

# wyBuild & wyUpdate File Specifications

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## General

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## File format

### Format:

**1 byte:** Identifier (e.g. 0xNN)

**4 bytes:** Little-endian, 32-bit signed integer length of the data (in bytes: e.g. X bytes)

**X bytes:** Data

Note: If the identifier byte is unknown or obsolete, simply use the integer byte-length of the data to skip over the data.

### Tagging bytes:

0x80 – 0x9F, and 0xFF (EOF tag)

Tagging bytes differ from the identifier bytes described above in that no data follows the tagging byte. Instead, a tagging byte is followed by either another Tagging byte or an Identifier byte and the above format is followed.

## Data types

**int** – 32-bit, little-endian, signed integer

**long** – 64-bit, little-endian, signed integer

### **d. string**

Int that stores String Length 'N' + 4,

Int that stores String Length 'N',

UTF8 string N bytes long

### **string**

Int that stores String Length 'N',

UTF8 string N bytes long

Note: both *string* and *d. string* are not null terminated. You must make sure you allocate N+1 character array and add the null character yourself.

## Common fields

RegChange		
Byte Code	Datatype	Contents
0x8E	–	Beginning of the reg change
0x01	int	Registry Operation {}
0x02	int	Registry BaseKey {}
0x03	int	Value Kind {}
0x04	d. string	Subkey
0x05	d. string	Value Name
0x07	object	Value Data (Int64, Int32, String, or Byte Array depending on Value Kind)
0x80	–	A flag that indicates a string is stored instead of a Byte Array
0x81	–	A flag that indicates that the RegChange should be treated as 32-bit on x64 systems
0x9E	–	End of the reg change

**Obsolete Fields** (don't use the byte-codes for anything, or you'll break backward compatibility):

Byte Code	Datatype	Contents
0x06	d. string	Value Data <b>[Deprecated 1.1. See 0x07]</b>

ShortcutInfo		
Byte Code	Datatype	Contents
0x8D	–	Beginning of the ShortcutInfo
0x01	d. string	Path
0x02	d. string	Working Directory
0x03	d. string	Arguments
0x04	d. string	Description
0x05	d. string	Icon path
0x06	int	Icon index
0x07	int	Windows style, Normal=1, Minimized=2, Maximized=3
0x08	d. string	Relative output path (used when creating the file from update)
0x9A	–	End of the ShortcutInfo

## wyBuild Project Files

File ID: IUPDFV3

File Extension: wyp

Byte Code	Datatype	Contents
0x3F	int	wyBuild project version
0x01	int	Designer Toolbox, index of selected group
0x02	int	Designer Toolbox, index of selected item
0x04	string	GUID for the product (mainly for wyUpdate)
0x10	d. string	Company name
0x11	d. string	Product name
0x16	d. string	Client appearance template name
0x21	d. string	Built in language culture code
0x22	d. string	Custom language culture code
0x8C	–	Start of a revision
0x9C	–	End of a revision
0x35	d. string	Version of the current revision working on
0x31	d. string	Current Version
0x33	d. string	Changes
0x36	d. string	The Version of your product for which the Client was built. <b>[TODO]</b>
0x37	bool	The Client needs to be rebuilt because fields effecting the Client data have been changed. <b>[TODO]</b>
0x38	bool	Close wyUpdate on successful update
0x39	string	Custom wyUpdate title bar
0x3A	bool	Sign updates
0x3B	string	Public / private RSA sign key (XML format)
0x3C	int	Use wyUpdate version to build {0= .NET 2.0, 1= .NET 4.0}
0x80	–	Marker for the “Application Base Directory” file structure.
0x85	–	Marker for the Common Desktop file structure.
0x86	–	Marker for the Start Menu Programs file structure.
0x84	–	Marker for the Common “ApplicationData Folder” file structure.
0x82	–	Marker for the Current user's “ApplicationData Folder” file structure.
0x91	–	Marker for the Current user's “Local ApplicationData Folder” file structure.
0x89	–	Marker for the Program Files\Common Files (32-bit) file structure.

