

BSQUARE® Corporation

**Update Designer
for use with the IBM NetVista N2200w**

User's Manual

Version 1.0



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1

Introduction

This manual describes installation and use of Update Designer, including product and technical overviews, descriptions of components, installation and system requirements.

Documentation Information

The following three documents describe the IBM NetVista N2200w and the remote administration software. BSQUARE recommends that you start with the *NetVista N2200w Reference for Service Pack 2* before referencing other manuals.

Table 1. Documentation Usage

Document Title	Contents
<i>NetVista N2200w Reference for Service Pack 2</i>	An overview of the NetVista N2200w Product from IBM. It is recommended that you reference this guide first.
<i>Remote Device Administrator User's Manual, version 1.0</i>	Installation and guidelines for installing and using Remote Device Administrator software with NetVista N2200w.
<i>Update Designer User's Manual, version 1.0</i>	Update designer is a user interface that creates .bud files that allow for remote updating. Instructions for installing and using Update Designer are included in this guide.

Acronyms Used

The following table is a list of acronyms used in this manual.

Table 2. Acronyms Used

Acronym	Definition
ATL	Active Template Library
CDF	Channel Definition Format
CIFS	Common Internet File System
COM	Component Object Model
DLL	Dynamic Link Library
DOM	Document Object Model
DTD	Document Type Definition
FTP	File Transfer Protocol
HTTP	Hyper Text Transfer Protocol
URL	Universal Resource Locator
VBCE	Visual Basic for CE
VCCE	Visual C++ for CE
XML	Extensible Markup Language

Copying Sample Code

NOTE:

Because the Reader copies each line of text with a hard return, these wrapped lines are copied as two lines instead of one. It is important, when pasting from the Reader, that you watch for and remove any hard return that separates a single line of code.

Using this document requires the Adobe Acrobat® Reader™. The Reader opens with the Hand Tool enabled, which allows you to navigate through the document.

To select and copy text such as sample code, click



in version 3.0.



in version 4.0.

IBM Software Service and Support

If you are using this software with IBM NetVista N2200w for Windows-based Terminal Standard 1.5, you can find information about IBM software service and support at the following web site:

<http://www.ibm.com/pc/support>

1. Click NetVista.
2. Click NetVista thin client.

2

Product Overview

This chapter describes the Update Designer, including features, functionality, and technical descriptions of product components.

Functional Overview

The Update Designer is a user interface that creates bud files that contain instructions about remote updates. On NTe clients, it can compare builds. It publishes the bud file to an URL or network location where clients can access it.

The Update Designer:

- Quickly creates complex update packages using drag-and-drop features.
- Creates and modifies instructions for remote updates for Windows CE. These instructions are written to a **.bud** file using the XML parser from Internet Explorer 5.0. The **.bud** file contains XML and is validated against the schema in the **updateschema.xml** file.
- Creates an update package by copying payload files to a specified location.
- The operations supported, and the directives defined in the bud file can be expanded without changing the Update Designer interface.
- Publishes the update file to a URL, FTP site, or network location. This location can then be accessed by the clients that you want to update.

Technical Overview

The Update Designer set-up includes

- User interface.
- XML Parser.
- The Update Designer:
- Runs on Windows NT 4.0 and Windows 2000.
- XML Parser.

- Creates XML directives files that contain the instructions for updating clients, and copies the file to an HTTP, FTP, or CIFS site.
- Copies payload files to an HTTP, FTP, or CIFS site.
- Creates initial device configurations for a device or group of devices (clone configurations).

For more information about the Remote Device Administrator, see the *Remote Device Administrator User's Manual*. For more information about the client management toolkits, see the *CE Client Management Toolkit User's Manual*.

3

Installation

This chapter describes installing the Update Designer, including supported platforms, system requirements, installation requirements, and system configurations.

Supported Platforms

The Update Designer runs on Windows NT 4.0 and Windows 2000 servers. The Update Designer creates update files for CE client updates. CE must be running Windows CE 2.12 or higher and WBT version 1.5.

System Requirements

In general, the network must use standard internet protocols: HTTP, FTP, CIFS. The system requirements are as follows:

- Windows NT 4.0 or higher, or Windows 2000
- Internet Explorer 4.0 or higher
- Microsoft's XML Parser (included as part of set-up for Update Designer).

Installation Instructions

To install Update Designer:

1. Insert the Remote Device Administrator CD-ROM.
2. Browse to the CD-ROM drive and double-click the **Setup.exe** program.
3. Follow the on-screen instructions. You can also follow the instructions in the section titled *Installing Update Designer Only* in Chapter Two of the *Remote Device Administrator User's Manual*.

