CrunchIt User Guide

Includes setup and operating instructions.

NSC

(c) 2003-2004 NSC. All rights reserved.

Under the copyright laws, this manual may not be copied, in whole or in print, without the written consent of NSC. Your rights to the software are governed by the accompanying software license agreement.

Use of the NSC logo for commercial purposes without the prior written consent of NSC may constitute trademark infringement and unfair competition in violation of international laws.

Every effort has been made to ensure that the information in this manual is accurate. NSC is not responsible for printing or clerical errors.

NSC
23 Fielding Dr.
Aurora, Ontario
Canada
L4G 4Z4

http://www.nsctech.com

Other company and product names mentioned herein are trademarks of their respective companies. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. NSC assumes no responsibility with regard to the performance or use of these products.

Simultaneously published in the United States and Canada.

Table of Contents

CHAPTER 1 *CrunchIt Overview* ***1***

Supported File Formats ***1***
Advanced Navigation ***1***
Automate Complex Tasks ***1***
Send Files Fast, Safe And Secure ***2***
An Excellent Backup Tool ***2***
Create Self-extracting ZIP Files ***2***
Benchmark Your Pocket PC ***2***

CHAPTER 2 *What's New?* ***3***

New Navigation Features ***3***
New Display Modes ***3***
Command Line Support (registered version) ***3***
New SFX Features ***4***

CHAPTER 3 *System Requirements* ***5***

CHAPTER 4 *Installation Notes* ***7***

Installing ***7***
You can also install CrunchIt on your device: ***8***
Uninstalling ***8***

CHAPTER 5 *Configuring CrunchIt* ***9***

Configure Compression settings ***10***

CHAPTER 6 *Using CrunchIt* ***11***

Opening Archives **11**
Microsoft File Explorer ***11***
CrunchIt ***12***
Viewing Files And Folders **12**
The Tall View ***12***
The Short View ***13***
Viewing File Properties ***13***
Navigation Options **14**
The Navigation Toolbar ***14***
The Folder Dropbox ***14***
The Parent Folder Button ***14***
How To Change Folders ***15***
Working With Files And Folders **15**
Selection Modes ***16***
Launching Files ***16***
E-mailing Files ***16***
Searching For Files And Folders ***16***
Testing And Extracting Files ***16***
Working with ZIP files **17**
Creating New ZIP Files ***17***
Adding Files ***17***
Securing Files With A Password ***18***
Deleting Files And Folders ***18***
Benchmarking ZIP operations **18**
Stream Statistics ***19***
File Statistics ***19***
General Statistics ***19***
Creating Self-extracting ZIP Files **19**
SFX Applications **20**
Creating Uuencoded Files **21**
Decoding Files **22**
How To Create And Edit A Shortcut **22**
Pocket PC Shortcut Format ***23***
CrunchIt Command Line Options (registered version) ***24***
CrunchIt Examples ***25***
SFX Command Line Options ***25***
SFX Example ***25***

CHAPTER 7 *Support* ***27***

CHAPTER 1

CrunchIt Overview

CrunchIt is the most advanced compression utility available for Microsoft Pocket PC devices. It offers unparalleled ease-of-use, security features and supports more file formats than any other package.

Supported File Formats

CrunchIt allows you to exchange files with Windows, Macintosh, UNIX and other handheld computers. It supports ZIP (.zip), SFX (*.exe), UUE (multipart with standard and base64 encoding), JAR (.jar), TAR (.tar), GZIP (.tar.gz, .tgz) and BZIP2 (.bz, .bz2, .tbz, .tbz2) file formats.

Advanced Navigation

CrunchIt makes working with large archives fast and easy. It organizes information so that you can browse information in the same manner as Microsoft File Explorer, by working with individual files and folders. In addition, you can search for files and view relevant statistics like ‘size on disk,’ plus much more.

Automate Complex Tasks

CrunchIt provides seamless integration with Microsoft File Explorer and other Pocket PC applications. When you double tap an archive entry, CrunchIt will auto-

matically extract and open the file. Or you can harness the power of CrunchIt in your scripts by using the command line options (registered version only) to move files in and out of archives.

