METHOD AND APPARATUS FOR OPERATING SYSTEM PERSONALIZATION DURING INSTALLATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the field of automated installation of an operating system onto a networked computer. More specifically, the invention includes a method and apparatus to provide personalization parameters so that an operating system can be automatically installed on a computer system configured with the personalization parameters.

2. Description of the Related Art

Installing or migrating updated versions of computer software including applications and operating systems from a network server to individual networked client workstations is commonplace. However, such installation or migration can be relatively labor intensive and complex. This can be especially true in corporate environments where there might be hundreds or even thousands of computers which are part of a network. Accordingly, applications exist to automate, to varying degrees, the installation or migration of operating systems from a network server or host to networked client workstations.

One example of an application for automating installation and/or migration of computer software from a network is referred to under the trade name of Microsoft Systems Management Server®, and is available from Microsoft® Corporation of Redmond Washington.

Another example of such an application is marketed under the trade name LANDdesk(R) Configuration Manager ("LCM") and is available from Intel Corporation of Hillsboro, Oreg. System components necessary to operate LCM include a console, a server, and one or more workstations. The console includes a server central processing unit ("CPU"), a monitor, and a data input device such as a keyboard. The server is interconnected with the console and includes a CPU. Each workstation is interconnected with the server and includes a CPU, a monitor, and keyboard. As used herein, CPU indicates any standard, general or special purpose computing device having a microprocessor; memory, such as a magnetic or optical disk drive, random access memory ("RAM") and read only memory ("ROM") ;bus lines; and inputs and outputs.

To operate LCM, a systems manager loads configuration manager software onto the console. Configurations for operating systems to be deployed over the network are defined and stored in the server memory. These operating systems are referred to as "services." Operating systems which can be installed using LCM include Windows 95®, Windows 98®, and Windows NT®, each available from Microsoft Corporation. The system administrator also defines configuration manager users ("CM-users") which, as used herein, indicates a technician or administrator who logs onto a workstation for the purpose of installing an operating system or other software from the network server. A CM-user stands in contrast to an "end-user," which, as used herein, indicates a workstation user for whom a workstation is configured for use in data processing and information exchange. The system administrator assigns services to be configured on client workstations to menus and assigns one of these menus to each CM-user who will be deploying services on the workstations. The files containing the menus and identifying CM-users associated with the menus are stored on the server.

Each client workstation on which an operating system to be automatically installed is configured with "LANDesk(R) Service Agent," ("LSA") also available from Intel Corporation. LSA is firmware which is resident on an ethernet card installed in the workstation. When a user boots a client workstation, LSA interrupts the normal boot module and causes a prompt to appear on the workstation monitor which asks the user if he or she would like to perform a service boot to access configuration services. If the CM-user chooses to perform a service boot, LSA accesses the configuration manager software located in the server which causes a dialog box to appear on the workstation display asking the CM-user to enter a username and password. If the user enters an appropriate username and password, the configuration manager software downloads certain files and programs, which are discussed below in the Detailed Description section, from the server to the workstation. These programs cause the client workstation monitor to display the menu of services which the system administrator assigned to the CM-user logged onto the workstation, and which are available to be downloaded. The CM-user can select from these services and initiate operating system configuration. Details of the above described operation of LCM are included in "Intel LANDesk® Configuration Manager Administrator's Guide", Intel Corporation, 1997 which is incorporated by reference in its entirety.

When configuring an operating system, there are a number of parameters that must be uniquely specified for each workstation on the network and other parameters that must be specified only for a sub-group of the total number of client workstations on a network. These parameters are referred to herein as "personalization parameters." Such personalization parameters which must generally be uniquely specified for each client on a network can include, among others, user login name, full name, initial password, and IP address. Personalization parameters which can generally be specified for a sub-group of client workstations on a network can include workgroup or domain name, organization name, and product ID.

For a variety of operating systems, specification and configuration of these personalization parameters can be partially achieved through the use of so called "answer files." An answer file is a script file which specifies various settings for operating system installation including full user name, organization name, computer name, product ID, domain name and workgroup name. Generally, answer files are created by a system administrator and reside in memory on the server. The answer files are then accessed by an operating system setup program which is run in the workstation during an operating system deployment to the workstation to at least partially personalize the client workstation. Use of answer files and operating system setup programs is known to those skilled in the art and discussed in detail in "Microsoft® Windows®95 Resource Kit" 1995 Microsoft Press, "Microsoft®98 Resource Kit" 1998 Microsoft Press, ISBN 1-57231-644-6, and Microsoft® Windows®NT Workstation Operating System Deployment Guide", 1997 Microsoft Corporation, which are incorporated in their entirety by reference.

A second way in which personalization parameters can be configured for an operating system is to use an operating system application programming interface ("API"). An API is essentially a line of code that can be executed to access the operating system (or other application) to tell the operating system to perform a lower level function, such as assign a certain I/O port to a certain address, or configure the operating system with certain information, such as a drive mapping user login name. Generally, one API can be used to configure an operating system with a single parameter. APIs