Symphonic Orchestra Gold Complete Structure® Edition

Version 1.0

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chapter 1

Introduction

The EastWest/Quantum Leap Symphonic Orchestra Gold Complete—Structure Edition sample library is a full orchestral sample library for Structure Professional Sampler Workstation, Structure LE, and Structure Free.

Features

◆ Professional 35 GB orchestral sample library for Structure Professional Sampler Workstation, Structure LE, and Structure Free

◆ Combines EastWest's Symphonic Orchestra Gold and Gold Pro XP in a one-stop native Structure library

◆ Contains 941 patches

◆ Makes use of Structure's Smart Knobs and Key Switches

◆ High quality 16-bit, 44.1 kHz stereo samples

◆ Recorded in a $125 million concert hall

System Requirements and Compatibility Information

To use EastWest/Quantum Leap Symphonic Orchestra Gold Complete—Structure Edition you need the following:

◆ An iLok USB Smart Key (an iLok.com account is also required for managing iLok licenses)

◆ Structure, Structure LE, or Structure Free

◆ One of the following:

- A qualified Pro Tools|HD system, Pro Tools LE system, or Pro Tools M-Powered system

– or –

- A qualified Pro Tools system and a third-party software application that supports the RTAS plug-in standard

Avid can only assure compatibility and provide support for hardware and software it has tested and approved.

For complete system requirements and a list of qualified computers, operating systems, hard drives, and third-party devices, visit:

www.avid.com/compatibility

Registering Plug-Ins

Your plug-in purchase is automatically registered when you activate your iLok license (see Chapter 2, "Installation.").

Registered users are eligible to receive software update and upgrade notices.

For information on technical support, visit www.avid.com.

Working with Plug-Ins

Refer to the *Pro Tools Reference Guide* for general information on working with plug-ins, including:

- Inserting plug-ins on tracks
- Using clip indicators
- Navigating the Plug-In window
- Adjusting plug-in controls
- Automating plug-ins
- Using plug-in presets

For information on using Instrument, Auxiliary Input, and MIDI tracks with instrument plug-ins, see the Pro Tools Reference Guide.

For information on working with your version of Structure, see the Structure Plug-In Guide, the Structure LE Guide, or the Structure Free Guide.

Conventions Used in This Guide

All of our guides use the following conventions to indicate menu choices and key commands:

Convention	Action
File > Save	Choose Save from the File menu
Control+N	Hold down the Control key and press the N key
Control-click	Hold down the Control key and click the mouse button
Right-click	Click with the right mouse button

The names of Commands, Options, and Settings that appear on-screen are in a different font.

The following symbols are used to highlight important information:

User Tips are helpful hints for getting the most from your system.

Important Notices include information that could affect your data or the performance of your system.

Shortcuts show you useful keyboard or mouse shortcuts.

Cross References point to related sections in this guide and other Pro Tools guides.

About www.avid.com

The Avid website (www.avid.com) is your best online source for information to help you get the most out of your Pro Tools system. The following are just a few of the services and features available.

Product Registration Register your purchase online.

Support and Downloads Contact Avid Customer Success (technical support); download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Knowledge Base or join the worldwide Pro Tools community on the User Conference.

Training and Education Study on your own using courses available online or find out how you can learn in a classroom setting at a certified Pro Tools training center.

Products and Developers Learn about Avid products; download demo software or learn about our Development Partners and their plug-ins, applications, and hardware.

News and Events Get the latest news from Avid or sign up for a Pro Tools demo.

chapter 2

Installation

The patches for Symphonic Orchestra are installed by the first Install disc, labeled "Disc 1-Symphonic Orchestra Gold Complete -Structure Edition Orchestral Sample Library for Structure." Corresponding waveform content for the patches is contained on the eight remaining discs and must be copied manually to your computer.

Installing the Patches

Use Disc 1 to install the patches for Symphonic Orchestra.

To install Symphonic Orchestra patches:

1 Insert the first of the nine Install discs into your computer.

2 Double-click the Installer application:

- Symphonic Orchestra - Structure Edition Setup.exe (Windows)
- Symphonic Orchestra - Structure Edition Setup.pkg (Mac OS X)

3 Follow the on-screen instructions to complete the installation of the plug-in and patch files.

4 When installation is complete, click Finish (Windows) or Quit (Mac).

The installer copies all patches to a folder named Instruments on your computer's hard drive. If you do not choose another location, it is created in the following place, depending on your OS:

Windows Program Files\Digidesign\Symphonic Orchestra - Structure Edition

Mac OS X /Applications/Digidesign/Symphonic Orchestra - Structure Edition

Installing the Content

Use Discs 2-9 to install the patches' corresponding waveform to your computer.

To install the content:

1 Locate the Samples folder, which is in the following place depending on your platform:

Windows Program Files\Digidesign\Symphonic Orchestra - Structure Edition\Samples

Mac OS X /Applications/Digidesign/Symphonic Orchestra - Structure Edition/Samples

2 Insert each of the remaining eight Symphonic Orchestra Install discs to your computer and manually copy the following folders into the Samples folder:

- Samples DVD 2
- Samples DVD 3
- Samples DVD 4
- Samples DVD 5
- Samples DVD 6
- Samples DVD 7
- Samples DVD 8
- Samples DVD 9

Changing the Location of the Content

If you need to move the Structure Factory Libraries folder to another location to, for example, save space on your system disc, only move the Samples folder. You must then point Structure to the new location of Samples folder.

To point Structure to the new location after moving the Samples folder:

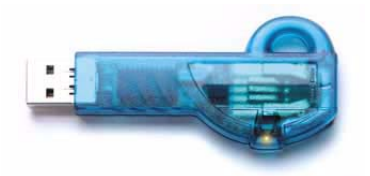
1 In the Structure Setup page, click the Content tab.

2 In the Content Search Folders section, type the new path of the Samples folder.

3 Click Search Now. Structure will scan the folder whenever it does not find relevant samples.

Authorizing Software

Software is authorized using the iLok USB Smart Key (iLok), manufactured by PACE Anti-Piracy.



iLok USB Smart Key

An iLok can hold over 100 licenses for all of your iLok-enabled software. Once a license for a given piece of software is placed on an iLok, you can use the iLok to authorize that software on any computer.

⚠ *An iLok USB Smart Key is not supplied with plug-ins or software options. You can use the iLok included with certain Pro Tools systems (such as Pro Tools|HD-series systems), or purchase one separately.*

Authorizing Symphonic Orchestra

To authorize software using an Activation Code:

1 If you do not have an iLok.com account, visit www.iLok.com and sign up for an account.

2 Transfer the license for your software to your iLok.com account by doing the following:

- Visit www.avid.com/activation.

– and –

- Input your Activation Code (listed on your Activation Card) and your iLok.com User ID. Your iLok.com User ID is the name you create for your iLok.com account.

3 Transfer the licenses from your iLok.com account to your iLok USB Smart Key by doing the following:

- Insert the iLok into an available USB port on your computer.
- Go to www.iLok.com and log in.
- Follow the on-screen instructions for transferring your licences to your iLok.

📄 *For more information, visit the iLok website (www.iLok.com).*

4 Launch Pro Tools.

5 If you have any unauthorized software installed, you are prompted to authorize it. Follow the on-screen instructions to complete the authorization process.

Removing Plug-Ins

If you need to remove a plug-in from your Pro Tools system, follow the instructions below for your computer platform.

Mac OS X

To remove a plug-in:

1 Locate and open the Plug-Ins folder on your Startup drive (Library/Application Support /Digidesign/Plug-Ins).

2 Do one of the following:

- Drag the plug-in to the Trash and empty the Trash.

– or –

- Drag the plug-in to the Plug-Ins (Unused) folder.

Windows Vista and Windows 7

To remove a plug-in:

1 Choose > Control Panel.

2 Under Programs, click Uninstall a Program.

3 Select the plug-in from the list of installed applications.

4 Click Uninstall.

5 Follow the on-screen instructions to remove the plug-in.

Windows XP

To remove a plug-in:

1 Choose > Start Control Panel.

2 Double-click Add or Remove Programs.

3 Select the plug-in from the list of installed applications.

4 Click the Remove button.

5 Follow the on-screen instructions to remove the plug-in.

chapter 3

Operating Symphonic Orchestra

Patches in Symphonic Orchestra are divided into the four traditional orchestral instrument families:

- strings
- woodwinds
- brass
- percussion

These four families of patches are further divided into instrument groups. For example, the strings patch family includes instrument groups consisting of violins, violas, cellos, double basses, and harps. Instrument groups are further divided into solo instruments and sections.

For example, the Violins instrument groups are divided into two sections, *18 Violins* and *11 Violins,* to represent the sounds of the First Violin and Second Violin sections of a traditional orchestra.

How to Use Symphonic Orchestra Instruments and Articulations

There are many ways to produce a sound from most instruments in a symphony orchestra. Not only does the player have the choice of how loud or soft to play the notes, but also many other options:

- how long to hold the note
- how much of an accent to use at the beginning
- whether to pluck a string or bow it
- whether to use a mute on the instrument
- how to position the mouth when blowing into an instrument (the embouchure)

These choices produce the separate articulations that instrumentalists use to add variety, to create emotion, and to carry out the composer's intentions as to the shape of the musical phrase.

One of the major strengths of the Symphonic Orchestra is the vast array of articulations at the composer's disposal. By learning to use this set of tools wisely, you can add realism, energy, emotion, and character to the music you write and orchestrate.

Terminology

In discussing how to use the wide variety of samples in Symphonic Orchestra, we first need to define some terms. This document will use the following terms consistently for strings, woodwinds, and brass. (Percussion instruments do not fall into exactly the same paradigm.) The four definitions below are listed from the largest grouping to the smallest.

Instrument is a solo instrument or orchestral section represented in Symphonic Orchestra by multiple articulations. Examples include:

- 18 Violins
- 4 Tenor and Bass Trombones
- Bassoon

Articulation File is the actual patch you load into Structure. Examples include:

- 18V Exp
- 18V Keyswitch C0–A0
- EHN Sus Vib

Articulation is what plays when a note sounds. Keyswitch patches contain three or more articulations. Those articulation files that do not contain keyswitches contain only one articulation per file. Each note plays only one articulation and cannot change articulations mid-note. Articulations contain not only samples, but also information about filters and other sound-shaping parameters.

