Wizards Guild to Open Suse

This document is designed to try to explain how to Install, Use, Fix, Upgrade, and Maintain an Open-Suse OS Desktop.

SuSE (pronounced soo'-sah) is a German Linux distribution provider and business unit of Novell, SuSE stands for Software und System Entwicklung, which translates to Software and System Development Company. The Company Logo is a Geeko or Geek.

Basically SuSE will create a repository and maintain it, then they repackage the Software into a stable OS, they provide this Repository in 3 forms, Suse paid accounts, and two Open Source Projects known as Tumbleweed and Leap, Tumbleweed is a rolling distribution, unlike Leap that has regularly scheduled upgrades, Tumbleweed has the latest, so it is cutting or bleeding edge, whereas Leap is Stable, Tumbleweed can become unstable at times, and if you keep up with all the upgrades you will not be more than 8 months behind stable, ensuring you are always stable, and those releases mirror the paid Suse accounts, but they are different repositories.

Suse Desktop accounts start at $50 for no support and $120 for support and $220 for premium support, https://www.suse.com/shop/desktop/, and when you think about what you get, you need to compare this to Windows or Red Hat, or Mac, then the cost makes sense, and the plans get better if get a three year plan, and at first the no support through me, but really you are not getting for the support, you are getting to have access to their Repositories and supported Software, you can get support at the forum if you need it, but access to these repository and software is worth the cost, and how they stay in business.

To install SuSE you need to know what version you want:

Paid SuSE account
https://www.suse.com/products/desktop/

Open Source

Tumbleweed Rolling Distribution
https://www.opensuse.org/#Tumbleweed

Leap Version
https://www.opensuse.org/#Leap

I will not cover Paid SuSE because I do not have an account, but I am willing to bet it is just as easy to install, the main differences is that you will use your account to get updates.

Tumbleweed has a Network Live Installer, Leap does not, I was unable to get the Leap Network installer to work due to it not setting up my network connection correctly, so I used the DVD version, which is also known as the Offline version, so I only recommend using the Tumbleweed Live Installer, and the DVD Leap version.

There is a good Guide here https://opensuse-guide.org and it has pictures of all the screens and explains them here https://opensuse-guide.org/installation.php so I do not want to repeat their instructions, so check out this guide, it also talks about Widgets, these are apps that stay on your Desktop, whereas Applets sit in the Taskbar, see https://opensuse-guide.org/kde.php.

And Now a Warning: Applets and Widgets run with the same permissions you do, thus a rough App can have consequences, but really there is no way around the permissions, and people are working on this issue, for the most part if you stick to what is in their Repositories you will not have an issue.

No mater which version you pick, you will need to download and burn an ISO to a USB in order to install it, and this dependents on what OS you are currently using, so I will cover Linux or Unix, or even Mac first, then Windows, in Linux use SuSE Image Writer, Mac has a similar app, it is a drag a drop interface, just pick the destination USB drive, and then you can change your BIOS to boot from the USB like it does a normal hard drive, in Windows I would recommend Windows USB/DVD Download Tool.
https://www.microsoft.com/en-us/download/windows-usb-dvd-download-tool

The Live Installer for Tumbleweed is very nice, wish Leap had one, or maybe I wish the Tumbleweed Live Installer would install Leap as well, but this is my experience and they are always working on Yast, Yet Another System Tool, and this is what most people like about SuSE.

The Leap installer network to has to be setup, and you can do this from the menu options, I am not going to make a screen shot example because Yast really does change over time, and to not confuse you, look at all the screens and figure out what they want, they are almost self explanatory, but these are the quirks, you have setup the Network in the first screen using the on screen buttons, and you need to make sure you only have the USB and a hard drive, the status does not matter as long as it works and is 256 GB minimum and SSD is better, this way it will find the right configuration and you will not have to change anything. You might run into a bug that pops up a window telling you a file is not signed right, your options are to pick yes, and ignore the signature then hit Ok, and repeat till the install is complete, this bug might get fixed soon, but not soon enough, other than that, you do not really need to know anything, just follow the prompts and create a User Name and Password, and un-check Auto Login.

