

Sugar on a Stick 3

Customization Guide

A simple guide on how to customize SoaS

sugar on a stick



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Edition 2

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This guide will effectively show you how to customize and adjust your copy of Sugar on a Stick, so that it fits your needs directly and enables you to do more the open source way.

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Preface

To whom it may concern,

you might have already explored your own Sugar on a Stick which you either received preloaded or downloaded yourself from our website. No matter which way you chose, you have come across the different possibilities Sugar on a Stick bears. You might have created content for your students, downloaded and tested additional activities or simply changed the language. Now you ask how to incorporate these changes easily? — That is why we are here today. Sugar on a Stick comes with a number of methods to customize it. You can apply all those said changes and create your proper image of Sugar on a Stick. And that is also the reason why we do this: We want to enable you — as a newcomer, early grade teacher, college professor or large deployment — to get the best possible Sugar on a Stick experience.

Sebastian Dziallas

Sugar on a Stick Project Leader

1. We Need Feedback!

Please share your feedback with us; it will help us to improve Sugar in subsequent versions of SoaS. Send an e-mail to the *Sugar on a Stick* [mailing list](http://lists.sugarlabs.org/listinfo/soas)¹ or join the *It is an Education Project* [mailing list](http://lists.sugarlabs.org/listinfo/iaep)². If you encounter any hardware-related issues besides the ones listed below, please consider joining our hardware effort. Submitting the specifications of your hardware helps us to work together with upstream to resolve any issues. Finally, you might also consider submitting bug reports at our [bug tracker](http://bugs.sugarlabs.org)³.

¹ <http://lists.sugarlabs.org/listinfo/soas>

² <http://lists.sugarlabs.org/listinfo/iaep>

³ <http://bugs.sugarlabs.org>

Preparation

This chapter will demonstrate the stages required to customize Sugar on a Stick in different ways and will guide you through them step by step. Please pay close attention to the instructions to make sure no loss of data occurs.

1.1. System Requirements

Platform	Requirements	Notes
Linux	Fedora 12 or higher at least 5 GB of free hard disk space a decently fast internet connection	root access is required older versions may be unsupported

Table 1.1. Platforms

1.2. Getting Started

When remixing Sugar on a Stick, you will note a lot of references to Fedora and related projects. This is mainly, because Sugar on a Stick is a Fedora Spin and thus based on this distribution. Hence, we are also assuming that you are starting with a current Fedora installation, as defined in the system requirements.

As a first step, you will need to install a number of packages that allow you to build your own Sugar on a Stick. For the build process, we are relying on Fedora's `livecd-tools`.¹ Therefore, you will need to install these, along with a couple of other packages.

- Execute as root: **`yum install git livecd-tools rpm system-config-language`**

The production of Sugar on a Stick usually takes place by providing the build tool with a kind of configuration file. This file is called *kickstart* file. We are going to start from the currently existing files, which are available in Fedora's GIT repositories, since the upcoming Sugar on a Stick version as a spin will be part of Fedora's engineering process.



Note

Make sure to pull the appropriate branch from GIT if you want to build against one of the upcoming stable releases. Otherwise, you will checkout the latest moving contents from the repository.

- Grab the configuration files by running: **`git clone git://git.fedorahosted.org/spin-kickstarts.git`**

You have taken the first step! You have downloaded all the required components and are now ready to learn how to customize Sugar on a Stick for your own purposes in the next chapter.

<http://fedoraproject.org/wiki/FedoraLiveCD>

Customization

This chapter will introduce you to the exact steps on how to customize Sugar on a Stick by editing the appropriate files and running a complete build process thereafter.

2.1. Overview

There are namely two kickstart files to look at:

- **fedora-live-mini.ks** - this file is shared with a number of other Fedora Mini ¹ projects and contains the package set for the base operating system, as well as other configurations for such purposes.
- **fedora-livecd-soas.ks** - this file contains all the changes required to actually make Sugar on a Stick, such as the unique package set and a number of other modifications to fit the special design.

In the following sections, we will walk through the different parameters and enable you to customize them.

2.2. Locales

One of the most requested changes to Sugar on a Stick is understandably the modification of the locals and keyboard settings. Sugar is a well localized learning environment and users of Sugar on a Stick should be able to take advantage of this fact.

Language customizations take place in the **fedora-live-mini.ks** file. At the top of this file, you will find the following three lines:

```
lang en_US.UTF-8
keyboard us
timezone US/Eastern
```

These lines impact the default language, keyboard setting and timezone configuration of Sugar on a Stick. You can modify them to fit your needs by following the given scheme as explained in the Kickstart Options ².

- A list of the valid language codes for the lang parameter is available in the first column of each line in the following file. Execute: **less /usr/share/system-config-language/locale-list**
- A list of valid keyboard settings is available in the following file. Execute: **less /usr/lib/python2.6/site-packages/rhpl/keyboard_models.py**

2.3. Packages

Another inevitable request we received concerns the selection of activities. For the upcoming Sugar on a Stick releases, we decided to include a number of core activities, allowing users to add more themselves from the *Activity Portal* ³. However, deployments and experienced users might want to customize the base set of activities as described in this section.

¹ http://fedoraproject.org/wiki/Anaconda/Kickstart#Chapter_2._Kickstart_Options

³ <http://activities.sugarlabs.org/>

Package set customizations take place in the **fedora-livecd-soas.ks** file, in which you will find a line listing a number of activities. This is the place to add new activities.

- To get an overview what activities are available, run: **yum list "sugar-*"**.
- You will be presented a list of available activities following the **sugar-*name*** naming scheme.
- Add your preferred activities to the list in the kickstart file.



Important

Pay attention to not introduce any typos at this point, as the build process will otherwise fail later on.

Building

At the end of the customization process, you will run your own build, resulting in a new image file. This chapter describes how to do so and mentions aspects to pay attention to.

To run the build process, Sugar on a Stick makes use of the *livecd-creator* from Fedora's *livecd-tools*. The process, which may take depending on your machine up to an hour, requires to be executed as root.



Warning

The build process is hardware-intensive and will demand both your internet connection and your computer itself in general. Make sure proceed only if you are aware of this.

- Make sure you comply with the system requirements as listed in the first chapter, especially concerning the amount of free hard disk space.
- Turn SELinux ¹ temporarily into a permissive mode by executing: `/usr/sbin/setenforce 0`
- Start the build process by executing the following command from the directory where you placed both kickstart files: `livecd-creator --config=fedora-livecd-soas.ks`



Note

You may also specify a *file system label*, influencing the name of the resulting image, as well as a *cache directory*, preventing *livecd-creator* from re-downloading the required packages again, unless updates have occurred. For more information, execute: `livecd-creator --help`

Congratulations! You have just taken the final step towards customizing Sugar on a Stick for your needs. If you ran into any issues or have comments, suggestions, or feedback in general, feel free to contact us on the Sugar on a Stick [mailing list](#)².

² <http://lists.sugarlabs.org/listinfo/soas>

Appendix A. Revision History

Revision 2	Sat May 22 2010	Sebastian Dziallas sdz@sugarlabs.org
Final commits before Mirabelle release		
Revision 1	Sun Mar 28 2010	Sebastian Dziallas sdz@sugarlabs.org
Added more content for customizing locales and packages		
Revision 0	Sat Mar 20 2010	Sebastian Dziallas sdz@sugarlabs.org
Initial creation of book by Publican		

