

PLK Multilingual Keyboard

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1. Introduction

PLK is an extended US keyboard able to generate all the characters of the English, Slovak, Czech, German and Hungarian languages. PLK eliminates the necessity to switch between US and SK (CZ, GE, HU) keyboards, keeps standard US keys layout and uses no dead keys. PLK is NOT compatible with typewriter-like SK (CZ, GE, HU) keyboard layout.

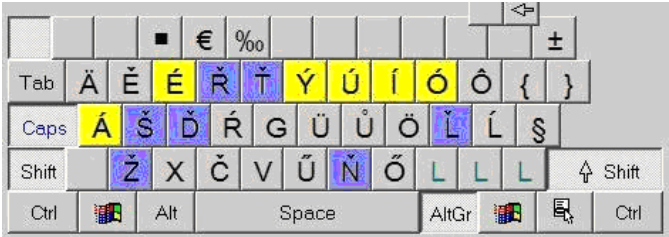
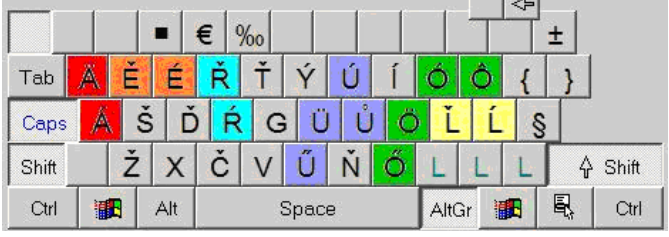
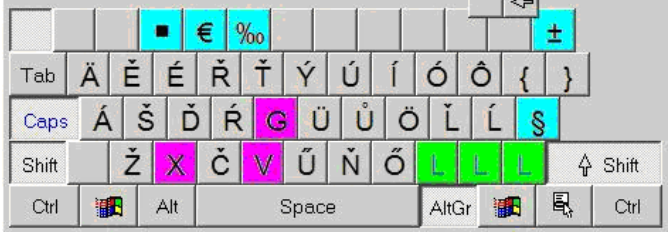
Typing on PLK is very natural and therefore easy to learn. The accented non-English characters are typed simply, using a new shift called here *LanguageShift* or shortly *Lang*, e.g.:

- *Lang+A* yields á (long small a);
- *Lang+Shift+A* yields Á (long capital A);
- *Lang+N* gives ñ (soft small n);
- *Lang+Shift+N* gives Ñ (soft capital N).

Note: The file containing this paper was saved with embedded fonts to guarantee its proper displaying and printing on PC's which are not configured to process texts with CE fonts. This paper should be spread in its original unmodified form.

2. The PLK Layout Rules

The PLK layout is easy to remember, because it is based on three pairs of simple rules. In the following description, each pair of the rules is accompanied by a keyboard picture. The keys mentioned in pair of rules are colored on the corresponding picture. To be brief, the rules mention just lower case letters, while the pictures show just the corresponding upper case letters.

<ol style="list-style-type: none"> 1. The accented vowels (á,é,í,ó,ú,ý) are located on the respective non accented keys (a,e,i,o,u,y). 2. The accented consonants (č,d,ř,ň,š,t,ž,ř) are located on the respective non accented keys (c,d,l,n,s,t,z,r). 	
<ol style="list-style-type: none"> 3. There are four letters (a,e,l,r), each with two accents: (á,ă), (é,ě), (ř,ř) and (ř,ř). The second one of the each pair is located next to the first one. 4. There are two letters (o,u), each with four accents (ó,ö,ő,ô) and (ú,ü,ű,û). They are located on keys which positions are easy to remember. 	
<ol style="list-style-type: none"> 5. The newer versions of the PLK contain the German sharp s (ß)¹, a few special characters (€,%,§) and some ligatures. 6. The unused keys (g,v,x) generate the respective characters regardless the <i>Lang</i> is pressed or not.² 	

¹ The sharp s is a lower case letter, therefore it is shown on the corresponding picture of the lower case accented characters in the section 4.

² Such an arrangement decreases the number of typing errors.

It can be seen, that all accented letters are assigned to the letter keys, except soft I/L (l/l) which is located on the non letter key (;/). The unused keys (G,V,X) may be used in future PLK versions.

3. The PLK Sets

The table in this section presents the accented and special characters which can be typed using PLK. The table presents also the 'membership' of the characters to the three character sets named PLK1, PLK2 and PLK5, and the names of the characters.

The versions 1.x of the PLK contained letters from the PLK1 set, which is in principle derived from an old Czechoslovak national standard that defined the common set of Slovak and Czech characters. These PLK 1.x are one-plus-two-lingual, because they are suitable for typing texts in the English plus Slovak and Czech languages.

