

Controlling multiple systems simultaneously with Synergy

# LATERAL CONTROL



Synergy lets you combine multiple PCs into a single virtual desktop.

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**S**ynergy is a small but powerful tool that lets the user control multiple PCs with a single keyboard and mouse – even across operating system boundaries. To run Synergy, you'll need at least two PCs, each with its own operating system, monitor, and working network adapter. The software supports Windows from 95 through Vista, Mac OS X version 10.2 or newer, and not only Ubuntu but other Linux distributions with the latest X server. Prebuilt packages for Windows and Mac OS X are available from the Synergy homepage [1]. Ubuntu offers a Synergy package in its Universe repository. For RPM-based Linux systems, an RPM package is also available.

First imagine a typical network administrator's workplace with a professional

desktop running on Ubuntu and a small notebook running on Vista next to it. To remove the need to keep swapping between keyboards, the administrator decides to install Synergy. Most of the work will be done on the desktop, the Ubuntu system. In Synergy-speak this master system is known as the *server*, and the

administrator will be using the keyboard and mouse attached to it. In line with this, all other devices are *clients*.

## Configuration

Before you start using Synergy, you need to configure the program by editing the `/etc/synergy.conf` or `~/.synergy.conf` text file. The program relies on the concept of screens: Every computer in the group, whether it is a server or a client, is a screen with a precisely defined position – just like assigning positions to applications on a multi-display setup. Therefore, you must add the screen name, its aliases, and the position relative to the other devices to the configuration file. It is important to define the position in both directions, left and right. The setup for the case study here, and comments

### Enabling Universe

Ubuntu organizes its software packages in numerous repositories. *Universe* is a hold-all for packages that are not as comprehensively supported and maintained as some others. To use *Universe*, you first need to enable the entry in the `/etc/apt/sources.list` by removing the pound sign. Then, after running `apt-get update`, you can install various new packages, including Synergy.

on it, are given in Listing 1. Many more options are available, all of which are documented on the Synergy configuration page [2].

A word of warning is appropriate here: Make sure you enter all the options in the configuration file in lowercase. In addition, pay attention to line breaks because Synergy is finicky and will not load the file if you make a mistake. After you complete the setup, launch the Synergy server on Ubuntu as a normal user by typing `synergys`. Adding `-f` prevents Synergy from running in the background as a service.

## QuickSynergy

QuickSynergy provides an even more convenient approach to configuring the tool. On Ubuntu, you can download the QuickSynergy package from the *Universe* repository and install it, then launch it via *Applications | Tools | QuickSynergy*. Unfortunately, the program failed to launch a working server when I tried it in our lab.

The Vista client – that is, the PC I will be controlling via the Ubuntu system – is easier to configure. After completing the install, you can launch Synergy directly via the Start menu, which takes you to a neat-looking graphical interface (Figure 1). To connect to the server, select the *Use another computer's shared keyboard and mouse* option and enter the name of the server machine. Professionals might also be interested in setting additional options, such as the logging level, auto-start, and network details.

## Linking Screens

After configuring your clients, just type `synergyc server IP` (or click *Start* if you are working on Windows) to connect the screens. At first, this is all fairly spectacular – you can use both systems in the normal way.

But if you move the mouse cursor over the right-hand border of the screen on the Ubuntu desktop, it shifts to the Vista desktop, just as on a multi-display sys-

tem – the difference is that you are using two operating system platforms. Keyboard input will also reach the client while the focus is on it (i.e., the mouse cursor is on the client screen). In addition, Synergy synchronizes the clipboards between the two systems; according to the developers, this feature automatically sets the correct character set and converts line breaks between operating systems – a perfect way to copy longer texts and configuration files centrally. Pressing *Scroll* disables Synergy temporarily if needed.

Many more options are available for you to set the configuration file. Among other things, Synergy supports keyboard mapping between the server and the clients, lets you configure screen areas where no screen paging will take place, and lets you run certain actions with the press of a button.

Of course, nobody's perfect, and Synergy failed on a couple of counts in our lab. For example, it failed to synchronize the screensavers and centrally lock all the screens.

## Listing 1: Case Study

```
01 # Define screens
02 section: screens
03  ubuntu:
04  vista:
05 end
06
07 # Alternative names
08 section: aliases
09 # ubuntu -> desktop
10  ubuntu:
11    desktop
12 # vista -> notebook
13  vista:
14    notebook
15 end
16
17 # Screen positions
18 section: left
19 # vista: right of ubuntu
20  ubuntu:
21    right = vista
22 # ubuntu: left of vista
23  vista:
24    left = ubuntu
25 end
```

## Security Note

As Synergy's authors point out on their homepage, Synergy does not possess anything in the line of authentication or encryption [3]. To be on the safe side, you might want to set up an SSH tunnel and encrypt all your data.

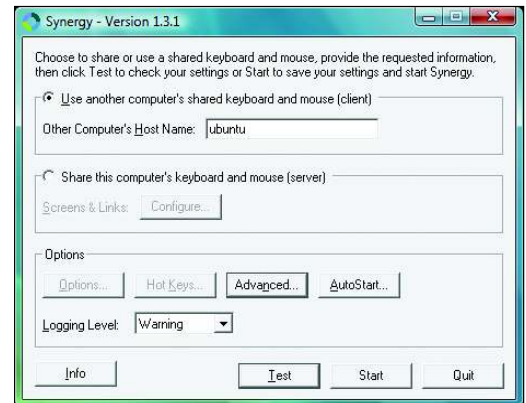


Figure 1: Synergy as a client on Windows Vista.

According to the homepage, the Mac OS X variant of the program in particular is not as mature as the Linux and Windows versions.

## Conclusions

Synergy offers an interesting approach to managing multiple computers centrally without investing in additional hardware. In contrast to legacy solutions, every machine keeps its own display. The program is definitely a boon for anybody who needs to run several machines, and Synergy's cross-operating system clipboard support is a really useful feature that removes the need to copy text files. However, if I had three wishes, one of them would be easier configuration on Linux. ■

## INFO

- [1] Synergy homepage: <http://synergy2.sourceforge.net>
- [2] Configuration options: <http://synergy2.sourceforge.net/configuration.html>
- [3] Security notes: <http://synergy2.sourceforge.net/security.html>

## THE AUTHOR

Florian Effenberger has been a free software evangelist for many years. He is the Co-Lead of OpenOffice.org's international marketing project and a member of the board of OpenOffice.org Deutschland e.V., a German NGO. His work mainly focuses on designing enterprise and school networks and software distribution solutions based on free software. Florian is a regular contributor to various German and English language publications, in which he investigates, among other topics, legal issues.