I am going to recommend using KDE, the reason is simple, one it is KDE, part of the Qt Applications Community, so it is solid, with one understanding, you install an Applet and it is Malware, you are screwed, so be careful if you add Applets, an Applet is like your Clock, Calendar, or other items in your Task Bar, the only ones I recommend are Weather and Sensors for CPU Temperature, but would not deter you from finding others via the Settings control panel, which is an icon in your Favorites, and has all the Settings in a GUI, so no command line changes need to be made normally.

I wrote a bash script that I will include with this document, actually I will paste it into it, and also include it as a separate download, this just makes it faster to install software, but it does require you to open up Konsole, assuming you took my recommendation about KDE, a word about Linux, for one thing Linux itself is called the Kernel, and it has a version number, and basically that version number is the same for every Linux Distribution, now a Distribution has a Name like OpenSuse, Arch Linux or Manjaro that it is based on, and most Distributions are based on either Debian, who died under a most unusual circumstances and creeps me out enough to not use it or any Distribution it is based on like Ubuntu, leaving with only Arch Linux and OpenSuse and a few others, but not many, Red Hat has Fedora and CentOS, Neon is based on Ubuntu, so you have very few choices in Linux, but thousands of Distributions based on just these few repositories.

Konsole or a Terminal Console is a “Black-Box” most Windows users shut down and call it quits, but really it is very easy and I will explain why in detail. I have to assume that you figured out how to install OpenSuSE with KDE as a Desktop Environment, you do not want to mix Environment because they all have different configurations for every file it runs, so what a mess, do not ever do this, you will regret it, so KDE, and why is simple, if you are from Mac or Windows, this will be the easiest.

Before we start to get into bash files, I want you to understand 3 things about Linux, one is Linux is just Kernel or “Black-Box”, the GUI is the Desktop, and I recommend KDE, and mainly for ease of use coming from Mac or Windows, and I have to point out that if you want to get away from Debian, pronounced Debi-an, as in Debbie, IAN’s x-wife, and after that Suicide by Cop thing, you have to understand why I want nothing to do with anything based on Debian, so Ubuntu is out, as is LM, and Arch Linux is focused on Servers and does not care if it breaks their Desktop, as such everything based on it will eventually break during an update, and mostly from not taking the new Configuration file, or by taking it, it goes both ways, and then it is Forum City looking for answers on why this Update broke your Desktop. If you mix Desktops trying to see what the others are like, you will end up with an ugly looking Desktop, been try done that, not fun, sure you can delete your .cache folder and let it rebuild, but why go through that, pick a Desktop and never look back, much like a Distribution, they all have their own set of problems, but Suse is one of the oldest and known to be the most stable, and why it is ranked as the 5th most popular Linux OS, and its benchmarks prove that overall it is the fastest, and most stable of all of them, so I will say this, Suse does not need the Command line to install apps, but I still think it is faster, so will show you how to use a bash script.

Bash is a terminal protocol used to execute Linux Commands, in Windows it is called a bat file, because the extension is bat, whereas most bash scripts use an sh extension.

SuSE uses Yast Software to install, remove and update all software on the system, but I will also talk about using npm, and maybe gem to install software, but mostly I will talk about zypper, the command line Software manager for Suse.

The first thing we want to do is open up Konsole by clicking its Icon located in Favorites or Application Settings, and the first command you need to know about is called refresh:

```
sudo zypper refresh
```

sudo means runs as super user, or do as super user, the sudo is a program that elevates your permissions to root after you log in using your root users password, which is set to the same as your user you have to create when installing Suse, as such, this tells the OS to update its Database of Software.

sudo zypper update will do minor updates or downgrades, and to do major upgrades or downgrades you need to run **sudo zypper dist-upgrade.**

I like to chain the command like this:

```
sudo zypper refresh && sudo zypper update -y && sudo zypper dist-upgrade -y;
```

If you are using Leap be careful using dist-upgrade or dup for short, normally only using update or up.