Send Files Fast, Safe And Secure

Use CrunchIt to compress your files and reduce transmission time. You can also secure files with CrunchIt to prevent unwanted visitors from snooping through your data.

An Excellent Backup Tool

CrunchIt makes it easy to move files in and out of archives. You can add or move entire folders into a ZIP file based on age or name (for example, *.doc). Extract files with the peace of mind that you will not erase something important.

Create Self-extracting ZIP Files

CrunchIt is an essential tool for software developers. You can create self-extracting ZIP files (*.exe) for ARM, XScale, MIPS, SH3 and X86 emulator Pocket PC devices. Software deployment has never been easier!

Benchmark Your Pocket PC

See how fast your Pocket PC really is. For enthusiasts and reviewers, use CrunchIt to benchmark the performance of your processor and storage devices.

CHAPTER 2

What's New?

The latest version of CrunchIt introduces many new navigation and command line features that make working with archives faster and easier.

New Navigation Features

CrunchIt changes the way you interact with archives. It organizes information so that you can browse files and folders in the same manner as Microsoft File Explorer. In addition, a new navigation toolbar is provided to help you view, find and select the files you want.

New Display Modes

CrunchIt 5.0 includes two new display modes: "tall" and "short." Tall mode shows you essential file information and makes it easier to browse and select files. Short mode lets you see the maximum number of files on a small display.

Command Line Support (registered version)

Now you can integrate CrunchIt into your own applications. With the new command line options, you can create Shortcuts, scripts or even make "shell" calls that will automatically perform add, test and extract operations without writing your own compression software.

New SFX Features

Now you can use self-extracting ZIP files to build installation and recovery solutions. The new command line options and error reporting features lets you simplify or eliminate user input!

CHAPTER 3

System Requirements

The minimum requirements your device needs to run CrunchIt are:

- A XScale, ARM, MIPS or SH3 processor.
- 16 megabytes (MB) of RAM.
- Color or monochrome display.
- Microsoft Pocket PC 2000/2002 or Windows Mobile 2003 operating system.
- 1 megabyte (MB) of storage for application data; 2 MB or more for temporary and archive data.
- External memory cards and storage devices are supported.

CHAPTER 4

Installation Notes

This chapter describes the procedures to install and uninstall CrunchIt.

NOTE: It is recommended that you perform a "soft" reset of the device after installing CrunchIt. Refer to your handheld manual for further details.

NOTE: If you have purchased CrunchIt from an on-line distributor, print out your receipt and make a back-up copy of the software.

Installing

Perform the following steps to install CrunchIt:

1. Open Microsoft Windows Explorer (**Start > Programs > Accessories > Windows Explorer**) on your desktop computer.
2. Double-click the **Setup.exe** icon in the CrunchIt folder.
3. Click the **Install**.
4. Read the license agreement carefully. If you agree to the terms, click the **Accept** button to launch Microsoft ActiveSync.
5. Follow the on-screen instructions.
6. Verify CrunchIt has been installed on your device by looking in the "Programs" folder (**Start > Programs > CrunchIt**).

You can also install CrunchIt on your device:

1. Locate the .CAB file for your device (for example, CrunchIt.PPC3_ARM.CAB for XScale and ARM devices) found in the CrunchIt folder.
2. Copy or download the .CAB file to your device.
3. Open Microsoft File Explorer (**Start > Programs > File Explorer**).
4. Locate and tap the CrunchIt .CAB file.
5. Follow the on-screen instructions.

Uninstalling

Perform the following steps to uninstall CrunchIt.

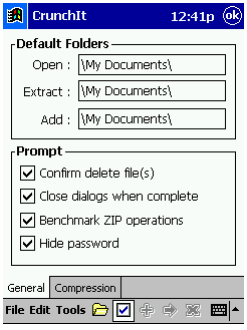
1. If CrunchIt is running, exit the application.
2. Open Microsoft ActiveSync on your desktop computer.
3. Select the **Add/Remove Programs** option in the **Tools** menu.
4. Select **NSC CrunchIt** in the application list.
5. Click the **Remove** button.
6. Follow the on-screen instructions.