The Remote Device Administrator installation installs the Microsoft XML Parser and the Windows Installer. If you uninstall the Remote Device Administrator using the uninstall program, these are not uninstalled. Use the Add/Remove Programs applet in the Control Panel to remove the XML Parser and the Windows Installer.

If you are using Internet Explorer 4.0, Remote Device Administrator will still install the parser from Internet Explorer 5.0. Both Internet Explorer 4.0 and 5.0 are compatible with Remote Device Administrator installation and usage.

4

Using Update Designer

This chapter describes how to use Update Designer, including how to start Update Designer, creating update files, creating update packages, publishing update files, and setting options.

Starting Update Designer

NOTE:

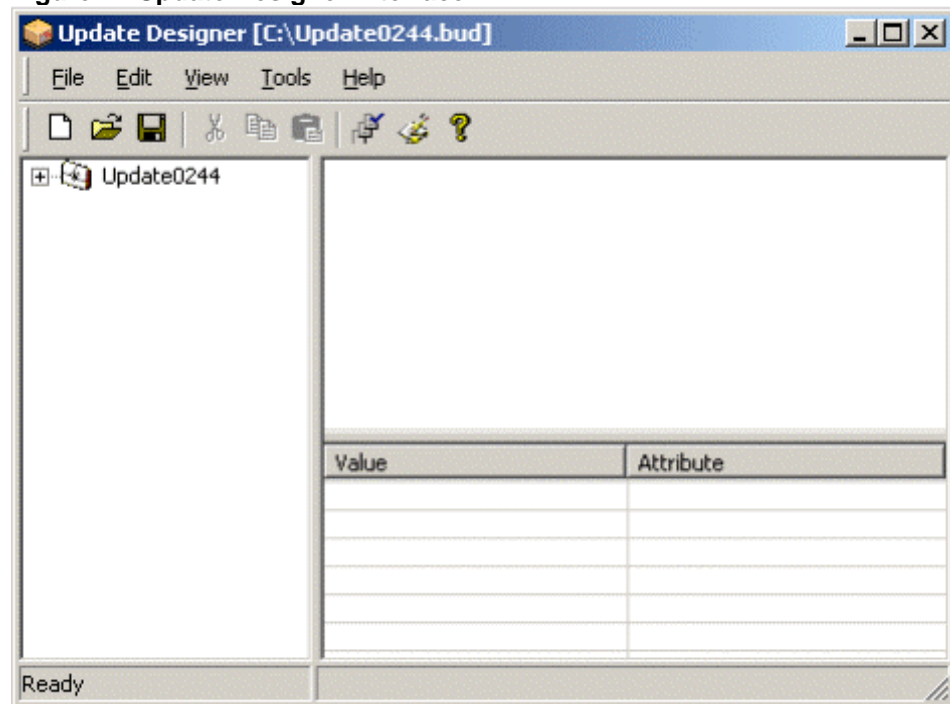
When using Update Designer, you will need to be logged on as an administrator in order to access Update Designer functions.

To start Update Designer

1. Click the Windows **Start** button, point to **Programs**, point to **BSQUARE Remote Device Administrator**, and then click **Update Designer**.
2. Click the New icon (□).
3. Type a name for the new update file.
4. Browse to the location where you want to save the new update file, and then click **OK**.

Some of the file attributes are set automatically when you create the **.bud** file. The update ID attribute is set when you create a new update and is not changed when you edit the **.bud** file. If you use an existing **.bud** file to create a new update, modify the ID attribute so that the new update is unique. You can set attributes for the update package. For more information, see the Update File Attributes chapter.

Figure 1. Update Designer Interface



Creating Update Files

Update files are .bud files that contain XML directives about how to perform an update on a client.

