Vidyut

A Phonetic Keyboard for Sanskrit

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Download: http://www.mywhatever.com/sanskrit/vidyut

Current version: 5.0 (August 27, 2010)

Requirements: Windows XP, Vista, Windows 7; 32-bit or 64-bit

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Overview and Key Features

The Vidyut keyboard enables direct typing of Unicode-compliant Devanāgarī and selected Sanskrit Vedic and metrical marks on Windows computers using a phonetic method. The keyboard generally is consistent with the ITRANS version 5.3 ASCII transliteration schema, with additional features to provide marks not mapped in ITRANS. Both Google and Microsoft have released 64-bit IMEs for Indic languages that include phonetic virtual keyboards, but to date none of the available alternatives provides a robust solution for Sanskrit text, including all marks needed to set the full range of classical and Vedic content. Vidyut provides a more complete alternative for users working with Sanskrit texts.

The word vidyut (विद्युत) means lightning in Sanskrit.

Key features:

- 1. Runs on XP, Vista, and Windows 7
- 2. Runs on 32-bit and 64-bit operating systems. Many of the older input method editors (IMEs) for Sanskrit were developed on 32-bit computers and do not run on 64-bit systems. Vidyut was developed specifically to fill a need on 64-bit systems but also runs on older 32-bit systems.
- 3. Includes all Devanāgarī characters normally used in classical Sanskrit. Characters included are a subset of Unicode Devanāgarī range (0900-097F) plus additional common punctuation and other marks.
- 4. Includes all Vedic marks necessary to set *Rgveda*, including udātta (ं), anudātta (ं), and cerebral l (ळ). E.g., RV 1.1.1: ॐ अग्निमीळे पुरोहितं युज्ञस्यं देवमृत्विजेम् । होतारं रत्नुधार्तमम् ॥ १.१.१ ॥
- 5. Includes guru (⑤) and laghu (⑥) metrical marks for scansion of poetic meter (e.g., ず and ず) [Chandas font only.]
- 6. Uses only the unshifted and SHIFT states of the keyboard; no use of CONTROL or ALT keys improves compatibility with most hardware.
- 7. Zero Width Joiner (U+200D) gives user the option to manually type joined forms, overriding automatic formation of ligatures if desired. (e.g., बत versus क)
- 8. Can be fully customized for individual needs using Microsoft Keyboard Layout Creator
 1.4. All customized derivative keyboards are subject to the terms of the Creative

Commo	ns Attribu	ition-Non(Commerc	ial-Share	Alike 3.0	Unported	License	under	wh
the Vidy	yut keyboa	rd itself is	distribut	ed.					

Font Issues

The Vidyut keyboard is Unicode compliant and will work with any Unicode compliant font, with the exception of some special marks as noted below that do not appear in all fonts. Microsoft ships standard Unicode fonts with its operating systems, e.g., Arial Unicode MS (now deprecated), Kokila, Mangal, etc.

Most Unicode Devanāgarī fonts only include the basic elements of the Devanāgarī writing system as standardized in the Unicode range 0900-097F (http://unicode.org/charts/PDF/U0900.pdf). That range does not include all of the marks that are needed to set Vedic text or to show metrical scansion. Two fonts that provide a superset of the basic range are Sanskrit 2003 and Chandas.

Sanskrit 2003

We recommend the Sanskrit 2003 font for general use. Sanskrit 2003 is available as a free download (http://www.omkarananda-ashram.org/Sanskrit/itranslator2003.htm). It is not necessary to use the Itranslator software to use the Sanskrit 2003 font. It is a standard Unicode font that can be installed on your system and used with any application that supports Unicode. The ligature set provided by Sanskrit 2003 is superior to most other fonts.