Sample is the recorded data. An articulation contains a large collection of samples. Each note in an articulation's range plays one or more samples. Some samples are triggered by the start of the note; others are triggered by the end of the note (release trails). More than one sample may play at the same time for a given note, with the relative loudness of the samples controlled by the Mod Wheel or other factors.

Keyswitch Patches

Sometimes one instrument needs to play different articulations within a single phrase. For example, some of the notes might best be played legato, and others staccato. While it is possible to put all the staccato notes in one MIDI track, all the legato notes in another track, and then assign a staccato instrument to the first track and a legato instrument to the second track, there are many reasons why that is awkward. Keyswitch patches can often—though not always—simplify the work, by allowing you to select articulations within the patch by pressing a key.

Keyswitches are located below the range of the instrument, so they do not make any sound. (Those low-register instruments that extend into this range have their switches a few octaves higher.) Note that these notes are to be played slightly before the note they are intended to affect. The exact position in time and the duration of the keyswitches are not important, and their note-off events are ignored. Just make sure the start of the keyswitch is placed before the first note it is supposed to affect, but after the start of the last note of the previous articulation (if any).

The designers of the keyswitches tried to make groupings that would be most useful to the most composers, that is, collections that reflect the most common articulations used in succession on a single instrument. But compromises have to be made. Too many keyswitches fill up the hard drive. A keyswitch with too many articulations loads too much data into memory.

Try to work with these collections when you can, but sometimes you will have to break a musical line across two separate MIDI channels, and assign a different articulation to each track.

A keyswitch instrument contains several articulations in a single file, allowing the user to have more than one articulation available within a single patch. Notes outside the range of the instrument are used to switch among the various articulations.

The keyswitch files have been standardized into two patterns of articulations that are used throughout. This change means that if you decide to change a part from, for example, a solo oboe to a section of 3 flutes, little or no work needs to be redone to make the keyswitch generate the correct articulations.

Most string, brass, and woodwind instruments and sections have a consistent keyswitch file for various sustained articulations with up to 12 switches that extend from C0 to B0.

Sustain keyswitches	
C0	Sustain vibrato (strings & woodwinds), Sustain non-vibrato (brass)
C#0	QLegato
D0	Tremolo (strings), Flutter tongue (woodwinds & brass)
D#0	Half-step trill
E0	Whole-step trill
F0	Non-vibrato (strings), Portato non-vibrato (woodwinds & brass)
F#0	Expressive 1 (strings & woodwinds), Marcato (brass)
G0	Expressive 2
G#0	Expressive 3
A0	Expressive 4
A#0	Expressive 5
B0	Expressive 6

In addition, there's a second keyswitch (from C0 to F#0) with a variety of short articulations:

Short Keyswitches for Strings	
C0	Quick up-down (a tight version of martelé up-down)
C#0	Marcato up-down
D0	Pizzicato up-down
D#0	Staccato up-down
E0	Spiccato up-down
F0	Col legno up-down
F#0	Bartok pizzicato up-down

In many instruments and ensembles certain articulations do not exist. The *Solo French Horn* has no trill samples, for instance. When you trigger the trill keyswitches in the *Solo French Horn* keyswitch program, you hear silence. Silence alerts you to the fact that the articulation does not exist for that instrument or section. The keyswitches are standardized to allow you to use the library without having to constantly look at tables.

There are also a few instrument-specific keyswitches. The following 4 tables specify the mapping for these individual keyswitch files.

6 French Horns	
6FH KS Cres C0-D#0	
C0	1 sec crescendo
C#0	2 sec crescendo
D0	3 sec crescendo to flutter tongue
D#0	fast crescendo to flutter tongue

2 Trumpets	
2TP KS Cres C0-D#0	
C0	1 sec crescendo
C#0	2 sec crescendo
D0	3 sec crescendo to flutter tongue
D#0	fast crescendo to flutter tongue

4 Trombones	
4TB KS Cres C5-D5	
C5	1 sec crescendo
C#5	2 sec crescendo
D5	3 sec crescendo

Solo Piccolo Flute	
PFL KS FX C0-G0	
C0	octave down
C#0	octave up-down
D0	octave up
D#0	glissando
E0	Psycho fall fast
F0	rips up 3rd
F#0	rips up 5th
G0	rips WT

There are no keyswitches for percussion instruments, for the harp, and for a few other instruments with limited sets of articulations.

Modulation Wheel

This library uses the Mod Wheel to cross-fade between samples and to adjust the volume of the accent on some sustain articulations. All articulations that include "Mod" or "XFade" in the name have Mod Wheel cross-fading. In the original versions, the third keyswitch often has the Mod Wheel controlling the volume of the accent. In addition, there is sometimes at least one more keyswitch that uses the Mod Wheel within each keyswitch file. A lot of user control has been built into this feature, so use it extensively to add expression to your work.

Mod Wheel articulations require you to move the Mod Wheel before they will work. This includes Mod Wheel articulations located inside keyswitch articulation files.

Cross-Fades

A cross-fade uses two or more different samples on the same MIDI track and is a means to lower the volume of one sample while simultaneously raising the volume on another sample. This fading between the two samples creates a smooth transition from the sound of one to that of the other.

There are three ways that cross-fades are used on Symphonic Orchestra:

- a dynamic cross-fade (DXF) within a single articulation file
- a cross-fade between different articulations within a single articulation file
- a custom cross-fade between 2 different articulations

They are quite different, so they will be each discussed in turn.

Dynamic Cross-Fades

A DXF file (*3FL Sustain DXF,* for example) is a single articulation file containing multiple samples of an instrument played at different dynamic levels (volumes) for every note in the range. The Mod Wheel is used to crossfade between these different samples of a given articulation file.

The volume of the audio output from one articulation file can be controlled by moving the Mod Wheel up and down. In most samples, the volume of the audio output can also be changed using the velocity assigned to each note. However, the DXF control can shape the volume even in the middle of a MIDI note, so it provides greater dynamic control over the shape of the musical phrase.

Other Standard Cross-Fades

There are other types of cross-fades in a single articulation file, as well. As an example, one of the most common types is the cross fade that affects the attack accent. It is most often the third keyswitch from the bottom (D0, or MIDI note #26). By pushing up on the Mod Wheel, the accent at the very beginning of the note is increased. This attack accent has been created by carefully programming together staccato and sustain layers, plus the use of ambient samples. The effect can be stunning; listen especially to how it sounds in the *4 Trumpets* instrument.

This facility allows the inclusion of accents on selected notes in a musical phrase as well as the ability to grade each accent on a continuous scale from none to barely audible to very strong. The use of such variability to fit the music's phrasing is what adds expression and realism. Other nuances that have preset cross-fades include:

- increasing vibrato
- increasing the sustain of a portato sample
- increasing the "slap" of a double bass

Creating a Soundscape

Whether listening to an orchestra live on a stage or from a stereo recording, we are all used to hearing the sounds of the various instruments coming at us from different directions. In a traditional symphonic layout, we expect the violins to be on our left, the cellos and basses on our right, and the flutes a little to the left of center. There are two reasons we might want to continue this practice. The first is to trick the listener's ear into perceiving a recording of a live performance. Even when everyone understands that the piece was created inside a computer, emulating a traditional sound can have its benefits. The second reason is that it is easier for the human ear to hear two similar sounds as separate when it perceives them as arriving from different locations. If the flute and the violin are doubled, or even playing an octave apart, they will stand out from each other better when they seem to be in separate locations in the soundscape that surrounds us.

Panning

Symphonic Orchestra is different from most other collections of orchestral samples in that the panning of the various instruments to the traditional locations on a symphonic stage is built in to the stereo samples. The double basses, for example, are already louder in the right channel. Therefore, one can leave the panning level at "center" for all instruments and they will be correctly placed on the stage in the final mix. Note that the natural panning within the Symphonic Orchestra samples has one subtle feature that reverb plug-ins do not offer: correctly timed reflections from all surfaces. To understand this concept, consider a double bass player who is 5 meters from the wall to our right and 45 meters from the wall to our left. We are seated half way between the walls The reflection from the right wall, which will be louder in our right ear, travels 30 meters (5 plus 25); the reflection from the left wall, louder in our left ear, travels 70 meters (45 plus 25). That 40-meter difference means that the reflection arrives in our right ear approximately one-ninth of a second sooner than in our left ear, a significant difference. And the bassoon and harp and tuba all have their characteristic left/right delay based on where they sit on the stage. It is impossible for a single reverb to achieve that level of realism.

Proximity Clues

Panning left or right is not the only way to separate instruments. It is also possible to move them forward and backward. This can be achieved in three ways:

- Dynamics relative to timbre
- Delay
- Presence

When most musical instruments change from being played louder to softer the timbre of the sound changes. Even if you let someone else adjust the volume control on your stereo, you can still tell whether the trumpet your are hearing was played loud or soft based on the instrument's tone; most instruments have a harsher sound when played louder. So, in an orchestral mix, if a trumpet seems to be played loud, but the volume level of that instrument compared to others is softer, then the ear assumes the trumpet is farther away. Adjusting independently the timbre—with velocity parameters or cross fading—and the volume of the sound, you can move individual instruments forward or backward.

Because sound travels at approximately 340 meters per second (1100 feet per second), the ear uses very small time delays to judge relative distance. If two violins play pizzicato notes simultaneously, and one is 15 meters (50 feet) further away, the note from the more distant violin arrives 0.044 seconds later. That is about one twenty-third of a second, a short time but quite noticeable to the ear. It is very easy to delay a track by a specific time—either with a Delay plug-in or by shifting the notes—and thereby achieve this effect.

By combining these principles, you can achieve quite convincing front/back positioning in your orchestral mix. Giving the ear contradictory signals can confuse it, achieving either a good or bad effect, depending on your intentions.

Volume, Velocity, and Expression

There are at least three ways to make a sampled instrument sound louder, or at least make the real instrument seem to have been played louder. The skilled MIDI orchestrator uses all three.

Volume is just the loudness of the generated sound. Changing volume is basically the same as turning the volume knob on your audio system. A flute played softly can be cranked up; a blasting trumpet can be turned way down.

Volume can be adjusted mid-note; that is, the listener can experience a crescendo or diminuendo for a held note. Even un-natural sounds can be created, such as a crescendo for a single plucked chord on a harp.

And as with a live orchestra, the various instruments are changing their loudness independently, something you cannot do with the stereo's loudness knob.

Velocity, is based on how fast a keyboard player hits the keys, and it controls how forcefully the note is played. Adding force changes not only the loudness of the notes, but usually also changes the notes' timbre. With a piano's action, the velocity cannot affect what happens to the sound after the hammers hit and leave the strings, and velocity works the same way here. In the current implementation of MIDI, velocity is usually designated by a number between 0 and 127.