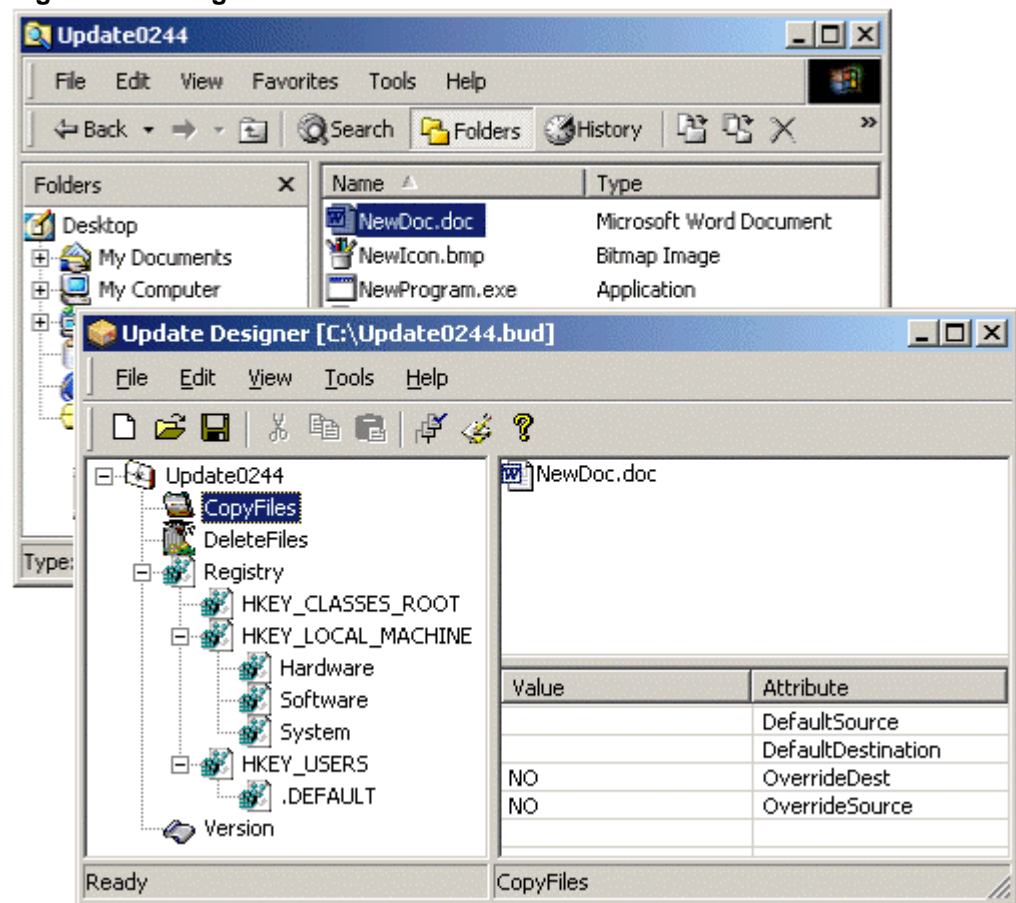
To add a file during an update

This procedure includes files in the .bud file that you want to copy to the device during the update.

1. Start the Update Designer, and create a new update file.
2. Expand the tree in the left pane of the Update Designer.
 - **Hard way:** Right-click on the **CopyFiles** icon, and click **Add New File**. A new file is inserted in the upper right pane. You must then manually enter all the attributes for the file. For more information, see the *Update File Attributes* chapter.
 - **Easy way:** Drag and drop as follows:
 - a. Open Windows Explorer. Browse to the location of the files that you want to include in the update.
 - b. Size the two windows so that you can drag files from Windows Explorer into the Update Designer.
 - c. Click on the **CopyFiles** icon.

- d. Drag the file from Windows Explorer onto the **CopyFiles** icon.