CHAPTER 5

Configuring CrunchIt

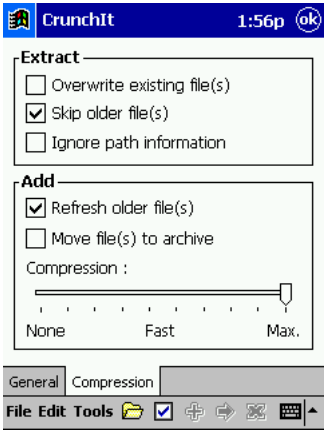
CrunchIt includes many options to help you work with archives. To configure CrunchIt, select the **Settings** option in the **Tools** menu.

Configure General settings



1. **Open folder**. Enter the default archive folder. CrunchIt will always look for files in this location.
2. **Extract folder**. Enter the default extract or temporary folder.
3. **Add folder**. Enter the default folder for add operations.
4. **Confirm delete prompt**. Check this option if you want to CrunchIt to ask you if it is okay to delete any files or folders.
5. **Close dialogs**. Check this option if you want to automatically close status dialogs.
6. **Benchmark ZIP operations**. This option will cause CrunchIt to display performance statistics after every ZIP operation. See the "Benchmarking ZIP operations" section below.
7. **Hide password**. Enable this option if you do not want to make your passwords visible while you enter them.

Configure Compression settings



1. **Overwrite existing files**. Check this option if you want the files and folders in the current archive to always overwrite the ones on your device.

   WARNING: This option will override the Skip older file(s) option and may delete any changes you have made to existing files.

2. **Skip older files**. Select this option if you want CrunchIt to preserve newer files on your device.

3. **Ignore path information**. Check this option if you want to ignore the folder hierarchy in the current archive.

4. **Refresh older files**. This option will update the files in your archive.

5. **Move files to archive**. Select this option if you want CrunchIt to delete the files on your device after they have been moved into the archive.

6. **Compression level**. Adjust the pointer to the compression level that suits your needs. None or fast compression levels will take less time, but result in larger archives.

CHAPTER 6

Using CrunchIt

Opening Archives

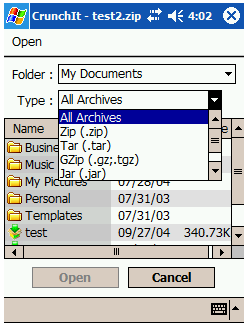
There are two methods to open an archive with CrunchIt:

Microsoft File Explorer

Open Microsoft File Explorer (**Start > Programs > File Explorer)** on your device and browse to the folder where you store your archive files. Single-tap a ZIP, SFX, TAR, GZIP, BZIP2 or JAR file.

CrunchIt

Open CrunchIt (**Start > Programs > CrunchIt**) and select the **Open Archive** option in the **File** menu, or single tap the folder icon on menu bar. The 'Open' dialog will be displayed.



The Open dialog (right) allows you to access the archives on your device. If you want to change folders, double-tap an entry in the folder view or select an entry in the **Folder** dropbox. You can filter archives with the **Type** options; and sort based on name, size and date.

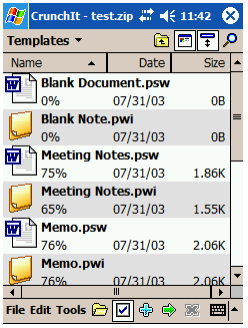
To open an archive, double tap an entry in the file view, or select it and tap the **Open** button.

Viewing Files And Folders

CrunchIt provides two different views to display file and folder information:

The Tall View

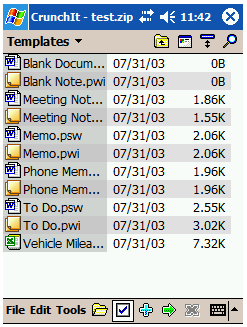
The Tall view uses two lines to display filename, date, size and compression (or file type if the compression data is not available) information. This view is designed to:



- Make reading long filenames (with extensions) easier.
- Distinguish between application icons.
- View the compression ratio or file type.
- The extra area of each item allows users to accurately tap and select files.