Velocity changes are, therefore, a much better way than volume changes to achieve natural-sounding dynamics. The disadvantage of velocity is that it cannot be changed mid-note. Using the two together gives the orchestrator more control over all aspects of dynamics.

In MIDI, velocity is an attribute of the Note-On message; it can only be transmitted at the onset of a note. Volume, in contrast, is a control code (CC7); it can be transmitted at any time. As discussed earlier, Symphonic Orchestra actually uses the Mod Wheel (CC1) to control volume inside dynamic cross fades (DXFs). The various layers within a DXF articulation vary not only in loudness, but also in timbre; therefore, using the Mod Wheel results in natural-sounding dynamics in which the instrument not only gets louder but also has the sound of being played louder.

Release Trails

This is an ambient sound library complete with release trails on all samples. The objective was to reduce the need for artificial reverb, which can seriously degrade the realism of the attacks and the body of the ambient samples. The included release trails require a lot of computing power, but they are absolutely worth it! Release trails are not always perfect, because there are many issues involved in programming that prevent this. This is especially true with expressive, swelling, or unlooped samples. One of the unique features of this library is how the release trails are amplitude-matched. The software analyzes the amplitude of the waveform when the key is released, then activates the release trail, automatically adjusting the release trail dynamics so the two samples blend seamlessly. The result is very natural.

The Pitch Bend

The use of the pitch bend control can add subtle changes to musical lines, thereby increasing the realism. And when combined with the new QLegato patches, as well as many other patches, the pitch bend can augment the sense of a natural legato, or add realistic, subtle pitch variations. Experiment with how the pitch bend can contribute to a more realistic orchestral sound.

Articulations

A library that contains all possible articulations for all orchestral instruments is, at the moment, impractically large. At a glance, you may wonder about the choice of included articulations. However, when you use the library, you will find these work really well. The focus was on the most useful and expressive articulations, steering away from sterility. The authors feel strongly that orchestral music should be dynamic, so they provided the articulations you need to achieve that result—without the complexity of some other collections, that in their view, consume far too much time to get a satisfactory result.

QLegato

Qlegato is sustained notes extracted from real performances that enable the user to play smooth, connected lines at fast or slow speeds. There is no tool or special technique. Simply play and enjoy the sound. QLegato programs can be used in place of sustain programs or alongside them.

Of course, as with any creative project, experience will teach you how to enhance the expressiveness of these new samples, so feel free to experiment using all the parameters and techniques discussed throughout this guide.

Short Articulations

The Symphonic Orchestra contains several types of articulation files that automatically vary the sound of short notes. This is done to avoid what is called the "shotgun effect," the sound of repeated identical notes that can give a composition orchestrated on a computer an unnatural, mechanical feel. The three primary techniques for varying the sounds are as follows:

◆ A set of samples (in a single articulation) that represent, for example, the violinist's upbow and downbow in a staccato passage. The program that plays such an "up-down" articulation automatically alternates between the two samples, in the same way a live performer would do.

◆ Round-robin articulations that use a similar automatic alternation between multiple samples. When a three-way alternation is used, the third sample may use a different technique, for example, a marcato sample interspersed between upbow and downbow samples.

◆ Some percussion files include samples of a left-hand hit and a right-hand hit on separate notes in the file. The orchestrator can alternate between these two MIDI notes to achieve the effect of the percussionist hitting the instrument alternately with left and right hands.

When you see "RR x3" in the name of an articulation file that means the program automatically rotates through 3 different samples. "RR 6" means you will hear 6 different sounds if you play the same MIDI note 6 times in a row. Just an "RR" means there are two samples that alternate.

Be aware that an "RR x6" is actually altering the sound artificially to create some of the unique sounds. Decide whether that slightly unnatural sound works for the piece at hand. If you are doing lots of quick, monophonic repetitions, then use the "RR x6." If you are playing sparse or very slow repetitions—or chords—use the simple 2-way "RR." The program with the higher "RR" number has always been created artificially and the program with the lower "RR" number is always authentic. Usually plain "RR" is authentic, but sometimes it can be a higher number too.

There are also programs for the *11 Violins*, *10 Violas*, *6 French Horns*, *2 Trumpets*, and *Solo Violin* called "Repetitions." These are very short 7-way round-robins that have been created from real performances. They also have an accented eighth repetition assigned to high velocities.

Articulation Types

The Symphonic Orchestra library includes a great number of articulations for instruments in the string, brass, and woodwind sections. Some of the differences among these sounds can be subtle. And some terms may not be familiar to all users. Let us start by comparing—in words, at least—some of the articulations. The descriptions here are specific to how Symphonic Orchestra uses the terms.

Duration and Attachment

◆ **Marcato** refers to notes that are a little longer and typically played with more force than a staccato and with a diminuendo.

◆ **Legato** describes a note that not only continues to the start of the next note, but also makes a smooth transition to it. In the samples, these notes are cut out of phrases to achieve the instrumentalist's natural flow preparing to start the next note. But be aware that achieving a realistic legato line is not as easy a stringing together notes from a Legato patch; the effective use of expression, velocity and selective attack accent can sometimes be needed to make the Legato samples come alive.

◆ **Sustain** refers to a note which is held for as long as needed, but does not prepare for a following note. Many of these samples are looped, meaning that the sound will continue indefinitely until the Note-Off event. (Non-looped samples decay and end at some fixed time if no Note-Off is reached first.) You may want to make the last note of a Legato phrase Sustain instead, whenever it sounds as if that note is headed to a next note that never appears.

◆ **Slur** refers to a note, at least in this library, that includes a short half-step rise at the beginning of the sample. This articulation only exists in string instruments that can move continuously from one note to the next by sliding a finger along the string, and in brass instruments where a "bend" can be effected with a change in embouchure. This articulation, when placed in the middle of a phrase on a note that the instrumentalist might reach using such a half-step slide can add realism to the phrase. It can also be used to create an upward chromatic scale that moves not in discreet jumps, but quickly passes through the intervening sounds, as well. Of course, you may find additional, novel uses for this articulation.

◆ **Slide** refers to a slide into a sustain. Note especially the "slup vs" and "slud vs" articulations that use the velocity parameter to control which notes get a slide; in these files, MIDI velocity does not affect volume. If playing these articulations at a keyboard, you can make the notes slide by "digging into the keys."

◆ **Portato** notes are held as long as needed, but then leave a small but noticeable gap between notes. The word literally means "carried" in Italian.

◆ **Staccato** refers to very short notes, often with lots of space between the sounds of the individual notes. It is notated with a dot above—or below—the note. In some cases in the string section, Symphonic Orchestra provides separate samples for staccato played with an up-bow and down-bow. Because it is usual for string players to alternate between up-bow and down-bow in staccato passages, those articulations with "Up Down" in the name automatically alternate between the samples for you. (For string players, there are other ways to achieve short notes. See those special articulations later in this section.)

Vibrato

Sustained notes often come in two versions:

◆ **Vibrato** refers to the slight wavering (literally, vibrating) in the pitch of a note that produces a pleasing sound similar to the natural fluctuation of the human voice around a central pitch. For sustained notes that do not specify vibrato or non-vibrato, you may assume the samples include vibrato. In many articulations, the vibrato characteristically starts after a slight delay, allowing the samples also to be used in faster passages in which vibrato would not normally be applied.

◆ **Non-vibrato** describes a note which holds tightly to its main pitch without wavering. For long-held notes it can sound cold, lacking in expression. But it is sometimes preferred for certain styles of playing.

Stress and Dynamics

◆ **Sforzando** describes a note that is played with extra force, causing it to be not only louder but also more stressed than other notes near it. This term usually applies to one note—or just a few notes—that need to stand out from others near them. It is tiring to the ears, and therefore uncommon, to hear many Sforzando notes in a row.

◆ **Attack accent** is not an articulation by itself, but is a component of many articulations in Symphonic Orchestra. The amount of accent is often controlled by the Mod Wheel, and less often by the velocity of the Note-On event. This term refers to a brief stress at the beginning of a note. It is similar to, but not the same as, the following term.

◆ **Forte piano** describes an articulation whose notes start loud (*forte*) and quickly drop to a softer level (*piano*) for the sustained part.

◆ **Crescendo** refers to a continuous rise in loudness. Articulations with this label record the live instrument in a crescendo on a single note, so the effect is somewhat smoother and more natural than a cross fade between layers in a DXF.

◆ **Crescendo on release** is an attribute of several articulations in which the release trail, instead of capturing the natural release and the reverb of the hall, actually supplies an after-the-fact, brief crescendo (followed by *its* release and reverb). Be careful not to hold the main note so long that it starts its decay, or else the sudden resumption of the note at the start of the release trail will sound unnatural.

◆ **Diminuendo** is the opposite of crescendo, a continuous decrease in loudness.

Ornamentation and Phrases

◆ **Grace notes** are single short notes that immediately precede the main note. In Symphonic Orchestra, all provided grace notes rise a half step to the main note and the accent is on the main note, not the grace note.

◆ **Glissando** has multiple meanings in general usage. In this library, it refers to two usages. One is a short upward run that precedes the main note. It might, for example, be used as a pickup to a melodic phrase. Because of its speed, using such a built-in phrase sounds more natural than writing it out as separate notes. The other usage is the standard meaning in harp writing.

◆ **Rips** describe the brass section version of a short upward run preceding the main note.

◆ **Trill** refers to the rapid alternation of two notes, either a half step or whole step apart.

◆ **Fall** refers, in Symphonic Orchestra, to a fast, downward chromatic scale starting at the given note and ending an octave below.

Technique

◆ **Flutter tongue** refers to the rapid movement of the tongue while blowing into the instrument's mouthpiece. The technique is sometimes compared to the rolled R of some southern European languages.

◆ **Double-tongue** is a technique of articulating the tongue alternately against the front and back of the mouth (as if saying tiki-tiki) to produce a fast staccato sound, especially in brass instruments.

◆ **Shake** describes a brief, coarse, trill-like sound characteristic of the French Horn.

◆ **Sordino** refers to a sound played with a mute in place. Each instrument has a characteristic muted sound, sometime considerably different from the same instrument unmuted.

String-specific Articulations

◆ **Bartok pizzicato** is a style of playing in which the string is pulled away from the fingerboard, allowing the string to snap back forcefully.

◆ **Col legno** refers to the sound of hitting the strings with the wood of the bow.

