

## OneHand Documentation

OneHand INIT v2.0, © 1991 written by Tom Leathrum

The OneHand INIT/cdev is a utility designed to eliminate some side-to-side motion otherwise required when typing with one hand (or with other restrictions to hand mobility). To install it, simply drop it in your system folder and reboot.

The OneHand INIT/cdev provides a compressed keyboard on the numeric keypad for Mac Plus or later machines running System 4.1 or later, and which have a numeric keypad. The idea of the compression scheme is to provide one of three subsets ("plies") of the usual character set at any given time, and switch between them in one of several ways which the user can choose in the OneHand Control Panel. There has been no attempt made to take over the Command key, so the best way to use this would be in conjunction with Apple's Easy Access (or else just use the mouse for menu commands).

There are three constant keys on the keypad:

- 1) the "ply" key (described above) which lets you jump to the next ply in the cycle
- 2) the "sticky shift" key, which shifts the *next* character typed on the keypad but does not jump to the next ply until the shifted key is pressed
- 3) the "space" key

The OneHand Control Panel:

The Control Panel interface to the OneHand INIT/cdev provides the user a way to 1) turn off OneHand, and 2) change the manner in which "plies" are chosen. For (1), the radio buttons titled "ON" and "OFF" have the obvious meanings. For (2), there is one group of radio buttons (titles "Ply After" and "Ply First") and two check boxes (titles "Default to Top" and "Use Backspace"); their meanings are described below. Changes to the settings take effect immediately and are saved automatically.

Ply After vs. Ply First:

The "ply" key provides the user a way to choose between the three "plies" of characters associated with the keypad. If the user has selected "Ply After", then the user selects the ply *after* having chosen the letter. In this case, the "ply" key has the effect of erasing the typed character and replacing it with the corresponding character from the next ply. If the user has selected "Ply First", then the user must select the ply *before* typing the key. In this case, the "ply" key has no visible effect until a key is pressed, but then the character typed is determined by the ply selected.

#### Default to Top:

When the user presses a key, the character typed is determined by the current ply. After completing the selection of a character, if the "Default to Top" option has been set, the current ply is automatically set to the first ply. This has different effects depending on whether the user has selected "Ply After" or "Ply First". Under "Ply After" with the "Default to Top" setting turned on, typing a character automatically gives the character from the first ply; the "ply" key allows the user to change this character to a corresponding character from one of the other two plies. With the "Default to Top" setting turned off, the next character typed would come from the ply immediately *after* the ply from which the last character was selected. Under "Ply First" with the "Default to Top" setting turned on, typing a character automatically puts the user *back* into the first ply, so that if the next key is a character key it will be a character from the first ply. With the "Default to Top" setting turned off, the next character typed would again come from the ply immediately after the ply from which the last character was selected.

#### Use Backspace:

This option only makes sense (and hence is only visible) if "Ply After" has been selected. It tells OneHand whether the ply key should use the Backspace character or the Delete character when erasing the previous character typed. For most purposes, it should be turned on; however, some terminal emulators or remote hosts may require that you use the Delete character, in which case you should turn this setting off.

#### Suggestions:

I am well aware that the above description of how OneHand works will be cryptic to the novice user. The best way to see how OneHand works is to try it with your favorite text editor. Probably the easiest setting to learn would be "Ply After" with "Default to Top" turned on. "Ply After" has the advantage of giving you a visual indication of which ply is current., and "Default to Top" makes it so that most times, regardless of "Ply After", you will be in the top ply anyway. While some people may consider "Ply First" selection the logical choice, I'm afraid I consider it something of an anachronism -- OneHand v1.0 only implemented "Ply First" selection, for reasons that had more to do with ease of programming than anything else. The setting with "Default to Top" turned *off* should be considered "expert mode" in the sense that more efficient typing is possible with that setting, given a good keymap for it. With "Default to Top" turned on, a logical keymap would put common characters in the top ply; with it turned off, you can get sneaky about putting common two-letter sequences under the same key.

#### Known Problems:

- 1) no attempt has been made to provide an efficient arrangement of letters; however, you can change this yourself, with ResEdit (see below)
- 2) for unavoidable reasons having to do with how the Mac handles DA's, this INIT does not work with them (nothing crashes, but the keypad reverts to its usual state)
- 3) the "Option" key does not affect the keypad
- 4) with Microsoft Word, the Numeric Lock must be set

#### To Change the Key Map:

The key map is stored in a custom resource, type 'nkpm', in the resource fork of the INIT file. To modify the map, use ResEdit; the format of the data is given below.

#### Acknowledgements:

Thanks to Juri Munkki for the SampleINIT.c source, upon which this was based; Ken McLeod for the CShowINIT source and PROC resource; Symantec Corporation, for the Sample cdev source; Brendan Hahn, for finding Juri's code for me and helping work out bugs; Paul Merchant, for answering some questions in the beginning on how I should go about it; Eric Linton, for reporting Mac+ keypad compatibility problems; and Nancy Pompian, for giving me the original motivation to write it.

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The layout of the letters in each ply is as follows:

*First Ply:*

1	*	2	+	3	#	:
---	---	---	---	---	---	---

a	A	b	B	c	C	{
---	---	---	---	---	---	---

d	D	e	E	f	F	}
---	---	---	---	---	---	---

g	G	h	H	i	I	
---	---	---	---	---	---	--

**space**

**shift**

**ply**

*Second Ply:*

4	\$	5	%	6	&	;
---	----	---	---	---	---	---

j	J	k	K	l	L	'
---	---	---	---	---	---	---

m	M	n	N	o	O	-
---	---	---	---	---	---	---

p	P	q	Q	r	R	
---	---	---	---	---	---	--

**space**

**shift**

**ply**

*Third Ply:*

7	/	8	@	9	=	0	
s	S	t	T	u	U	(	[
v	V	w	W	x	X	)	]
y	Y	z	Z		del		
					back		
							<b>ply</b>
	<b>space</b>				<b>shift</b>		

*Format of the 'nkpm' Resource*

The 'nkpm' resource type is formatted in 6 32-byte units, two units for each ply (one for unshifted, one for shifted). The INIT accesses this information directly, so there is no formatting information in the resource. Only half of these 32-byte units actually get used, since the INIT takes care of the two special function keys ("sticky shift" and "ply") and the remaining 16 keys only require one byte each. However, the special keys do rely on getting a "null" character back from the key map, so for safety all bytes except for the 16 keys used should be set to "null". The chart below gives the position within the 32-byte unit of the character for the key as it is marked on the keypad. The order of the units is: Ply 1, Ply 1 shifted, Ply 2, Ply 2 shifted, Ply 3, Ply 3 shifted.

	0	1	2	3	4	5	6	7
\$00	.	rt	*		+	lt	clr	
\$08	dn		/	ent	up	-		
\$10	=	0	1	2	3	4	5	
\$18	6	7	8	9				

The "rt", "lt", "dn", and "up" keys are the arrow keys from a Mac+ keypad and should be set the same as the "\*", "/", "+", and "-" keys respectively, for reasons of compatibility. Also please note that the entry for the "ent" key in Ply 1 and Ply 1 Shifted represent the two options for erase characters for the ply key.