

# Multistation Sound Support Readme

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## Introduction

With Useful Multiplier, each user can enjoy independent audio -- including volume and source control. USB sound devices can be assigned to each station and operated independently.

This document explains how to set up Multistation sound with Useful Multiplier.

## Supported Linux Distributions for Multistation Sound

- Fedora Core 8
- openSUSE 11.0
- SLED 10 & 11
- Ubuntu 8.04, 8.10, 9.04

Multistation Sound is automatically installed on the supported distributions listed above, if you are installing Useful Multiplier™ ≥v.320. If you wish to install the Multistation Storage packages manually, [instructions follow](#).

**Note:** Official support for Useful Multistation Sound is currently available for Gnome Desktop environments only.

It is *possible* that Useful Multistation Storage software could work with other -- unsupported -- Linux distributions. Although Useful cannot guarantee positive results, [guidelines for installing Multistation Storage software on unsupported Linux distributions](#) can be found below.

## USB Sound Device Assignment



A range of USB devices -- including headphones and other audio devices -- work with Useful Multiplier.

A USB sound device will be automatically assigned to the same station as the keyboard if you connect it to:

- the same powered USB hub as the keyboard, or,
- a USB port built into the keyboard.

It is recommended that each station uses its own powered USB hub to connect one keyboard/mouse pair and a USB sound device, which will be assigned to same station automatically.

Any devices plugged directly into the USB keyboard (if the keyboard has a USB port) will also be assigned to the same station as the keyboard. In this scenario, some devices may not function correctly due to insufficient power supplied by the keyboard's USB ports.

## MP3 support

MP3 is not an open format, so you may need to install some extra software (codecs) to play MP3 files in your Linux system.

### Fedora

- <http://www.fedorafaq.org/#mp3>

### openSuSE

- [http://opensuse-community.org/Restricted\\_Formats](http://opensuse-community.org/Restricted_Formats)

## Skype

For Skype support in a multistation environment, Skype version 2.0.0.72 or higher is required. You can download the latest version at <http://www.skype.com/intl/en/download/skype/linux/>

Please note that although Useful provides Multistation Audio support for Skype, Skype itself will only allow **one** call at a time.

## Configuration

Please refer to [How To/Configuring Skype](#).

### SLED 10 SP1

The rpm package of Skype for SuSE Linux cannot be installed on SLED10 SP1 because of a library dependency problem. Refer to following link to install Skype on SLED 10 SP1.

<http://www.novell.com/coolsolutions/tip/19660.html>

# Known Issues

## Power issue with unpowered USB hubs and keyboard USB ports

Some USB devices will not work if they are plugged into unpowered USB hubs (which include USB ports in keyboards). If the hub is unpowered, all devices using it will share power. Some devices may expect or need more power from the USB port, and the shortage will cause them to malfunction.

If you have any problem with your USB devices, it is recommended that you use a powered USB hub.

## Only one application can play sound at a given time

Most USB sound devices do not support hardware mixing, and some closed-source software -- for example, Adobe Flash Player -- does not work with the ALSA plugin for software mixing (dmix). Because of these limitations, Useful Multiplier uses ALSA devices directly for sound support and only one application *per station* can play sound at any one time.

If sound does not seem work with some programs, please check whether there is another program using the sound device and close the program. Then, try the first program again.

## Problem with hotplugging sound devices during user sessions

We recommend that you connect the USB sound device *before* you log in to a session. If you plug in a USB sound device after you log in, the sound device may not be recognized or assigned to the user session. If that is the case, you have to log out and log in again to get the sound device working.

## Limitation in the number of event devices

An event device is a character device created by the evdev kernel driver. evdev, the generic input event device driver, creates an event device for any device which provides input events (e.g. keyboard and mouse). USB sound devices and PC speakers (although not strictly *input* devices) also constitute event devices and cause one event device to be created for each physical device.

One physical device can also provide more than one event device. For example, most multimedia keyboards provide two event devices: one for the basic keys and another for the multimedia keys.