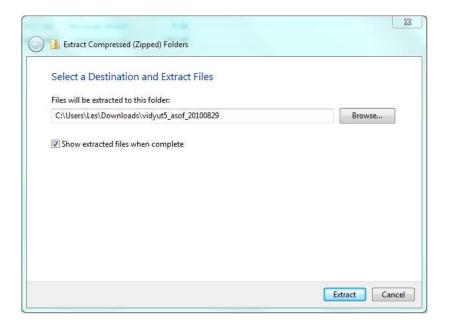
Chandas

Chandas is a Devanagari Unicode Open Type font with a very large ligature set. Chandas is available as a free download (http://www.sanskritweb.org/cakram/). Chandas is one of the only fonts with the complete set of marks needed to set Vedic text, metrical marks, and many additional signs not found in other Sanskrit fonts. Because most of these marks are not supported in other fonts, and because Vedic marks were only standardized in Unicode in 2009, Chandas uses the Private Use Area for these special marks. The Vidyut keyboard maps a few of the most useful marks from the Private Use Area of Chandas. If you require keyboard access to the complete Chandas font, we recommend that you install the Chandas Input Method Editor as an additional keyboard option for your system (32-bit only; 64-bit not supported as of August 2010).

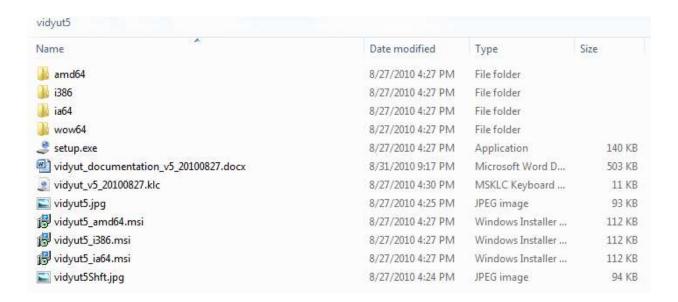
Installation instructions

- 1. If you have an older version of the Vidyut keyboard installed on your system, before installing a new version completely uninstall the older version by using "Add and Remove Programs" (in XP) or "Programs and Features" in Vista and Windows 7. In those listings Vidyut may be shown as "Sanskrit Vidyut Phonetic Keyboard" or "Phonetic KB for Sanskrit Custom".
- 2. You do not need to remove other Sanskrit keyboards prior to installing Vidyut. If you already have a Sanskrit keyboard such as the Google Sanskrit Input or the Microsoft Indic Language Input Method Editor, the Vidyut keyboard will be added as an additional keyboard option. You may have multiple Sanskrit keyboards installed on your system. If you have multiple Sanskrit keyboards installed, you will configure your Language Options later to determine which of these keyboards is the default.
- 3. Download the Vidyut zip file, which will have a version number and release date as part of the file name. The current file name is vidyut5_asof_20100829.zip.

4. Extract all of the files from the Vidyut zip file before beginning the installation. Do not try to run the installer from within the zip file, as this may cause the installation to fail. Do not extract only some of the files, as this may cause the installation to fail. To extract all of the files do a right click on the .zip file (vidyut5_asof_20100829.zip) and then select "Extract All...". In Windows XP the Extraction Wizard will start. In Windows 7 you will then see a dialog box asking where you want to store the extracted files. You can place the extracted files in any folder you want.



After you have extracted all of the files you will have a normal folder on your system that looks like this:



5. Run the setup exe file by double clicking it. You do not need to select a version of the software. The setup installer will detect the version of Windows that you have and do the correct installation automatically. The zip file includes all of the files needed to handle both 32-bit and 64-bit systems. When the setup installer begins, Windows may report that the Publisher is "unknown", which is normal for this package. The system will ask for permission to continue with the installation. After authorizing the installation, be patient and give the installer time to complete. It is a silent installer and does not show a progress indicator. If the installation runs correctly you will see the final "Installation Complete" message:

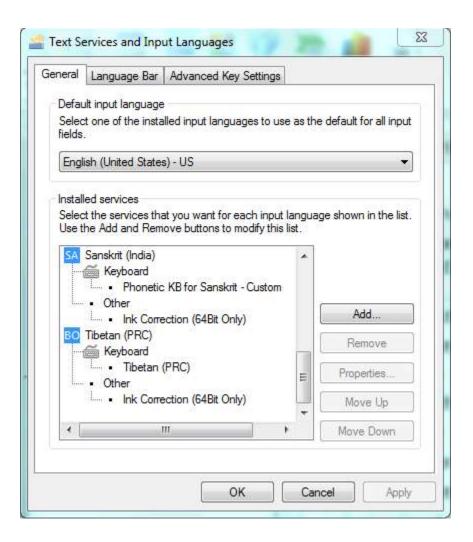


6. Because keyboard changes affect hardware, you may need to restart your system to ensure that the new keyboard will be available as an option. We recommend a restart on most systems to ensure that the new .dll file is activated.

