
Language Supplement



Speechify 3.0 for ja-JP
(Japanese)

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Introduction

Overview

This document contains language-specific reference information for application developers using SpeechWorks Speechify 3.0 and higher.

Speechify™ is a Text-To-Speech (TTS) system.

New and changed information

Information about installing voices has been moved from this supplement to the *Speechify User's Guide*.

There are small improvements throughout this document.

See the *Speechify Migration Guide* for a complete list of changes in Speechify 3.0.

Getting started

To get started, we recommend that you are familiar with the *Speechify User's Guide*, which provides comprehensive installation, programming, and reference information about the Speechify product. You should also review the release notes distributed with this product for the latest information, restrictions, and known problems.

Other documents in the Speechify documentation set:

- ❑ *Speechify E-Mail Pre-processor Developer's Guide* explains the types of input that the SpeechWorks E-mail Pre-processor handles, how it processes the messages, the modes that the application can take advantage of at runtime, the layout and use of the E-mail substitution dictionary, and provides the API function prototypes, types, error codes and constants.
- ❑ *Speechify Migration Guide* introduces several new features that have been added to Speechify 3.0 relative to Speechify 2.x releases.
- ❑ The *SpeechWorks Licensing Handbook* describes the process for getting licenses to run the Speechify software, details about configuring your license server, and related topics.
- ❑ There is a *Speechify Language Supplement* for each supported language.

Support services

To receive technical support from SpeechWorks International, Inc., use the following methods:

- ❑ Check the FAQs, visit the Knowledge Base, or ask a question at:

<http://techsupport.speechworks.com/>

- ❑ Ask for “technical support” at +1 617 428-4444



Symbolic Phonetic Representations

The following tables show the inventory of available symbols for use in ja-JP Symbolic Phonetic Representations (SPRs). Use this chapter in conjunction with the SPR information found in the *Speechify User's Guide*.

Each sound symbol is accompanied by examples illustrating typical spellings of the sound in actual words, with the letters representing the given sound **bolded**. Due to dialectal differences, the SPR examples shown may not always agree with your own pronunciations.

Vowels

The following table includes the ja-JP symbols for vowels.

Symbol	Example Words	
a	酒、幅	sake, haba
A	マーク、メーカ	maaku , meek aa
e	手、捨てる	te , suteru
E	警察、平成	keisatsu , heisei
i	今、見る	ima , miru
I	いい、新しい	ii , atarash ii
o	程、側	hodo , soba
O	工場、大勢	koujou , oozei

Symbol	Example Words	
u	冬、寿司	fuyu , sushi
U	九州、有名	kyuuushuu , yuumei

Consonants

The following table includes the ja-JP symbols for consonants.

Symbol	Example Words	
p	心配	shimpai
b	カビ、千葉	kabi , chiba
t	時	toki
d	まだ、出る	mada , deru
k	かかる	kakaru
g	卵、実業	tamago , jitusgyou
f	岐阜、二つ	gifu , futatsu
s	魚	sakana
z	水、雑誌	mizu , zasshi
S	島、一生	shima
h	幅、いろは 暇、是非、評判	haba , iroha , hima , zehi , hyouban
'ts'	津波、立つ	tsunami , tatsu
'tS'	地図、街	chizu , machi
'dZ'	自分、明治	jibun , meiji
m	丸、様	maru , sama
n	のり、花	nori , hana
N	新聞、言語、印刷、仁	shimbun , gengo , insatsu , jin

Symbol	Example Words	
r	旅館、切る	ry okan, kiru
w	我々、泡	w are w are, a w a
y	夜、豊田、協会	y oru, to y ota, ky oukai

Double consonant sounds (gemimates) are represented with double consonant symbols:

Symbol	Example Words	
pp	河童	kappa
tt	あった	atta
kk	作家	sakka
ss	一斉	issei
SS	一生	isshou
tts	一通	ittsuu
ttS	密着	micchaku

Syllable accent

For ja-JP, you can mark individual syllables for pitch accent using the numbers shown in the following table:

0	No accent
1	Accent

Unmarked syllables are assumed to have no accent.

The accent marker should be within the boundaries of the syllable, and to the left of the vowel. Thus, any of the following SPRs will place the accent on the correct vowel (shown in bold) in the word **kyakka**:

Example word	SPR mark-up
脚下	\[1kyak.0ka]
ky ak ka	\[k1yak.0ka]
	\[ky1ak.0ka]
	\[1kyak.ka]
	\[k1yak.ka]
	\[ky1ak.ka]

The following table shows examples of the use of accent marking in SPRs:

Example word	SPR mark-up
箸の	\[.1ha.0Si.0no]
橋の	\[.0ha.1Si.0no]
端の	\[.0ha.0Si.0no]

Syllable boundary

The following table includes the ja-JP symbol for a syllable boundary.

.	(period) beginning of a syllable
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Phoneme Marks

The phoneme-mark data structure is useful for matching each moment of synthesized speech with the phonemes being spoken. This information is particularly useful when you synchronize facial animation with speech output.