Figure 2. Adding a File



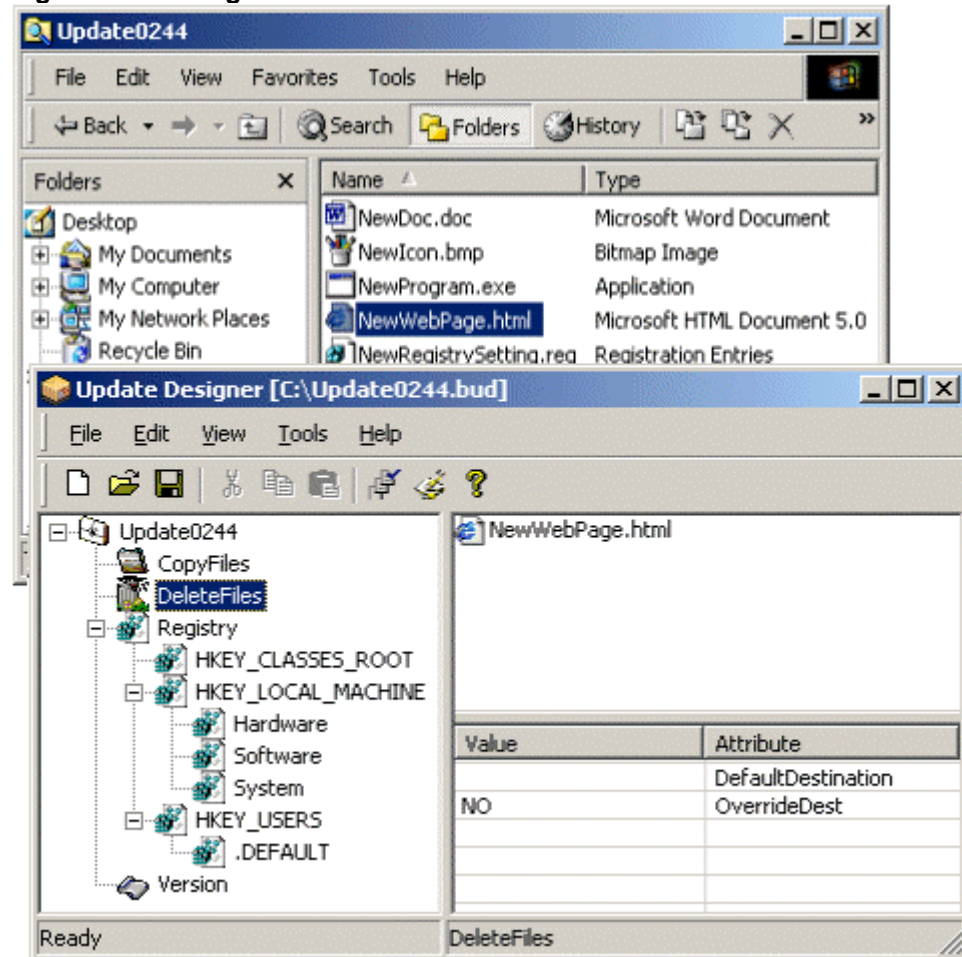
Some of the file attributes are set automatically if you drag and drop the file. You can set attributes for all the copied files, and for each copied file. For more information, see the Update File Attributes chapter.

To Delete a File During an Update

This procedure includes files in the **.bud** file that you want to delete from the device during the update.

- **Hard way:** Right-click on the DeleteFiles icon, and then click **Add New File**. A new file is inserted in the upper right pane. You must then manually enter all the attributes for the file. For more information, see the *Update File Attributes* chapter.
- **Easy way:** Drag and drop as follows:
 1. Click on the DeleteFiles icon.
 2. Drag the file from Windows Explorer onto the DeleteFiles icon.

Figure 3. Deleting Files



Some of the file attributes are set automatically if you drag and drop the file. You can set attributes for all the deleted files, and for each deleted file. For more information, see the *Update File Attributes* chapter.

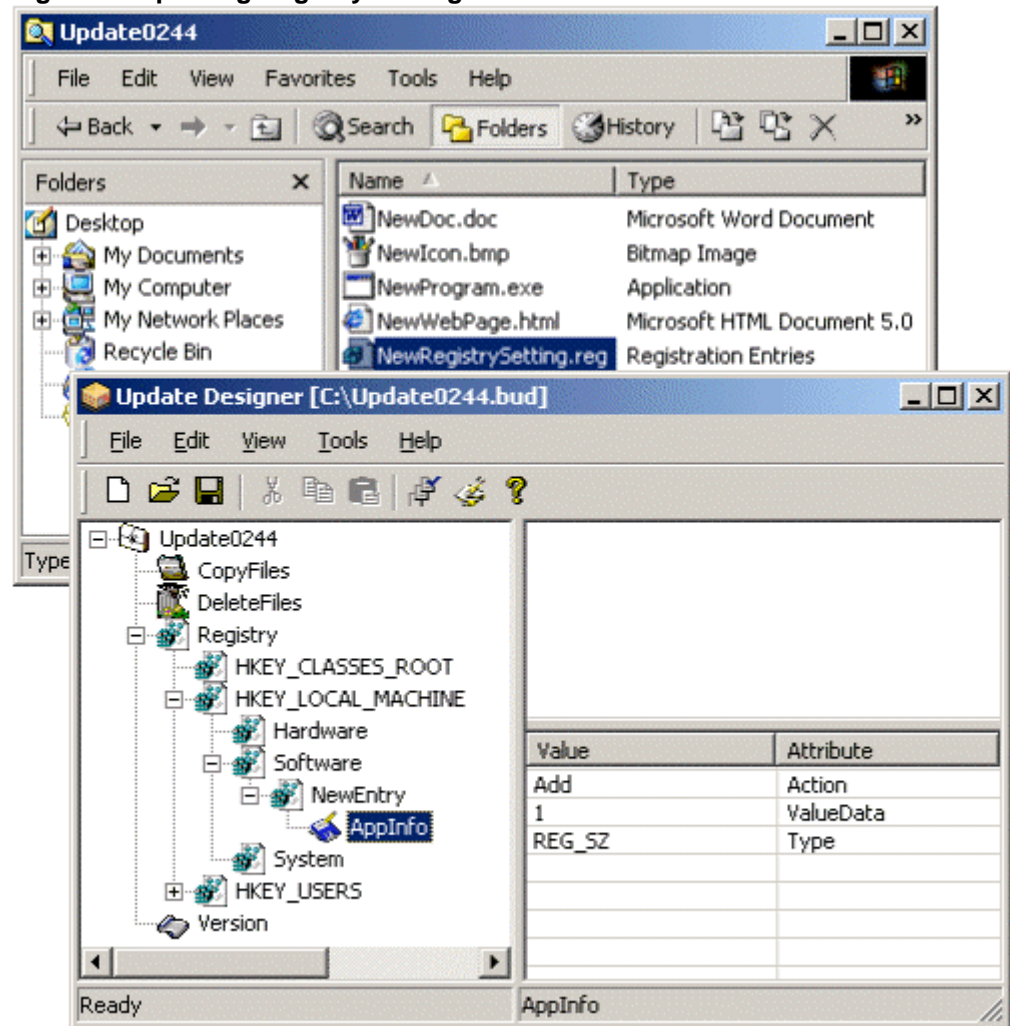
To change a registry setting during an update

