

Transliteration Map  
**DEVNAG font**  
(Hindi, Marathi, Sanskrit)

itrans

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## 1 Fonts Available

### 1.1 T<sub>E</sub>X Interface

This devanagari font *devnag* is a Metafont font, developed by Frans Velthuis, and his package is called “Devanagari for TeX”.

The devnag font is in a archive named **devnag** or **devanagari**. It is available at all CTAN T<sub>E</sub>X archives in the languages directory. At the time of writing this document (2001), it was certainly available at ftp.cdrom.com, ctan.tug.org, and many other sites. Please use your Internet search tools to locate the CTAN site closest to you for downloading the devnag archive.

This font is not bundled with the itrans package, but is available at many FTP sites, including in the texlive package.

This ITRANS package make use of Velthuis’s Devanagari for TeX package, version 2.15 (released 2008). This contains a change from the previous 1.6 version - the font family **dvnb** is used instead of **dvng**. This is required to get the correct *j~na* and *GYa* consonant variations.

Devnag also has another Metafont file (dvpn10.mf) which generates a variation of the Devnag font. If you have Metafont on your system, you may use it to generate the PK and TFM files for T<sub>E</sub>X. This variation was developed by Thomas Ridgeway, and in his words, it is “a trivial variation of dvnb10.mf to resemble devanagari written with an ordinary writing pen”. Looks nice.

Note that the *dvpn10.mf* file alone is insufficient to generate the T<sub>E</sub>X font, the complete devnag package is required to make it usable. And, you must know enough about Metafont to run it.

**Important:** itrans does not automatically handle all the ligatures present in the devnag font. The Devnag font does contain many three- and four- consonant ligatures, most of which are not currently supported using *itrans*. See the section titled “Limitations” for more details.

### 1.2 Direct Textual Interface - HTML

HTML interface is supported using this font, Unicode (UTF-8) is supported for this the Devanagari script, but no Unicode fonts are included with the ITRANS package.

Since this is a T<sub>E</sub>X font, this interface cannot be used as is for HTML. But, Sandeep Sibal, developer of the Jtrans package, has made available a font named Xdvng, which is derived from the dvng/dvnb fonts, and which allows use of Xdvng with the direct Text HTML output mode of ITRANS. See the example files for HTML output in the ITRANS doc directory (ITRANS/doc/slhtml.itx); the IFM file to use is named *xdvng.ifm*. The IFM file has been developed by Sandeep Sibal, and the Xdvng font (available for multiple platforms) has been developed by Sandeep Sibal and Arun Gupta See <http://www.sibal.com/sandeep/jtrans/> for info on Sandeep Sibal’s Jtrans package.

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<sup>0</sup>Last modification: December 4, 2009

### 1.3 Text Interface - Unicode (UTF-8) for Sanskrit, Hindi, and Marathi

IFM file to use is named *udvng.ifm*.

Unicode (UTF-8) output is supported for this the Devanagari script, but no Unicode fonts are included with the ITRANS package. There are many Unicode fonts available on the Web, and more are being developed so it should be easy to locate a Unicode font when needed. Not all Unicode fonts fully support Indian Languages yet.

### 1.4 Sanskrit (or Hindi) and Marathi

The IFM file *dvng.ifm* can be used for Sanskrit, Hindi or Marathi output.

The marathi form of ra-half is available through the R character and the second LA is at L (or 1d), etc. The tables (1 and 7) display the complete mapping from English to Devanagari for all the three Indic Scripts.

A second IFM file is also provided, *dvngfull.ifm*, and is meant to be used for text that needs to use many archaic consonant conjunct forms. Use this file only if you really need all the consonant conjuncts; in most cases a smaller set of consonant conjuncts, as defined by the *dvng.ifm* file suffices. The tables that follow include information on which conjunct glyphs are available using which IFM file. *dvng.ifm* file is the one most commonly used, since this has the “best” set of ligatures.

## 2 Font Developer

This font has been created by Frans Velthuis as part of his “Devanagari for TeX” package. He holds copyright to the fonts in the package. I would like to thank him for making it available as freeware.

Frans Velthuis

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Since 1990, many other people have worked to enhance the original “Devanagari for TeX” package, the current version is being supported by John Smith and Anshuman Pandey.

Table 7 shows the ITRANS encoding in a compact table, this table was sent in by Ashok Basargekar, and it is similar in layout to the table included with the documentation in the original Velthuis Devanagari for TeX package.

