ViaVoice Outloud Contents

Introduction

ViaVoice Outloud is a text-to-speech program that reads standard text aloud through your computer's sound card. The program processes a wide variety of textual input, including abbreviations, acronyms, and numbers, and pronounces it with high-quality speech and a natural intonation.

In addition, you can customize ViaVoice Outloud in a variety of ways. You can insert special tags into the text to change voice characteristics, adjust sentence intonation, and choose text and number interpretation modes. You can use phonetic spellings to specify the pronunciation of a word, and you can store these pronunciations in one of the user dictionaries.

Contents:

Tags	Inserting special codes (tags) to customize the output.
Language/Dialect	Selecting a language and dialect.
Emphasis	Modifying the intonation pattern of a sentence.
Pause Length	Inserting pauses in the speech output.
Built-in Voices	Selecting from a family of built-in voices.
Voice Characteristics	Modifying voice characteristics like pitch, volume, and breathiness.
Phonetic Spellings	Using phonetic spellings--known as "Symbolic Phonetic Representations" (SPRs)--to customize pronunciation.
User Dictionaries	Creating your own dictionaries to customize pronunciation.
Glossary	A glossary of terms used in this document.

Useful tables:

Table of Tags, a listing of all the tags available.

SPR Symbols, the phonetic alphabet used by ViaVoice Outloud.

Tags

Tags are special codes which you can insert into the text to make the text-to-speech engine behave in certain ways. Tags control attributes like voice characteristics, word emphasis, number interpretation, and much more. For example:

\Spd=282\	Speak 282 words per minute.
\xWac=4\	Put very heavy emphasis (level 4) on the following word.
\ xSpl=allchars\	Pronounce all characters individually by name.

Form:

- Tags begin and end with a backslash character (\).
- The backslash character is not allowed within a tag.
- To insert a backslash character in the text, but outside a tag, use a double backslash (\\).
- Tags are not case-sensitive. For example, \vce\ is the same as \VCE\ or \Vce\.
- Tags are sensitive to white space. For example, \vce\ is not the same as \ vce \.
- Punctuation marks can immediately follow any tag.
- A phrase-final intonation tag must be followed immediately by a punctuation mark.


See the Table of Tags for a list of all the tags available.


Additional information and examples are available on some especially useful tags:

Language/Dialect

Emphasis

Pause Length

Built-in Voices

Voice Characteristics

Tags Example

The following story illustrates a variety of tags. The story also contains some SPRs to customize the pronunciation of some words. Click on a  button below to hear the portion of text following it.

\Vce=Speaker=Grandma\ Preparing for Trails \xWac=0\ Day.

\Vce=Speaker=Wade\ I can bring two rakes on trails \xWac=0\ day.

\Vce=Speaker=Flo\ Can you bring \xWac=3\ three rakes?

\Vce=Speaker=Wade\ I don't \xWac=2\ have three rakes. I was borrowing the \xWac=2\ second one from my \xWac=2\ daughter.

\Vce=Speaker=Flo\ We are going to have \xWac=3\ loads of \xWac=2\ volunteers. \xWac=2\ One team will build a \xWac=2\ bog bridge. But the \xWac=3\ rest will be clearing the new trail around the \xWac=2\ beaver pond. Do you have any \xWac=3\ other tools?

\Vce=Speaker=Wade\ What \xWac=2\ \xSPR=`[.1kYn.dx]"\ tools? I have a wrench \ xPhf=ContinuationRise\, a drill \xPhf=ContinuationRise\, a hammer \xPhf=ContinuationRise\, and a level.

\Vce=Speaker=Flo\ Saws, shovels, clippers, shears?

\Vce=Speaker=Wade\ I could bring a shovel \xPhf=SmallRise\.

\Vce=Speaker=Flo\ Great! \Spd=205\ Will you see \xWac=3\ Greg this week?

\Vce=Speaker=Wade\ Yes \xPhf=SmallRise\. Tomorrow \xPhf=SmallRise\.

\Vce=Speaker=Flo\ Can you ask him to bring some juice and snacks?

\Vce=Speaker=Wade\ He brought them \xWac=3\ last time. \Pau=50\ And wasn't too \xWac=Scooped\ happy about it.

\Vce=Speaker=Flo\ I'll get somebody else \xWac=0\ then \xPhf=LargeFall\.

\Vce=Speaker=Grandma\ Trails \xWac=0\ Day Arrives.

\Vce=Speaker=Bobby\ Mom! I just saw a real \xSPR=`[.1layv]"\ beaver!!

\Vce=Speaker=Flo\ \xBth=100\ \xSPR=`[SSSUS]"\, you'll scare her away!

\Vce=Speaker=Bobby\ Oh, she's already gone. But I saw her.

\Vce=Speaker=Flo\ You're \xWac=2\ lucky then. They aren't usually around during the middle of the day.

If you're hungry for lunch, go get our bag.

\Vce=Speaker=Bobby\ \xWac=2\ Which bag?

\Vce=Speaker=Flo\ \xWac=High\ You \xWac=Low\ know. The one you marked \xSpl=alphanumeric\ OL \xSpl=off\ for "Our Lunch."

\Vce=Speaker=Bobby\ Oh yeah.

\Vce=Speaker=Wade\ How many acres are in this preserve?

\Vce=Speaker=Flo\ Exactly? I think its \Pau=150\ \Spd=149\ \xYr=off\ 1250 \xYr=on\.

\Vce=Speaker=Wade\ Wow. We don't \xWac=00\ \xSPR=`[.1hAf.0tx]"\ take care of all of it, \xWac=2\ do we?

\Vce=Speaker=Flo\ Oh, no. It'll take care of itself \xPhf=LargeFall\.

Annotations

An annotation has the same function as a tag: it is a special code which you can place in the input text to customize the output. Most annotations have equivalent tags.

Why Annotations?

A little background information illuminates the duplication between annotations and tags: The tags used in this program are part of an industry-wide standard common to all text-to-speech programs. This industry standard is known as "**SAPI**" (Speech Application Programmers Interface).

However, the text-to-speech engine you are currently using also has its own version of tags, called "annotations." Annotations predate SAPI tags, and many users have already built systems that depend solely on annotations. For this reason, we cannot simply replace annotations with tags.

Annotations have a different form than tags, but accomplish the same things. The tags are really just a layer of commands over this underlying system of annotations. Each tag is converted to an annotation "behind the scenes."

When and How Do I Use Annotations?

- The only time you must use annotations is if you want to make use of their functions within an entry for the user's Special Words Dictionary. For example, you might use the annotation equivalent of the emphasis tag to mark a phrase as having the stress of a compound word.
- If you wish to use an annotation elsewhere (outside the Special Words Dictionary), you must enclose the annotation within the Eng tag as follows:

  `\Eng;{F063EDA0-8C65-11CF-8FC8-0020AF14F271}: " `*`annotation`*` "\`

  Once you have issued the full engine identifier (the long string of numbers and letters in curly brackets), you may eliminate it from all following tags, leaving just the **Eng** tag and the annotation: \Eng: " *annotation* "\.
- For a complete listing of the annotations and their tag equivalents, see the Table of Tags.

Form:

An annotation consists of a ` (backquote) followed immediately by a string of characters. For example:

`vs5	Use speaking rate 5.
`4	Put very heavy emphasis (level 4) on the following word.
`ts2	Pronounce all characters individually by name.

Punctuation marks can immediately follow any annotation. Otherwise, all annotations (except one--the phrase-final intonation annotation) must have at least one unit of white space on either side.

A phrase-final intonation annotation must be followed immediately by a punctuation mark.

Language and Dialect

The ViaVoice Outloud text-to-speech engine is available in a number of languages, and we are adding more all the time.