0x90	–	Marker for the Program Files\Common Files (64-bit) file structure.
0x81	–	Marker for the “System32 Folder” (32-bit) file structure.
0x87	–	Marker for the “System32 Folder” (64-bit) file structure.
0x88	–	Marker for the “Root drive” file structure.
0x83	–	Marker for the “Temporary Folder” file structure.
0x8F	–	End of file structure (meaning no more file or folders)
0x51	int	File/Folder Type (1 = File, 2 = Folder)
0x43	d. string	File/Folder Name
0x44	d. string	File/Folder Complete Path
0x52	d. string	File/Folder Relative path (with reference to the project file) <b>[TODO]</b>
0x45	bool	Execute Before
0x46	bool	Execute File?
0x47	bool	Wait for execution to finish before continuing
0x48	d. string	Command line switches
0x4A	int	ProcessWindowStyle { 0 = Normal, 1 = Hidden, 2 = Min, 3 = Max }
0x4E	int	ElevationType { SameAswyUpdate = 0, Elevated = 1, NotElevated = 2 }
0x05	bool	RollbackOnNonZeroRet
0x06	string	Comma separated list of return code exceptions (when not to rollback)
0x55	bool	Register COM dll
0x49	bool	TreeNode expanded?
0x50	bool	TreeNode selected?
0x3D	UpdateAction	See <b>UpdateAction</b>
0x8A	–	Start of a file information object
0x8D	–	Start of a ShortcutInfo object
0x9A	–	End of a file information object, or a ShortcutInfo object
0x8B	–	Start of a folder information object
0x9B	–	End of folder information object
0x66	d. string	Client output Directory (relative to the project file OR absolute)
0x68	d. string	Update output Directory (relative to the project file OR absolute)
0x63	bool	Optimize .NET Assemblies
0x6A	bool	Hide wyUpdate included warning
0xA1	int	Type of site {Both = 0, Server = 1, Update =2}
0xA2	d. string	Site
0x3E	UploadSite	See <b>UploadSite</b>
0x75	d. string	Update Filename
0x76	d. string	Server Filename
0x70	d. string	Update filename on disk (there can be multiple)

0x72	d. string	Version the update files were built for
0xA0	bool	Version changed since last update was built [TODO]
0x77	int	Zip compression level
0x78	bool	Delta compression enabled
0x79	int	Delta compression level
0x7F	bool	Create a catch-all update
0x7A	d. string	wyUpdate server sites
0x7B	bool	Only add shortcuts if one or more shortcuts previously existed
0x7C	d. string	Link text to show when the installed version of your software can't be updated
0x7D	d. string	Link URL to show when the installed version of your software can't be updated
0x7E	bool	Compress server files?
0x53	string	The password used to encrypt updates.
0x54	bool	Encrypt updates with password
0x56	bool	Put the password in the client.wyc file

UpdateAction		
Byte Code	Datatype	Contents
0x01	int	UpdateAction type {StopService = 0, StartService = 1}
0x02	string	Service name
0x03	string	Arguments to pass to the starting service.
0x9A	—	End of the update action

UploadSite		
Byte Code	Datatype	Contents
0x01	int	UploadSite type {FTP = 0, SFTP = 1}
0x02	string	Host address
0x03	string	Username
0x04	string	Password
0x05	string	Path
0x06	short	Port
0x9A	—	End of the update action