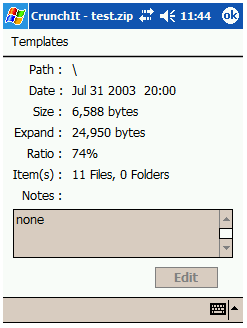
The Short View

The Short view lets you view the maximum number of file entries on your Pocket PC display. It can help you identify groups of files and avoid a lot of scrolling.



Viewing File Properties

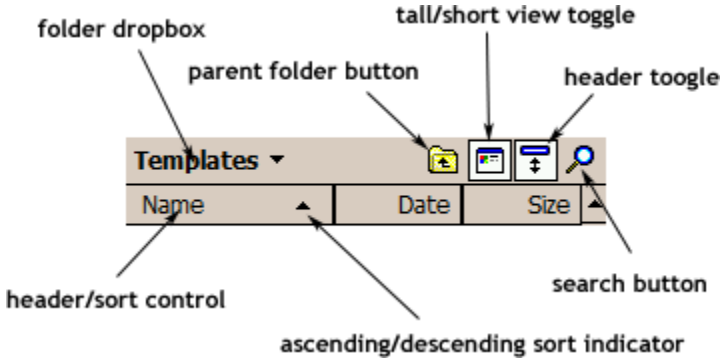
You can view file and folder information by selecting an entry and choosing the **File Properties** option (**Edit > File Properties...** or 'tap and hold'). Note the expanded file size and compression ratio is not available for all types of archive formats.



Navigation Options

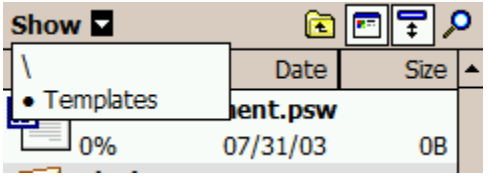
The Navigation Toolbar

The Navigation toolbar lets you select the current folder, change the display mode and search for files and folders.



The Folder Dropbox

The Folder dropbox lets you navigate to a previous or parent folder. Tap the control to view the contents and select a folder entry. The current selection is indicated with a dot.

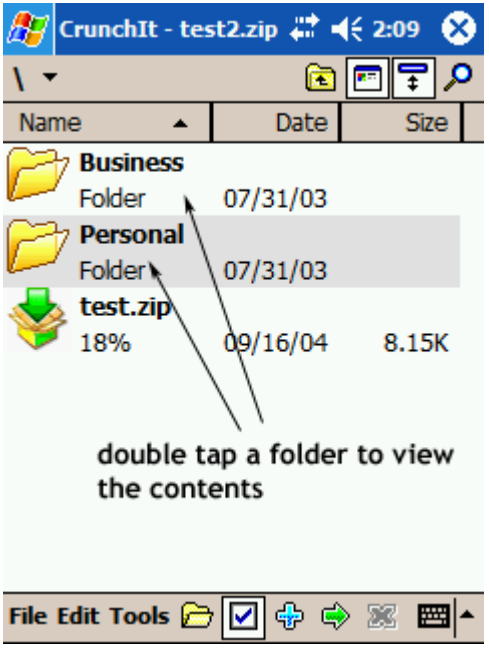


The Parent Folder Button

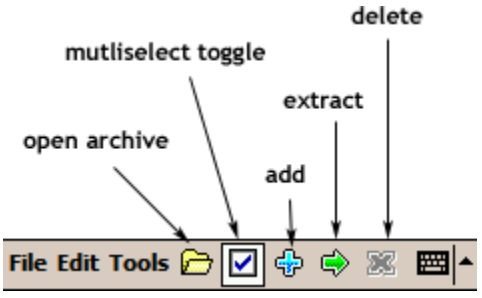
The Parent Folder button works with the Folder dropbox. Tap this button to to move to the parent folder.