◆ **Flautando** is an articulation in which the bow barely brushes the string; it is always non-vibrato, as well.

◆ **Harmonics** are notes formed by lightly touching a fractional node of the string while pulling the bow across it. The sound is an ethereal, usually very high note; it is always played as a sustain.

◆ **Martelé** is a term that describes a playing style in which the bow pushes heavily on the string and the sound stops briefly between notes, achieving a strong accent at the start of each note. It is usual for the bow to reverse direction at the start of each new note, hence the "Up Down" in the name of most Martelé articulation files. In some cases, Marcato is heard at top velocities of other articulations.

◆ **Spiccato** refers to a style of string playing in which the bow bounces off the string with each note. In some cases, Spiccato is only heard at top velocities. Also look for examples of 3-way round-robins in which spiccato appears on every third note to give variety to a run of staccato notes.

◆ **Pizzicato** is the name given to the sound of strings plucked with the fingers instead of bowed. It creates a very short sound that can cut through even a dense orchestration.

◆ **Sul ponticello** refers to the sound of the bow playing very near the instrument's bridge.

◆ **Tremolo** describes a rapid repetition of the same note produced by alternating up and down strokes of the bow without having the bow leave the string. This tremulous effect often accompanies mysterious or scary scenes in movies. It can also create beautiful shimmering passages.

Expression

Some of the terms used in Symphonic Orchestra articulations are more subjective. Because they are already descriptive, they are listed here without comment as to their meaning, for example:

- Expressive
- Emotion
- Butter legato
- Lyrical

appendix a

Abbreviations

The names of the articulations are written with abbreviations. Here is a list of the most common ones to help in interpreting the names.

Abbreviations	
1sec, 2sec, …	1-second, 2-second, …
Acc	accented
Bart	Bartok pizzicato
Clstr	cluster
Crec, Cres	crescendo
Dbl-Tng or DT	double-tongue
Dim	diminuendo
Dn	down
DXF	dynamic cross-fade
Emotn	emotion
Exp	expressive
Flaut	flautando
Fltr	flutter tongue
Fst	fast
FX	effects
Gliss	glissando
Glock	glockenspiel
H or HT	half-tone

Abbreviations (Continued)	
Harm	harmonics
KS	keyswitch
Leg	legato
LR	separate left- & right-hand
Lyr	lyrical
Marc	marcato
Mart	martelé
Med	medium
Mlt	mallet
Mod	Mod Wheel
Non Vib	non-vibrato
NV	non-vibrato
Orch	orchestral
Pizz	pizzicato
Port	portato
QLeg	QLegato
RR	round-robin
RR x3	3-way round-robin
Sfz	sforzando
Shrt	short
Sl	slide

Abbreviations (Continued)	
Slr	slur
Slud vs	slide up-down vel sw*
Slw	slow
Sord	sordino
Spic	spiccato
Stac	staccato
Str Sec	string section
Sul Pont	sul ponticello
sus	sustained
Trem	tremolo
Vel	velocity
Vib	vibrato
W or WT	whole tone
x4, x6, etc.	4-way, 6-way, etc
X-Fade	cross-fade
Xfast	extra fast

***** A "slide up-down velocity switch" uses MIDI velocity to control slides and not volume. High velocities add an upward slide; the highest velocities add a downward slide. It is used with *11 Violins, 18 Violins, 2 Trumpets,* and *6 French Horns*.

appendix b

The Patch List

The full list of articulation patches follows, with instruments listed in the following order:

- Strings
- Woodwinds
- Brass
- Percussion

Within those four sections, instrument names are alphabetical as they appear in the file system menus. The leftmost column subdivides the articulation files:

- Long sounds
- Short sounds
- Effects
- Mod Wheel and DXF files
- Keyswitches

These subfolders actually appear in the Structure Quick Browse menu when selecting an articulation file.

10 Cellos	
1 Long	VCS Butter Leg Forte
	VCS Butter Legato
	VCS Exp Vib Fst
	VCS Exp Vib
	VCS Flowing
	VCS Lyr Fast
	VCS Lyr
	VCS Non Vib
	VCS Port Shrt
	VCS Port
	VCS QLeg Sord
	VCS QLeg
	VCS Run Simulator
	VCS Sord leg dim
	VCS Sus Vib Hard
	VCS Sus Vib Soft Leg
	VCS Sus Vib Soft
	VCS Sus Vib
	VCS Trem Leg
	VCS Trem

10 Cellos (Continued)	
2 Short	VCS Bartok Pizz RR x3
	VCS Bartok Pizz
	VCS Col Legno RR x3
	VCS Col Legno
	VCS Marc Mod Col RR x6
	VCS Marc RR x6
	VCS Marc RR
	VCS Mart Up Dn
	VCS Pizz NEW
	VCS Pizz RR x3
	VCS Pizz vs Bart RR x3
	VCS Pizz
	VCS Quick Up DN x6
	VCS Quick Up DN
	VCS Spiccato RR x6
	VCS Spiccato RR
3 Effects	VCS Crec
	VCS FX
	VCS Sul Pont
	VCS Trill H
	VCS Trill W

10 Cellos (Continued)	
4 ModXfd	VCS DXF Sus Acc Vel
	VCS DXF Sus Vib Slow
	VCS DXF Sus Vib
	VCS Emotn DXF 1
	VCS Emotn DXF 2
	VCS Emotn DXF 3
	VCS Emotn DXF 4
	VCS Exp Vib DXF
	VCS Fast Acc Mod
	VCS Non Vib-Sus X-Fade
	VCS QLeg DXF sl up
	VCS QLeg DXF
	VCS QLeg Sord DXF
	VCS Soft Vib X-Fade Trem
	VCS Sul Pont Trem DXF
	VCS Sus Accent Mod
5 Keysw	VCS KS Shrt RR C0-F#0
	VCS KS Sus C0-B0

10 Violas	
1 Long	VAS Butter Leg
	VAS Exp Fst
	VAS Exp Slow
	VAS QLeg Sord
	VAS QLeg
	VAS Sus 2
	VAS Sus Soft Leg
	VAS Sus Soft
	VAS Sus
2 Short	VAS Bartok Pizz RR x3
	VAS Bartok Pizz
	VAS Col Legno RR x3
	VAS Col Legno
	VAS Marc Long
	VAS Marc Shrt
	VAS Mart Up Dn Marc
	VAS Mart Up Dn
	VAS Pizz RR x3
	VAS Pizz vs Bart RR x3
	VAS Pizz
	VAS Repetitions
	VAS Mart UD Marc x6
	VAS Mart Up Dn Marc S
	VAS Shrt Mart Up Dn
	VAS Stac MOD Col RR
	VAS Stac RR x4
	VAS Stac RR x8

10 Violas (Continued)	
3 Effects	VAS SulPont
	VAS Trem
	VAS Trill HT
	VAS Trill WT
4 ModXfd	VAS DXF Sus Acc Vel
	VAS Emotn DXF 1
	VAS Emotn DXF Acc Vel
	VAS Exp Fst DXF
	VAS Exp Slow DXF
	VAS Leg Exp Accent Mod
	VAS QLeg DXF sl up
	VAS QLeg DXF
	VAS QLeg Sord DXF
	VAS Sul Pont Trem DXF
	VAS Sus Accent Mod
	VAS Sus NV VB X-Fade
5 Keysw	VAS KS Shrt RR C0-F#0
	VAS KS Sus C0-B0

11 Violins	
1 Long	11V Butter Legato Forte
	11V Butter Legato
	11V Exp Dim
	11V Exp
	11V Grand Detache
	11V Harmonics
	11V Lyr A
	11V Lyr B
	11V QLeg Flaut
	11V QLeg Sord
	11V QLeg
	11V Run Simulator
	11V Sus Vib Hard
	11V Sus Vib Soft Leg
	11V Sus Vib Soft
	11V Sus Vib

11 Violins (Continued)	
2 Short	11V Col Legno RR x3
	11V Col Legno
	11V Marc Short
	11V Marc
	11V Mart Up Dn Marc
	11V Mart Up Dn Spic
	11V Mart Up Dn
	11V Med Shrt 3-Way RR
	11V Quick Up Dn Marc x6
	11V Quick Up Dn Marc
	11V Quick Up Dn Spic
	11V Quick Up Dn
	11V Repetitions
	11V Short 3-Way RR
	11V Shrt Spic 3-Way RR
	11V Spic
	11V Spiccato 2 RR x6
	11V Spiccato 2 RR
	11V Stac Mod Col RR x2
	11V Stac RR x2

11 Violins (Continued)	
3 Effects	11 Violins Scratching FX
	11V 5th Slide DN Hrd
	11V 5th Slide UP Hrd
	11V Gl L
	11V Gl S
	11V Psycho Rip
	11V Run Dn Psycho
	11V Run Up Psycho 2
	11V Run Up Psycho RR
	11V SFX Clusters
	11V Slw Trll FX
	11V Sul Pont
	11V Tremolo F
	11V Trill H
	11V Trill W

11 Violins (Continued)	
4 ModXfd	11V Accent Sus Mod
	11V DXF EXP Fast
	11V DXF EXP Slow
	11V DXF Sus Vib Acc Vel
	11V Emotn DXF 1
	11V Emotn DXF 2
	11V Flaut Harm DXF
	11V QLeg DXF slud vs
	11V QLeg DXF
	11V QLeg Sord DXF
	11V Sul Pont Trem DXF
	11V Sus NV Vib X-Fade
	11V Sus Vib DXF Slow
	11V Sus Vib DXF
5 Keysw	11V KS Shrt RR C0-F#0
	11V KS Sus C0-B0

18 Violins	
1 Long	18V Butter Leg Forte
	18V Butter Legato
	18V Exp Fast
	18V Exp
	18V Lyr Fast
	18V Lyr
	18V Non Vib Fast
	18V Non Vib-Exp Fst XF
	18V Non Vib-Sus XF
	18V Non Vib
	18V QLeg
	18V Sord Slow
	18V Sord
	18V Sus Vib Hard
	18V Sus Vib Soft Leg
	18V Sus Vib Soft
	18V Sus Vib
	18V Trem Leg