This procedure includes registry settings (as **.reg** files) in the **.bud** file that you want to add or delete on the device during an update.

- **Hard way:** Right-click on the key where you want to add an entry, and then click **Add Registry Entry**. A new registry entry is inserted in the tree. You must then manually enter all the attributes for the entry. For more information, see the *Update File Attributes* chapter.

- **Easy way:** Drag and drop as follows:
 1. Open the Windows Registry Editor. Browse to the location of the registry entry that you want to include or delete during the update. Use the **Registry|Export Registry File** command to create a **.reg** file of the entry.

Figure 4. Updating Registry Settings



2. Drag the **.reg** file from Windows Explorer onto the Registry icon. The entry is automatically inserted under the correct registry setting.
3. Select a Value for the **Action** attribute: Add, Delete, DeleteRecursive, or ExportKeyToFile. For more information, see the Update File Attributes chapter.

Some of the entry attributes are set automatically if you drag and drop the entry. You can set attributes for all the registry entries, and for each registry entry. For more information, see the Update File Attributes chapter.

To Set a Version Number During an Update

Click the **Version** icon. For each attribute, enter any information that you want to include. For more information, see the Update File Attributes chapter.

Publishing Update Files

The Update Designer publishes update files to a URL, an FTP site, or a network location. The application on the client (for example, the Remote Updater) downloads the update file, parses the XML to determine the update instructions, and downloads the update package.

For more information about the Remote Updater, see the *CE or NTe Client Management Toolkit User's Manual*.

To publish an update file:

1. On the **Tools** menu, click **Publish**.
2. Enter or browse to the location where you want to publish the file. This location is a network location, where the client will access the files by HTTP, FTP, or CIFS.
3. Enter or browse to the location where you want to publish the files that need to be copied during the update. This location is a network location, where the client will access the files by HTTP, FTP, or CIFS, as illustrated in the examples below.

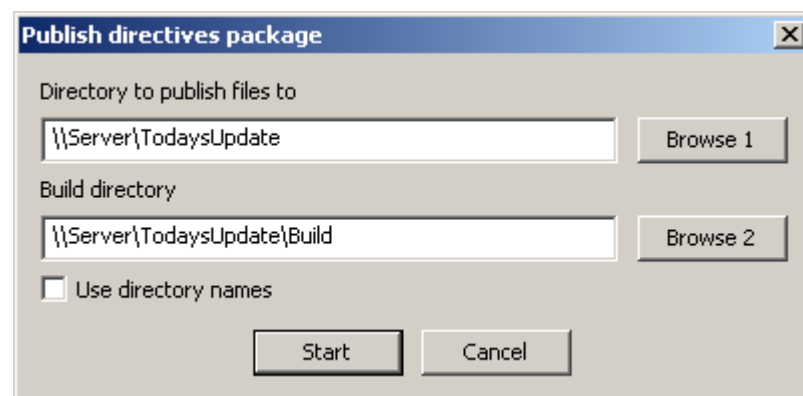
\\ServerName\ShareName\Directory\updatefilename.bud

http://ServerName/Directory/updatefilename.bud

ftp://ServerName/Directory/updatefilename.bud

4. Select whether to include directory names. If you include the directory name, the directory structure is maintained for each file that you publish.