7. To verify that Vidyut has been installed, you may look in "Add and Remove Programs" (in XP) or "Programs and Features" in Vista and Windows 7 to see the Vidyut listing. If it does not appear, you may need to restart your system and check again.

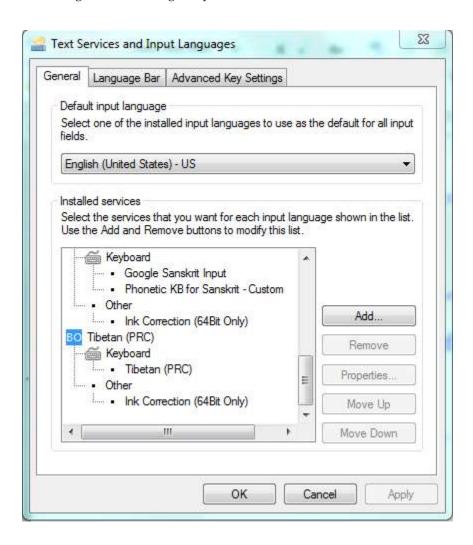
Acrobat.com	Adobe Systems Incorporated	11/16/2009	1.60 MB	1.6.65
Adobe Reader 9.3.4 MUI	Adobe Systems Incorporated	8/21/2010	688 MB	9.3.4
Sanskrit Vidyut Phonetic Keyboard Version 5	Adolf von Wurttemberg, Les M	8/27/2010	128 KB	1.0.3.40
∰ Apple Software Update	Apple Inc.	4/10/2010	2.15 MB	2.1.1.116
# Apple Application Support	Apple Inc.	8/16/2010	42.8 MB	1.3.1

8. To verify that the Vidyut keyboard is now associated with the Sanskrit ("SA") language on your Language Bar, right-click the Language Bar and select "Settings". If you did not have another keyboard previously installed as your Sanskrit default, the Vidyut keyboard should now be shown as the default. It may be listed as Vidyut or it may be listed as "Phonetic KB for Sanskrit – Custom" as shown below:

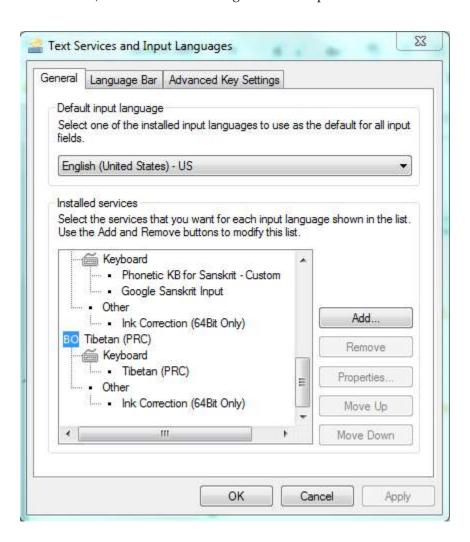


- 9. Once the Vidyut keyboard is installed as the default keyboard for Sanskrit you may enter Sanskrit typing mode by selecting "SA" on the language bar.
- 10. <u>If you had another keyboard associated with Sanskrit before installing Vidyut</u>, the Vidyut keyboard will be added as an option below previously-installed keyboards. The first keyboard in the list is the default keyboard. In the example shown below, the Google Sanskrit Input keyboard was previously-

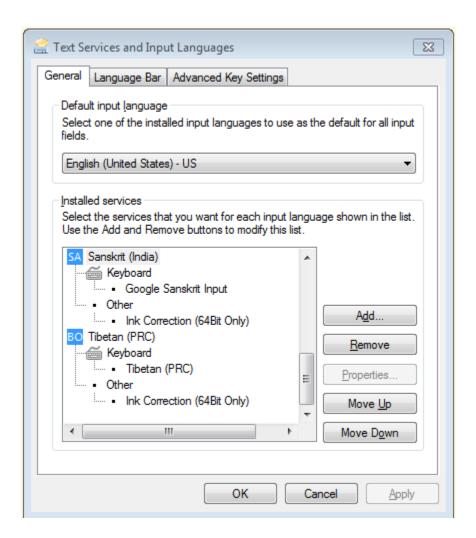
installed as the default for Sanskrit. After installing Vidyut, the Vidyut Keyboard ("Phonetic KB for Sanskrit - Custom") was added as the second option, below the previous Google default. In this listing order the Google keyboard is still the default.