With the language and dialect tags, you can specify which language and which dialect you want the text-to-speech engine to produce while processing the text. Not all languages may be available to you; you must install a language's text-to-speech engine in order to produce the specified language. For example, you must install the Standard German text-to-speech engine in order for the `\Vce=Language=German\` tag to work.

One way to determine which languages are correctly installed on your system is to click on the light blue examples below to hear them synthesized. (Throughout this help document, you can click on light blue text to hear it spoken.) If the language in question is not installed correctly, you will get an error message.

Language and Dialect Tags

There is one tag for specifying a language, \Vce=Language=*language*\, and another tag for specifying a dialect of that language, \Vce=Dialect=*dialect*\. You can combine the two as follows:

`\Vce=Language=`*`language`*`, Dialect=`*`dialect`*`\`

For example:

`\Vce=Language=Spanish, Dialect=Mexican\`

Default Language and Dialect

- If you do not specify a language (i.e., you do not insert a language tag in your input text), one of two things can happen: either the lowest numbered language available will be used, or the application that is using ViaVoice Outloud will determine the default language for you.
- If you do not specify a dialect, the default dialect will be used. Refer to the following table for the default dialect.
- If you specify a dialect that does not exist for the current language, the tag will be ignored. For example, if the current language is French (\Vce=Language=French) and you input the tag \Vce=Dialect=British\, it will be ignored because there is no text-to-speech engine for a British dialect of French.

	Tag	Annotation	Dialect or Language
1	`\Vce=Language=English\`	`` `l1 ``	English
	`\Vce=Dialect=American\`	`` `l1.0 ``	American English (default)
	`\Vce=Dialect=British\`	`` `l1.1 ``	British English
2	`\Vce=Language=Spanish\`	`` `l2 ``	Spanish
	`\Vce=Dialect=Castilian\`	`` `l2.0 ``	Castilian Spanish (default)
	`\Vce=Dialect=Mexican\`	`` `l2.1 ``	Mexican Spanish
3	`\Vce=Language=French\`	`` `l3 ``	French
	`\Vce=Dialect=Standard\`	`` `l3.0 ``	Standard French (default)
4	`\Vce=Language=German\`	`` `l4 ``	German
	`\Vce=Dialect=Standard\`	`` `l4.0 ``	Standard German (default)
5	`\Vce=Language=Italian\`	`` `l5 ``	Italian
	`\Vce=Dialect=Standard\`	`` `l5.0 ``	Standard Italian (default)

Examples:

`\Vce=Language=English\ \Vce=Dialect=American\`

I'm from America. Do you speak English?

\Vce=Language=English\ \Vce=Dialect=British\

I'm from the United Kingdom. Do you speak English?

\Vce=Language=Spanish\ \Vce=Dialect=Castilian\

Soy de España. ¿Habla usted el español?

\Vce=Language=French\ \Vce=Dialect=Standard\

Je suis français. Parlez-vous français?

\Vce=Language=German\ \Vce=Dialect=Standard\

Ich komme aus Deutschland. Sprechen Sie Deutsch?

\Vce=Language=Italian\ \Vce=Dialect=Standard\

Sono d'Italia. Parla italiano?

Emphasis

Each word in an utterance is pronounced with a level of emphasis relative to other words in the utterance.

You can override the default emphasis patterns by placing a Word Accent (\xWac\) tag before the word you want to modify.

Tag	Annotation	Description
\xWac=00\	`00	reduced emphasis
\xWac=0\	`0	no emphasis
\xWac=1\	`1	normal emphasis
\xWac=2\	`2	added emphasis
\xWac=3\ or \Emp\	`3	heavy emphasis
\xWac=4\	`4	very heavy emphasis

Emphasis level 1, or "normal emphasis," is the default level of emphasis for a content word, and emphasis level 00 is the default emphasis for a function word. The last content word in an intonational phrase (the nuclear accent) will receive emphasis level 2, unless you annotate the utterance to change the default pattern. For example, the default emphasis pattern for the phrase "run through fields of barley" is:

run	through	fields	of	barley
1	1	1	00	2

Uses of Emphasis Tags

Reduced Emphasis (\xWac=00\)

The *reduced emphasis* tag can be used to reduce a word to a function word:

```
Marty couldn't wait till he could work on the computer.

Marty couldn't wait \xWac=00\ till he could work on the computer.
```

No Emphasis (\xWac=0\)

When two words form a single compound word (as in "wet suit" in example (b) below), the second word receives less emphasis than the first. The *no emphasis* tag is used for achieving this effect:

```
(a)  He wore a wet suit to work because his umbrella broke.

(b)  He wore a wet \xWac=0\ suit while diving.
```

Normal Emphasis (\xWac=1\)

The *normal emphasis* tag can be used to mark a word like "can" (in sentence (b)) as a content word rather than a function word:

```
(a)  Eating fat can make you fat.

(b)  You're going to need a very fat \xWac=1\ can to hold all those peaches.
```

Added Emphasis (\xWac=2\)

Typically, the last content word in an intonational phrase receives emphasis level 2 automatically. Sometimes, however, it is more appropriate for this emphasis to fall earlier in the phrase. The *added emphasis* tag can be used to mark words in this way, as in examples (b) and (c) below. Note that this causes all subsequent words to be de-emphasized.

```
(a) We demand absolute equality.

(b) We demand \xWac=2\ absolute equality.

(c) We \xWac=2\ demand absolute equality.
```

Heavy Emphasis and Very Heavy Emphasis (\xWac=3\ and \xWac=4\)

To give added emphasis to a word, you can increase the emphasis level:

```
We demand absolute \xWac=3\ equality.
We demand \xWac=4\ absolute equality.

We \xWac=3\ demand absolute equality.
We \xWac=4\ demand absolute equality.
```

The higher levels of emphasis are also useful in contradicting a previous statement or expressing incredulity.

```
Your brother has a dog named Spot?
My brother has a dog named \xWac=3\ Fido.

It's not \xWac=3\ Monday, it's \xWac=4\ Tuesday.

My aunt has a cat named Fido.
Your aunt has a \xWac=3\ cat named Fido?
```

Pause Length

Pause Length Tag

You can use the pause tag to:

- increase or reduce the pause length created by punctuation symbols
- insert pauses between words where there is no punctuation

Tag	Annotation	Effect
\Pau=N\	`pN	Creates a pause N milliseconds long. The pause tag must be in multiples of 5.

Punctuation Pauses

By default, certain punctuation marks correspond to a number of milliseconds:

Punctuation	Duration in Milliseconds
periods, colons, question marks	450 ms
commas, semicolons, dashes	150 ms

You can add to a punctuation pause or replace it with a shorter pause. To add to a punctuation pause, follow the punctuation with a single space and then the tag. To replace a punctuation pause, place the punctuation immediately after the tag. The example in (b) below lengthens the comma pause by adding 400 ms to it; the example in (d) replaces the period break with a shorter pause.

(a) Avoid the following routes: Thirteen north, Ninety-six west, and Thirty-two south.

(b) Avoid the following routes: Thirteen north, \Pau=400\ Ninety-six west, \Pau=400\ and Thirty-two south.

(c) I thought I saw Kris. But I'm not sure about it.

(d) I thought I saw Kris \Pau=50\. But I'm not sure about it.

Inserting Pauses

Inserting pauses can be useful for synthesizing the hesitations that occur in natural speech:

(a) Amy saw him \Pau=450\ well \Pau=450\ \xWac=3\ us \Pau=150\ last night.

(b) Take the square root of \Pau=450\ no \Pau=450\ forget that. Multiply the total by .05.

Built-in Voices

ViaVoice Outloud provides at least eight pre-defined voices for each language, and each one has a corresponding voice tag that can be inserted into the text. You may use any pre-defined voice with any language; the following eight voice tags are listed because they correspond to the set of eight voice annotations available for each language.