How To Change Folders

You can view the contents of a folder by double tapping (single tap is used to select) any folder entry.



Working With Files And Folders



Selection Modes

CrunchIt has two different modes for selecting files: single and multi mode. In single select mode, every time you select a new file or folder (by tapping it) your previous selection will be deselected. In multi-select mode, you can select multiple entries by tapping each one.

Launching Files

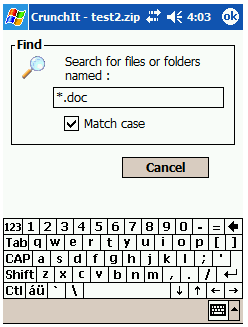
Double tap a file (or **Edit > Open**) to automatically extract and open it in the associated Pocket PC application. For example, a .doc file will be loaded into Pocket Word.

E-mailing Files

You can email a selected file to a friend by choosing the **Mail File...** option in the **Edit** menu.

Searching For Files And Folders

To search and select files, choose the **Find** option in the **Edit** menu. Enter a name pattern (all UNIX wildcard options are supported, such as ?, * and !).



Testing And Extracting Files

To extract files from an archive, select the **Extract** option in the **Edit** menu; or click the arrow icon (see above) on the tool bar. The 'Extract File(s)' dialog will be displayed; containing options to change the destination folder of the files, overwrite mode and selection criteria. Tap **Extract** to decompress and write the contents of the files.

If you wish to test the integrity of an archive or specific files, use the **Test** option found in the **Edit** menu. CrunchIt will decompress and check the file data without writing the contents.

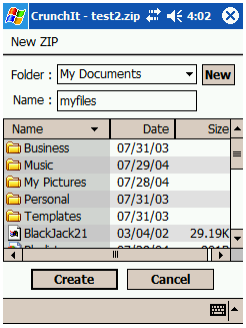
If one or more of the files in the archive is protected with a password, CrunchIt will prompt you for a password to unlock the contents.

The default file selection behavior of test and extract is as follows. If no files are selected the operation will apply to all files, otherwise selected files will be used.

Working with ZIP files

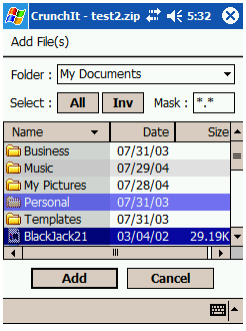
Creating New ZIP Files

To create a new ZIP archive, select the **New Archive** option in the **File** menu. The 'New ZIP' dialog will be displayed; where you can enter the name and location of the new archive. Note that do not need to add the '.zip' extension to the name, CrunchIt will add it for you. Tap **Create** or press return to edit the new archive.



Adding Files

To add files to a ZIP archive, select the **Add** option in the **Edit** menu or tap the plus icon on the tool bar. The 'Add File(s)' dialog will be displayed; containing options to select the files or folders to be compressed.



Notes:

- If you select a folder, the add operation will apply to all of the files and sub-folders contained in it.

- A file **Mask** option is available to add files of a specific name or type. For example, '*.doc' will cause CrunchIt to only add word processing documents to the archive.

Tap the **Add** button to insert the selected files and folders to the archive.

Securing Files With A Password

To encrypt files with CrunchIt, you must enter a password before adding items to the ZIP file:

- Select the **Password** option in the **Tools** menu.
- Enter a password and tap 'OK' to continue.
- Add (**Edit > Add**) files to the archive.

NOTE: CrunchIt uses the ZIP 2.0 encryption standard (Windows, Unix and Macintosh compatible) to encode files.

Deleting Files And Folders

To delete files and folders from an archive, select one or more entries in the file view. Choose the **Delete** option in the **Edit** menu or tap the 'X' icon in the menu bar.

NOTE: Users have reported that the delete operation will fail on some storage cards and devices. This is a bug in the operating system/device driver. If you are experiencing problems, you should move the file off the storage card, perform the delete operation and then move it back.