The versions 2.x of the PLK were based on the PLK2 character set, which contains all the PLK1 characters and a few additional letters, necessary for typing German and Hungarian texts.

The versions 3.x and 4.x of the PLK are obsolete transition subsets and therefore are not included in the table.

The versions 5.x of the PLK are based on the PLK5 character set, which contains all the PLK2 characters and a few special, rather frequently used characters and character sequences (ligatures).

No.	Char	Shift + Char	Lang + Char	Lang + Shift + Char	PLK1 Set sk,cz	PLK2 Set sk,cz ge,hu	PLK5 Set sk,cz ge,hu spec	International Name in English	Slovak Name in Slovak	Slovak Name in English
1	a	A	á	Á	+	+	+	a/A with acute	dlhé a/A	long a/A
2	b	B	ú	Ú		+	+	u/U with double acute	dlhé prehlasované u/U	long pronounced u/U
3	c	C	č	Č	+	+	+	c/C with caron	mäkké c/C	soft c/C
4	d	D	ď	Ď	+	+	+	d/D with caron	mäkké d/D	soft d/D
5	e	E	é	É	+	+	+	e/E with acute	dlhé e/E	long e/E
6	f	F	ř	Ř	+	+	+	r/R with acute	dlhé r/R	long r/R
7	g	G	g	G				(not used)	(nepoužité)	(not used)
8	h	H	ü	Ü	+	+	+	u/U with diaeresis	prehlasované u/U	pronounced u/U
9	i	I	í	Í	+	+	+	i/I with acute	dlhé i/I	long i/I
10	j	J	û	Û	+	+	+	u/U with ring above	u/U s krúžkom	u/U with ring
11	k	K	ö	Ö	+	+	+	o/O with diaeresis	prehlasované o/O	pronounced o/O
12	l	L	ł	Ł	+	+	+	l/L with caron	mäkké l/L	soft l/L
13	m	M	ő	Ő		+	+	o/O with double acute	dlhé prehlasované o/O	long pronounced o/O
14	n	N	ň	Ň	+	+	+	n/N with caron	mäkké n/N	soft n/N
15	o	O	ó	Ó	+	+	+	o/O with acute	dlhé o/O	long o/O
16	p	P	ô	Ô	+	+	+	o/O with circumflex	o/O s vokáňom	o/O with vokan
17	q	Q	ä	Ä	+	+	+	a/A with diaeresis	prehlasované a/A	pronounced a/A
18	r	R	ř	Ř	+	+	+	r/R with caron	r/R s háčkom	r/R with hacek
19	s	S	š	Š	+	+	+	s/S with caron	mäkké s/S	soft s/S
20	t	T	ť	Ť	+	+	+	t/T with caron	mäkké t/T	soft t/T
21	u	U	ú	Ú	+	+	+	u/U with acute	dlhé u/U	long u/U
22	v	V	v	V				(not used)	(nepoužité)	(not used)
23	w	W	ě	Ě		+	+	e/E with caron	e/E s háčkom	e/E with hacek
24	x	X	x	X				(not used)	(nepoužité)	(not used)
25	y	Y	ý	Ý	+	+	+	y/Y with acute	dlhé y/Y	long y/Y
26	z	Z	ž	Ž	+	+	+	z/Z with caron	mäkké z/Z	soft z/Z
27	;	:	ł	Ł	+	+	+	l/L with acute	dlhé l/L	long l/L
28	'		ß			+		sharp s	ostré s	
28	"		§				+	section mark	paragraf	
29	#		■				+	Windings 110	Windings 110	
30	\$		€				+	euro sign	euro	
31	%		‰				+	per mille sign	promile	
32	=		≠				+	not equal to	nerovná sa	
32	+		±				+	plus-minus sign	plus-mínus	

The PLK versions 2.x and higher are one-plus-four-lingual, they support typing English plus Slovak, Czech, German and Hungarian texts. It means, that one needs just one PLK keyboard instead of one English and four national keyboards to type texts in all the five languages. It is useful to realize that texts typed in one language often contain fragments in other languages, e.g. names of people and geographical places, references to papers and books, and therefore such texts are de facto multilingual ones.

4. PLK Implementations


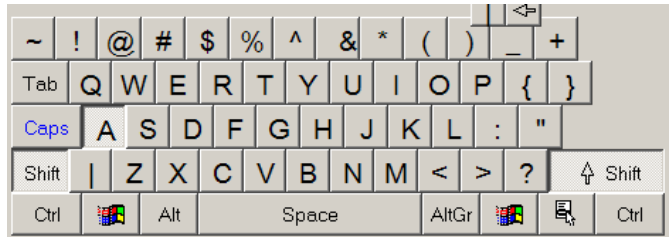


Early versions of PLK layout were implemented under *PC/MS-DOS* in the years 1986-1990, as an extensions or modifications of keyboard drivers. The *LanguageShift* was implemented as by *Alt* or *Alt+Ctrl*.