We need to add repositories to access specific applications.

Tumbleweed run this:

```
sudo zypper ar -cfp 90 https://ftp.gwdg.de/pub/linux/misc/packman/suse/openSUSE_Tumbleweed/ packman
sudo zypper ar http://download.opensuse.org/repositories/games/openSUSE_Tumbleweed/ games
sudo zypper ar http://download.opensuse.org/repositories/games:tools/openSUSE_Tumbleweed/ games:tools
sudo zypper addrepo https://download.opensuse.org/repositories/Emulators:Wine/openSUSE_Tumbleweed/Emulators:Wine.repo
https://download.opensuse.org/repositories/system:/snappy/openSUSE_Tumbleweed snappy
```

Leap run this:

```
sudo zypper addrepo -cfp 90 'https://ftp.gwdg.de/pub/linux/misc/packman/suse/openSUSE_Leap_$releasever/' packman
sudo zypper addrepo http://download.opensuse.org/repositories/games/openSUSE_Leap_15.3/ games
sudo zypper addrepo -f http://opensuse-guide.org/repo/openSUSE_Leap_15.3/ dvd
https://download.opensuse.org/repositories/system:/snappy/openSUSE_Leap_15.3 snappy
sudo zypper addrepo https://download.opensuse.org/repositories/Emulators:Wine/openSUSE_Leap_15.3/Emulators:Wine.repo
```

```
sudo zypper refresh
sudo zypper --gpg-auto-import-keys refresh
sudo zypper dist-upgrade --from packman --allow-vendor-change
sudo zypper dist-upgrade --from games  allow-vendor-change
```

If you want tools like Kindle Gen, you can use npm

```
sudo npm install -g kindlegen;
```

Snap is another application software manager, you can use it to install android-studio

```
sudo snap install android-studio  classic
```

I like to use fail2ban

```
sudo zypper install -y fail2ban;
sudo cp /etc/fail2ban/jail.conf /etc/fail2ban/jail.local;
sudo nano /etc/fail2ban/jail.local
# bantime = 3666h
# maxretry = 3
# ignoreip = 127.0.0.1/8

sudo systemctl start fail2ban || sudo systemctl restart fail2ban;
sudo systemctl status fail2ban;
sudo systemctl enable fail2ban;
```

There is a lot of good documentation for OpenSuse, and one of the best ways to find Software is in repositories, and these are all Projects you can find here:
https://build.opensuse.org/project

Note that factory is the name of the repository for the next version of Leap.

OpenSuse has two types Tumbleweed and Leap, where Leap has version numbers, and they are numbered from 1 to 15 to date, but after version 13 came version 42, which is the Universes answer to everything, and then 15 came out, so 14 and 42 are the same thing.

The more I learn about Tumbleweed the more I like about it, because you have be very careful about using the One-Click installs on OpenSuse websites, whereas Tumbleweed is more resilient when it comes to this, I have installed Suse by mistake, and that causes all kinds of red flags to go off because it cannot find Suse patches, so you have to know about these version number issues, and Suse vs OpenSuse, but if you ever do this just list the files in a terminal like this:

```
ls -A1  /etc/zypp/repos.d

dvd.repo
Emulators_Wine.repo
games.repo
openSUSE-Leap-15.3-1.repo
packman.repo
repo-backports-debug-update.repo
repo-backports-update.repo
repo-debug-non-oss.repo
repo-debug.repo
repo-debug-update-non-oss.repo
repo-debug-update.repo
repo-non-oss.repo
repo-oss.repo
repo-sle-debug-update.repo
repo-sle-update.repo
repo-source.repo
repo-update-non-oss.repo
repo-update.repo
science.repo
snappy.repo
```

So my point is this, do this from time to time to update a list somewhere on your computer, that list all the repo's you use, if you see some with http in there name, these are most likely for Suse, and not OpenSuse, so you can just delete them using rm filename.ext