**Obsolete Fields** (don't use the byte-codes for anything, or you'll break backward compatibility):

Byte Code	Datatype	Contents
0x03	bool	Designer Toolbox collapsed? (default = false) [Removed, 1.0]
0x15	bool	Show 'Welcome' screen [Removed, 1.0 RC2]
0x30	int	Update Type [Huh? Update Channel maybe] [Removed, 1.0]
0x40	int	Number of files in current directory [Removed, 1.0 RC2]
0x41	int	Number of sub-folders in current directory [Removed, 1.0 RC2]
0x42	d. string	File/Folder Type [Deprecated, RC2. See 0x51]
0x20	d. string	Client Language name (English name, not native name) [obsolete – 1.3, see 0x21, 0x22]
0x69	d. string	Server File Site [Deprecated, 1.4. See 0xA1]
0x32	d. string	Update File Site [Deprecated, 1.4. See 0xA1]
0x71	d. string	Upload update site [Deprecated, 2.6.11. See 0x3E]
0x65	d. string	Test Base Directory [Removed, 1.0 RC2]
0x64	d. string	Backup directory (relative to project file OR absolute) Also, must contain %version% [Removed 2.6.7]
0x67	bool	Same as Local? [Removed, 1.0 RC2]
0x34	d. string	Post-Update Commands to execute [Removed, 2.6.7]

## wyUpdate Client Files

File ID: IUCDFV2

File Extension: iuc

Compressed File Extension: wyc

Byte Code	Datatype	Contents
0x01	d. string	Company Name
0x02	d. string	Product Name
0x03	d. string	Installed Version
0x0A	string	GUID of the product
0x04	d. string	Server File Site(s)
0x09	d. string	wyUpdate server site(s)
0x11	d. string	Header image alignment {Left, Right, Fill}
0x12	int	Header text indent
0x13	d. string	Header text color {Black, White, etc.}
0x14	d. string	Header filename (used in wyc files instead of 0x06)
0x15	d. string	Side image filename (used in wyc files instead of 0x07)
0x18	d. string	Language Culture (e.g. en-US or fr-FR)
0x16	d. string	Language filename (if NullorEmpty use English) ( <b>Note:</b> must be preceded by culture)
0x17	bool	Hide header divider? (default = false)
0x19	bool	Close wyUpdate on successful update
0x1A	string	Custom wyUpdate title bar
0x1B	string	Public sign key
0x1C	string	Password for encrypted updates

**Obsolete Fields** (don't use the byte-codes for anything, or you'll break backward compatibility):

Byte Code	Datatype	Contents
0x10	bool	Show 'Welcome' screen [Removed, 1.0 RC2]
0x06	Image	Header image [Deprecated, 1.0 RC2. See 0x14]
0x07	Image	Side image [Deprecated, 1.0 RC2. See 0x15]

## wyBuild Server Files

File ID: IUSDFV2

Compressed File ID: = { 0x50, 0x4b, 0x03, 0x04 } = { 'P', 'K', 0x03, 0x04 }

File Extension: wys

Byte Code	Datatype	Contents
0x01	d. string	Current Latest Version
0x02	d. string	Server file http/ftp site (for updating mirrors locally)
0x07	d. string	Minimum client version needed to install the update
0x81	–	Flag to mark the version choices as incremental patches.
0x0F	–	Dummy variable with a length int written to skip all versions except the catch-all version
0x0B	d. string	Old version to update
0x0C	string	Version that the update will install (for incremental patches only)
0x03	d. string	Update file http/ftp site
0x80	–	Changes are in RTF format if this byte is present
0x04	d. string	Latest changes
0x09	long	Update's filesize
0x08	long	Update file's Adler32 checksum
0x14	byte[ ]	Signed SHA1 hash of the file
0x0A	int	Installing to folders (flags: 1 = base dir, 2 = system 32 dir (x86), 4 = comm desktop, 8 = com star menu, 16 = com app data, 32 = system 32 dir (x64), 64 = Windows root drive, CommonFilesx86 = 128, CommonFilesx64 = 256, 512 = ServiceOrCOMRegistration, 1024 = NonCurrentUserReg )
0x20	d. string	Link text to show when the installed version of your software can't be updated
0x21	d. string	Link URL to show when the installed version of your software can't be updated