Once the number of event devices exceeds the maximum number supported by the Linux kernel, any subsequent device will not work. Most Linux distributions provide up to 32 event devices by default. If you want to increase the number of event devices, you will need to re-compile the kernel with a patch.

## Not enough bandwidth

A "not enough bandwidth" kernel error may prevent audio output on certain stations. We recommend:

- Spreading USB devices to different USB buses on the machine. (That is, not plugging all USB devices into a single bank of USB ports.)
- Using PCI USB expansion cards, since they do not share the same bus with the motherboard's built-in USB ports.

- Using USB 2 or USB 3 certified hubs and cables, and make sure full speed USB is enabled in the BIOS and kernel.

## Installing Multistation Sound on Unsupported Linux Distros

**Note:** All necessary packages are installed with Useful Multiplier  $\geq v.320$  by default on supported Linux distributions. The following section is primarily of interest if you wish to try to install Useful Multiplier Multistation Sound on *unsupported* Linux distributions.

**Useful cannot guarantee successful installation and operation of Multistation Sound on an unsupported Linux distribution.**

### General Requirements

**Note:** Useful cannot guarantee successful installation and operation of Multistation Sound on an unsupported Linux distribution.

These are requirements for all Linux distributions:

- **Useful Multiplier™** must be installed before Multistation Sound software can be added.
- **UDEV** version 071 or higher must be installed.
- **HAL** version 0.5.8 or higher must be installed.
- **Flash Player** version 9.0.48 or higher is required for Multistation Sound support in Web browsers.
  - Older versions of FlashPlayer 9 use the first (and only the first) ALSA device for sound support. This bad design limits sound support on multiple Web browsers running on multiple stations. To enable sound in your Web browser with an older version of FlashPlayer 9, use **Pulseaudio** (Sound Server) and related libraries instead of an ALSA device.
- **aoss** (a wrapper script to facilitate the use of the ALSA OSS compatibility library) is required, because some audio applications only support the OSS interface. Check your Linux system to see if aoss is already installed. If your system does not have aoss, see below for distribution-specific aoss installation instructions.

### Installing aoss

#### Fedora Core

You can install **aoss** by installing the `alsa-oss` package with Yum Extender (a graphical tool) or the `yum` command in a terminal program:

```
$yum install alsa-oss
```

#### openSuSE

If you do not have **aoss**, you must get the `alsa` package.

## Ubuntu

You can install `alsa-oss` with the Synaptic Package Manager (a graphical tool) or use the `apt-get` command in a terminal session:

```
$apt-get install alsa-oss
```

**Note:** Since `alsa-oss` is available from the "universe" repository, you have to uncomment the universe repository in `/etc/apt/sources.list`.

## Manual Installation

If you are using one of the Linux distributions listed [above](#), typically you will *not* have to install Multistation Sound support. During the installation of Useful Multiplier, the Multistation Sound package will also be installed automatically.

Please use the following procedure if you wish to try installing Useful's Multistation Sound manually.

### For RPM package-based systems

1. Start a terminal program.
2. Log in as root.  
\$ su
3. If you haven't done so already, unzip the Useful Multiplier zip file with the `unzip` command.  
\$ unzip useful-multiplier-<version>.zip
4. Go into the newly created `useful-multiplier` directory.  
\$ cd useful-multiplier
5. Go into the `packages` directory.  
\$ cd packages
6. Install the Multistation Audio package by entering the following at the command prompt.  
\$ rpm -Uvh umx-multimedia-<version>.rpm
7. Reboot the computer.

### For DEB package based system

1. Start a terminal program.
2. Log in as root.  
\$ su
3. If you haven't done so already, unzip the Useful Multiplier zip file with the `unzip` command.  
\$ unzip useful-multiplier-<version>.zip
4. Go into the newly created `useful-multiplier` directory.  
\$ cd useful-multiplier
5. Go into the `packages` directory.  
\$ cd packages
6. Install Multistation Audio package by entering the following at the command prompt.  
\$ deb -i umx-multimedia-<version>.deb
7. Reboot the computer.