To look at the repositories do this:

```
sudo zypper repos  uri
```

```
Repository priorities in effect:
    90 (raised priority) :  1 repository
    99 (default priority) : 11 repositories

#  | Alias                          | Name                                                                                                  | Enabled | GPG Check | Refresh | URI
---+--------------------------------+-------------------------------------------------------------------------------------------------------+---------+-----------+---------+-----------------------------------------------------------------------------------------------------
1  | Emulators_Wine                 | Wine (openSUSE_Leap_15.3)                                                                             | Yes     | (r ) Yes  | No      | https://download.opensuse.org/repositories/Emulators:/Wine/openSUSE_Leap_15.3/
2  | dvd                            | dvd                                                                                                   | Yes     | (r ) Yes  | Yes     | http://opensuse-guide.org/repo/openSUSE_Leap_15.0/
3  | games                          | games                                                                                                 | Yes     | (r ) Yes  | No      | http://download.opensuse.org/repositories/games/openSUSE_Leap_15.3/
4  | openSUSE-Leap-15.3-1           | openSUSE-Leap-15.3-1                                                                                  | No      | ----      | ----    | hd:/?device=/dev/disk/by-id/usb-PNY_USB_2.0_FD_00000000698DE89E-0:0-part2
5  | packman                        | packman                                                                                               | Yes     | (r ) Yes  | Yes     | https://ftp.gwdg.de/pub/linux/misc/packman/suse/openSUSE_Leap_15.3/
6  | repo-backports-debug-update    | Update repository with updates for openSUSE Leap debuginfo packages from openSUSE Backports           | No      | ----      | ----    | http://download.opensuse.org/update/leap/15.3/backports_debug/
7  | repo-backports-update          | Update repository of openSUSE Backports                                                               | Yes     | (r ) Yes  | Yes     | http://download.opensuse.org/update/leap/15.3/backports/
8  | repo-debug                     | Debug Repository                                                                                      | No      | ----      | ----    | http://download.opensuse.org/debug/distribution/leap/15.3/repo/oss/
9  | repo-debug-non-oss             | Debug Repository (Non-OSS)                                                                            | No      | ----      | ----    | http://download.opensuse.org/debug/distribution/leap/15.3/repo/non-oss/
10 | repo-debug-update              | Update Repository (Debug)                                                                             | No      | ----      | ----    | http://download.opensuse.org/debug/update/leap/15.3/oss/
11 | repo-debug-update-non-oss      | Update Repository (Debug, Non-OSS)                                                                    | No      | ----      | ----    | http://download.opensuse.org/debug/update/leap/15.3/non-oss/
12 | repo-non-oss                   | Non-OSS Repository                                                                                    | Yes     | (r ) Yes  | Yes     | http://download.opensuse.org/distribution/leap/15.3/repo/non-oss/
13 | repo-oss                       | Main Repository                                                                                       | Yes     | (r ) Yes  | Yes     | http://download.opensuse.org/distribution/leap/15.3/repo/oss/
14 | repo-sle-debug-update          | Update repository with debuginfo for updates from SUSE Linux Enterprise 15                            | No      | ----      | ----    | http://download.opensuse.org/debug/update/leap/15.3/sle/
15 | repo-sle-update                | Update repository with updates from SUSE Linux Enterprise 15                                          | Yes     | (r ) Yes  | Yes     | http://download.opensuse.org/update/leap/15.3/sle/
16 | repo-source                    | Source Repository                                                                                     | No      | ----      | ----    | http://download.opensuse.org/source/distribution/leap/15.3/repo/oss/
17 | repo-update                    | Main Update Repository                                                                                | Yes     | (r ) Yes  | Yes     | http://download.opensuse.org/update/leap/15.3/oss/
18 | repo-update-non-oss            | Update Repository (Non-Oss)                                                                           | Yes     | (r ) Yes  | Yes     | http://download.opensuse.org/update/leap/15.3/non-oss/
19 | science                        | science                                                                                               | Yes     | (r ) Yes  | No      | https://download.opensuse.org/repositories/science/openSUSE_Leap_15.3/
```

Now you will see the same list for the files we saw above this.