## 3 Limitations

As mentioned in the first section, *itrans* makes use of only a subset of the ligatures available in the Devnag font. *itrans* only recognizes two-consonant ligatures, and most ligature of more than two consonants is ignored.

The two tables (in tables 4 and 5) display the ligatures that are being used in ITRANS. All the ra-<consonant> and <consonant>-ra ligatures are not displayed in the available list, but they are handled by *itrans* correctly.

Table 6 displays ligatures that are not used, along with their decimal character codes (glyph positions).

ITRANS versions 5.1 and newer do support three- or more consonant conjuncts, so, it is technically possible to support all these conjuncts, but to keep things simple, I am currently simply

Vowels	
अ	a
आ	aa or A
इ	i
ई	ii or I
उ	u
ऊ	uu or U
ऋ	RRi or R <sup>i</sup>
ॠ	RRI or R <sup>I</sup>
ऌ	LLi or L <sup>i</sup>
ॡ	LLI or L <sup>I</sup>
ए	e
ऐ	ai
ओ	o
औ	au
अं	aM
अः	aH

Digits	
०	0
१	1
२	2
३	3
४	4
५	5
६	6
७	7
८	8
९	9

Consonants	
क	ka
ख	kha
ग	ga
घ	gha
ङ	~Na or N <sup>a</sup>
च	cha
छ	Cha or chha
ज	ja
झ	jha
ञ	~na or JNa
ट	Ta
ठ	Tha
ड	Da
ढ	Dha
ण	Na
त	ta
थ	tha
द	da
ध	dha
न	na
प	pa
फ	pha
ब	ba
भ	bha
म	ma
य	ya
र	ra
ल	la
व	va or wa
श	sha
ष	Sha or shha
स	sa
ह	ha
ळ	lda or La
क्ष	kSha or xa
ज्ञ	j~na or GYa

Specials/Accents	
क्व	qa
ख्	Ka
ग़	Ga
ज़	Ja or za
फ़	fa
ड़	.Da
ढ़	.Dha
अँ	AUM or OM
ऱ	Rga
र्ग	rga or ga <sup>r</sup>
गं	ga.n
आँ	aa.c
डँ	Da.N
इँ	D.h
दुः	duH
ः	.a

Table 1: ITRANS: Devanagari to English Transliteration Table.

Sample Letters

क का कि की कु कू	ka kaa ki kii ku kuu
स् स सा सि सी सु सू	s.h sa saa si sii su suu
ख खे खै खं खः खँ खै	kh.r khe khai khaM khaH kha.c kha.N
डे डै डं डः डँ डै	De Dai DaM DaH Da.c Da.N

Sample Words

भाग्य	bhaagya	कस्तुरी	kasturii
राज्य	raajya	नास्तिक	naastik
विद्या	vidyaa	प्राप्त	praapt
शिष्य	shiShya	स्वतंत्र	swata.ntra
मुख्य	mukhya	स्वातंत्र्य	svaata.ntrya
गाढा	gaaDyaa	ध्वनी	dhvanii
त्याग	tyaag	गोष्ट	goshhT
ध्यान	dhyaan	युद्ध	yud.hdh
न्याय	nyaay	युद्ध	yuddh
श्याम	shyaam	पश्चिम	pashchim
ज्योत	jyot	फक्त	phakt
मनुष्य	manushhya	तर्हा	tarhaa
चांदण्या	chaa.ndaNyaa	अर्थ	arth
अभ्यास	abhyaas	कर्ता	kartaa
कल्याण	kalyaaN	गर्दी	gardii
घड्याळ	ghaDyaaId	निर्णय	nirNay
कच्चा	kachchaa	पत्र	patr
खड्डा	khaD.hDaa	त्रिकोण	trikoN
खड्डा	khaDDaa	श्रावण	shraavaN
गट्ठा	gaThThaa	आश्रम	aashram
धक्का	dhakkaa	शुश्रूषा	shushruushhaa
पत्ता	pattaa	ग्रंथ	gra.nth
तिप्पत	tippat	प्रजा	prajaa
पन्नास	pannaas	द्राक्षे	draakShe
सज्जन	sajjan	गृहस्थ	g.rhasth
पुस्तक	pustak	प्रकृती	prakR^itii