See also the following tags:

Gender and Age

Style

Speakers

Voice Tags

Tag	Annotation	Voice
\Vce=StoredVoice="Adult Male 1"\	`v1	Adult Male voice
\Vce=StoredVoice="Adult Female 1"\	`v2	Adult Female voice
\Vce=StoredVoice="Child 1"\	`v3	Child voice
\Vce=StoredVoice="Adult Male 2"\	`v4	A male with a very low voice
\Vce=StoredVoice="Adult Male 3"\	`v5	A faster-talking male voice
\Vce=StoredVoice="Adult Female 2"\	`v6	A faster-talking, breathy-sounding female voice
\Vce=StoredVoice="Elderly Female 1"\	`v7	Elderly Female voice
\Vce=StoredVoice="Elderly Male 1"\	`v8	Elderly Male voice

The voice tag will stay in effect until a new voice tag is entered.

Voice Characteristics

Individual voices derive their uniqueness from a number of physical factors. In addition, an individual's voice can take on different qualities at different times, depending on such things as mood and circumstance. You can modify these attributes with a set of voice characteristics tags.

See also the following tags:

Gender and Age

Style

Speakers (the \Vce=Speaker=*name*\ tag)

Voice Characteristics Tags

Tag	Annotation	Attribute	Effect
\Pit=N\	`vbN	Pitch baseline	Set pitch baseline to N. Tag range is 1 Hz (very low) through 324 Hz (very high). Annotation range is 0-100.
\xPfl=N\	`vfN	Pitch fluctuation	Set pitch fluctuation to N, range of 0 (narrow, or monotone) through 100 (wide).
\xVct=male\	`vg0	Vocal tract (male)	Set vocal tract to male.
\xVct=female\	`vg1	Vocal tract (female)	Set vocal tract to female.
\xHsz=N\	`vhN	Head size	Set head size to N, range of 0 (very small head) through 100 (very large head).
\xRgh=N\	`vrN	Roughness	Set roughness to N, range of 0 (smooth) through 100 (rough).
\xBth=N\	`vyN	Breathiness	Set breathiness to N, where larger N gives a breathier voice, and 100 is a whisper.
\Spd=N\	`vsN	Speed	Overall speed of the utterance. Tag range is 70 to 350 words per minute. Annotation range is 0-100.
\Vol=N\	`vvN	Volume	Output volume control. Tag range is 1 to 63095. Annotation range is 0-100.

Voice characteristics tags affect the currently selected voice and remain in effect until a new voice or speaker is specified with the \Vce\ tag or until the same tag is used again with a different value. Restarting the program also resets all of the characteristics to their default values.

Pitch Baseline

Changing the pitch baseline will affect the overall pitch of the voice, where the highest pitch is associated with children, a high pitch with women, and a low pitch with men.

```
\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking.  How am I \xWac=2\ feeling today?
```

```
\Vce=Speaker=Flo\ \Pit=53\ This is \xWac=2\ Flo speaking.  I'm feeling a bit \xWac=2\ low today.
```

```
\Vce=Speaker=Flo\\Pit=422\ This is \xWac=2\ Flo speaking.  I'm feeling a bit \xWac=2\ silly today.
```

Pitch Fluctuation

This attribute controls the degree of fluctuation in the speaker's voice. A large pitch fluctuation is characteristic of an excited speaker, and a small pitch fluctuation creates a monotone.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\\xPfl=10\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ bored today.

\Vce=Speaker=Flo\\xPfl=60\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ anxious today.

Head Size

This attribute controls one aspect of the deepness of the voice. Since a truly deep voice also has a low pitch baseline, ViaVoice Outloud allows you to control head size independently of pitch.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\\xHsz=10\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ squished today.

\Vce=Speaker=Flo\\xHsz=100\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ hollow today.

Vocal tract

Male and female vocal tracts have physical differences which affect the voice, some of which are reflected in the vocal tract setting. Other differences between male and female voices, namely pitch and head size, are controlled independently.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\ \xVct=male\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ androgynous today.

Roughness

This attribute controls the roughness or "creakiness" of the voice.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\\xRgh=30\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ hoarse today.

\Vce=Speaker=Flo\\xRgh=90\ This is \xWac=2\ Flo speaking. I'm feeling really \xWac=2\ hoarse today.

Breathiness

The maximum breathiness is a whisper.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\\xBth=10\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ artificial today.

\Vce=Speaker=Flo\\xBth=90\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ paranoid today.

Speed

Speed controls the number of words spoken per minute.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\\Spd=104\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ slow today.

\Vce=Speaker=Flo\\Spd=237\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ rushed today.

Volume

The volume for built-in voices is set as loud as possible without causing distortion. (Louder settings may cause distortion when combined with other attribute changes.) For example, the default volume for Adult Female 1 (which is Flo's voice) is 26987.

\Vce=Speaker=Flo\This is \xWac=2\ Flo speaking. How am I \xWac=2\ feeling today?

\Vce=Speaker=Flo\\Vol=255\ This is \xWac=2\ Flo speaking. I'm feeling a bit \xWac=2\ quieted today.

\Vce=Speaker=Flo\\Vol=65535\ This is \xWac=2\ Flo speaking. I'm feeling \xWac=2\ fine today.

Symbolic Phonetic Representation (SPR)

A Symbolic Phonetic Representation (SPR) is the phonetic spelling of a word. It represents the sounds of the word, how these sounds are divided into syllables, and which syllables receive stress. For example, in ViaVoice Outloud's phonetic spelling,

"though" = `[.1Do]

"shocking" = `[.1Sa.0kIG]

The periods signal the start of a new syllable (they are optional in the notation), and the numbers 1 and 0 signal primary stress and zero stress. The letters, D, o, S, a, k, I, G are part of the phonetic alphabet used by ViaVoice Outloud. The [ ] brackets and ` backquote indicate that the string is a phonetic representation rather than normal English spelling.

You may want to use SPRs when the normal letter-to-sound rules wouldn't produce the correct pronunciation. You can enter SPRs for particular strings in the user dictionaries to have the pronunciation apply whenever a certain string is encountered, or you can enter the SPR in the input text itself by enclosing it in the \xSPR\ tag.

Form

Each word entered as an SPR must be a string of allowable SPR symbols enclosed in square [ ] brackets, and preceded by a ` backquote character. Within the brackets there are restrictions on where to place syllable stress markers. An invalid SPR is read out character by character.

☞ If you are entering an SPR directly into the input text, the SPR must be enclosed in the \xSPR\ tag. For example:

```
What \xSPR=`[.1kYn.dx]\ tools?
```

If you are entering an SPR into one of the user dictionaries, you do not need to enclose the SPR in the \xSPR\ tag.

To learn more about how to create SPRs see:

SPR Examples for an opportunity to practice interpreting SPRs.

SPR Symbols for a list of the actual phonetic alphabet.

Syllable Stress for how to mark syllable stress in an SPR.

Some Tips on SPR Symbols for how to deal with sounds with limited distribution, dialects, and sound-changing rules.

SPR Examples

The best way to become proficient at entering and reading SPRs is by actually doing it. The table below lists some examples to help get you started.

For practice, you might want to just look at each SPR in the list and try to figure out what the word is. If you need help, peek at the source paragraph from Charles Darwin.

Spelling	SPR
interesting	`[.1In.0trX.0stIG]
contemplate	`[.1kan.0txm.2plet]
tangled	`[.1tAG.0gxld]
clothed	`[.1kloDd]
plants	`[.1plAnts]
birds	`[.1bRdz]
singing	`[.1sI.0GIG]
bushes	`[.1bU.0SXz]
various	`[.1ve.0ri.0xs]
insects	`[.1In.2sEkts]
flitting	`[.1flI.0tIG]
worms	`[.1wRmz]
crawling	`[.1krcl.0IG]

damp	`[.1dAmp]
earth	`[.1RT]
reflect	`[.0rX.1flEkt]
these	`[.1Diz]
different	`[.1dI.0frXnt]
each	`[.1iC]
complex	`[.1kam.2plEks]
manner	`[.1mA.0nR]
been	`[.1bIn]
laws	`[.1lcz]

More SPRs are listed in the examples of syllable stress and syllable boundaries.