To implement PLK a configurable keyboard driver suits well. Under *Windows* operating systems a few such drivers exist.

A version of PLK is implemented in *Kalligram Keyboard layout editor and driver*.³

Newer versions of PLK are implemented using *KLM - The Keyboard Layout Manager*.⁴ In PLK for KLM, the *Lang (LanguageShift)* if implemented by keys *CapsLock* and *AltGr*. While any of the two is hold down, hitting an appropriate key, the desired accented character or special character or sequence of characters is generated.

The keyboard pictures contained in this paper are cutouts of the KLM screenshots. The following four keyboard pictures show the characters generated by the PLK. The numerical pad and the cursor keys are not included in the pictures.

<p>English Characters - Lower Case</p> <p>Neither <i>Lang</i> nor <i>Shift</i> pressed</p> <p>The characters correspond to the <i>Char</i> column of the table in the section 3.</p>	
<p>English Characters - Upper Case</p> <p><i>Lang</i> not pressed, <i>Shift</i> pressed</p> <p>The characters correspond to the <i>Shift+Char</i> column of the table in the section 3.</p>	
<p>Accented Characters - Lower Case</p> <p><i>Lang</i> pressed, <i>Shift</i> not pressed</p> <p>The characters correspond to the <i>Lang+Char</i> column of the table in the section 3.</p>	
<p>Accented Characters - Upper Case</p> <p>Both <i>Lang</i> and <i>Shift</i> pressed</p> <p>The characters correspond to the <i>Lang+Shift+Char</i> column of the table in the section 3.</p>	

PLK for KLM are stored in the “pl*.klm2000” files. It is recommended to download the newest PLK version⁵ and import it by KLM into US keyboard or the most frequently used national keyboard. Before PLK import the CapsLock LED should be switched off.

³ Available on www.internet.sk/kalligram/.
⁴ Available on www.klm.freeservers.com and www.klm32.com.
⁵ Available on www.hisys.sk.

Some texts contain arrows like ⇔ or →. They are generated by the sequences of characters (called *ligatures* in the KLM) - e.g. *Lang+>* generates the “-->” characters sequence, which is transformed by MS Word (and MS Power Point) to the → character. The overview of the arrows generated by the PLK5 is in the following table:

No.	Char	Shift + Char	Lang + Char	Lang + Shift + Char	PLK1 Set sk,cz	PLK2 Set sk,cz ge,hu	PLK5 Set sk,cz ge,hu spec	ligatures	
33	,	<	←	↩			+	<--	<==
34	.	>	→	↪			+	-->	==>
35	/	?	⇔	⇔			+	<=>	<=>

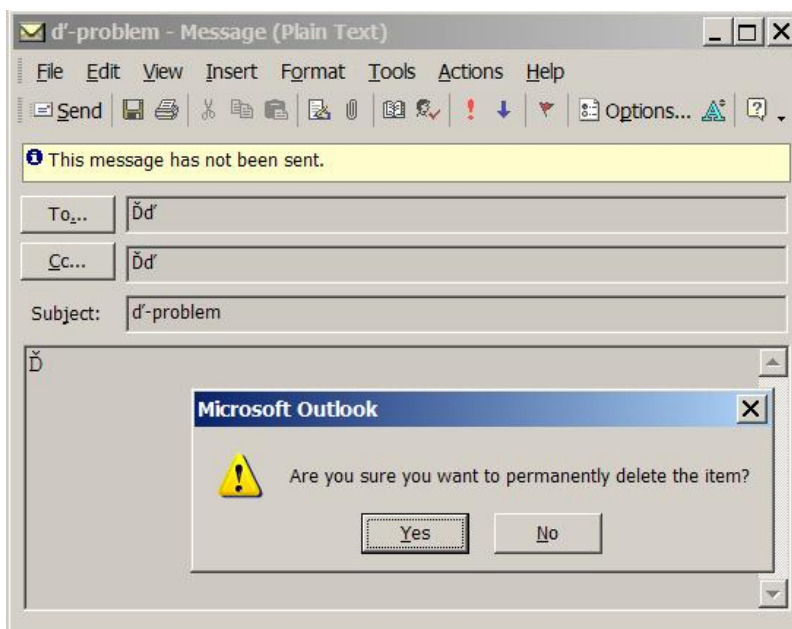
5. Incompatibilities

Just a few incompatibilities are known so far. They are concerned mainly to older versions of some software products. Newer versions of the products respect the PLK without problems.