Figure 5. Publishing Update Files



5. Click **Start**.
6. The Update Designer will copy the **.bud** file to the publish directory.

The Update Designer will copy any files listed for CopyFiles from the build directory to the publish directory. The DefaultSource and OverrideSource attributes will change to reflect the new location.

Setting Options

The Update Designer has several user options that you can set, as described in the following procedure.

1. On the **Tools** menu, click **Options**.
2. To save the open file when you close, select the **Save file on exit?** check box.
3. To open the most recently-used file when you start, select the **Open last file used?** check box.
4. To set your default working directory (the location where you most often save files), in the **Default working directory** field, enter or browse to the location.
5. To save the screen location of the Update Designer window, select the **Save last window position** check box.
6. To automatically reclaim the file extensions of deleted files, select the **Automatically reclaim file extension** check box.
7. Click **OK**.

5

Update File Attributes

This chapter describes the attributes in the **.bud** files, including how to modify attributes, descriptions of attributes, and a listing of required and optional attributes.

The attributes for files and registry entries can be modified by:

- Clicking in the Value cell for the attribute and selecting one of the values.
- Clicking twice (not double-clicking) in the Value cell, and then typing a value.

Package Attributes

The Package attributes include information about the **.bud** file.

Name

Table 3. Name Attributes

Description	This is the filename of the .bud file.
Required	Yes
Usage	Automatically provided
Valid Values	filename without filename extension
Notes	This name does not include the filename path.

ID

Table 4. ID Attributes

Description	This is the unique identifier for the .bud file. It is used by the client to determine if the update has been previously run. The ID is stored in the update log on the client; when a .bud file is downloaded, the ID is checked against the IDs of previously-run .bud files so that updates are not run more than once. This attribute is automatically generated when you create a new bud, but will not be changed if you use an existing .bud file to start your new .bud.
Required	Yes
Usage	Automatically provided
Valid Values	Must be a number, no spaces, no symbols, no letters.
Notes	None

RebootAfterLevel

Table 5. Boot Level Attributes

Description	This is an indication of whether and when to reboot the client during the update. If you need to reboot after a file is downloaded, first set the Priority of the file. Then to indicate the reboot, set RebootAfterLevel to the same number as the Priority.
Required	No
Usage	Use with Priority
Valid Values	0 (no reboots) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Notes	Only reboots once in CE Priorities after reboot is not executed.

MultiPart

Not supported in this version.

Table 6. MultiPart Attributes

Description	This is an indication that the update is multi-pass. That is, if your network times out after a period of time, and the download of the update files may take longer than the timeout, you can indicate that the update is multipart. To create a multi-pass update, set the Priorities of the files. Files with a higher Priority are downloaded first. If the update is interrupted by a timeout, it will restart automatically.
Required	No
Usage	Use with Priority
Valid Values	YES and NO
Notes	None

Description

Table 7. Description Attributes

Description	This is a description of the update.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

OStype

Table 8. OStype Attributes

Description	This is the operating system of the client that you want to update
Required	No
Usage	Optional
Valid Values	CE and NT
Notes	None

CopyFiles Attributes

The CopyFiles attributes include default attributes that you can assign to all the files, and attributes that you can assign to each file.

DefaultSource

Table 9. Default Source Attributes

Description	This is the base directory where the relative source path starts for each file you want to copy. The DefaultSource and Source attributes are used together to determine the location of a file.
Required	No
Usage	Use with Source and OverrideSource
Valid Values	URL or network path
Notes	When you publish the .bud file, the DefaultSource attribute changes to reflect the new base directory.

DefaultDestination

Table 10. DefaultDestination Attributes

Description	This is the base directory where the relative destination path starts for each file that you want to copy. The DefaultDestination and Destination attributes are used together to determine the destination of a file.
Required	No
Usage	Use with Destination and OverrideDest
Valid Values	Local URL or network path Example: \Program Files\ or \HardDisk3\UpdateLog\
Notes	None

OverrideDest

Table 11. OverrideDest Attributes

Description	This indicates whether to use the Destination attribute when you copy the file during the update, or to use the DefaultDest attribute. For example, on one particular update, you do not want to overwrite the old files with the new files. Instead of changing the Destination attribute for all the files, you can set the DefaultDest attribute to a different location, and then set OverrideDest to YES.
Required	Yes
Usage	Use with DefaultDest and Destination
Valid Values	YES and NO
Notes	None

OverrideSource

Table 12. OverrideSource Attributes

Description	This indicates whether to use the Source attribute when you copy the file during the update, or to use the DefaultSource attribute. For example, when you publish the update, all the files in the update package are copied to the publish location. If you want to then copy the files from the publish location and not from their original source, set OverrideSource to YES.
Required	Yes
Usage	Use with DefaultSource and Source
Valid Values	YES and NO
Notes	When you publish the .bud file, the OverrideDest attribute automatically changes to YES.