Hints:

It is _____ to _____ a _____ bank, _____ with many _____ of many kinds, with _____ _____ on the _____, with _____ _____ _____ about, and with _____ _____ through the _____ _____, and to _____ that _____ elaborately constructed forms, so _____ from _____ other, and dependent upon each other in so _____ a _____, have all _____ produced by _____ acting around us.

-Charles Darwin, *The Origin of Species* (1859)

SPR Symbols

The symbols allowed in Symbolic Phonetic Representations (SPRs) are listed in the table below.
 See Some Tips on SPR Symbols in order to get the best use out of these symbols.

Symbol	Example Words
Regular Vowels:	
a	rod, father
A	back, had
e	cake, pain
E	hedge, let
i	see, speak, believe
I	pick, ill
o	both, oak
c	law, cough
u	zoo, truth
U	took, put
H	but, mug, son
R	butter, hurt
Diphthongs:	
W	out, cow
O	toil, boy
Y	life, fine
Reduced vowels:	
x	sofa, alone, suppose, tedious, America
X	roses, connect, melody, symphony, hinted
Consonants:	
Symbol	**Example Words**
b	bad, sob
p	pit, rip
d	dip, had
t	tip, pet
g	good, bug
k	kill, make, back
D	this, breathe
T	thing, Beth
v	vase, save
f	field, if, graph
z	zip, phase
s	seal, miss, ceiling
Z	treasure, garage
S	ship, wish
J	Jane, huge
C	chip, witch
h	hot, hero
m	man, hum, summer
n	never, sun, winner
G	sing, finger
r	borrow, rake
l	low, hall

v	yes, Virginia	
w	wear, quick	
?	("glottal stop")	kitten, Latin
F	("flap")	writer, fiddle
N	("syllabic nasal")	button, satin, eaten, burden

Syllable Stress

1	primary stress (most prominent stress in the word)
2	secondary stress
0	no stress

Syllable Boundary

.	(period) beginning of a syllable

Some Tips on Entering and Interpreting SPR Symbols

- If you are entering an SPR directly into the input text, the SPR must be enclosed in the \xSPR\ tag. For example:

  ```
  \xSPR=`[.1kYn.dx]\
  ```

  If you are entering an SPR into one of the user dictionaries, you do not need to enclose the SPR in the \xSPR\ tag.

- In the above table, there are words illustrating each sound symbol, with the underlined portions of the example words indicating a typical English spelling of the sound. Since English, like other languages, exhibits dialectal variation in pronunciation, your own pronunciation may not match every example.

- Note that the symbols are case-sensitive, so `[a] and `[A] represent two different sounds.

- The sounds of every language have specific distributional patterns. For example, in all dialects of English the sound [G], as in "sing" (`[sIG]), does not occur at the beginning of a word. Other sounds in English that have particularly narrow distribution are the glottal stop [?], the flap [F], and the syllabic nasal [N]. If you enter a sound symbol in a context where it does not normally occur, the resulting speech may sound unnatural.

- ViaVoice Outloud applies a sophisticated set of linguistic rules to its input to reflect the processes by which sounds change in specific contexts in natural language. For example, in American English, the sound [t] of "write" `[.1rYt] is pronounced as a flap in "writer" `[.1rY.0FR]. SPR input will undergo these modifications in the same way that ordinary text input does. In this example, whether you enter `[1rY.0tR] or `[rY.0FR], the output of the program will be the same.

Syllable Stress

If a word has more than one syllable, at least one of these syllables must be marked for primary stress. Other syllables can also be marked with their stress level, either secondary or no stress. Syllables that are not marked for stress are assumed to have no stress.

Syllable Stress Markers

1	primary stress (most prominent stress in the word)
2	secondary stress
0	no stress

- Words with only one syllable do not have to be marked for stress. They are given stress level 1. Example:

  `spice` can be `` `[.1spYs] `` or

  `` `[.spYs] ``

- The syllable stress marker (1, 2, or 0) should be within the syllable's boundaries but always before the syllable's vowel. Put another way, a syllable stress marker always applies to the following vowel and its syllable. Thus, if you don't know where the syllable boundary is in a word like "restrict" or "construction," any of the following SPRs will correctly place the primary stress on the vowel in **bold** type:

"restrict"	"construction"
`[rX1str`**`I`**`kt]`	`[kXn1str`**`H`**`kSXn]`
`[rXs1tr`**`I`**`kt]`	`[kXns1tr`**`H`**`kSXn]`
`[rXst1r`**`I`**`kt]`	`[kXnst1r`**`H`**`kSXn]`
`[rXstr1`**`I`**`kt]`	`[kXnstr1`**`H`**`kSXn]`

See further examples below.

Syllable Boundaries

Within the brackets of an SPR, a period signals the beginning of each syllable. This syllable boundary marker is optional in the SPR, and is ignored by the pronunciation rules. It is there only as a visual aid for spotting syllable breaks (which is useful when entering syllable stress markers). You cannot override ViaVoice Outloud's internal syllabification rules by moving the syllable boundary marker.

Examples of Syllable Stress and Syllable Boundaries

Single Syllable	**SPR**
spice	`` `[.1spYs] ``
cloves	`` `[.1klovz] ``
knead	`` `[.1nid] ``
Two Syllables	
honey	`` `[.1hH.0ni] ``
chocolate	`` `[.1Cc.0klxt] ``
cookbook	`` `[.1kUk.2bUk] ``
complete	`` `[.0kxm.1plit] ``
Three Syllables	
cinnamon	`` `[.1sI.0nx.0mXn] ``
celebrate	`` `[.1sEl.0X.2bret] ``
vanilla	`` `[.0vx.1nIl.0x] ``
raspberry	`` `[.1raz.2bE.0ri] ``
Four Syllables	

ingredients	`[.0IG.1gri.0di.0Xnts]
thermometer	`[.0TR.1ma.0mX.0tR]

Five Syllables

refrigerator	`[.0rX.1frI.0JR.2e.0tR]
horizontally	`[.2hc.0rX.1zan.0tx.0li]

User Dictionaries

ViaVoice Outloud allows you to specify explicit pronunciations for words, abbreviations, and acronyms, preventing the normal letter-to-sound rules from applying. One way you can do this is to enter an SPR tag directly into the input text. A more permanent way is to enter the word (the input string or "key") and the pronunciation you want (the output or "translation") in one of the user dictionaries:

Special Words Dictionary

Abbreviations Dictionary

Roots Dictionary

How to Modify the Dictionaries

Each dictionary entry has two parts: a key and a translation. An invalid key or translation will cause the dictionary look-up to fail, and the pronunciation of the word will be generated by the normal pronunciation rules. Valid entries for each dictionary are discussed under each dictionary's topic.

To add, modify, or delete an entry in any of the dictionaries, use the Lexicon or Dictionaries dialog box available in your program's user interface. This dialog box will provide you with further instructions.

See also:

Tags to control Dictionary Processing of Abbreviations

Internal Abbreviations Dictionary

Roots Dictionary

Use the roots dictionary is used for ordinary words like nouns, verbs, or adjectives, and for proper names. The distinctive property of the roots dictionary is that you only have to enter the root form of a word; all other forms of the word will automatically get pronounced in the same way.