5.1 MS Outlook XP

The incompatibility, caused by the MS Outlook XP, has been removed in MS Outlook 2003. In the message body field, the MS Outlook XP does not accept the letter *d* (soft small d). Instead, it displays the message *Are you sure you want to permanently delete the item?* - as can be seen on the accompanying picture. Such misbehavior is rather unpleasant because rapid typing often causes that the actual e-mail is lost.

Note, that this happens only in the above mentioned combination, i.e. either CapsLock+d or AltGr+d typed in the message body field. Ď (soft capital D) is accepted in message body, and both *d*/Ď are accepted in the all other fields of the Outlook XP message. To enter the letter *d* in the Outlook XP message body, it is necessary to use the combination Alt+271 typed on the numerical pad of the keyboard.



5.2 Acrobat Reader

Some versions of the Acrobat Reader ignore accented characters typed by PLK in Search mode. Due to this feature Acrobat Reader fails to find the searched strings.

5.3 Logons

Some logon programs/modules ignore accented characters typed by PLK although they appear as they accept it. Due to this feature a network or PC can become inaccessible. Therefore it is strongly recommended not to use accented characters in passwords.

5.4 Keyboards

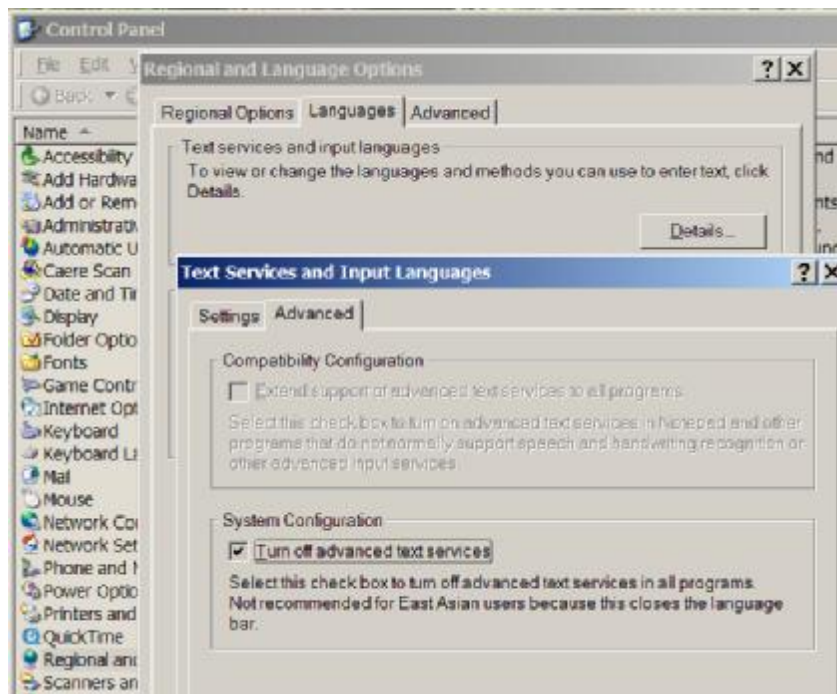
Some keyboards don't pass the following combinations: CapsLock+Shift+W, CapsLock+Shift+S (and CapsLock+Shift+X). Instead of Ě, Š (and X) they generate nothing. Fortunately, the letters Ě, Š are not too frequent and can be generated by the alternative combinations AltGr+Shift+W, AltGr +Shift+S respectively.

The PLK layout is different from standard typewriter-like PC layouts used for Slovak, Czech, German and Hungarian languages.

6. Pleasant side effects

If *Lang* (*LanguageShift*) if implemented by *CapsLock* the almost useless (and sometimes annoying) *CapsLock* key gains a very useful role. *CapsLock* as the *LanguageShift* is far more convenient than *AltGr*.

If everyday practice shows that PLK is sufficient, it is possible to switch off the language/keyboard switching mechanism - in *Windows XP* it is called *Turn off advanced text services*.



It is available through *Control Panel - Regional and Language Options = Languages - Details - Advanced*.

7. Conclusion

The PLK is used since 1986. It is designed for natural rapid typing of the text in the four Central European languages on standard US keyboard. It is very pleasant to type mixed-lingual texts with just one common well-designed multilingual keyboard, because such typing is much faster and less error prone. It is also very important that the US keyboard layout remains intact.

Because typing with the PLK is fast and natural, it is very easy to accustom to it. After a few weeks of continuous usage of the PLK, it is rather painful if one has to use a PC without the PLK. Therefore it is recommended to start to use the PLK only when its usage is guaranteed for long continuous time.

Similarly, changes of the PLK, especially minor ones, are usually very painful, because they significantly increase number of typing errors and decrease typing speed. Therefore it is recommended to avoid minor changes of the PLK after a longer time of its usage. The PLK extensions usually do not cause problems. ■