
   d. Prompt for a reboot so that the restored settings will take effect.
   e. Aside from this final prompt for a system restart, the Restore Required Settings tool has no user interface. If the required_settings.undo file does not exist in the location specified above, the Restore Required Settings tool will display an appropriate error message.

13.0 BigFix Setting Enforcement for DCM Desktops

13.1 For information about BigFix enforcement of settings implemented by the DCM App, please see the separate document, "BigFix Setting Enforcement for DCM Desktops."