For example, the spelling-to-sound rules normally pronounce "roof" as `[ruf] (which has the vowel of "boot"). You can use the roots dictionary to specify the alternate pronunciation `[rUf] (which has the vowel of "book"). Then, all words with this root, such as "roofer" and "roofing," will also be pronounced this way; there is no need to list the other words separately in the dictionary.

The roots dictionary is not case-sensitive. So, for example, if you enter a root in lowercase, it will still be found and pronounced as specified even when it begins with an uppercase (capital) letter as the first word in a sentence.

Roots Dictionary Allowable Entries

Key	Translation
• a single word in ordinary spelling	• a single word in ordinary spelling
• letters, in upper or lower case	• a valid SPR
NO: digits, non-letter symbols, punctuation, or white space	**NO:** digits, non-letter symbols, punctuation, white space, tags, or annotations

Root Dictionary Examples

Key	Translation	Would apply to...
roof	`[.1rUf]	roof, roofs, roofer, roofing
bonny	`[.1ba.0ni]	bonny
figure	`[.1fI.0gR]	figures, figuring, figured, refigure
tomato	`[.0tx.1ma.0to]	tomatoes, tomato's
almond	`[.1a.0mXnd]	almonds, almond's
lugubrious	`[.0lu.1gu.0bri.0xs]	lugubrious, lugubriousness
Wilhelmina	Wilma	Wilhelmina, Wilhelmina's
Macbeth	`[.0mxk.1bET]	Macbeth, Macbeth's
Miyuki	`[.0mI.1yu.0ki]	Miyuki, Miyuki's
Guam	`[.1gwam]	Guam, Guam's
Lima	`[.1li.0mx]	Lima, Lima's

See also:

Special Words Dictionary

Abbreviations Dictionary

Tags to control Dictionary Processing of Abbreviations

Special Words Dictionary

The important feature of the special words dictionary is that a valid translation can consist of any valid input string. So, you can use the special words dictionary for:

- strings that translate into more than one word.
- abbreviations and acronyms (as long as they don't contain periods).
- strings containing digits or other non-letter symbols (these aren't allowed in the other dictionaries).
- strings that require translations with annotations or SPRs. (Note that you must always use annotations rather than tags in dictionary entries.)

The special words dictionary is case-sensitive. So for example, if you entered the key WHO to translate to "World Health Organization," lower case "who" would still be pronounced as expected (`[hu]).

Special Words Dictionary Allowable Entries

Key	Translation
• a single word in ordinary spelling • letters, in upper or lower case • strings containing digits or non-letter symbols like @, #, $, %, &, *, + • apostrophes within a word (not at the beginning or the end)	• With the exception of tags, anything that is legal input to the text-to-speech engine, including white space, punctuation, SPRs, and annotations
NO: punctuation (except apostrophes), parentheses, brackets, or double quotes, or white space	**NO:** tags

Special Words Dictionary Examples

Key	Translation
AWSA	American Woman Suffrage `0 Association
ECSU	`[1i] `[1si] `[1Es] `[1yu]
UConn	`[1yu2kan]
wheelpower	wheel `0 power
safekeeping	safe keeping
WYSIWYG	`[1wI0zi0wIg]
Win32	win thirty two
486DX	4 86 dee ecks

See also:

Abbreviations Dictionary

Roots Dictionary

Tags to control Dictionary Processing of Abbreviations

Abbreviations Dictionary

The abbreviations dictionary is used for abbreviations (both with and without periods) which do not require the use of annotations in their translation. You can specify whether you want abbreviations to be spelled out (e.g. USET as "you ess ee tee") or expanded (e.g., nm as "nautical mile")

The abbreviations dictionary is case-sensitive. So for example, if you entered the key Mar to translate to "march," lower-case "mar" would still be pronounced as expected (`[mar]).

When you enter a key in the abbreviations dictionary, it is not necessary to follow it with a "trailing" period (such as "etc."). The dictionary look-up routine will still find and pronounce the abbreviation as you have specified, whether or not it has a trailing period. However, if you want an abbreviation to be pronounced as such only when it followed by a period in the text, then you must enter the trailing period in the key. The following table summarizes the use of trailing periods:

Key entry:	Will match:
`inv`	`inv` `inv.`
`sid.`	`sid.` (not sid)

An abbreviation dictionary entry invokes different assumptions about how to interpret a following period in the text than does a special words dictionary entry. Since the period cannot be part of a special words entry, it is automatically interpreted as end-of-sentence punctuation. A period following an abbreviations dictionary entry, on the other hand, is ambiguous. It will only be interpreted as end-of-sentence punctuation if other appropriate conditions obtain (e.g., if it is followed by two spaces and an upper-case letter). For example, the period in the following entry will not be interpreted as indicating the end of the sentence:

```
It rained 1 in. on Monday
```

whereas it will be regarded as such in this entry:

```
It rained 1 in.  On Monday, it was sunny
```

Abbreviations Dictionary Allowable Entries

Key	Translation
• sequences of one or more letters separated by periods (x.x.x. or xx.xx.xx) • sequences of letters, with or without the trailing period that may be considered part of the abbreviation (xxx. or xxx) • upper or lower case letters	• one or more valid words in ordinary spelling
NO: digits, non-letter symbols, white space, or punctuation (except periods)	**NO:** digits, punctuation, SPRs, tags, or annotations

Abbreviations Dictionary Examples

Key	Translation
`Is.D.`	`eye ess dee`
`punct`	`punctuation`
`para`	`paragraph`
`Ltjg`	`lieutenant junior grade`

See also:

Special Words Dictionary

Roots Dictionary

Internal Abbreviations Dictionary

Tags to control Dictionary Processing of Abbreviations

Ambiguous Abbreviations

Some abbreviations are ambiguous when not followed by a period. For example, the string of characters "in" could be either the abbreviation for *inches* or the word *in*. Therefore:

- Ambiguous abbreviations must be followed by a period or they will not be interpreted as an abbreviation (they will be interpreted as the word itself).
- Ambiguous abbreviations used at the end of a sentence must be followed by two periods in order to be interpreted as the abbreviation rather than the word that is spelled the same way.

For example:

(a) `The door was only 20 in. wide, so the wheelchair couldn't get in.`

(b) `The wheelchair couldn't get in because the width of the door was only 20 in..`

Example (a): The first instance of "in." is interpreted as the abbreviation for "inches" because it has only one period after it and is not at the end of a sentence. The second occurrence is interpreted as the preposition "in" because it is at the end of the sentence and is followed by only one period.

Example (b): The first instance of "in" is interpreted as the word "in" because it is not followed by a period and is not at the end of the sentence. The second occurrence, even though it appears at the end of the sentence, is interpreted as the abbreviation for "inches" because it is followed by two periods.

Note that in the User's Abbreviations Dictionary, there is no method of declaring an abbreviation as ambiguous. However, you can temporarily override the interpretation of a user-defined abbreviation with a tag; See the tags for Dictionary Processing of Abbreviations.

Internal Abbreviations Dictionary

This internal dictionary contains abbreviations that are expanded to their full-length form when pronounced. Although listed here without a trailing period, most abbreviations are found and expanded with or without the trailing period. The few exceptions to this are ambiguous abbreviations like in. and apt., in which case they are only expanded when followed by a period.

This dictionary also contains special acronyms like NCAA (en see double ay) that aren't pronounced letter-by-letter, as well as abbreviations like Ph.D. (pee aitch dee) that don't follow a "one letter one period" pattern.

State abbreviations are interpreted as state abbreviations only in appropriate contexts. Abbreviations of units of measure will be read out in singular or plural form, depending on the context.