18 Violins (Continued)	
2 Short	18V Bartok Pizz RR
	18V Bartok Pizz
	18V Marc Long
	18V Marc Med Short
	18V Marc Short
	18V Mart UD Marc Shrt
	18V Mart Up Dn Marc Med
	18V Mart Up Dn
	18V Pizz RR x3
	18V Pizz vs Bart RR x3
	18V Pizz
	18V Quick UD Marc x6
	18V Quick Up Dn Marc Short
	18V Quick Up Dn Marc Up Dn
	18V Quick Up Dn
	18V Short 3-Way RR
	18V Spiccato RR x4
	18V Spiccato RR
3 Effects	18V Clstr & Air
	18V Pendereki
	18V Slr Fast
	18V Slr Med
	18V Slr Slow
	18V Slr XFast

18 Violins (Continued)	
4 ModXfd	18V Accent Sus Mod
	18V Emotn DXF 1
	18V Emotn DXF 2
	18V Emotn DXF Acc Vel 1
	18V Exp Fast DXF
	18V Exp Leg Accent MOD
	18V Exp LEG DXF ACC Vl
	18V QLeg DXF slud vs
	18V QLeg DXF slup vs
	18V QLeg DXF
	18V Sord Emotn DXF Vel
	18V Sord Mod XFD Dyn
	18V Sus Vib DXF Leg Vel
	18V Sus Vib DXF Slow
	18V Sus Vib DXF Slr Vel
	18V Sus Vib DXF Slr2 Vel
	18V Sus Vib DXF
	18V Sus Vib X-Fade Trem
5 Keysw	18V KS Shrt RR C0-F#0
	18V KS Sus C0-B0

3 Cellos	
1 Long	3VC Sus Vib
4 ModXfd	3VC Sus Vib DXF

4 Violins	
1 Long	4VL Sus Vib
4 ModXfd	4VL Sus Vib DXF

9 Double Basses	
1 Long	CBS Big Sus
	CBS Exp 2x Crec
	CBS Exp Fast
	CBS Exp
	CBS Forte Piano
	CBS Port
	CBS Sforzando
	CBS Sus Vib Hard
	CBS Sus Vib Soft Leg
	CBS Sus Vib Soft
	CBS Sus Vib
	CBS Trem Leg
	CBS Trem
2 Short	CBS Mart Up Dn
	CBS Pizz Mod Slaps
	CBS Pizz
	CBS Quick UD Mod Slap
	CBS Quick Up Dn x6
	CBS Quick Up Dn
	CBS Slaps
3 Effects	CBS Crec
	CBS FX

9 Double Basses (Continued)	
4 ModXfd	CBS DXF Sus Slow
	CBS DXF Sus
	CBS Emotn DXF 1
	CBS Emotn DXF 2
	CBS Emotn DXF Acc Vel
	CBS EXP DXF Acc Vel
	CBS EXP Fast DXF
	CBS EXP LEG DXF Acc Vel
	CBS Sus Accent Mod
	CBS Sus Vib X-Fade Trem
	CBS Sus Vib X-Fade
5 Keysw	CBS KS Shrt RR C4-F#4
	CBS KS Sus C4-B4

Harp	
1 Long	Harp Pluck Long
	Harp Pluck Roll
	Harp Pluck Short
	Harp Pluck
3 Effects	HarGliss 6 Up+Dn
	HarGliss 9 Up+Dn
	HarGliss Maj Up+Dn
	HarGliss WT Up+Dn
	Harp Harm
	Harp Psycho Drone C

Harpsichord	
1 Long	Harpsichord

Large String Ensembles
50 Piece Str Sec Fst
50 Piece Str Sec Leg
50 Piece Str Sec Sus
60 Piece Str Sec Sus
60 Piece String Sec EXP
60 Piece String Sec PIZZ
70 Piece QLeg Slow
70 Piece QLeg Sord
70 Piece QLeg
70 Piece Str Marc RR
70 Piece Str Sec Pizz
70 Piece Str Sec Sus
70 Piece String Sec EXP
Chamber Ens Flautando
Chamber Ensemble
String Quartet QLeg RR
String Quartet QLeg

Solo Cello	
1 Long	SVC Double Bow Exp
	SVC Exp DN
	SVC Exp Up
	SVC Exp Vib
	SVC Leg Vib
	SVC Non Vib
	SVC QLeg RR
	SVC QLeg
	SVC Sul Tasto Leg
	SVC Sus Accent
	SVC Sus Vib Hard
	SVC Sus Vib Smooth
2 Short	SVC Col Legno RR x3
	SVC Col Legno
	SVC Marc
	SVC Mart Up Dn Marc x6
	SVC Mart Up Dn Marc
	SVC Mart Up Dn
	SVC Pizz RR x3
	SVC Pizz
3 Effects	SVC Slur
4 ModXfd	SVC NV Vib DXF Acc
	SVC Vib DXF Acc
5 Keysw	SVC KS Shrt RR C0-F#0
	SVC KS Sus C0-B0

Solo Contrabass	
1 Long	SCB Exp
	SCB Lyrical
	SCB QLeg Exp
	SCB QLeg RR
	SCB QLeg
	SCB Sus NV
	SCB Sus Vib
2 Short	SCB Col Legno RR x3
	SCB Col Legno
	SCB Marcato RR x3
	SCB Marcato
	SCB Martele RR x6
	SCB Martele RR
	SCB Pizz RR x3
	SCB Pizz
	SCB Spic Marc RR x6
	SCB Spic RR x6
	SCB Spic RR
4 ModXfd	SCB Sus Vib DXF
5 Keysw	SCB KS Shrt RR C4-F#4
	SCB KS Sus C4-B4

Solo Viola	
1 Long	SVA Exp 1
	SVA Exp 2
	SVA Exp 3
	SVA Exp Vib Sft
	SVA Non Vib Hard
	SVA Non Vib RR
	SVA QLeg RR
	SVA QLeg
	SVA Sus Vib
2 Short	SVA Col Legno RR x3
	SVA Col Legno
	SVA Marc Hard RR x2
	SVA Marc Hard
	SVA Mart RR x4
	SVA Mart RR x8
	SVA Pizz RR x3
	SVA Pizz
	SVA Spic RR x2
	SVA Spic RR x4
3 Effects	SVA 8va Slide UP
	SVA Trill HT
	SVA Trill WT
4 ModXfd	SVA nv vib DXF
5 Keysw	SVA KS Shrt RR C0-F#0
	SVA KS Sus C0-B0

Solo Violin	
1 Long	SVL Exp 1
	SVL Exp 2
	SVL EXP Crec
	SVL Exp P
	SVL Leg Vib
	SVL Non Vib Hard
	SVL Non Vib Soft
	SVL QLeg Exp P
	SVL QLeg RR
	SVL QLeg
	SVL Sus Vib Hard
	SVL Sus Vib Soft
2 Short	SVL Col Legno
	SVL Marc Non Vib Hard
	SVL Marc Vib
	SVL Mart Up Dn x6
	SVL MarT up dn
	SVL Pizz RR x3
	SVL Pizz
	SVL Repetitions
	SVL Stac RR x4
	SVL Stac RR

Solo Violin (Continued)	
3 Effects	SVL 5th SI UP
	SVL 8va SI UP
	SVL 8vb SI DN
	SVL Crec
	SVL Slur
	SVL Trill HT
	SVL Trill WT
4 ModXfd	SVL NV DXF
	SVL NV Vib DXF
	SVL QLeg DXF RR
	SVL QLeg DXF
	SVL Vib DXF
5 Keysw	SVL KS Shrt RR C0-F#0
	SVL KS Sus C0-B0

3 Clarinets	
1 Long	3CL Legato
	3CL Sus
2 Short	3Cl Stac rr x3
	3CL Stac
4 ModXfd	3CL Sus DXF Acc Vel
	3CL Sus DXF
	3CL Sus X-Fade
5 Keysw	3CL KS Sus C0-B0

3 Flutes	
1 Long	3FL Exp Dim
	3FL Legato
	3FL Non Vib
	3FL Sus FST
	3FL Sus
2 Short	3FL Stac RR x3
	3FL Stac
3 Effects	3FL Gliss L
	3FL Gliss S
	3FL Grace
	3FL Trill H
	3FL Trill W
4 ModXfd	3FL Emotn DXF
	3FL Non Vib-Sus X-Fade
	3FL Sus DXF Acc Vel
	3FL Sus DXF
5 Keysw	3FL KS Sus C0-B0

3 Oboes	
1 Long	3OB Exp
	3OB Legato
	3OB Non Vib
	3OB Sus Vib
2 Short	3Ob Stac rr x3
	3OB Stac
3 Effects	3OB Grace
	3OB Trill H
	3OB Trill W
4 ModXfd	3OB DXF Sus Acc Vel
	3OB DXF Sus
	3OB Emotn DXF
	3OB Non Vib-Sus X-Fade
5 Keysw	3OB KS Sus C0-B0

Solo Alto Flute	
1 Long	AFL Exp Legato Bright
	AFL Exp Legato Lyrical
	AFL Exp Legato
	AFL Exp
	AFL Legato
	AFL Non Vib
	AFL Sus Vib
2 Short	AFL Stac rr x3
	AFL Stac
3 Effects	AFL Run Up Dn
4 ModXfd	AFL Exp DXF Acc
	AFL Exp DXF
	AFL Legato DXF Acc
	AFL NV Vib XFade
5 Keysw	AFL KS Sus C0-B0

Solo Bass Clarinet	
1 Long	BCL Exp Fast
	BCL Exp
	BCL Port
	BCL QLeg RR
	BCL QLeg
	BCL Sus
2 Short	BCL Stac rr x3
	BCL Stac
3 Effects	BCL Gl m
	BCL Key Clicks MOD RT
4 ModXfd	BCL QLeg DXF RR
	BCL QLeg DXF
	BCL Sus Acc MOD
	BCL Sus DXF
5 Keysw	BCL KS Sus C0-A0

Solo Bassoon	
1 Long	BSN Exp Long Crec
	BSN Exp Short
	BSN Forte
	BSN Non Vib
	BSN Port
	BSN QLeg RR
	BSN QLeg
	BSN Sus Vib
2 Short	BSN Stac RR x3
	BSN Stac
3 Effects	BSN Gliss
	BSN Trill HT
	BSN Trill WT
4 ModXfd	BSN Sus Accent Mod
	BSN Sus Vib DXF
	BSN Vib XFade
5 Keysw	BSN KS Sus C0-A0