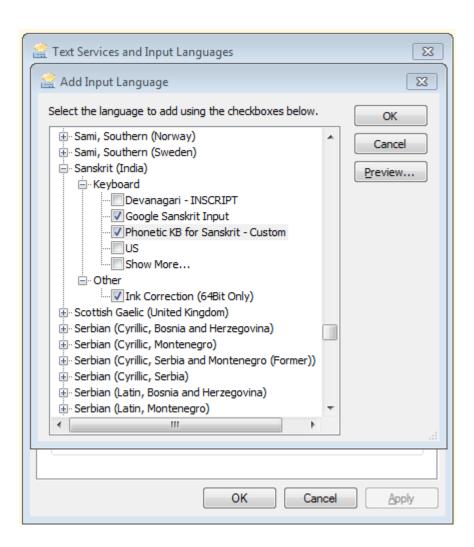
11. <u>To change the default order of keyboards</u>, if you have more than one, use the Move Up and Move Down keys. The picture below shows the Vidyut keyboard (listed as "Phonetic KB for Sanskrit - Custom") moved above the Google Sanskrit Input.



12. If you installed the Vidyut keyboard but it does not appear as a Sanskrit keyboard in your Language Bar settings, you may add it to the Language Bar manually. In the example shown below, the Vidyut keyboard has not yet been added as an option. To add Vidyut as an option, select "Sanskrit (India)" as the language, then click the "Add" button.



13. As shown below, in the "Add Input Language" dialog box scroll down to "Sanskrit (India)" and check the box to add the Vidyut keyboard. The Vidyut keyboard may be listed as "Phonetic KB for Sanskrit - Custom". Click "OK".



Typing Method

The Devanāgarī writing system forms shapes based on complete syllables. If you think in terms of forming one syllable at a time you will make fewer errors. In the following examples, the keys you would press are shown in **red**.

1. Consonants, semi-vowels, and sibilants include the vowel अ (a) as part of their standard form. To type a consonant with no vowel sound (a half-form or halant) type virāma (the forward slash) after the consonant:

```
    ホ = ka || k
    ホ + ○ = 東 = k || k/
    ロ = va || v
    ロ + ○ = 頁 || v/
    स = sa || s
    स + ○ = 刊 || s/
```

2. Vowels used at the beginning of words are shown as full forms (अ इ उ, etc.). Vowels used to modify the sound of other letters (mātrās) are shown as vowel marks (गु गू गी गी ग गो, etc.) that are typed following the letter they modify.

```
      अ॥ a
      उ॥ f

      आ॥ `
      ऊ॥ F

      का॥ क + ा॥ kA
      वु॥ व + ु॥ vu

      इ॥ x
      ऋ॥ [

      ई॥ x
      गृ॥ gR

      सि॥ स + ि॥ si
      कं॥ क + ं॥ kM

      ठी॥ ठ + ी॥ QI
      कः॥ क + ः॥ kH
```

3. Compound characters are typed using virāma (the forward slash). Ligature forms (saṃyoga) will be created automatically depending on the font you are using.

```
왕 = \pi + \gamma + \eta || k/S

\overline{\eta} = \overline{\psi} + \gamma + \gamma || z/g

\overline{\psi} = \overline{\eta} + \gamma + \gamma || s/Q

\overline{\psi} = \overline{\psi} + \gamma || y/j

\overline{\psi} = \overline{\psi} + \gamma || h/1
```