Table 2: Examples

नैर्ऋत्य	nairR^itya
शुभ्र	shubhr
सहस्र	sahastr
क्रीडा	kriiDaa
स्वच्छ	svachchh
स्वरूप	svaruup
ट्रक	Trak
आम्ही	aamhii
चतुर्थी	chaturthii
ऋतू	RRituu
ऑक्टोबर	aa.cktobar
नोव्हेंबर	novhe.nbar
ग्रॅम	gra.cm
ऊँचा	uu.Nchaa
बैलगाडी	bailagaaDii
गुरुद्वारा	gurud.hvaaraa
गुरुद्वारा	gurudvaaraa
निराळ्या	niraaldyaa
ज्ञान	GYaan
मेकॅनिक	meka.cnik
म्हैस	mhaish
देणार्या	deNaaryaa
प्रतिष्ठा	pratishhThaa
इतिहास	itihaas
आस्थाबद्ध	aasthaabaddh
अंतर्राष्ट्रीय	a.ntarraashhTriiy

Table 3: More Examples

ignoring these complex glyphs. If there are a few conjuncts that are important enough to be included, let me know, and will add those definitions to the dvng.ifm file. I have added a few such conjuncts to dvng.ifm and dvngfull.ifm files, the tables 4 and 5 show all supported conjuncts.

## 4 Author

ITRANS has been developed by Avinash Chopde.

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क क	kka	क्क
क त	кта	क्त
क न	kna	क्न
क म	kma	क्म
क य	kya	क्य
क ल	kla	क्ल
क व	kva	क्व
क ष	xa	क्ष
घ न	ghna	घ्न
ङ क	~Nka	ङ्क
ङ ख	~Nkha	ङ्ख
ङ ग	~Nga	ङ्ग
ङ घ	~Ngha	ङ्घ
ङ ङ	~N~Na	ङ्ङ
ङ न	~Nna	ङ्न
ङ म	~Nma	ङ्म
ङ य	~Nya	ङ्य
च च	chcha	च्च
च ज	ch na	च्च
छ य	chhya	छ्य
ज ज	j~na	ज्ज
ज च	~ncha	ज्च
ज ज	~nja	ज्ज
ट क	Tka	ट्क
ट ट	TTa	ट्ट
ट ठ	TTha	ट्ठ
ट य	Tya	ट्य

ठ य	Thya	ठ्य
ड ग	Dga	ड्ग
ड घ	Dgha	ड्घ
ड ङ	DDa	ड्ङ
ड म	Dma	ड्म
ड य	Dya	ड्य
ढ य	Dhya	ढ्य
त त	tta	त्त
त न	tna	त्न
त र	tra	त्र
द ग	dga	द्ग
द घ	dgha	दघ
द द	dda	द्ध
द ध	ddha	द्ध
द न	dna	दन
द ब	dba	द्ब
द भ	dbha	द्भ
द म	dma	द्म
द य	dya	द्य
द व	dva	द्व
द व य	dvya	द्व्य
द व र	dvra	द्व्र
ध न	dhna	ध्न
न न	nna	न्न
प त	pta	प्त
प न	pna	प्न
प ल	pla	प्ल

ब न	bna	ब्न
ब ब	bba	ब्ब
ब व	bva	ब्ब
भ न	bhna	भ्न
म न	mna	म्न
म ल	mla	म्ल
ल ल	lla	ल्ल
व न	vna	व्न
श च	shcha	श्च
श न	shna	श्न
श ब	shba	श्व
श र	shra	श्र
श ल	shla	शल
श व	shva	श्व
ष ट	shhTa	ष्ट
ष ठ	shhTha	ष्ठ
स न	sna	स्न
ह ण	hNa	ह्ण
ह न	hna	ह्न
ह म	hma	ह्म
ह य	hya	ह्य
ह र	hra	ह्र
ह ल	hla	ह्ल
ह व	hva	ह्व
ज़ र	zra	ज़्र
फ र	phra	फ्र
फ़ र	fra	फ़्र

Table 4: Ligatures Supported (when using dvng.ifm)

क क	kka	क़
क त	kta	क़
क न	kna	क़
क म	kma	क़
क य	kya	क़
क ल	kla	क़
क व	kva	क़
क ष	xa	क़
घ न	ghna	घ़
ङ क	~Nka	ङ़
ङ ख	~Nkha	ङ़
ङ ग	~Nga	ङ़
ङ घ	~Ngha	ङ़
ङ ङ	~N~Na	ङ़
ङ न	~Nna	ङ़
ङ म	~Nma	ङ़
ङ य	~Nya	ङ़
च च	chcha	च़
च ज	ch~na	च़
छ य	chhya	छ़
ज ज	j~na	ज़
ज च	~ncha	ज़
ज ज	~nja	ज़
ट क	Tka	ट़
ट ट	TTa	ट़
ट ठ	TTha	ट़
ट य	Tya	ट़