**Obsolete Fields** (don't use the byte-codes for anything, or you'll break backward compatibility):

Byte Code	Datatype	Contents
0x05	int	Update file size compressed <b>[Deprecated, 1.1. See 0x09]</b>
0x06	d. string	Update file's CRC32 in hexadecimal format <b>[Deprecated, 1.0 RC2. See 0x08]</b>
0x10	bool	Installing to Base Directory? <b>[Deprecated, 1.1. See 0x0A]</b>
0x11	bool	Installing to the System Folder? <b>[Deprecated, 1.1. See 0x0A]</b>
0x12	int	Number of <b>RegChanges</b> to check
0x13	d. string	wyUpdate server site(s) <b>[Removed, 2.6.3]</b>





## wyUpdate UpdateDetails

File ID: IUUDFV2

Filename: updttdetails.udt

Byte Code	Datatype	Contents
0x20	int	Number of registry changes (precedes <b>RegChange</b> list)
–	–	List of RegChanges, (See <b>RegChange</b> )
0x30	d. string	Relative path to Common Desktop shortcuts that must exist to install new Desktop shortcuts
0x31	d. string	Relative path to Common Start Menu shortcuts that must exist to install new Start Menu shortcuts
0x36	String	Relative path to Current User's Desktop shortcuts that must exist to install new Desktop shortcuts
0x37	String	Relative path to Current User's Start Menu shortcuts that must exist to install new Start Menu shortcuts
0x32	string	Service to stop before update
0x33	string	Service to start after update
0x34	int	Number of arguments to use with the last "start" service
0x35	string	Argument to use with the last "start" service
0x8D	–	Start of a Shortcut Info
–	–	List of ShortcutInfos, (See <b>ShortcutInfo</b> )
0x21	int	Number of file infos (precedes file info list)
0x8B	–	Beginning of File information
0x40	d. string	Relative file path
0x41	bool	Execute file?
0x42	bool	Execute before updating
0x45	bool	Wait for execution to finish before continuing
0x8F	–	Rollback on failure
0x4D	int	Return code exception (i.e. if this code is returned, don't rollback)
0x43	d. string	Command line arguments
0x44	bool	Is the file a .NET assembly?
0x46	bool	Delete the file?
0x47	d. string	Delta patch relative path
0x48	long	New file's Adler32 checksum (only used when delta patching files)
0x49	int	CPUVersion { 0 = AnyCPU, 1 = x86, 2 = x64 } (for NGENing & GAC installing assemblies)
0x4A	int	ProcessWindowStyle { 0 = Normal, 1 = Hidden, 2 = Min, 3 = Max }
0x4E	int	ElevationType { SameAswyUpdate = 0, Elevated = 1, NotElevated = 2 }

0x4B	int	Framework version { -1 = Unknown, 0 = .NET 2.0, 1 = .NET 4.0 }
0x4C	int	Register COM dll {0 = None, 1= .NET Assembly, 2=Register, 4=Unregister}
0x9B	–	End of File information
0x60	d. string	Folder to delete (providing it's empty on the user's machine)

**Obsolete Fields** (don't use the byte-codes for anything, or you'll break backward compatibility):

Byte Code	Datatype	Contents
0x01	d. string	Commands to execute post-update [Removed, 2.6.7]

## wyUpdate Self Update Files (aka Continuation Files)

File ID: IUSUFV2

Byte Code	Datatype	Contents
0x01	d. string	Client data file location
0x02	d. string	Server data file location
0x03	d. string	Client's server file location (self update server file)
0x04	d. string	Base Directory
0x05	d. string	Temporary directory
0x06	d. string	Old client file location (wyUpdate.exe)
0x07	bool	SelfUpdate = true, ContinueUpdate = false
0x08	bool	Elevation needed? (Used to check if the client was appropriately elevated by the user)
0x09	d. string	Server overwrite location
0x0A	string	Location for the auto-update file
0x80	–	Is in automatic mode – will commence with update installation immediately
0x81	–	Is this the new self?
0x82	–	Is updating from a service (i.e. skip UI prompts)
0x0C	string	Update path variable
0x0D	string	Custom URL arguments
0x0E	string	Forced language
0x0F	string	Custom proxy URL
0x10	string	Custom proxy username
0x11	string	Custom proxy password
0x12	string	Custom proxy domain