Upgrades need to be done right, when it is time to upgrade first test to make sure it is available:

```
sudo zypper --releasever=15.4 lr -u
```

If running the above looks the same as 15.3 this means there is no update 15.4 available, otherwise you would be seeing that version number in the output of the above.

If there was you would upgrade doing this:

```
sudo zypper --releasever=15.4 ref
sudo sed -i 's/15.3/${releasever}/g' /etc/zypp/repos.d/*.repo
```

Then you need to log out of the GUI, and hit Alt-Ctrl-F6, F2 → F6 will work, this will take you to a "Black-Box", now log in and type this:

```
sudo systemctl set-default multi-user.target
```

and

```
sudo zypper --releasever=15.4 dist-upgrade -y --download-in-advance
sudo zypper --releasever=15.4 dist-upgrade -y
sudo zypper refresh
sudo zypper patch -y
sudo zypper update -y && sudo zypper dist-upgrade -y
sudo zypper clean -a
```

Then reboot

```
sudo reboot
```

If all went right you should now be upgraded, read this before doing this: https://en.opensuse.org/SDB:System_upgrade.

This is why Tumbleweed is nice, you never have to upgrade, but when things break, you have to know how to fix them, and why Leap is nice, things do not break as much.

When things breaks the best thing to do is have a plan, and the first plan we will call plan A, this always involves Alt-Ctl-F6 and the following:

```
sudo zypper refresh && sudo zypper patch -y && sudo zypper update -y && sudo zypper dist-upgrade -y
sudo zypper clean -a
sudo reboot
```

If plan A does not fix it, we need to do Alt-Ctl-F6 and this time run:

```
sudo dmesg > dmesg.log
sudo journalctl -xe > journalctl.log
```

This plan involves gathering logs and looking at them for problems.

You can run this command after an update to see if you need to reboot:

```
zypper needs-rebooting
```

There are a lot of resources to get Help if you have issues, there is a Cheat Sheet for Zypper:

https://scadahacker.com/library/Documents/Cheat_Sheets/Linux%20-%20OpenSUSE%20-%20Zypper.pdf

Forum for OpenSuse
https://forums.opensuse.org/

To register go here:
https://idp-portal.suse.com/univention/self-service/#page=createaccount

Then you can go to any forum that is close to what you are having issues with:
https://forums.opensuse.org/forumdisplay.php/667-Get-Technical-Help-Here

Windows Users Guide to Linux

Microsoft Office is replaced with Libre-Office Suit, you have Writer, that is what I am using to write this document.
https://www.libreoffice.org/

Email clients include the default Kmail, Kontact, and KOrganizer

Kmail
https://apps.kde.org/kmail2/
https://www.kmail.org/

Kontact
https://kontact.kde.org/

KAddressBook
https://kontact.kde.org/components/kaddressbook.html

KOrganizer
https://kontact.kde.org/components/korganizer.html

and Akregator an RSS feed

https://kontact.kde.org/components/akregator.html

Thunderbird is an alternative Email client

https://www.thunderbird.net/en-US/

WINE
Windows Integration Not Emulation

https://software.opensuse.org/package/wine

wine

An MS Windows (Not) Emulator

Wine is a compatibility layer capable of running Windows applications. Instead of simulating internal Windows logic like a virtual machine or emulator, Wine translates Windows API calls into POSIX calls on-the-fly, eliminating the performance and memory penalties of other methods and allowing you to cleanly integrate Windows applications into your desktop. You can run your Windows executables with it and write your Windows programs under Linux and link against the WINE libraries. It is not necessary to have a Windows installation to run WINE.

https://wiki.winehq.org/OpenSUSE

Forums:

OpenSuse

http://forums.opensuse.org

KDE

http://forum.kde.org/

LibreOffice

http://libreofficeforum.org/

Documentation

http://doc.opensuse.org/

Wiki

http://en.opensuse.org/Portal:Documentation

Search

http://search.opensuse.org

Hardware

http://en.opensuse.org/Portal:Hardware

http://www.linux-laptop.net/ (Laptops)
http://www.linlap.com/ (Laptops)
http://thinkwiki.org/wiki/ThinkWiki (IBM/Lenovo Thinkpads)
http://bugtrack.alsa-project.org/main/index.php/Matrix:Main (Sound cards)
http://www.linuxfoundation.org/collaborate/workgroups/openprinting/database/databaseintro (Printers)
http://www.sane-project.org/sane-supported-devices.html (Scanners)
http://wireless.kernel.org/en/users/Devices (Wireless devices)
http://linux-wless.passys.nl/ (Wireless devices)
http://linuxtv.org/ (TV cards)
http://www.linux-usb.org/ (USB devices)
http://www.linux1394.org/hcl.php (FireWire)
http://mxhaard.free.fr/spca5xx.html (Webcams)
http://www.ideasonboard.org/uvc/#devices (Webcams)
https://h-node.org/ (General hardware working with free software)

GNU

http://tldp.org/
http://en.flossmanuals.net
http://www.freetechbooks.com/

Games

http://www.tuxgames.com/
http://www.penguspy.com/
http://www.lgdb.org/
http://www.linuxgamingworld.com/

News

http://news.opensuse.org
http://planet.opensuse.org

Shop

http://shop.opensuse.org/

Wiki

http://en.opensuse.org/openSUSE:Wiki_team

You'll find the roadmap here:
http://en.opensuse.org/Roadmap

Get the latest development version here:
http://software.opensuse.org/developer

Read this before reporting bugs:
http://en.opensuse.org/openSUSE:Submitting_bug_reports

You can request new features for openSUSE here, or vote for (or against) existing requests:
http://features.opensuse.org

There's also an organized testing team which you can join, see:
http://en.opensuse.org/openSUSE:Testing

Configuration

Configuration Files

/etc/fstab	The file system table, file systems/partitions mounted during boot.
/etc/sysconfig/yast2	Configuration for YaST.
/etc/zypp/zypp.conf	Configuration for the software management.
/etc/samba/smb.conf	Samba configuration ("Windows Network")
/etc/HOSTNAME	The hostname for the machine.
/etc/X11/xorg.conf.d/	X-server configuration files. By default autodetection is used, edit these files if you must configure the X-server.
/etc/sysconfig/kernel	The kernel. For example loading extra modules during boot.
/etc/modprobe.d/50-blacklist.conf	Blacklisting kernel modules.

Logs

/var/log/Xorg.0.log	Log for the X-server.
/home/*username*/.xsession-errors	Useful for troubleshooting applications ran as normal user.
/var/log/YaST2/	Log files for various YaST modules and components.

Using Linux

Once you figure out how to install software, you will find more things to do in Linux, so get used to using Yast and Zypper. To get to know Linux you need to install it on a few machines, and you might want to run Tumbleweed as a secondary hard drive so you can find out about it more.

For the internet I would recommend Firefox, and I would recommend using Fire Sync, I would recommend using your Gmail DriveSpace to store files, and have all the scripts you need on a USB.

You want the OS to boot from an SSD drive, but you want to have home on a separate hard drive, normally a larger SATA, maybe a RAID 1, I have one set up now with two 2 TB Green Western Digital 7200 RPM hard drives, if you want to have Virtual Machines using either KVM or Xen, you will also want to have var on a separate hard drive, this will make it easier to change OS.

You should get used to using Snapshots from the Yast Filesystem Snapshot menu, this will make backups of your system before you try to install or even update your system, in case it goes wrong you can roll back the changes.

No real need for Antivirus or Malware applications, that is mostly just a Windows thing.

Checkout Yast Settings, it is how you configure OpenSuse.

If Dolphin single click is not what you want, go to Settings → Workspace → Behavior, and change it from single to double click to open files and folders.

You can also set Windows Effects, I like the exploding windows on Close.

This Wizards Guide to OpenSuse is an on going document.

Written by Jeffrey Scott Flesher, the Light Wizzard in the Flesh.