4. If desired, you can stop the system from automatically creating vertical ligatures by using the Zero Width Joiner key (the "?" key). The Zero Width Joiner key allows you to display consonant half-forms using horizontal ligature variations (e.g., कर versus क).

```
क्त versus क्त ॥ क + ् + त versus क + ् + ZWJ + त ॥ k/t versus k/?t
भ्न versus भ्र ॥ भ + ् + न versus भ + ् + ZWJ + न ॥ B/n versus B/?n
ङुग versus ङ्ग ॥ ङ + ् + ग versus ङ+ ् + ZWJ + ग ॥ Z/g versus Z/?g
```

5. Vedic texts use a wide variety of special accents and marks that are not part of the Devanāgarī 0900-097F standardized Unicode writing system in range as (http://unicode.org/charts/PDF/U0900.pdf). That basic range does include three marks that are useful for Vedic texts: udātta (ਂ), anudātta (ਂ), and cerebral l (귱). Those three characters are included in some Unicode Sanskrit fonts. Verify that the marks are present in whatever font you want to use for Vedic text. The Vidyut keyboard allows you to type them easily if they are present in their Unicode standard values. These marks are sufficient to set Rgveda, (e.g. RV 1.1.1: 🕉 अग्निमीळे पुरोहितं युज्ञस्य देवमृत्विजम् । होतारं रत्नुधातमम् ॥ १.१.१ ॥) but are not sufficient to set Yajurveda, Sāmaveda, or Atharvaveda. If you need to set those texts consider using the Chandas font.

6. The guru (*) and laghu (*) metrical marks for scansion of poetic meter (e.g., す and ず) are not part of the Devanāgarī writing system as standardized in Unicode range 0900-097F

(http://unicode.org/charts/PDF/U0900.pdf). and are not found in most Sanskrit fonts. They are present in the Chandas font. To set metrical text you may either set all of the text in Chandas, or set the base text in another font, such as Sanskrit 2003, and then add the metrical marks to the base text using Chandas. The marks can be added to text in the same manner as the Vedic marks discussed above. The examples below are set using the Chandas font.

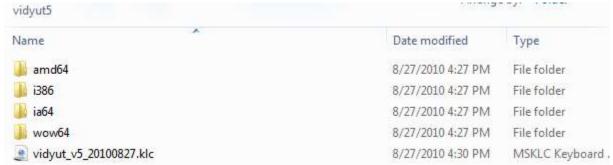
7. Numbers and common punctuation marks are typed using their standard keys.

$$2.893 = (2.000 + 893) \parallel 1.493 = (1.000 + 493)$$

Customization

All functions of the Vidyut keyboard can be fully customized for individual needs. The Vidyut keyboard is distributed with a MSKLC source file (with a .klc extension) that can be opened and modified in Microsoft Keyboard Layout Creator 1.4. All customized derivative keyboards created in this manner are subject to the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License under which the Vidyut keyboard itself is distributed. If you develop a version of Vidyut for a special application, the developers would be happy to hear about it. If the variant works well for a special need the developers may consider adding it to the download archive for Vidyut, crediting you as the developer of the modified version.

- 1. Microsoft Keyboard Layout Creator 1.4 can be downloaded from Microsoft (http://msdn.microsoft.com/en-us/goglobal/bb964665.aspx).
- 2. To modify the Vidyut keyboard, select [File > Load Source File].
- 3. Navigate to the uncompressed version of the Vidyut zip file to find the MSKLC Keyboard file. The current version of the file is named vidyut_v5_2010827.klc as shown below:



- 1. Use [File > Save Source File As] to rename the .klc file to something else.
- 2. Use [Project > Properties] to edit the name and description of your variant version.
- 3. Use [Project > Build DLL and Setup Package] to create executables. Be careful when naming the new version and select a name that will have clear version information. Place it in a new directory, not back into the original vidyut5 directory. One the setup package has been created you can run it and install it on your system to add it as an additional keyboard option in your Language preferences.

Keyboard Encoding Table (in Keyboard key order)

In this table cells that are not included in the ITRANS or IAST standards are shown in dark grey. Typesetting examples of how the keys render in three different fonts are shown in the rightmost columns (Sanskrit 2003, Kokila, and Mangal), with rendering errors shown in light grey.