Benchmarking ZIP operations

NOTE: This feature is for registered users.

CrunchIt includes a benchmarking tool for measuring the performance of your PDA's processor and storage devices.

To benchmark the performance of ZIP operations, check the **Benchmark ZIP operations** option in the General settings (**Tools > General**).

NOTE: If you turn on the benchmarking feature, you will have to close the current ZIP file and re-open it to gather performance statistics.

Stream Statistics

The inflate/deflate statistics display the amount of time (seconds) the processor spends performing dictionary lookups, bit shifting/arithmetic and read/write memory operations. If the data is encrypted, additional CRC calculations and arthimetic are included. These measurements do not account for the time taken to read or write to the file system.

File Statistics

The read/write statistics display the amount of time spent reading and writing data from the storage device.

General Statistics

The archive statistics display the amount of time spent processing the archive format datastructures. It does not account for the time taken to update the CrunchIt user interface or threading overhead.

Creating Self-extracting ZIP Files

The first step in creating a self-extracting ZIP file is to create a regular ZIP file with the files and folders you want to include in the final executable.

NOTE: Do not use a password in your ZIP file, the self-extracting component does not support encrypted ZIP files.

After you have created your ZIP file, select the **Convert To .EXE** option in the **File** menu:

1. Tap the **Browse** button and select the source ZIP file.

2. Select the target platform:
- Pocket PC (PPC 2000),
- Pocket PC 2002 (PPC 2002) or
- Windows Mobile (PPC 2003) .

3. Check the platforms (ARM, MIPS etc.) you want to target. CrunchIt will generate a file for each platform. Note that XScale processors use the ARM target.
4. Tap the **OK** button.

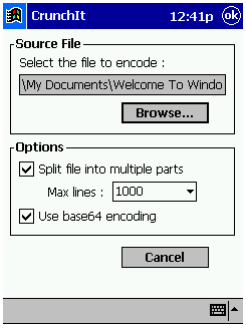
CrunchIt will generate the self-extracting ZIP files in the same folder as the source ZIP file. It will append the platform name and ".exe" extension to the file. For example, app.zip will become appARM.exe or appSH3.exe.

SFX Applications

Self-extracting ZIP files can be used for many applications:

- Software installation.
- Version control. Save the time and effort required to shuffle single files around.
- System recovery solutions (restore applications and data).
- Automated scripts.
- Data deployment (where users do not have to own compression utilities).
- Compact e-mail attachments.
- Plus many more.

Creating Uuencoded Files



If you want to send and receive binary files from newsgroups or other Internet services, you will need to become familiar with uuencode. This format takes any file on your Pocket PC and produces an encoded (using only ASCII characters) version suitable for plain-text transport.

To create a uuencoded file, select the **UUEncode File** option in the **Tools** menu:

1. Tap the **Browse** button and select the source file.
2. If the source file is too big (over 500K) to fit into a single message, select the **Split** ("Split file into multiple parts") option. See step 3.
3. If you have selected the **Split** option, enter or select the maximum number of lines per message. You should enter atleast 10 lines.
4. If you want to use base64 encoding, check the "Use base64 encoding" option.
5. Tap **OK** to create the UUE file(s).

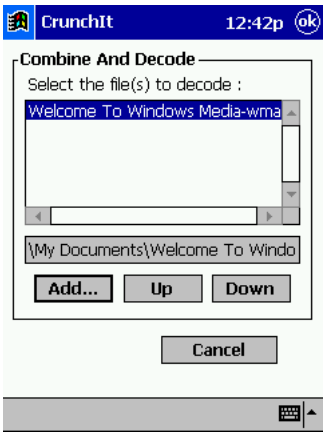
CrunchIt will generate a UUE file in the same folder as the source file. It will name files with the following convention:

filename-extension[(part-total)].UUE

The part-total information is present when the **Split** option is selected, otherwise it is omitted.

NOTE: The Windows CE (Pocket PC) operating system does not allow the forward slash character ('/') in filenames.