Solo Clarinet	
1 Long	SCL EXP Fast
	SCL Exp Slow Crec
	SCL Non Vib
	SCL Port
	SCL QLeg RR
	SCL QLeg
2 Short	SCL Stac RR x3
	SCL Stac
3 Effects	SCL 8va Run Dn
	SCL 8va Run Up Dn
	SCL 8va Run Up Fast
	SCL 8va Run Up
	SCL Grace Notes
	SCL Key Clicks MOD RT
	SCL Trill HT
	SCL Trill WT
4 ModXfd	SCL QLeg DXF RR
	SCL QLeg DXF
	SCL Sus Accent Mod
5 Keysw	SCL KS Sus C0-B0

Solo Contrabasson	
1 Long	CTB Exp Short
	CTB Exp
	CTB Legato
	CTB Port F
	CTB Sus
2 Short	CTB STAC RR x3
	CTB Stac
3 Effects	CTB Gliss
	CTB Grace
4 ModXfd	CTB Sus Accent Mod
	CTB Vib DXF Acc
	CTB Vib DXF
5 Keysw	CTB KS Sus C4-B4

Solo English Horn	
1 Long	EHN Exp
	EHN Legato
	EHN New Legato
	EHN Non Vib
	EHN Sus Vib
2 Short	EHN Stac RR x3
	EHN Stac
3 Effects	EHN Fall
	EHN Gliss
	EHN Grace
	EHN Slide
4 ModXfd	EHN Legato DXF
	EHN NV Vib DXF
	EHN NV Vib XFAD
	EHN Sus Accent Mod
	EHN Vib DXF Acc
	EHN Vib DXF
5 Keysw	EHN KS Sus C0-B0

Solo English Horn 2	
1 Long	EH2 Exp
	EH2 Portato NV
	EH2 QLeg RR
	EH2 QLeg
	EH2 Sus
2 Short	EH2 Stac RR x3
	EH2 Stac
3 Effects	EH2 Grace Note
	EH2 Trill HT
	EH2 Trill WT
4 ModXfd	EH2 QLeg DXF RR
	EH2 QLeg DXF
	EH2 Sus Acc Mod
	EH2 Sus DXF
5 Keysw	EH2 KS Sus C0-B0

Solo Flute	
1 Long	SFL Exp Legato
	SFL Lyrical
	SFL Non Vib
	SFL QLeg RR
	SFL QLeg
	SFL Slow Exp 2
	SFL Slow Exp
	SFL Sus NV PPP
	SFL Sus Vib Bright
	SFL Sus Vib

Solo Flute (Continued)	
2 Short	SFL Short Stac RR x2
	SFL Short Stac
	SFL Stac RR x3
	SFL Stac
3 Effects	SFL 8va Run Dn
	SFL 8va Run Up Dn
	SFL 8va Run Up
	SFL Fall
	SFL Flutter Mod
	SFL Grace
	SFL Psycho Run Dn RR
	SFL Trill HT
	SFL Trill WT
4 ModXfd	SFL Accent Mod
	SFL Lush Accent Mod
	SFL QLeg DXF RR
	SFL QLeg DXF
	SFL Vib DXF 2 Acc
	SFL Vib DXF 2
	SFL Vib DXF
5 Keysw	SFL KS Sus C0-B0

Solo Oboe	
1 Long	SOB Exp P
	SOB Exp Vib
	SOB Non Vib
	SOB QLeg RR
	SOB QLeg
	SOB Sfz
	SOB Sus Vib
2 Short	SOB Stac RR x3
	SOB Stac
3 Effects	SOB Fall
	SOB Gliss
	SOB Grace
	SOB Key Clicks MOD RT
	SOB Trill H
	SOB Trill W
4 ModXfd	SOB NV Vib DXF
	SOB QLeg DXF RR
	SOB QLeg DXF
	SOB Sus Acc Mod
5 Keysw	SOB KS Sus C0-B0

Solo Piccolo Flute	
1 Long	PFL Exp
	PFL QLeg RR
	PFL QLeg
	PFL Sus NV PPP
	PFL Sus Vib
2 Short	Pfl Stac rr x3
	PFL Stac
3 Effects	PFL 8va Dn
	PFL 8va Up Dn
	PFL 8va Up
	PFL Gliss
	PFL Psycho fall Fst
	PFL Rips Up 3rd
	PFL Rips Up 5th
	PFL Rips WT
	PFL Trill H
	PFL Trill W
4 ModXfd	PFL Sus Accent Mod
	PFL Vib DXF Acc
	PFL Vib DXF
5 Keysw	PFL KS Sus C0-B0
	PFL KS FX C0-G0

2 Trumpets	
1 Long	2TP Mute Sus
	2TP Portato
	2TP QLeg RR
	2TP QLeg
	2TP Sus
2 Short	2TP Marc
	2TP Mute Stac RR x6
	2TP Mute Stac RR
	2TP Repetitions
	2TP Stac RR x4
	2TP Stac RR x8
3 Effects	2TP 1sec Cres
	2TP 2sec Cres
	2TP 8va Sl Dn
	2TP 8va Sl Up
	2TP Arp FX
	2TP Mute Cres Fltr
	2TP Mute Fltr Cres Fst
	2TP Mute Rip
	2TP Trill HT
	2TP Trill WT

2 Trumpets (Continued)	
4 ModXfd	2TP Mute Sus DXF
	2TP QLeg DXF RR
	2TP QLeg DXF
	2TP QLeg DXF Slud
	2TP Sus Acc MOD
	2TP Sus DXF Acc Vel
	2TP Sus DXF
5 Keysw	2TP KS Sus C0-B0
	2TP KS Crec C0-D#0

3 Wagner Tuben	
1 Long	3WT Big Sus
	3WT Sus Port
3 Effects	3WT Rip
4 ModXfd	3WT Sus X-Fade 2-way

4 Trombones	
1 Long	4TB Forte Piano
	4TB Mute Sus
	4TB Portato
	4TB QLeg RR
	4TB QLeg
	4TB Sus
2 Short	4TB Marc Accent
	4TB Marc Short
	4TB Marc
	4TB Mute Stac RR x6
	4TB Mute Stac RR
	4TB Stac RR x3
	4TB Stac
3 Effects	4TB 1Sec Cres
	4TB 2Sec Cres
	4TB 3Sec Cres
	4TB Bn Dn HT
	4TB Clusters
	4TB Flutter
	4TB Mute Cres Fltr
	4TB Mute Fltr Cres Fst

4 Trombones (Continued)	
4 ModXfd	4TB Marc Sus X-Fade
	4TB Mute Sus DXF
	4TB QLeg DXF RR
	4TB QLeg DXF
	4TB Sus ACC DXF
	4TB Sus Accent Mod
	4TB Sus DXF
5 Keysw	4TB KS Sus C5-B5
	4TB KS Crec C5-D5

4 Trumpets	
1 Long	4TP Forte Piano
	4TP Sfz
	4TP Sus
2 Short	4TP Stac
3 Effects	4TP Crec
4 ModXfd	4TP Sus ACC VEL DXF
	4TP Sus Accent Mod
	4TP Sus DXF Leg
	4TP Sus DXF
5 Keysw	4TP KS Sus C0-B0

6 French Horns	
1 Long	6FH 3Sec Marc
	6FH Mute Sus
	6FH Portato
	6FH QLeg RR
	6FH QLeg
	6FH Sfz
	6FH Stop Fast
	6FH Stop
	6FH Sus 4 lay Smooth
	6FH Sus 4 lay
	6FH Sus 5 lay
	6FH Sus Accent
	6FH Sus Adventure
	6FH Sus Bright
	6FH Sus Forte Piano
	6FH Sus Mellow
2 Short	6FH 1sec Marc
	6FH Repetitions
	6FH Stac Long RR x3
	6FH Stac Long
	6FH Stac Short RR x3
	6FH Stac Short

6 French Horns (Continued)	
3 Effects	6FH 1sec Cres
	6FH 2sec Cres
	6FH 3sec Cres Fltr
	6FH Bend Dn HT
	6FH Clstr Bend WT
	6FH Clstr Gliss Up
	6FH Clstr
	6FH Flutter Cres Fst
	6FH FX Hell
	6FH Rips L
	6FH Rips S
	6FH Rips X
	6FH Shake
	6FH Trill HT
	6FH Trill WT
4 ModXfd	6FH Emotn DXF Leg
	6FH QLeg DXF RR
	6FH QLeg DXF slud vs
	6FH QLeg DXF
	6FH QLeg Power DXF
	6FH Sus ACC VEL DXF
	6FH Sus DXF
5 Keysw	6FH KS Sus C0-B0
	6FH KS Crec C0-D#0

Solo French Horn	
1 Long	SFH QLeg RR
	SFH QLeg
	SFH Sfz Crec
	SFH Sus
2 Short	SFH Marc
	SFH Stac RR x6
	SFH Stac RR
4 ModXfd	SFH QLeg DXF RR
	SFH QLeg DXF
	SFH Sus Accent Mod
	SFH Sus Accent
	SFH Sus DXF Acc
	SFH Sus DXF
5 Keysw	SFH KS Sus C0-B0

Solo Piccolo Trumpet	
1 Long	PTP Sus RR
	PTP Sus
2 Short	PTP Marc
	PTP Stac RR x6
	PTP Stac RR
3 Effects	PTP Trill HT
	PTP Trill WT
4 ModXfd	PTP Sus acc DT Mod
	PTP Sus DXF Acc Vel
	PTP Sus DXF RR
	PTP Sus DXF
5 Keysw	PTP KS Sus C0-B0

Solo Trombone	
1 Long	STB Mute Sus
	STB Portato
	STB QLeg RR
	STB QLeg
	STB Sus
2 Short	STB Marc F
	STB Stac RR x3
	STB Stac
3 Effects	STB Bass Sfz Crec
4 ModXfd	STB Mute Sus DXF
	STB QLeg DXF RR
	STB QLeg DXF
	STB Sus Accent Mod
	STB Sus DXF Acc
	STB Sus DXF
5 Keysw	STB KS Sus C5-B5

Solo Trumpet 1	
1 Long	STP Exp PPFF
	STP Exp
	STP Port
	STP Sus Vib
	STP Sus
2 Short	STP Stac RR
	STP Stac
3 Effects	STP Sfx Crec
	STP Slur
4 ModXfd	STP NV VB DXF ACC Mid
	STP NV VB DXF ACC Sof
	STP Sus Acc Mod
	STP SUS DXF ACC
	STP SUS DXF
	STP Vib DXF ACC
	STP Vib DXF
5 Keysw	STP KS Sus C0-B0