Action

Reserved by BSQUARE for future use.

Priority

Table 13. Priority Attributes

Description	This sets the order in which files are copied. Files with a higher priority are copied before files with lower priorities. This attribute is used in conjunction with RebootAfterLevel and MultiLevel
Required	Yes
Usage	Use with RebootAfterLevel
Valid Values	1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 (1 is highest, 10 is lowest)
Notes	None

Source

Table 14. Source Attributes

Description	This is the relative directory path of file you want to copy. That is, it is relative to the DefaultSource attribute. If no DefaultSource is specified, it is the whole path to the file.
Required	No
Usage	Use with DefaultSource and OverrideSource
Valid Values	URL or network path
Notes	<p>Examples of Update Locations:</p> <p>\\ServerName\ShareName\Directory\updatefilename.bud</p> <p>http://ServerName/Directory/updatefilename.bud</p> <p>ftp://ServerName/Directory/updatefilename.bud</p>

Destination

Table 15. Destination Attributes

Description	This is the relative directory path to the destination where you want to copy the file. That is, it is relative to the DefaultDestination attribute. If no DefaultDestination is specified, it is the whole path to the destination.
Required	Yes
Usage	Use with DefaultDestination and OverrideDest
Valid Values	Local URL or network path Example: \Program Files\ or \HardDisk3\UpdateLog\
Notes	This attribute is required or the file will not be copied. The file will appear to copy, the log file will indicate that the file copied, but the file will not be copied.

Flags

Reserved by BSQUARE for future use.

FileAttributes

Table 16. FileAttributes

Description	This is the numeric value that resets the attributes of a file. It presents the actual file attributes used with Get and SetFileAttribute().
Required	No
Usage	Use to present file attributes for GetFileAttribute() and SetFileAttribute()
Valid Values	0X00000001 Read Only 0X00000002 Hidden 0X00000004 System 0X00000020 Archive
Notes	None

Description

Table 17. Description Attributes

Description	This is a description of the file that you want to copy.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

OSImage

Table 18. OSImage Attributes

Description	This is an indication of whether the file is a Windows CE image or not. If the value of OSImage is YES, the client will automatically reboot when the download is complete.
Required	Yes
Usage	Use with OSImageSize
Valid Values	YES and NO
Notes	The client automatically reboots after the file is downloaded. Use of OSImage requires rebooting.

OSImageSize

Table 19. OSImageSize

Description	This is the size of the image, in bytes, to which the image is updating. BSQUARE recommends rounding up. (Example: nk.bin = 6.4MB. OSImageSize = 70000000)
Required	Yes if OSImage is YES
Usage	Use with OSImage
Valid Values	Any integer
Notes	OSImageSize is used to allocate memory for the update, so it is important to enter a large enough number.

Register

Table 20. Register Attributes

Description	This is an indication of whether the file needs to be registered. Use this attribute to register COM objects .
Required	Yes
Usage	Use if the file is a COM object
Valid Values	YES and NO
Notes	None

Execute

Table 21. Execute Attributes

Description	This is an indication of whether to execute the file after is it copied.
Required	Yes
Usage	Use with CommandLine and WaitForExecute
Valid Values	YES and NO
Notes	None

CommandLine

Table 22. CommandLine Attributes

Description	This is used in conjunction with the Execute attribute to pass any command line arguments to the executable.
Required	No
Usage	Use with Execute and WaitForExecute
Valid Values	Any string
Notes	None

WaitForExecute

Table 23. WaitForExecute Attributes

Description	This is an indication of whether to pause the upgrade until a file has finished executing. It is used in conjunction with the Execute attribute.
Required	Yes
Usage	Use with Execute and CommandLine
Valid Values	YES and NO
Notes	None

DeleteFiles Attributes

The DeleteFiles attributes include default attributes that you can assign to all the files, and attributes that you can assign to each file.