Related Topics:

Ambiguous Abbreviations

User's Abbreviations Dictionary

English Language Internal Abbreviation Dictionary Listing:

Abbreviation	Pronounced as:
acct	account
AK	Alaska
AL	Alabama (if interpreted as a state abbreviation)
Ala	Alabama
apt.	apartment
Apr	April
AR, Ark	Arkansas
attn, Attn	attention
Aug	august
Av, Ave, av, ave	avenue
avg	average
AZ, Ariz	Arizona
bdrm	bedroom
bldg	building
Blvd, blvd, BLVD	boulevard
ca	circa
CALIF, Calif, CA	California
Capt	captain
Cir, cir	circle
cm	centimeter
Co	company
Col	colonel
Colo	Colorado
CO	Colorado (if interpreted as a state abbreviation)
Corp, corp, CORP	corporation

cpl, Cpl	corporal
Conn	Connecticut
CT	Connecticut (if interpreted as a state abbreviation)
Ctrl, ctrl, CTRL	control
cu	cubic
dB	decibel
DE, Del	Delaware (if interpreted as a state abbreviation)
Dec	December
deg	degree
dept, Dept	department
dkg	dekagram
dkl	dekaliter
dkm	dekameter
dl	deciliter
dm	decimeter
Dr, DR	doctor or drive (depending on the context)
doz	dozen
etc	et cetera
Feb	February
fed, Fed	federal
FL, Fla, FLA	Florida
Fri	Friday
ft	foot or feet
GA, Ga	Georgia
Gen	general
gm	gram or grams
Gov	governor
govt	government
HI	Hawaii (if interpreted as a state abbreviation)
hr	hour
hrs	hours
ht	height
Hts	heights
hwy	highway
Hz	hertz
IA, Ia	Iowa
ID	Idaho (if interpreted as a state abbreviation)

Ill	Illinois (if interpreted as a state abbreviation)
IL	Illinois
in.	inch or inches
IN	Indiana (if interpreted as a state abbreviation)
Inc	incorporated
Ind, IND	Indiana
intl, int'l	international
Jan	January
jct	junction
Jr	junior
Jul	July
Jun	June
Kan, KS	Kansas
kcal	kilocalorie
Ken	Kentucky
keV	kiloelectronvolt
kg	kilogram or kilograms
kHz	kilohertz
km	kilometer or kilometers
kW	kilowatt
kWh	kilowatt hour
KY, Ky	Kentucky
LA	Louisiana (if interpreted as a state abbreviation)
lb	pound or pounds
lbs	pounds
Lt	lieutenant
ltd, Ltd	limited
Mass, MA	Massachusetts (if interpreted as a state abbreviation)
mA	milliampere
Maj	major
Md	Maryland
MD	Maryland (if interpreted as a state abbreviation)
ME	Maine (if interpreted as a state abbreviation)
mg	milligram or milligrams
mgr	manager
mgt	management
MHz	megahertz
MI	Michigan (if interpreted as a state abbreviation)
MN	Minnesota
misc	miscellaneous

MS	Mississippi (if interpreted as a state abbreviation)
ml	milliliter or milliliters
mm	millimeter or millimeters
Mo, MO	Missouri (if interpreted as a state abbreviation)
mpg	miles per gallon
mph	miles per hour
Mr	mister
MS	Mississippi (if interpreted as a state abbreviation)
ms	millisecond
Ms	miz
MT	Montana (if interpreted as a state abbreviation)
	mount (if followed by a word beginning with an uppercase letter)
Mt	mount (if followed by a word beginning with an uppercase letter)
	mountain (elsewhere)
Mrs	misses
msec	millisecond
mtn	mountain
mts	mountains
mV	millivolt
mW	milliwatt
MW	megawatt
natl, nat'l	national
NC	North Carolina
NCAA	en see double ay
ND	North Dakota
NE	Nebraska (if interpreted as a state abbreviation)
	northeast
Nebr	Nebraska
Nev	Nevada
Neth	Netherlands
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
No, no, NO	number (if followed by a digit)
Nov	November
NV	Nevada
NW	northwest
NY	New York
NYSE	New York stock exchange
Oct	October
OH	Ohio (if interpreted as a state abbreviation)

OK	Oklahoma (if interpreted as a state abbreviation)
	okay
Okla	Oklahoma
OR, Ore	Oregon (if interpreted as a state abbreviation)
oz	ounce or ounces
PA, Pa	Pennsylvania (if interpreted as a state abbreviation)
pd	paid
pg	page
Ph.D.	pee aitch dee
pkg	package
rd, Rd	road
recd, rec'd	received
RI	Rhode Island
rte	route
SC	South Carolina
SD	South Dakota
Sep, Sept	September
Sgt	sergeant
St, ST	saint (if followed by a word beginning with an uppercase letter)
	street (elsewhere)
tbsp, Tbsp, tbs, Tbs	tablespoon or tablespoons
Tenn, TN, TENN	Tennessee
Thurs	Thursday
Tnpk	turnpike
tsp	teaspoon or teaspoons
tsps	teaspoons
Tues	Tuesday
TX	Texas
UT	Utah
Va	Virginia
VA	Virginia (if interpreted as a state abbreviation)
	vee ay (elsewhere)
vs	versus
VT	Vermont (if interpreted as a state abbreviation)
Wash	Washington (if interpreted as a state abbreviation)

WA	Washington
WI, Wisc, Wis	Wisconsin
wk	week or weeks
wks	weeks
wkly	weekly
WV	West Virginia
WY, Wyo	Wyoming
yd	yard or yards
yds	yards
yr	year or years
yrs	years

Table of Tags

Insert these tags into the input text to affect how it sounds when it is read out loud. If you are annotating an entry in the Special Words Dictionary, you must use the annotation equivalent of the tag.

Choosing a Language and Dialect

Tag	Annotation	Dialect or Language
\Vce=Language=English\	`l1	English
\Vce=Dialect=American\	`l1.0	American English (default dialect)
\Vce=Dialect=British\	`l1.1	British English
\Vce=Language=Spanish\	`l2	Spanish
\Vce=Dialect=Castilian\	`l2.0	Castilian Spanish (default dialect)
\Vce=Dialect=Mexican\	`l2.1	Mexican Spanish
\Vce=Language=French\	`l3	French
\Vce=Dialect=Standard\	`l3.0	Standard French (default dialect)
\Vce=Language=German\	`l4	German
\Vce=Dialect=Standard\	`l4.0	Standard German (default dialect)
\Vce=Language=Italian\	`l5	Italian
\Vce=Dialect=Standard\	`l5.0	Standard Italian (default dialect)

Setting the Character Spelling Mode (\xSpl=<*value*>\)

Tag	Annotation	Description
\xSpl=off\	`ts0	No special interpretation (default setting).
\xSpl=alphanumeric\	`ts1	Pronounce only alphanumeric characters by name.
\xSpl=allchars\	`ts2	Pronounce all characters individually by name.
\xSpl=radio\	`ts3	Pronounce alphabet characters according to the International Radio Alphabet.

Pronouncing Numbers and Years (\xYr=<*value*>\)

Tag	Annotation	Description
\xYr=off\	`ty0	Pronounce 4-digit numbers as "nonyears."
\xYr=on\	`ty1	Pronounce 4 digit numbers as "years" (default setting).

Emphasizing Words (\xWac=*n*\)

Tag	Annotation	Description
\xWac=00\	`00	reduced emphasis
\xWac=0\	`0	no emphasis

\xWac=1\	`1	normal emphasis
\xWac=2\	`2	added emphasis
\xWac=3\ or \Emp\	`3	heavy emphasis
\xWac=4\	`4	very heavy emphasis

Assigning Tones to Words \xWac=*tone* (American and British English Only)

Tag	**Annotation**	**Description**
\xWac=Low\	`al	Low Tone
\xWac=High\	`ah	High Tone
\xWac=Falling\	`af	Falling Tone
\xWac=Rising\	`ar	Rising Tone
\xWac=Scooped\	`as	Scooped Tone
\xWac=Downstep\	`ad	Downstepped Tone

Emphasis and tone may also be combined in a single tag:
\xWac=*n, tone*\ or \xWac=*tone, n*\

Modifying Phrase-final Intonation (\xPhf=*intonation*\ ) (American and British English Only)

Tag	**Annotation**	**Description**
\xPhf=SmallRise\	`%	Small pitch rise at the end of the phrase
\xPhf=ContinuationRise\	`%%	Continuation rise at the end of the phrase and low pitch on the nuclear accented word of the phrase.
\xPhf=HighFlat\	`%%%	Flat, high pitch at the end of the phrase.
\xPhf=LargeFall\	`/	Large pitch fall, as at the end of a paragraph. More perceived finality than at the end of a sentence.

