

version information with the version information associated with each update identified in the manifest file. In addition, the manifest file can include information concerning any dependencies that must be present before a particular update can be delivered and installed. For example, a specific update can require a newer or specific version of the updater itself. Alternatively, an update can require another update in order to be installed properly.

[0031] In one implementation, the system can handle manifest file containing all of these elements. In another implementation, the system can handle manifest files containing any combination of these elements, in any order, as well as additional elements not listed here.

[0032] The system displays information contained in the manifest file in a dual-list format (step 115). In one implementation, the dual-list display format presents two parallel lists. The first list displays details of all available update components for each installed product. This includes update components that have already been installed on the user computer, as well as update components not yet installed. This list can be ordered in any manner selected by the user; for example, the first list can be presented in alphabetical order, chronological order by date of the update components, or in a hierarchical manner, such that all update components associated with each installed product are grouped together.

[0033] The second list displays details of all of the update components that have already been installed on the user computer. In one implementation, information concerning updates already installed on the user computer is collected using key files. A key file is a designated file that is part of each installed update component. For example, consider an update component that installs one or more files on the user computer, all of which are essential for the proper functioning of the update component. One of these installed files can be designated as a key file. The presence of the key file indicates that the update component has been installed on the user computer. The key file can also provide information as to the specific version of the update component. In an alternative implementation, the system can refer to a single file maintained by the system that contains information concerning update components already installed for a plurality of installed products. This single file is modified every time a new update component is installed for any of the installed products referenced in the file. Alternatively, if the system is based on a Microsoft® Windows® operating system, the system can use entries in the registry database to maintain information about update components already installed.

[0034] The second list is displayed in such a manner so that update components that appear in the second list appear in the same row as the same update component on the first list. FIG. 3 shows an example user interface 300, in which the available update component 330 in the first list of available update components 305 is displayed across from the same installed component 335 in the second list of installed update components 310. Further, if an available update component has not yet been installed, a blank space appears in the second list 310 in order to maintain the proper spacing and alignment of both lists. In FIG. 3, available update component 320 in the first list of available update components 305 is aligned with the blank space 325 in the second list of installed update components 310. The blank space 325 indicates that this update component has not yet been installed on the user computer. Rather than a blank space, an alternative placeholder can be used. This place-

holder can be a brief message indicating that the component has not yet been installed or an icon having the same significance.

[0035] The short description 315 displayed is the short description that is contained in the manifest file for the selected update component 355. The two lists can be displayed in column format, such that the first list and the second list are displayed as two rows, with matching update components on both lists listed in the same column. Alternatively, the first list and the second list can be displayed in rows or in any other manner that retains the alignment between matching update components appearing on both lists.

[0036] The alignment between the first list and the second list is always maintained, even if the first list and the second list are too long to display completely in the space available, in which case, the user can scroll the contents of the first list and the second list to view the entire list. While scrolling, the first list and the second list will move together, so that the items in the first list will always remain in alignment with the same corresponding item in the second list.

[0037] FIG. 2 shows a method 200 for installing selected update components. A system performing method 200 requests and receives a first list of available update components (step 205). This list can be requested from and received in a variety of forms; for example, the first list can be requested over a computer network, e.g., the Internet or a local area network (LAN), and can be received over the same computer network. Alternatively, the list can be received over a different computer network. The list can also be made available on removable media, e.g., a floppy disk, CD-ROM, or DVD.

[0038] In one implementation, the first list can also include information that is associated with the available update components. For example, the list can include the name of each available component and instructions on how to obtain each available component. The list can optionally include a brief description of each available component, or any other useful information.

[0039] The system displays the first list of available update components (step 210). The available components can be ordered and displayed in a variety of formats; some of the various formats available are described above. The preferred display format will typically be predefined by the update application, although the user also has the capability of selecting the desired display order. In another implementation, update component information in addition to or instead of the component name can also be displayed in the second list.

[0040] In FIG. 3, the list of available update components 305 is displayed in a hierarchical format. In this case, the name of each available update is displayed, with the available updates grouped together based upon the software application associated with each available update. The name of the software program 350 appears above the names of the available update components associated with the software program. Update components common to multiple programs can appear together in one common area, or can also appear with each of the respective products that each update component is associated with.

[0041] The system creates a second list of installed update components (step 215). The system determines what update components are already installed on the user's computer. This may be done in a variety of manners. In one imple-