Solo Trumpet 2	
1 Long	ST2 Exp Vib
	ST2 Marc Vib Long
	ST2 Portato
	ST2 QLeg NV RR
	ST2 QLeg NV
	ST2 QLeg Vib RR
	ST2 QLeg Vib
	ST2 Sus NV
2 Short	ST2 Marc
	ST2 Stac RR x10
	ST2 Stac RR x5
3 Effects	ST2 8va Sl Up
	ST2 Cres 1 Sec
	ST2 Cres 2 Sec
	ST2 Cres 3 Sec Fltr
	ST2 Falls
	ST2 Flutter Cres Fst
	ST2 Rips
4 ModXfd	ST2 QLeg NV DXF RR
	ST2 QLeg NV DXF
	ST2 Sus Acc Mod
	ST2 Sus DXF Acc Vel
	ST2 Sus NV DXF
5 Keysw	ST2 KS Sus C0-B0

Solo Tuba	
1 Long	STU Exp
	STU Mute Sus
	STU Sfz
	STU Sus
2 Short	STU Marc
	STU Stac RR x3
	STU Stac
4 ModXfd	STU Sus Accent Mod
	STU Sus DXF Acc Vel
	STU Sus DXF
5 Keysw	STU KS Sus C4-B4

Cymbals & Gongs
12 Band Cymbal
12 Cymbal
16 German Cymbal
18 Cymbal
18 German Cymbal
18 Viennese Cymbal
18 Zildjan Roll DXF MOD
19 French Cymbal
20 Cymbal
20 French Cymbal
21 French Cymbal
22 Cymbal
23 Gong
26 Zildjan Crash
26 Zildjan Roll DXF MOD
28 Gong
37 Chinese Tam Tam
48 Gong
60 Gong 2
60 Gong
All Cymbals
All Gongs

Drums
3 Snares DXF Rolls
3 Snares
5 Concert Toms
Bass Drum Concert
Bass Drum Wagner
Field Ensemble
Field Funeral Tenor
Mahler Hammer
Roto Toms RR
Snare Ens Large
Snare Ensemble Small
Taiko Drums
Timp Cres L
Timp Cres S
Timp Hits LR
Timp Roll DXF Mod Hits
Timp Roll DXF Mod
Timp Sft Mlt Hits LR

Metals
All Anvils
Anvil Low
Anvil
Artillery Shells
Bowed Crotales
Celesta
Crotales
Glock Mellow
Glock
Hall Noise
Huge Anvils
Orch Chimes
Sleigh Bells RR
Steel Plates
Triangle 2
Triangle
Various Metals
Vibes
Waterphone

Woods
All Sticks
Castanets
Guiro RR
Marimba
Piano
Puilli Sticks
Slap Sticks
Tambourine 2
Tambourine
Tiny Puilli Sticks
Various Perc
Washboard RR
Wind Machine
Woodblock Symphony
Xylophone

Percussion Tables

Unlike the other three orchestral families, many percussion instruments make only a single sound, or a small repertoire of sounds. Sometimes, instead of creating a separate instrument for each of these, they are grouped together in a single file with different notes mapped to the different sound-makers. These collections are different from a "drum kit" often used in pop styles, because instead of a collection of dissimilar instruments played by a single musician in a live convert, these instruments are usually related, for example, different types of bells.

In other cases, an instrument file contains multiple articulations of a single physical instrument. For example, a grouping might contain both hits and rolls for a bass drum.

The tables in this section list instrument names within the files, and indicate which range of notes play which instrument or articulation. Note that sometimes there are different timbres when there are different sizes or shapes of a single instrument group: for example there are several sizes of snare drums. No attempt is made to describe these differences here. You will have to audition the various sounds and decide which one, or ones, are best suited to your project. In some cases the differences are very subtle.

For most unpitched instruments, but not all, only the keyboard's white keys are used. Of course, for chromatic percussion instruments, like timpani, or the xylophone, all twelve notes in the octave are used.

12" Band Cymbal		
C3	Cymbal pair	hit, leave open, long ring
D3	Cymbal pair	hit, short ring, then close
E3	Cymbal pair	hit, close immediately

12" Cymbal		
C3	Suspended cymbal	roll, slow crescendo
D3	Suspended cymbal	roll, medium crescendo
E3	Suspended cymbal	roll, fast crescendo
F3	Suspended cymbal	hit, long ring

16" German Cymbal		
C3	Cymbal pair	hit, stay open
D3	Cymbal pair	hit, then close

18" Cymbal		
C3	Suspended cymbal	roll, slow crescendo
D3	Suspended cymbal	roll, medium crescendo
E3	Suspended cymbal	roll, fast crescendo
F3	Suspended cymbal	hit, long ring

18" German Cymbal		
C3	Cymbal pair	hit, stay open
D3	Cymbal pair	hit, then close

18" Viennese Cymbal		
C3	Cymbal pair	hit, stay open
D3	Cymbal pair	hit, then close

19" French Cymbal		
C3	Cymbal pair	hit, stay open
D3	Cymbal pair	hit, then close

20" Cymbal		
C3	Suspended cymbal	roll, slow crescendo
D3	Suspended cymbal	roll, medium crescendo
E3	Suspended cymbal	roll, fast crescendo
F3	Suspended cymbal	hit, long ring
G3	Suspended cymbal	brush
A3	Suspended cymbal	hit, long ring, and brush

20" French Cymbal		
C3	Cymbal pair	hit, stay open
D3	Cymbal pair	hit, then close

21" French Cymbal		
C3	Cymbal pair	hit, stay open
D3	Cymbal pair	hit, then close

22" Cymbal		
C3	Suspended cymbal	roll, fast crescendo
D3	Suspended cymbal	roll, medium crescendo
E3	Suspended cymbal	roll, slow crescendo
F3	Suspended cymbal	hit, long ring
G3	Suspended cymbal	brush
A3	Suspended cymbal	hit, long ring, and brush

⚠ *In this instrument and the otherwise similar 20" Cymbal, the C3 and E3 are reversed.*

23" Gong		
C1	Gong	roll, fast crescendo
D1	Gong	roll, very slow crescendo
E1	Gong	slow brush
F1	Gong	fast brush
G1	Gong	hit, long ring

28" Gong		
C2	Gong	roll, very slow crescendo
D2	Gong	roll, fast crescendo
E2	Gong	long brush
F2	Gong	short brush
G2	Gong	hit, long ring

37" Chinese Tam Tam		
C0	Tam tam	multi-velocity hit
D0–B1	Tam tam	bowed effects
C2–G2	Tam tam	scrapes

48" Gong		
C3	Gong	roll, very slow crescendo
D3	Gong	hit, long ring

60" Gong		
C4	Gong	roll, very slow crescendo
D4	Gong	long brush
E4	Gong	short brush
F4	Gong	hard-mallet hit, medium length ring
G4	Gong	10-velocity, medium mallet sustain

60" Gong 2		
C1	Gong	multi-velocity stick hits
D1–E1	Gong	multi-velocity rubber mallet hits
F1	Gong	multi-velocity fiber rod hits
G1–E2	Gong	scrapes, white keys only

18" Zildjian Roll DXF Mod		
A2–F3	Zildjian cymbal	rolls

26" Zildjian Roll DXF Mod		
A2–F3	Zildjian cymbal	rolls

26" Zildjian Crash		
C4	Zildjian cymbal	multi-velocity hits
D4–D5	Zildjian cymbal	crescendos
E5–B5	Zildjian cymbal	scrapes

5 Concert Toms		
C1	Lowest tom	hit (left hand)
D1	Lowest tom	hit (right hand)
E1	2nd tom	hit (left hand)
F1	2nd tom	hit (right hand)
G1	Middle tom	hit (left hand)
A1	Middle tom	hit (right hand)
B1	4th tom	hit (left hand)
C2	4th tom	hit (right hand)
D2	Highest tom	hit (left hand)
E2	Highest tom	hit (right hand)

Roto Toms RR		
B0–C3	Roto toms	multi-velocity RR hits (left), pitched
B3–C6	Roto toms	multi-velocity RR hits (right), pitched

Mahler Hammer		
C1–E1	Mahler hammer	multi-velocity hits (left)
C2–E2	Mahler hammer	multi-velocity hits (right)

3 Snares		
C1	Small snare	hit (left hand)
D1	Small snare	hit (right hand)
E1	Small snare	rim shot
F1	Small snare	long roll, *mf*
G1	Small snare	long roll, *f*
A1	Small snare	short roll, fast crescendo
B1	Small snare	long roll, slow crescendo
C2	Medium snare	hit (left hand)
D2	Medium snare	hit (right hand)
E2	<empty>	
F2	Medium snare	long roll, *mf*
G2	Medium snare	long roll, *f*
A2	Medium snare	short roll, fast crescendo
B2	Medium snare	long roll, slow crescendo
C3	Large snare	hit (left hand)
D3	Large snare	hit (right hand)
E3	<empty>	
F3	Large snare	long roll, *mf*
G3	Large snare	long roll, *f*
A3	Large snare	short roll, fast crescendo
B3	Large snare	long roll, slow crescendo

3 Snares DXF Rolls		
C4	Small snare	long roll
D4	Medium snare	long roll
E4	Large snare	long roll
F4	Small snare	long roll, accent at release (last hit)
G4	Medium snare	long roll, accent at release (last hit)
A4	Large snare	long roll, accent at release (last hit)

These samples use the Mod Wheel to control volume (Dynamic Cross Fade, or DXF). You can make your own crescendo and diminuendo effects.

Snare Ensemble Large		
C3	Large snare drum	single hit (left hand)
D3	Large snare drum	single hit (right hand)
F3	Large snare drum	long roll, looped, *mf*
G3	Large snare drum	long roll, looped, *f*

Snare Ensemble Small		
C3	Small snare drum	single hit (left hand)
D3	Small snare drum	single hit (right hand)
F3	Small snare drum	long roll, looped, *mf*
G3	Small snare drum	long roll, looped, *f*

Puilli Sticks		
C1–D1	Puilli sticks	multi-velocity hits

Tiny Puilli Sticks		
C1–D1	Tiny puilli sticks	multi-velocity hits

Slap Sticks		
C1–D1	Slap sticks	multi-velocity hits

All Sticks

This is a collection of slapstick and puilli stick sounds, spread out from C1 to A2. Use your ear to find what is best for your piece.

All Cymbals

This is a collection of many, many cymbal sounds, spread over 7 octaves from C0 to B6. Use your ear to find what is best for your piece.

All Anvils

This is a collection of many, many anvil and railroad track sounds spread out over more than 3 octaves from C1 to E5. Use your ear to find what is best for your piece.