☞ The **\xPhf** tag must be immediately followed by the punctuation ending the intonation phrase: either a period, comma, exclamation point, question mark, colon, or semicolon. If the required punctuation is missing, the tag is ignored.

Inserting Pauses (\Pau=*n*\)

Tag	**Annotation**	**Description**
\Pau=n\	`pN	Creates a pause n milliseconds long. The pause tag must be in multiples of 5.

Choosing a Voice (\Vce=StoredVoice=*name*\)

Tag	**Annotation**	**Description**
\Vce=StoredVoice=*name*\	- - -	Set voice to the specified user-defined or built-in voice.
\Vce=StoredVoice="Adult Male 1"\	`v1	Set voice to a standard male.
\Vce=StoredVoice="Adult Female 1"\	`v2	Set voice to a standard female.
\Vce=StoredVoice="Child 1"\	`v3	Set voice to a child.

\Vce=StoredVoice="Adult Male 2"\	`v4	Set voice to a low-pitched male.
\Vce=StoredVoice="Adult Male 3"\	`v5	Set voice to a faster-talking male.
\Vce=StoredVoice="Adult Female 2"\	`v6	Set voice to a faster-talking, breathy-sounding female.
\Vce=StoredVoice="Elderly Female 1"\	`v7	Set voice to an older female.
\Vce=StoredVoice="Elderly Male 1"\	`v8	Set voice to an older male.

Choosing a Voice by Gender or Age (\Vce=Gender=*gender*\), (\Vce=Age=*age*\)

Tag	Description
\Vce=Gender=Male\	Set voice to a male voice, which is either Adult Male, Child, or Elderly Male, depending on the age setting.
\Vce=Gender=Female\	Set voice to a female voice, which is either Adult Female, Child, or Elderly Female, depending on the age setting.
\Vce=Age=Child\	Set voice to the built-in Child voice.
\Vce=Age=Adult\	Set voice to an adult voice, which is Adult Male or Adult Female, depending on the gender setting.
\Vce=Age=Elderly\	Set voice to an elderly voice, which is Elderly Male or Elderly Female, depending on the gender setting.

Defining Voice Characteristics

Tag	Annotation	Description
\xVct=male\	`vg0	Set to male vocal tract configuration.
\xVct=female\	`vg1	Set to female vocal tract configuration.
\Pit=N\	`vbN	Set pitch baseline to N. Tag range is 1-324 Hz. Annotation range is 0-100.
\xPfl=N\	`vfN	Set pitch fluctuation to N, range of 0 (narrow) through 100 (wide).
\xHsz=N\	`vhN	Set head-size to N, range of 0 (very small head) through 100 (very large head).
\xRgh=N\	`vrN	Set roughness to N, range of 0 (smooth) through 100 (rough).
\xBth=N\	`vyN	Set breathiness to N, where larger N gives a breathier voice, and 100 is a whisper.
\Spd=N\	`vsN	Set overall speed of the utterance. Tag range is 70 to 350 words per minute. Annotation range is 0-100.
\Vol=N\	`vvN	Set output volume control. Tag range is a linear range from 1 to 63095. Annotation range is 0-100

Choosing a Speaking Style (\Chr=*style*\)

Tag	Annotation	Description
\Chr="Normal"\	`vyN	Set voice to default speaking style.

\Chr="Whisper"\	`vy100	Set voice to a whisper.
\Chr="Monotone"\	`vf0	Set voice to a monotone.

Choosing a Speaker (\Vce=Speaker=*name*\)

(There are no equivalent annotations for Speaker tags.)

Tag	Description
\Vce=Speaker=*name*\	Set speaker to the specified user-defined or built-in speaker.
\Vce=Speaker="Wade"\	Set speaker to Wade, which uses an American English adult male voice and a sampling rate of 11 kHz.
\Vce=Speaker="Wade for phone"\	Set speaker to "Wade for phone," which uses an American English adult male voice and a sampling rate of 8 kHz (this sampling rate is required for use over the telephone).
\Vce=Speaker="Flo"\	Set speaker to Flo, which uses an American English adult female voice and a sampling rate of 11 kHz.
\Vce=Speaker="Flo for phone"\	Set speaker to "Flo for phone," which uses an American English adult female voice and a sampling rate of 8 kHz (this sampling rate is required for use over the telephone).
\Vce=Speaker="Bobby"\	Set speaker to Bobby, which uses an American English child voice and a sampling rate of 11kHz.
\Vce= Speaker ="Grandma"\	Set speaker to Grandma, which uses an American English older female's voice and a sampling rate of 11 kHz.
\Vce= Speaker ="Grandpa"\	Set speaker to Grandpa, which uses an American English older male's voice and a sampling rate of 11 kHz.

Entering Symbolic Phonetic Representations (SPRs)

Tag	Description
\xSPR=`*[SPR]*\	Pronounce the word(s) contained in `*[SPR]*.

Dictionary Processing of Abbreviations

Tag	Annotation	Description
\xAbb=off\	`da0	Don't use the abbreviation dictionaries (the Internal Abbreviations Dictionary and the User's Abbreviations Dictionary)
\xAbb=on\	`da1	Use the abbreviation dictionaries (default setting).

Other Tags

\Eng

Another useful tag is the Eng, or "Engine Specific," tag. This tag provides a way to use annotations rather than

the above tags. The tag must first contain "Eng;" then the ViaVoice Outloud engine identifier enclosed in curly brackets

{F063EDA0-8C65-11CF-8FC8-0020AF14F271}

followed by a colon, followed by an annotation that is enclosed in double quotes.

For example:

\Eng;{F063EDA0-8C65-11CF-8FC8-0020AF14F271}:" `vr80 "\	Set voice roughness to 80
\Eng;{F063EDA0-8C65-11CF-8FC8-0020AF14F271}:" `3 "\	Put heavy emphasis on the following word.

Once you have issued the full engine identifier, you may eliminate it from all following **Eng** tags, leaving just the **Eng** tag and the annotation. For example (note the colon after **Eng**):

```
\Eng: " `vy80 "\
\Eng: " `3 "\
```

\Rst

Another useful tag that has no annotation equivalent is the \Rst\ tag. It resets the voice to the original characteristics for the selected speaker.

Glossary

alphanumeric
compound word
content word
flap
emphasis
function word
glottal stop
intonation
intonational phrase
key
nuclear accent
phonetic spelling
pitch
question intonation
reduced emphasis
reduced vowel
root
speaker
stress
syllable
syllabic nasal
translation
vocal tract
voice
voice box
waveform
white space

emphasis

Emphasis is the prominence given to a word relative to other words in an utterance.

alphanumeric

Alphabetic (a, b, c) and numeric (1, 2, 3) symbols.

compound word

A word created from two other words. Here are some examples of compound words:

hardwood	moon dancer	widespread	hand carry
tree trunk	overpower	outgrown	cow punch

A compound word can be combined with another word (which can be a compound), so there is no theoretical limit to the length of a compound:

firewood bin

greenhouse gas

graham cracker pie crust

English spelling does not indicate whether or not something is a compound. The component words can be separated with a space or a hyphen, or not separated at all:

highland	freeway
high-rise	free-fall
high school	free will

A compound word has a different stress pattern than a noun phrase consisting of the same words. For example, compare the pronunciation of the following:

Ouch! That's **hard wood**.