QWERTY	Devanāgarī	ITRANS 5.31	IAST	Comment	Unicode	Sans. 2003	Kokila	Mangal
`	आ	aa or A	ā	Vowel long ā	U+0906	आ	आ	आ
1	8			एक	U+0967	8	१	१
2	२			द्धि	U+0968	२	2	ર
3	3			त्रि	U+0969	ર	3	3
4	8			चतुर्	U+096A	8	8	8
5	ч			पञ्च	U+096B	ч	ų	ч
6	Ę			षष्	U+096C	६	Ę	ξ
7	9			सप्त	U+096D	७	૭	b
8	۷			अष्ट	U+096E	6	۷	6
9	9			नव	U+096F	9	9	९
0	o			श्र्न्यम्	U+0966	o	o	o
-	_			En Dash	U+2013	_	-	-
=	=			Equals Sign	U+003D	=	=	=
q	ट	Та	ṭa		U+091F	ट	ट	ट
w	ड	Da	фа		U+0921	ड	ड	ड
e	े	e	e	Vowel Sign e	U+0947	गे	गे	गे
r	र	ra	ra		U+0930	र	र	र
t	त	ta	ta		U+0924	त	त	त
у	य	ya	ya		U+092F	य	य	य

QWERTY	Devanāgarī	ITRANS 5.31	IAST	Comment	Unicode	Sans. 2003	Kokila	Mangal
u	ુ	u	u	Vowel Sign short u (उ)	U+0941	गु	गु	गु
i	ি	i	i	Vowel Sign short i (इ)	U+093F	गि	गि	गि
О	ो	О	О	Vowel Sign o (ओ)	U+094B	गो	गो	गो
p	ч	ра	ра		U+092A	ч	ч	Ч
[昶	RRi or R^i	ţ	Vowel r	U+090B	ऋ	汞	ऋ
]	ऌ	LLi or L^i	ļ	Vowel ļ	U+090C	ऌ	ऌ	ल
\	l			Daṇḍa (दण्ड)	U+0964	ı	1	I
a	अ	a	a	Vowel a	U+0905	अ	अ	31
s	स	sa	sa		U+0938	स	स	स
d	द	da	da		U+0926	द	द	द
f	उ	u	u	Vowel u	U+0909	उ	3	3
g	ग	ga	ga		U+0917	ग	ग	ग
h	ह	ha	ha		U+0939	ह	ह	ह
j	ज	ja	ja		U+091C	ज	ज	ज
k	क	ka	ka		U+0915	क	क	क
1	ਲ	la	la		U+0932	ਲ	ल	ਕ
;	ओ	О	О	Vowel o	U+0913	ओ	ओ	ओ
,	s	.a		Avagraha (अवग्रह)	U+093D	S	2	S
z	श	sha	śa		U+0936	श	श	श
х	इ	i	i	Vowel i	U+0907	इ	इ	इ
С	च	cha	ca		U+091A	च	च	च
V	а	va or wa	va		U+0935	व	а	а
b	ब	ba	ba		U+092C	ब	ब	ब

QWERTY	Devanāgarī	ITRANS 5.31	IAST	Comment	Unicode	Sans. 2003	Kokila	Mangal
n	न	na	na		U+0928	न	न	न
m	н	ma	ma		U+092E	म	म	म
,	,			Comma	U+002C	,	,	,
	•			Period (Full Stop)	U+002E			
/	্	.h		Virāma (विराम) = Halant (हलन्त)	U+094D	ग्	ग्	ग्
~	<i>3</i> 0	OM or AUM		U+0950		30	3%	3%
!	୍ପ			Udātta (उदात्त) U+0951		र्ग	र्ग'	गं
@	ੁ			Anudātta (अनुदात्त)	U+0952	ग	<u>ग</u>	ग
#	ँ			Combining metrical mark guru (गुरु) = Combining macron. Chandas font only. Sanskrit 2003 contains an error, mapping a double stress mark (") to the value U+0304.	U+0304 Chandas only	ग	п□	ग□
\$	ŏ			Combining metrical mark laghu (ਲਬੂ) = Combining breve. Chandas font only. Sanskrit 2003 does not contain the value U+0306.	U+0306 Chandas only	ग□	ग□	ग□
%	ँ	.N		Combining Candrabindu (चन्द्रबिन्दु)	U+0901	गँ	गँ	गँ
۸	્ર	RRI or R^I	Ţ	Vowel sign long ṭ (末)	U+0944	गृ	गृ	गॄ
&	⊗			Cakram, Chandas font only, private use area	U+F127, Chandas	0		