DefaultDestination

Table 24. DefaultDestination Attributes

Description	This is the base directory where the relative path starts for each file that you want to delete. The DefaultDestination and Destination attributes are used together to determine the location of a file.
Required	No
Usage	Use with Destination and OverrideDest
Valid Values	URL or network path
Notes	None

OverrideDest

Table 25. OverrideDest Attributes

Description	This indicates whether to use the Destination attribute to locate the file during the update, or to use the DefaultDest attribute. For example, on one particular update, you want to clean up any copies of a file that might have been moved into the Temp directory on the device. You do not want to delete the copy of the file that is being used, just any extra copies of it. Instead of changing the Destination attribute for all the files, you can set the DefaultDest attribute to the Temp directory, and then set OverrideDest to YES.
Required	Yes
Usage	Use with DefaultDestination and Destination
Valid Values	YES and NO
Notes	None

Action

Reserved by BSQUARE for future use.

Priority

Table 26. Priority Attributes

Description	This sets the order in which files are deleted. Files with a higher priority are deleted before files with lower priorities. This attribute is used in conjunction with RebootAfterLevel and MultiLevel.
Required	Yes
Usage	Use with RebootAfterLevel
Valid Values	1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 (1 is lowest, 10 is highest)
Notes	None

Source

Table 27. Source Attributes

Description	This is the relative directory path of file you want to delete. That is, it is relative to the DefaultSource attribute. If no DefaultSource is specified, it is the whole path to the file.
Required	No
Usage	Use with DefaultSource and OverrideSource
Valid Values	URL or network path
Notes	None

Destination

Table 28. Destination Attributes

Description	This is the relative directory path to the location of the file you want to delete. That is, it is relative to the DefaultDestination attribute. If no DefaultDestination is specified, it is the whole path to the destination.
Required	Yes
Usage	Use with DefaultDestination and OverrideDest
Valid Values	URL or network path
Notes	None

Flags

Reserved by BSQUARE for future use.

FileAttributes

Not used with DeleteFiles.

Description

Table 29. Description Attributes

Description	This is a description of the file that you want to delete.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

OSImage

Not used with **DeleteFiles**.

OSImageSize

Not used with **DeleteFiles**.

Register

Not used with **DeleteFiles**.

Execute

Not used with **DeleteFiles**.

CommandLine

Not used with **DeleteFiles**.

WaitForExecute

Not used with **DeleteFiles**.

Registry Attributes

The Registry attributes are applied to each registry entry.

RootKey

Table 30. RootKey Attributes

Description	This is the root key of the registry key.
Required	Yes
Usage	Required
Valid Values	HKEY_CLASSES_ROOT, HKEY_LOCAL_MACHINE, HKEY_USERS, HKEY_CURRENT_USER
Notes	None

Flags

Reserved by BSQUARE for future use.

Action

Table 31. Action Attributes

Description	This is the action that you want to perform on the key. Add adds the key to the registry under the RootKey. Delete removes the key from the registry. DeleteRecursive deletes the key and all the keys underneath it. ExportKeyToFile exports the registry key to a file in the \temp directory
Required	Yes
Usage	Required
Valid Values	Add, Delete, DeleteRecursive, ExportKeyToFile
Notes	The ExportKeyToFile is not supported on Windows CE. It is supported on NTe.

Priority

Reserved by BSQUARE for future use.

Version Attributes

The Version attributes include information about the update package, the version of the client, and so on. They do not affect the update.

CPU_Type

Table 32. CPU_Type Attributes

Description	This is the CPU type of the device that you are upgrading (for example, X86, MIPS, and so on).
Required	Yes
Usage	Use with Processor
Valid Values	Any string
Notes	None

Processor

Table 33. Processor Attributes

Description	This is a detail of the CPU_Type (for example, i486).
Required	Yes
Usage	Use with CPU_Type
Valid Values	Any string
Notes	None

OS_Build_Version

Table 34. OS_Build_Version Attributes

Description	This is the build version of the client operating system.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

Service_Pack

Table 35. Service_Pack Attributes

Description	This is the service pack number of the client operating system.
Required	Yes
Usage	Optional
Valid Values	Any string
Notes	None

WBT_Client_type

Reserved by BSQUARE for future use.

WBT_Client_Version

Table 36. WBT_Client_Version Attributes

Description	This is the version of WBT software of the client.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

Desktop_Shell_Version

Table 37. Desktop_Shell_Version Attributes

Description	This is the shell version of the client.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

Update_Client_Version

Table 38. Update_Client_Version Attributes

Description	This is the version of the update.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None

SNMP_Agent_Version

Table 39. SNMP_Agent_Version Attributes

Description	This is the version of the SNMP Agent that is installed on the client.
Required	No
Usage	Optional
Valid Values	Any string
Notes	None