

Multistation Sound Support README

Copyright © 2002-2007, Useful Corporation. All rights reserved.
(Updated 2007.09.12)

Introduction

A sound device can be assigned to a station and operated independently in a multistation environment by installing Multistation Sound software provided by Useful. This document explains how to do this.

Supported Linux Distributions for Multistation Sound

- Fedora Core 4 and 6
- openSUSE 10, 10.1, 10.2
- SLED 10
- Ubuntu 6.06 and 6.10

It is still *possible* that other Linux distributions not listed above could work with Multistation Sound software. Useful's Multistation Sound software can be installed on many distributions, though we do not guarantee positive results on unsupported distributions.

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

Prerequisites for Multistation Sound Support

General Requirements

These are requirements for all Linux distributions:

- **Desktop 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.
- **aoss** (a wrapper script to facilitate the use of the ALSA OSS compatibility library) is also required for applications that only support the OSS interface. If your Linux system does not have aoss, see below to install aoss on your Linux system. Check your system first to see if aoss is already installed.
- **Flash Player 9** 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 its 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 FlashPlayer 9, **Pulseaudio** (Sound Server) and related libraries can be used instead of an ALSA device.

Distribution-Specific Notes

Fedora Core 6

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 10.2

aoss is part of the `alsa` package. Install this package and you should be fine.

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`.

Installation

Use the following procedure to install Useful's Multistation Sound support software:

1. Download the software.
 - For RPM based Linux systems:
<http://www3.userful.com/dm/Multistation-Sound-Support.zip>
 - For Debian based Linux systems:
<http://www3.userful.com/dm/Multistation-Sound-Support-deb.zip>
2. Uncompress the software bundle by running `unzip <zip file>`. For example:

```
$unzip Multistation-Sound-Support.zip
```
3. Install Multistation Sound Support by running the `INSTALL` script in the directory created by the previous step:

```
$bash INSTALL
```
4. Reboot the computer.

Device Assignment

A 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 10.2

- http://opensuse-community.org/Restricted_Formats/10.2

Skype

For Skype support in a multistation environment, Skype version 1.4.0.99 or higher is required. You can download the latest version at

<http://www.skype.com/intl/en/download/skype/linux/>

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 software like Adobe Flash Player does not work with the dmix plugin, an ALSA plugin for software mixing. Because of these limitations, Desktop 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 program, please check whether there is another program using the sound device and close the program. Then, try the second 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.

Unstable USB 2 support in the Linux kernel

If you have any problem with your USB sound devices, ensure that USB 2 support is disabled in the BIOS before you try anything else.