Anvil Low

This is a collection of many, many anvil and railroad track sounds spread out over more than 3 octaves from C1 to E4. In general, they are lower in pitch than those in the collection directly above.

Steel Plates

This is a collection of steel plate sounds spread out from C1 to B1. Use your ear to find what is best for your piece.

Artillery Shells		
C1–D1	Shell 1	multi-velocity hits
E1	Shell 1	roll
G1–A1	Shell 2	multi-velocity hits
B1	Shell 2	roll
C2–D2	Shell 3	multi-velocity hits
E2	Shell 3	roll

Bass Drum Concert		
C3	Bass drum	roll, slow crescendo
D3	Bass drum	roll, medium length crescendo
E3	Bass drum	roll, fast crescendo
F3	Bass drum	long roll, slow crescendo
G3	Bass drum	roll, loud start, then soft, slow crescendo
A3	Bass drum	roll, loud start, soft, med. length cresc.
B3	Bass drum	roll, loud start, then soft, fast cresc.
C4	Bass drum	hit (left hand)
D4	Bass drum	hit (right hand)
E4	Bass drum	hit, lower in pitch
F4	Bass drum	hit, louder
G4	Bass drum	long roll, looped

Bass Drum Wagner		
C1	Bass drum	roll, slow crescendo
D1	Bass drum	roll, medium length crescendo
E1	Bass drum	roll, fast crescendo
F1	Bass drum	long roll, slow crescendo
G1	Bass drum	roll, loud start, then soft, slow crescendo
A1	Bass drum	roll, loud start, soft, med. length cresc.
B1	Bass drum	roll, loud start, then soft, fast crescendo
C2	Bass drum	hit (left hand)
D2	Bass drum	hit (right hand)
E2	Bass drum	roll, *p*
F2	Bass drum	loud attack, then *p*
G2	Bass drum	long roll, looped

This drum is generally lower in pitch than the Bass Drum Concert instrument above.

Castanets		
C1	Castanets	short roll (1 sec) (left hand)
D1	Castanets	short roll (1 sec) (right hand)
E1	Castanets	long roll (3 sec)
F1	Castanets	single hit (left hand)
G1	Castanets	single hit (right hand)

Crotales		
C3–C5	Crotales	pitched chromatic scale

Bowed Crotales		
C3–C4	Crotales	bowed, long
C5–C6	Crotales	bowed, short

Field Drum Ensemble		
C4	Field drum	single hit (left hand)
D4	Field drum	single hit (right hand)
F4	Field drum	long roll, *mf*
G4	Field drum	long roll, *f*

Field, Funeral, and Tenor Drums		
C4	Field drum	single hit (left hand)
D4	Field drum	single hit (right hand)
F4	Field drum	roll *mf*, accent at release (4 sec)
G4	Field drum	roll *f*, looped
A4	Field drum	roll, fast crescendo (1 sec)
B4	Field drum	roll, slow crescendo (3 sec)
C5	Funeral drum	hit (left hand)
D5	Funeral drum	hit (right hand)
E5	Funeral drum	roll, looped, *mf*
F5	Funeral drum	roll, looped, *f*
G5	Tenor drum	hit (left hand)
A5	Tenor drum	hit (right hand)

Taiko Drums		
C1–F1	26" drum	multi-velocity hits (left)
G1	26" drum	rimshot
C2–F2	22" drum	multi-velocity hits (left)
G2	22" drum	rimshot
C3–F3	26" drum	multi-velocity hits (right)
G3	26" drum	rimshot
C4–F4	22" drum	multi-velocity hits (right)
G4	22" drum	rimshot

Glockenspiel		
A3–C6	Glockenspiel	pitched chromatic scale

Glockenspiel Mellow		
A3–C6	Glockenspiel	pitched chromatic scale

All Gongs
This is a collection of many gong sounds (both hits and rolls) spread out over the following white keys on the keyboard: C0–F6.

Orchestral Chimes		
G2–G4	Orchestral chimes	pitched chromatic scale

Tambourine		
E3	Tambourine	single hit (left hand)
F3	Tambourine	single hit (right hand)
F#3	Tambourine	slow shake (3 sec)
G3	Tambourine	fast shake (2 sec)
G#3	Tambourine	fast shake (3 sec)

Tambourine 2		
C1–D1	Tambourine	multi-velocity hits
G1–G1	Tambourine	rolls
A1–A2	Tambourine	effects

Timpani Crescendo Long		
C1–A2	Timpani	crescendo roll, pitched chromatic scale

These are very slow crescendos, from silence, with a diminuendo at the end. The higher pitched samples tend to reach the maximum volume a little more quickly than the lowest pitched samples. If you need both hits and rolls, it is more efficient to use the combined samples below.

Timpani Crescendo Short		
C1–A2	Timpani	crescendo roll, pitched chromatic scale

These are crescendos, with a diminuendo at the end. They are about half the duration of Timpani Crescendo Long. As with the previous file, the higher pitched samples tend to reach the maximum volume a little more quickly than the lowest pitched samples. If you need both hits and rolls, it is more efficient to use the combined samples below.

Timpani Hits		
C1–A2	Timpani	single hit (left hand), pitched chrom.
C3–A4	Timpani	single hit (right hand), pitched chrom.

Timpani Hits Crescendo Long		
C1–A2	Timpani	single hit (left hand), pitched chromatic scale
C3–A4	Timpani	single hit (right hand), pitched chrom.
C5–A6	Timpani	longer crescendo roll, pitched chrom.

This file includes all the samples from Timpani Hits, and adds in the samples from Timpani Crescendo Long, except that the crescendo rolls are positioned 4 octaves higher on the keyboard.

Timpani Hits Crescendo Short		
C1–A2	Timpani	single hit (left hand), pitched chromatic scale
C3–A4	Timpani	single hit (right hand), pitched chrom.
C5–A6	Timpani	shorter crescendo roll, pitched chrom.

This file includes all the samples from Timpani Hits, and adds in the samples from Timpani Crescendo Short, except that the crescendo rolls are positioned 4 octaves higher on the keyboard.

Timpani Rolls		
C1–A2	Timpani	roll, pitched chromatic scale, looped

These are rolls at a constant volume level, as determined by velocity.

Timpani Rolls DXF Mod Wheel		
C1–A2	Timpani	roll, pitched chromatic scale, looped

These are rolls with a dynamic cross fade, controlled by the Mod Wheel. Use this file to achieve greater control over the dynamics of the rolls.

Timpani Rolls Release Crescendo		
C1–A2	Timpani	roll, pitched chromatic scale, looped

These are rolls at a constant volume level, until the note (or key) is released. The release trail includes a crescendo roll that rises fairly fast and then goes silent (except for the reverberation).

Timpani Soft Hits		
C1–A2	Timpani	softer single hit (L hand), pitched chrom.
C3–A4	Timpani	softer single hit (R hand), pitched chrom.

These samples are softer single strokes than Timpani Hits.

Sleigh Bells		
C1	Large sleigh bells	multi-velocity hits
D1–E1	Large sleigh bells	rolls
C#2	Small sleigh bells	multi-velocity hits
D2	Small sleigh bells	rolls

Triangle		
B1	Triangle	single hit (left hand), lower pitch
C2	Triangle	single hit (left hand), higher pitch
C#2	Triangle	single hit (left hand), muffled
D2	Triangle	single hit, (right hand), muffled
D#2	Triangle	single hit (right hand), lower pitch
E2	Triangle	single hit (right hand), higher pitch

Triangle 2		
C1–E1	Triangle	multi-velocity hits
F1–A1	Triangle	rolls

Guirro		
C1–B1	Guirro	round-robin shakes

Washboard		
C1–B2	Washboard	round-robin scrapes

Wind Machine		
C1–B1	Wind machine	effects

Woodblock Symphony		
G0–C2	Woodblock symphony	multi-velocity blocks, pitched (left)
C2–C4	Woodblock symphony	multi-velocity blocks, pitched (right)

Various Metals		
C1	Bell tree	Fast upward glissando
D1	Bell tree	Medium speed upward glissando
E1	Bell tree	Slow upward glissando
F1	Bell tree	Upward glissando, playing last notes over and over
G1	Mark tree	Slow downward glissando
A1	Mark tree	Fast downward glissando
B1	Bell, lower pitch	Single hit
C2	Bell, lower pitch	Roll (tremolo)
D2	Bell, lower pitch	Roll (tremolo)
E2	Bell, lower pitch	Roll (tremolo) crescendo
F2	Bell, higher pitch	Single hit
G2	Bell, higher pitch	Roll (tremolo)
A2	Bell, higher pitch	Roll (tremolo)
B2	Bell, higher pitch	Roll (tremolo) crescendo

Various Percussion		
C1	Castanets	short roll (left hand) (1 sec)
C#1	Castanets	short roll (right hand) (1 sec)
D1	Castanets	short roll
D#1	Castanets	short roll
E1	Castanets	longer roll (3 sec)
F1	Castanets	single click (left hand)
F#1	Castanets	single click (right hand)
G1	Wood block	single hit, lower pitch
G#1	Wood block	single hit, higher pitch
A1	Popgun	single shot
A#1	Wood block	single hit, much higher pitch
B1	Wood block	single hit, even higher pitch
C2	ACME noise maker	loud, fast
C#2	ACME noise maker	loud slow
D2	ACME noise maker	soft, fast
D#2	ACME noise maker	soft, slow
E2	Policeman's whistle	short tone (1.5 sec)
F2	Slap stick	soft
F#2	Slap stick	loud
G2	Ratchet	loud, long
G#2	Ratchet	loud, short
A2	Ratchet	softer, long

Various Percussion (Continued)		
A#2	Ratchet	loud, long, with pickup
B2	Ratchet	louder, long
C3	Slide whistle	long rising
C#3	Slide whistle	long falling
D3	Slide whistle	longer falling
D#3	Slide whistle	longer rising
E3	Slide whistle	roller coaster (down, up, down, up, etc.)
F3	Tambourine	single hit
F#3	Tambourine	slow shake (3 sec)
G3	Tambourine	fast shake (2 sec)
G#3	Tambourine	fast shake (3 sec)

Waterphone		
C1–D5	Waterphone	effects

Celesta		
C2–C7	Celesta	pitched chromatic scale

Marimba		
F1–C6	Marimba	pitched chromatic scale

Vibraphone		
F1–F4	Vibraphone	pitched chromatic scale

Xylophone		
F2–F6	Xylophone	pitched chromatic scale

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