Decoding Files



To combine and decode files from newsgroups or email, select the **Combine/Decode** option in the **Tools** menu:

1. Tap the **Add** button to select files to decode.
2. To change the order of files, select the file-name in the listbox and use the **Up** and **Down** buttons.
3. Tap **OK** to combine and decode the files.

How To Create And Edit A Shortcut

On your Pocket PC:

1. Open Microsoft **File Explorer**.
2. Find and select the file you want to create a Shortcut for.
3. Select the **Paste Shortcut** option in the **Edit** menu. A file with the prefix "Shortcut to" and the extension ".lnk" will be created.

On your Microsoft Windows PC:

1. Open **Windows Explorer**.
2. Locate the **Mobile Device** folder (located under "My Computer").
3. Find and select the Shortcut file (.lnk) you created on your Pocket PC.
4. Copy this file to a location on your Windows PC.
5. Open **Notepad** (**Start > Run > Notepad**).
6. Edit the Shortcut (see instructions below) using **Notepad** (**File > Open**).
7. Copy the Shortcut file back to your device.

Pocket PC Shortcut Format

The Shortcut file format provides a simple interface to run applications with custom parameters. It can be edited in any text editor and uses the following rules:

<number of chars after '#'>#<"application path and file name">[<space>option1 [<space>option 2]...]

CrunchIt Command Line Options (registered version)

COMMAND	STATE	DESCRIPTION/SYNTAX
/archive <filename>	Required	Archive to open/create.
/extract	Required	Extract files and folders (cannot be mixed with add or test).
/test	Required	Test archive integrity (cannot be mixed with extract option).
/add	Required	Add files to archive (cannot be mixed with extract or test).
/folder <pathname>	Optional	Specify destination folder (for extract operations).
/file [file 1 [file 2] ..]]	Optional	Specify files for add operation. Use quotes (“\file1.doc” “\file2.doc”) and a space to separate multiple files.
/ignorepath [on | off]	Optional	Ignore path information during extraction process.
/skip [on | off]	Optional	Skip older files during extraction process.
/level [0-9]	Optional	Set compression level (for add operations).
/move [on | off]	Optional	Move files to archive (for add operations).
/refresh [on | off]	Optional	Refresh older files (for add operations).
/password <alphanum>	Optional	Password required to extract/add files.
/prompt [on | off]	Optional	Turn status dialogs, and error messages on/off.
/overwrite [on | off]	Optional	Overwrite existing files during the extraction process.
/exit		Exit after extraction process is complete.

NOTE: If the optional parameters are not specified, the CrunchIt defaults (the settings in the configuration pages) will be used.

CrunchIt Examples

The following Shortcut will add all of the files in “My Documents\Templates” to an archive named “mytemplates.zip.”

```
138#"\Program Files\CrunchIt\CrunchIt.exe" /archive "\My Documents\mytemplates.zip" /prompt off /move off /add /file "\My Documents\Templates"
```

The next example will automatically extract the archive “\My Documents\mytemplates.zip” to the “\Temp” folder and exit.

```
151#"\Program Files\CrunchIt\CrunchIt.exe" /archive "\My Documents\mytemplates.zip" /prompt off /overwrite on /ignorepath on /extract /exit /folder "\Temp"
```

SFX Command Line Options

COMMAND	DESCRIPTION/SYNTAX
/auto	Automatically start the extraction process.
/folder <path>	Extract to specified folder. Default is “\My Documents”.
/exit	Exit after extraction process is complete.

SFX Example

The following Shortcut will extract the files in the SFX named “testARM2003.exe” to the “\Temp” folder and automatically exit.

```
57#"\My Documents\testARM2003.exe" /auto /folder Temp /exit
```

CHAPTER 7

Support

To find current information on CrunchIt, please monitor our website at:

http://www.nsctech.com

If you have purchased this software and require assistance, please contact:

support@nsctech.com

Sales and reseller information should be directed to:

sales@nsctech.com

We like to hear what you think of our products! If you have any comments or feature requests for CrunchIt, email them to:

support@nsctech.com