It's not a pine tree; it's a **hardwood**.

Please paint that **black board** yellow.

Please erase the **blackboard** this afternoon.

content word

The type of word that constitutes most of the vocabulary, such as:

- nouns (story, happiness, sun, mile...)
- verbs (ride, chew, listen, bring, believe, remain...)
- adjectives (brilliant, awful, three, new, darkest...)
- adverbs (often, far, much, calmly, happily...)

Content words are distinguished from **function words**.

function word

Grammatical words such as:

- conjunctions (and, or, but)
- articles and determiners (a, an, the, this, those...)
- auxiliaries (can, may, will, must, should...)
- prepositions (to, from, over...)
- pronouns (she, her, we, they, it...)

Function words are contrasted with **content words**, and are normally pronounced with **reduced emphasis**.

vocal tract

Male and female vocal tracts have physical differences which affect the voice, some of which are reflected in the vocal tract setting. Other differences between male and female voices, namely pitch and head size, are controlled independently.

The vocal tract attribute should not be confused with the "gender" label that some applications use to classify a speaker, or with the \Vce=Gender=*gender*\ tag, which resets the program to a built-in voice of the specified gender.

intonation

Changes in pitch across an utterance which are not related to the meaning of individual words. Intonation conveys, for example:

- the difference between questions and statements
- contrastive emphasis, used in statements that contradict or parallel a previous statement (e.g., Terry has a cold but JANET has pneumonia.)
- statement completion or closure

key

A key is the first half of a user dictionary entry. The key is the string of characters that will be searched for by the dictionary routine.

nuclear accent

The last emphasized word in an intonational phrase that has a degree of emphasis of 2 or higher.

phonetic spelling

A phonetic spelling uses special symbols like those found in the pronunciation guide of a dictionary. It has one symbol for each sound and indicates which syllables receive stress.

intonational phrase

In ViaVoice Outloud, an intonational phrase is usually marked off by punctuation, such as a comma, period, or question mark.

Examples:

One phrase:	He's a child?
Two phrases:	He's a child, though growing quickly.
Three phrases:	He's a child, an old child, but a child.

One exception to this rule is a sentence containing a quotation, as in the following example. In this case, the sentence is treated as a single intonational phrase (rather than two), and the **nuclear accent** falls on the last content word in the quotation rather than the last content word in the sentence.

"Because I'm a lousy singer," I said.

pitch

How high or low a voice sounds.

question intonation

In questions like the following, question intonation is marked by a low tone on the nuclear accented word of the intonation phrase, followed by a pitch rise. In the fourth example below, the nuclear accent has been moved forward with the `2 annotation in order to more clearly illustrate the low tone on the nuclear accented word.

Did I miss the meeting?

You were a lawyer?

Would you like to dance?

Would you `2 like to dance?

However, following standard English usage, if the sentence already contains a question word like *who, what, when*, or *how*, the question intonation is not used, even when a question mark is present.

How would you know?

What else is new?

Why go home?

Questions with "or" also do not use question intonation. Compare the following:

Did you buy a pickle on a bagel?

Did you buy a pickle or a bagel?

reduced emphasis

A word with reduced emphasis is shorter than normal and has no pitch accent (tone). A word that simply has *no emphasis* rather than *reduced emphasis* has no pitch accent but it is not shortened.

reduced vowel

The reduced vowels are `[x] (as in 'sofa') and `[X] (as in 'shaded'). They are shortened and unstressed.

root

The base form of a word, without prefixes (like un-) or suffixes (like plural -s or past tense -ed).

stress

Stress is the prominence given to a syllable, relative to other syllables in the word. For example, in sentence (a) the word **desert** has the greatest stress on the first syllable, and in sentence (b) the word **desert** has the greatest stress on the second syllable.

(a) I've been through the desert in a car with no air `0 conditioner.

(b) Let's desert this old car and walk from here.

syllable

A syllable is a unit of speech containing, at a minimum, a sonorant nucleus such as a vowel or diphthong. The syllable may also contain one or more consonants surrounding the vowel.

For example:

One syllable	Two syllables
oh	okay
strode	striding
said	saying
rough	roughhouse

translation

A translation is the second half of a user dictionary entry. The translation is the pronunciation or output specified by the user.

voice box

The common term "voice box" refers to the **larynx**, a roughly cylindrical arrangement of cartilage and muscle located at the top of the wind pipe (trachea), and containing the "vocal cords" (which are really more like "folds" than cords).

waveform

A waveform is an acoustic representation of speech. It plots variations in air pressure (vertical axis) across time (horizontal axis).

For example, this is a picture of the waveform for the word "eloquence."

white space

One or more spaces made with the spacebar or tab key.

glottal stop

The glottal stop, [?], has a limited distribution in SPRs. It can only occur before the [N] sound, which is heard in "kitten" `[.1kI.0?N] and "Latin" `[.1lA.0?N].

flap

The flap, [F], sounds like a quick [d]. It occurs only after a vowel and before an unstressed vowel or other syllabic sound like [R]. The following examples are from General American English:

sooty	`[.1sU.0Fi]	woody	`[.1wU.0Fi]
pretty	`[.1prI.0Fi]	buddy	`[.1bH.0Fi]
pity	`[.1pI.0Fi]	tidy	`[.1tay.0Fi]
data	`[.1de.0Fx]	soda	`[.1so.0Fx]
unity	`[.1yu.0nX.0Fi]	comedy	`[.1ka.0mX.0Fi]
motto	`[.1ma.0Fo]	voodoo	`[.1vu.0Fu]
rattle	`[.1rA.0Fxl]	paddle	`[.1pA.0Fxl]
cottage	`[.1ka.0FXJ]	adage	`[.1A.0FXJ]
British	`[.1brI.0FXS]	Swedish	`[.1swi.0FXS]
visitor	`[.1vI.0zX.0FR]	odor	`[.1o.0FR]
creator	`[.2kri.1e.0FR]	cider	`[.1say.0FR]
writer	`[.1ray.0FR]	rider	`[.1ray.0FR]
latter	`[.1lA.0FR]	ladder	`[.1lA.0FR]

As you can see from the above examples, the flap corresponds to the alphabet letters "t" or "d." You may enter the flap symbol in an SPR, but it is not necessary to do so. Wherever required, the text-to-speech engine will modify user SPRs to convert "t" or "d" to a flap. For example, if the dialect is set to American English and you enter `[.1pH.0ti] for "putty," the SPR will be converted to `[.1pH.0Fi].

syllabic nasal

The syllabic nasal, [N], has a limited distribution in SPRs. The sound [N] only occurs after [d] and [t] (or [?] -- the glottal stop -- since [t] is converted to [?] in this context). For example:

button	`[.1bH.0?N]
satin	`[.1sA.0?N]
eaten	`[.1i.0?N]
burden	`[.1bR.0dN]

speaker

A speaker is a collection of settings. A speaker has settings for particular voice characteristics, a language and a dialect, a style of speaking, and a set of dictionaries to use. A speaker also has settings for tag processing options and audio (sample rate) options.

For example, you could have a speaker named "Gramps" who uses an elderly male voice, speaks English, uses a set of dictionaries customized for telling children's stories, and uses a sampling rate of 11.025 kHz. Or you might want a speaker designed to give medical facts over the phone, one who speaks English, and uses a neutral adult voice, a set of medical dictionaries, and a sampling rate of 8 kHz.

voice

A voice is a set of characteristics that affect how the speaker sounds. These characteristics include features like head size, pitch, and breathiness.

A voice is just one property of a speaker.