0x13	string	The process to start on error (StartOnErr)
0x14	string	Arguments to pass to the process to start on error (StartOnErrArgs)

## wyUpdate Rollback Files/Folder

File ID: IURUFV1

Byte Code	Datatype	Contents
0x02	d. string	Filename
0x04	d. string	Folder path to delete
0x06	d. string	Folder path to create

## wyUpdate Rollback Registry

File ID: IURURV1

Byte Code	Datatype	Contents
0x01	int	Total number of registry rollback entries
–	–	See <b>RegChange</b>

## wyUpdate Rollback COM registration

File ID: IURUCV1

Byte Code	Datatype	Contents
0x01	int	Total number of registry rollback entries
–	–	See <b>RegChange</b>

## wyUpdate Uninstall Files & Registry

**File ID:** IUUFRV1

**Filename:** uninstall.dat

**Description:** Remove any newly created files, folders, and registry items (keys or values).

Byte Code	Datatype	Contents
0x8A	–	Beginning of file information
0x01	d. string	Filename
0x02	bool	Delete the file?
0x03	bool	Un-NGEN the file?
0x04	int	CPUVersion { 0 = AnyCPU, 1 = x86, 2 = x64 } (for NGENing & GAC installing assemblies)
0x05	int	Framework version { -1 = Unknown, 0 = .NET 2.0, 1 = .NET 4.0 }
0x06	int	Register COM dll {0 = None, 1= .NET Assembly, 2=Register, 4=Unregister}
0x9A	–	End of file information
–	RegChange	Registry change to execute (See <b>RegChange</b> ) 0x8E is the byte code

**More information:** When an update creates new files, folders, or registry items, these items are added to the top of this file. Newest added files, folder, registry first, all the way back to the oldest.

The uninstall is then executed sequentially.

```
[Header info]
[Version 2.1 files, folders, registry]
[Version 2.0 files, folders, registry]
...
[Version 1.0 files, folders, registry]
[EOF byte]
```

## wyUpdate Automatic Update State Files

**File ID:** IUAUFV1

**Filename:** autoupdate

**Description:** Allow wyUpdate to continue where it left off in the AutoUpdate process.

Byte Code	Datatype	Contents
0x01	int	Step on {Checked = 0, Downloaded = 1, Extracted = 2}
0x02	string	Executable to launch after the update succeeded Or failed (if 0x80 is present, this is really the service name)
0x03	string	AutoUpdateID to write to the file in AppData\wyUpdate AutoUpdater\[id].autoupdate whether the update succeeded or not.
0x0C	string	Execution arguments when starting the update app/service
0x80	–	The “app to be executed (0x02)” is really a service
0x04	string	Server data file location
0x05	string	Client's server file location (self update server file)
0x06	string	Old temp directory [pre v2.5.10] (%appdata%\wyUpdate AU\cache\GUID)
0x0B	string	Temp directory (cache folder, C:\Users\USER\wc\N)
0x07	string	Update filename
0x08	int	SelfUpdateState {None = 0, WillUpdate = 1, Downloaded = 4, Extracted = 5}
0x09	string	Path to self update file (unextracted) or Path to extracted wyUpdate depending on SelfUpdateState
0x0A	string	Path to old wyUpdate (self for “slave”, to-be-replaced for “master”)
0x0C	string	Update path variable
0x0D	string	Custom arguments variable
0x0E	string	Forced culture language
0x0F	string	Custom proxy URL
0x10	string	Custom proxy user
0x11	string	Custom proxy password
0x12	string	Custom proxy domain
0x13	string	App to start on error
0x14	string	Arguments to pass to app that will be started on an error
0x15	string	Password encrypted updates