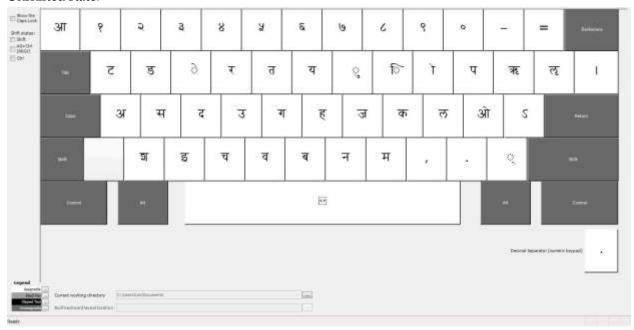
QWERTY	Devanāgarī	ITRANS 5.31	IAST	Comment	Unicode	Sans. 2003	Kokila	Mangal
					only			
*	55			Svastika, Chandas font only,	U+F120,			
				private use area	Chandas			
					only			
((Left Parenthesis	U+0028	(((
))			Right Parenthesis	U+0029)))
_	_			Low Line	U+005F	_	_	_
+	+			Plus Sign	U+002B	+	+	+
Q	ठ	Tha	ṭha		U+0920	ठ	ਠ	ਠ
W	ढ	Dha	ḍha		U+0922	ढ	ढ	ढ
Е	ै	ai	ai	Vowel sign ai (ऐ)	U+0948	गै	गै	गै
R	ৃ	RRi or R^i	ţ	Vowel sign ṛ (ऋ)	U+0943	गृ	गृ	गृ
Т	थ	tha	tha		U+0925	थ	थ	थ
Y	ञ	~na or JNa	ña		U+091E	স	স	ਤ
U	ૂ	uu or U	ū	Vowel sign long ū (ऊ)	U+0942	गू	गू	ग्
I	ी	ii or I	ī	Vowel sign long ī (ई)	U+0940	गी	गी	गी
О	ौ	au	au	Vowel sign au (औ)	U+094C	गौ	गौ	गौ
P	फ	pha	pha		U+092B	फ	দ	দ
{	ૠ	RRI or	ŗ	Vowel long <u>r</u>	U+0960	ૠ	汞	ॠ
		R^I				1 દ	,-	76
}	ૡ	LLI or L^I	Ī	Vowel long [U+0961	ॡ	ॡ	ॡ
I	II			Double Daṇḍa (दण्डद्वयम्)	U+0965	II	11	II
A	ा	aa or A	ā	Vowel sign long ā (সা)	U+093E	गा	गा	गा

QWERTY	Devanāgarī	ITRANS 5.31	IAST	Comment	Unicode	Sans. 2003	Kokila	Mangal
S	ष	Sha	șa		U+0937	ष	ष	ष
D	घ	dha	dha		U+0927	ध	ध	ម
F	ऊ	uu or U	ū	Vowel long ū	U+090A	ऊ	ऊ	<u></u> 3
G	घ	gha	gha		U+0918	घ	घ	घ
Н	ः	Н	ḥ	Visarga	U+0903	गः	गः	गः
J	झ	jha	jha		U+091D	झ	झ	झ
K	ख	kha	kha		U+0916	ख	ख	ख
L	ૢ	LLi or L^i	1	Vowel sign ļ (ন্ট)	U+0962	गृ	गू	गू
:	औ	au	au	Vowel au	U+0914	औ	औ	औ
"	o			Devanāgarī abbreviation sign	U+0970	o	o	o
Z	ङ	~Na	'nа		U+0919	ङ	ङ	ङ
Х	रीज	ii or I	ī	Vowel long ī	U+0908	ई	ई	ई
С	छ	Cha	cha		U+091B	छ	छ	छ
V	ळ			Devanāgarī letter LLA (Unicode name). Used in Rgveda (e.g., RV 1.1.1). Cf. Macdonell, <i>A Sanskrit Grammar for Students</i> , p. 236. Transliterated as <u>l</u> in Macdonell.	U+0933	ळ	ਲ	ಹ
В	भ	bha	bha		U+092D	भ	भ	भ
N	ण	Na	ņa		U+0923	ण	ण	ण
М	ं	.n or M	m (U+1E43)	Anusvāra (अनुस्वार) ISO 15919 uses ṁ (U+1E41) to transliterate (ं).	U+0902	गं	गं	गं
<	ए	e	e	Vowel e	U+090F	ए	ए	ए