ठ य	Thya	ठ़
ड ग	Dga	ड़
ड घ	Dgha	ड़
ड ङ	DDa	ड़
ड म	Dma	ड़
ड य	Dya	ड़
ढ य	Dhya	ढ़
त त	tta	त़
त न	tna	त़
त र	tra	त़
द ग	dga	द़
द घ	dgha	द़
द द	dda	द़
द ध	ddha	द़
द न	dna	द़
द ब	dba	द़
द भ	dbha	द़
द म	dma	द़
द य	dya	द़
द व	dva	द़
द व य	dvya	द़
द व र	dvra	द़
ध न	dhna	ध़
न न	nna	ऩ
प त	pta	प़
प न	pna	प़
प ल	pla	प़

ब न	bna	ब़
ब ब	bba	ब़
ब व	bva	ब़
भ न	bhna	भ़
म न	mna	म़
म ल	mla	म़
ल ल	lla	ल़
व न	vna	व़
श च	shcha	श़
श न	shna	श़
श ब	shba	श़
श र	shra	श़
श ल	shla	श़
श व	shva	श़
ष ट	shhTa	ष़
ष ठ	shhTha	ष़
स न	sna	स़
ह ण	hNa	ह़
ह न	hna	ह़
ह म	hma	ह़
ह य	hya	ह़
ह र	hra	ह़
ह ल	hla	ह़
ह व	hva	ह़
ज़ र	zra	ज़़
फ र	phra	फ़
फ़ र	fra	फ़

Table 5: Ligatures Supported (when using dvngfull.ifm)



Consonants	Ligature	Char Code
क त य	क्त्य	197
क त व	क्तव	198
क न य	क्त्य	230
क र य	क्त्य	231
क व य	क्त्य	204
क त र य	क्त्य	252
ङ क त	ङक्त	173
ङ क य	ङक्त्य	175
ङ क ष	ङक्तष	176
ङ ख य	ङक्त्य	186
ङ ग य	ङक्त्य	190
ङ घ य	ङक्त्य	185
ङ घ र	ङक्त्य	192
ङ क त य	ङक्त्य	174
ङ क ष व	ङक्तषव	177

Consonants	Ligature	Char Code
ड ग य	डग्य	184
ड घ र	डग्य	182
ड र य	डग्य	251
द ग र	दग्य	237
द घ र	दग्य	238
द द य	दद्य	144
द द व	दद्व	248
द ध य	दध्य	143
द ध व	दध्व	249
द भ य	दभ्य	142
द र य	दग्य	239
ष ट य	षट्य	247
ष ट व	षट्व	171
ष ट र य	षट्य	170

Table 6: **Ligatures NOT Supported**

a	अ	k.h	क	p	प	.D	ड	
aa or A	आ or ा	k	क	ph	फ	.Dh	ढ	
i	इ or ि	kh	ख	b	ब	1	१	
ii or I	ई or ि	g	ग	bh	भ	2	२	
u	उ or ु	gh	घ	m	म	3	३	
uu or U	ऊ or ू	~N	ङ	y	य	4	४	
R^i	ऋ or ृ	ch	च	r	र	5	५	
R^I	ॠ or ॡ	chh or Ch	छ	l	ल	6	६	
L^i	ऌ or ॡ	j	ज	v	व	7	७	
L^I	ॢ or ॣ	jh	झ	sh	श	8	८	
e	ए or ै	JN or ~n	ञ	shh or Sh	ष	9	९	
ai	ऐ or ै	T	ट	s	स	0	०	
o	ओ or ो	Th	ठ	h	ह	.n or M	˙	anusvāra
au	औ or ौ	D	ड	ld or L	ळ	.N	˚	chandrabindu
a.n or aM	अं	Dh	ढ	x or kSh	”	H	:	visarga
aH	अः	N	ण	j~n or GY or dny		.		danda
a.c	अँ	t	त	q	क	R	=	Marathi r
aa.c or A.c	आँ	th	थ	K	ख	.. or ;		paragraph end
OM or AUM	ॐ	d	द	G	ग	.a	ऽ	avagraha
.a	ऽ	dh	ध	z	ज	.c	˘	a like in at
Ra	र	n	न	f	फ़	{\rm .}	.	period

Table 7: ITRANS Encoding (table format is similar to Velthuis’s documentation)