The structure is returned to your application's callback function, which is described under “SWIttsCallback()” in the API reference section of the *Speechify User's Guide*. Each phoneme-mark contains the phoneme name, along with other information about the phoneme. The phoneme-mark symbols for ja-JP are documented in the following table.

Note: The phoneme names used in phoneme marks are not necessarily the same as those used for SPR input.

Phone	Examples
a	sake, haba
aa	maaku, meekaa
b	kabi, chiba
ch	chizu, machi
cch	micchaku, icchou
d	mada, deru
dd	beddo
e	te, suteru
ee	keisatsu, heisei
f	gifu, futatsu

Phone	Examples
g	tam ago , jitsug yo
hh	h achi, ni h ongo
i	i ma, mi r u
ii	ii , atarash ii
j	j ibun, mei j i
k	k akaru, k ono
kk	sak ka , tok kyu ukara
m	m aru, sa m a
n	n ori, ha n a
ng	j in, gen g o
o	h o do, so ba
oo	kou jo u, oo zei
p	shim p ai, suup a a
pau	[Indicates a pause]
pp	ka pp a, ip pp ou
r	ry okan, ki r u
s	s akana, chouse i
sh	sh ima, tosh ite
ss	is ss ei, has ss eiga
ssh	is ssh ou, jis ssh i
t	t oki, tosh ite
tt	at tt a, ittengsh ite
tts	mit tt suno, itt tsu u
ts	ts unami, tat tsu
u	fuy u , sush i
uu	kyu uu shuu, yu uu mei
w	w areware, aw a

Phone	Examples
y	y oru, toy ota
z	mi z u, z ehi



User Dictionaries

This chapter describes Japanese behaviors for Speechify dictionaries. Use this chapter in conjunction with the dictionary information found in the *Speechify User's Guide*.

MainExt dictionary

For Japanese, there is a single user dictionary called mainext which lets you specify word pronunciations using *katakana*.

Note: all dictionary API functions must set the dictionary type to mainext.

Valid main dictionary entries

Each entry in the mainext dictionary consists of a key and a translation. You can specify keys and translations in any supported ja-JP character set: Shift-JIS, EUC, UTF16, or UTF8.

The table below summarizes keys and translations. It is followed with a more detailed description:

Key	Translation	
Allowed: - <i>kanji</i> - <i>hiragana</i> - <i>katakana</i> - Roman letters, uppercase and lowercase - digits - non-alphanumeric characters, including: @, #, \$, %, &, *, + - punctuation (except as final character)	Replacement String	Part of Speech (optional)
	<i>katakana</i>	Values: - futsuumeishi - koyuumeishi - sahenmeishi - undefined
Disallowed: whitespace	Disallowed: - <i>kanji</i> - <i>hiragana</i> - Roman letters - digits - non-alphanumeric characters - punctuation - embedded tags	

Keys

The key may contain *kanji*, *hiragana*, *katakana*, Roman letters, digits, non-alphanumeric characters, and punctuation (except as the final character in the key).

The key may not contain white space. The maximum length is 15 characters.

Roman-letter keys are case-sensitive; they only match an input string when the string has identical upper and lowercase letters.

Translations

The translation contains the replacement string and, optionally, a part of speech specification.

The replacement string must be entered in *katakana*. The maximum length is 25 moras.

To indicate an accented syllable in the translation, insert an apostrophe (') after the *katakana* character containing the accented vowel.

Parts of Speech

Optionally, you can specify the part of speech at the end of the translation.

The part of speech is separated from the replacement string by a forward slash.

Valid parts of speech in ja-JP:

Part of Speech	Used for...	Examples
futsuumeishi	Ordinary nouns, including abbreviations of ordinary nouns.	空港、猫、 不始末、 修理工場
koyuumeishi	Proper nouns, including abbreviations of proper nouns.	祐輔、高松、 静岡、英国
sahenmeishi	Nouns which can be made into verbs by adding suru.	勉強、想像、 選択、調節
Undefined (default value)		

If no part of speech is specified in the dictionary translation, the part of speech is assumed to be undefined. If an entry specifies an invalid part of speech, a value of `SWItts_INVALID_PARAMETER` is returned by the API function that was called.

MainExt dictionary examples

The following table contains examples of ja-JP mainext dictionary entries:

Key	Translation
箸	ハ' シ/futsuumeishi
和也	カズ' ナリ/koyuumeishi
検討	ケントー/sahenmeishi
dm	デ' シ/futsuumeishi

Key	Translation
DM	ド' イツマルク/futsuumeishi
\$\$	マルキ'/futsuumeishi
A1	イチバン/futsuumeishi



W3C SSML

Speechify includes support for input text formatted according to the W3C Speech Synthesis Markup Language (SSML).

In order to invoke the correct processing for Japanese text, the given W3C SSML input must have the `xml:lang` attribute set to “ja-JP.” If this attribute is absent, Speechify assumes “en-US” as a default.

In addition to producing Japanese output, the W3C SSML processor for ja-JP parses and expands tag content in a manner consistent with that locale.

For more description of W3C SSML support in Speechify, see the *Speechify User's Guide*.