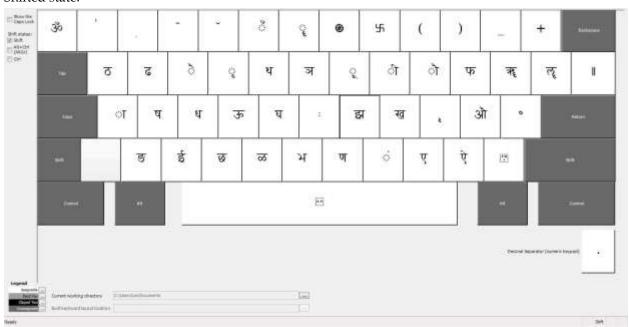
QWERTY	Devanāgarī	ITRANS 5.31	IAST	Comment	Unicode	Sans. 2003	Kokila	Mangal
>	ऐ	ai	ai	Vowel ai	U+0910	ऐ	ऐ	ऐ
?				Zero Width Joiner. Used for alternate typing of joined forms, e.g., क्त versus क्त	U+200D			

Keyboard Layout

Unshifted state:

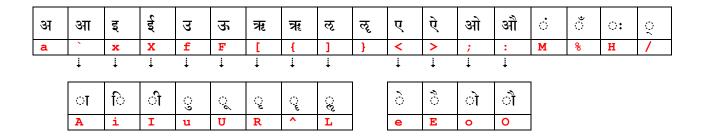


Shifted state:



Keyboard Quick Reference

Vowels



Consonants, Semivowels and Sibilants

क = k	ख = K	ग = g	ਬ = G	ভ-= Z
च = c	छ = C	ज = j	झ = J	ञ = Y
z = g	ठ = Q	ਫ= w	ढ = ₩	ण = n
त = t	थ = T	द = d	된 = D	ਜ = n
T = p	फ = P	ਕ = b	ਮ = B	म = m
ਧ = y	₹ = r	ਲ = 1	ਕ = v	
হা = z	ष = S	स = s		•
ह = h			•	

Numbers and punctuation (standard keyboard positions)

१ = 1	₹ = 2	₹ = 3	४ = 4	٧ = 5	ξ = 6	9 = 7	८ = 8	९ = 9	o = 0
1	•	()	+	=	-	_	
Comma	Period	l Left		Right	Plus Sign	Equals	En Das	h Lo	w Line
		Pare	enthesis	Parenthesis		Sign			

Devanāgarī punctuation

1	\	Daṇḍa (दण्ड)
11	1	Double Daṇḍa (दण्डद्वयम्)
S	`	Avagraha (अवग्रह)
0	**	Devanāgarī abbreviation sign

Special marks

30	~	Oṁ
ਂ	!	Udātta (उदात्त)
<u> </u>	@	Anudātta (अनुदात्त)
ō	#	Combining metrical mark guru (गुरु) = Combining macron. Chandas font only. Sanskrit
		2003 contains an error, mapping a double stress mark (") to the value U+0304.
ŏ	\$	Combining metrical mark laghu (लघु) = Combining breve. Chandas font only. Sanskrit
		2003 does not contain the value U+0306.
⊗	&	Cakram, Chandas font only, private use area
55	*	Svastika, Chandas font only, private use area
ಹ	V	Devanāgarī letter LLA (Unicode name). Used in Ŗgveda (e.g., RV 1.1.1). Cf.
		Macdonell, A Sanskrit Grammar for Students, p. 236. Transliterated as <u>l</u> in Macdonell.
	?	Zero Width Joiner. Used for alternate typing of joined forms, e.g., वत versus क