

# The i3 Tiling Window Manager

Experiences of a new user

## Window Managers vs. Desktop Managers

**Window managers control the placement of windows on a desktop**

- it places windows on a 2D surface
- doesn't include status bar, top bar, menus to start programs

### Desktop managers

Include

- window manager
- status bar
- top bar with shortcuts, clock, volume controls, network manager

Important: it's possible to replace just the window manager

## Tiling Features in Windows / Ubuntu Mate / KDE

**Most desktops have minimal tiling features**

- full screen
- drag window to left/right edge → Resize to half screen
- drag window to corners → Resize to quarter of screen

**Very Limited**

- most force you to use the mouse
- can't easily rearrange placement

## Linux Tiling Window Managers

**There are lots to choose from**

- AWM - Awesome Window Manager
- i3
- Rat Poison
- Xmonad
- Sway - similar to i3, includes support for Wayland

## i3wm

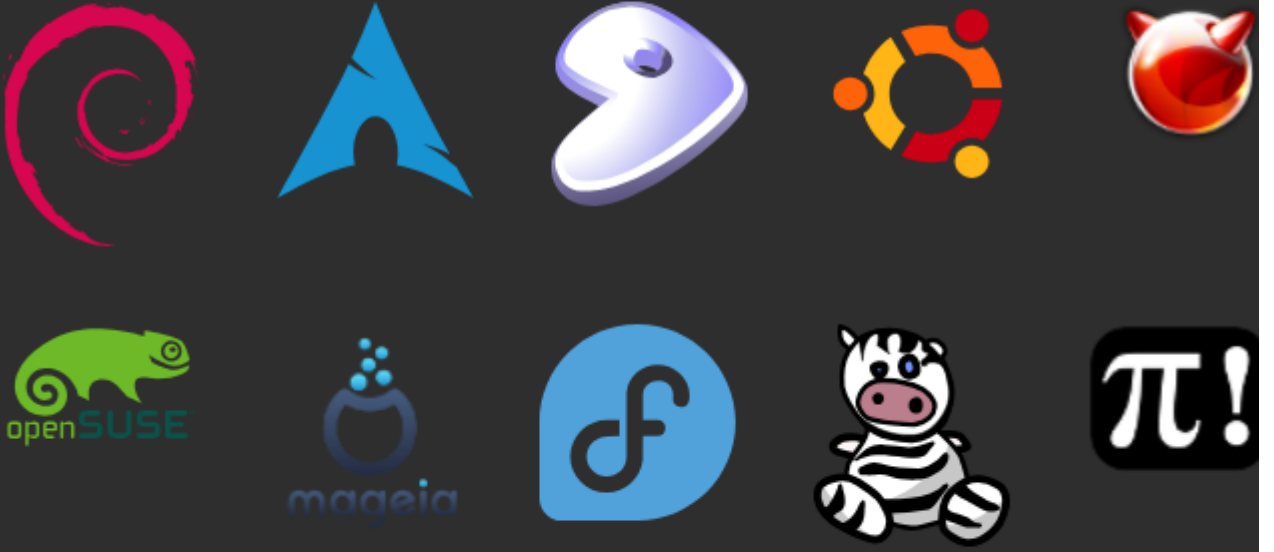
- widely supported
- easily configured via text file
- can restart without logging out
- can be controlled using keyboard

## Installing i3

It's available for all major distributions

### Distributions

Please use the i3 packages provided by the distribution you are using. i3 is available for the following systems/distributions:



We also provide [Debian and Ubuntu repositories](#) with up-to-date packages.

## Default commands & Reference Card

<https://i3wm.org/docs/refcard.html>



## i3 Reference Card

<http://i3wm.org/docs/userguide.html>

Throughout this guide, the i3 logo will be used to refer to the configured modifier. This is the **Alt** key (Mod1) by default, with **⌘** (Mod4) being a popular alternative.

### Basics

+ <b>Enter</b>	open new terminal
+ <b>j</b>	focus left
+ <b>k</b>	focus down
+ <b>l</b>	focus up
+ <b>;</b>	focus right
+ <b>a</b>	focus parent
+ <b>Space</b>	toggle focus mode

### Moving windows

+ <b>Shift</b> + <b>j</b>	move window left
+ <b>Shift</b> + <b>k</b>	move window down
+ <b>Shift</b> + <b>l</b>	move window up
+ <b>Shift</b> + <b>;</b>	move window right

### Modifying windows

+ <b>f</b>
+ <b>v</b>
+ <b>h</b>
+ <b>r</b>

Look at the “Resizing cor the user guide.

### Changing the cont

+ <b>e</b>
+ <b>s</b>
+ <b>w</b>

### Floating

+ <b>Shift</b> + <b>Spa</b>
+ <b>Left click</b>

### Using workspaces

+ 0 - 9	sw
+ Shift +	
0 - 9	

## The Mod4 (Super/Windows) Key

It's the key with Flag on it beside the ALT key

### Why use the Super/Windows key?

- need a way to send commands to i3 without using Ctrl or Alt
- apart from some games, that key is largely unused

## A trap for new players

- I've had the Super/Windows key stop working :-(
- diagnostics from `xev` showed no keyboard output
- AAARGH - turns out there's a button on my keyboard to disable/enable the Super/Windows key!

## The basics - creating windows & moving them

Start a program – it'll be tiled

```
$mod + enter --> starts a terminal
```

Can change the split to Horizontal (side-by-side) or Vertical

### Changing which window has focus

```
$mod + arrow keys (or jkl;)
```

### Rearranging windows

```
$mod + Shift +arrows
```

OR

```
$mod + *Drag-Window-Header*
```

### Window Layout: Tiled, Stacked or Tabbed?

## The auto-created config file

**i3 config file: it's created at `~/.config/i3/config`**

```
# This file has been auto-generated by i3-config-wizard(1).
# It will not be overwritten, so edit it as you like.
#
# Should you change your keyboard layout some time, delete
# this file and re-run i3-config-wizard(1).
#
# i3 config file (v4)
# Please see https://i3wm.org/docs/userguide.html for a complete reference

*Use Windows key as prefix:
*set $mod Mod4*           # Alt key is Mod1
```

```

# Font for window titles.
font pango:monospace 10

# The combination of xss-lock, nm-applet and pactl is a popular choice, so
# they are included here as an example. Modify as you see fit.
#
# xss-lock grabs a logind suspend inhibit lock and will use i3lock to lock
# screen before suspend. Use logindctl lock-session to lock your screen.
exec --no-startup-id xss-lock --transfer-sleep-lock -- i3lock --no fork

*# NetworkManager - manage wireless networks on Linux,*
exec --no-startup-id nm-applet

*# Use pactl to adjust volume in PulseAudio.*
set $refresh_i3status killall -SIGUSR1 i3status

bindsym XF86AudioRaiseVolume exec --no-startup-id pactl set-sink-volume @F
bindsym XF86AudioLowerVolume exec --no-startup-id pactl set-sink-volume @F

*# Use Mouse+$mod to drag floating windows*
floating_modifier $mod

*# Move tiling windows via drag & drop on the title bar*
# or left-clicking anywhere into the window while holding the floating modifier
tiling_drag modifier titlebar

*# Start a terminal*
bindsym $mod+Return exec i3-sensible-terminal

*# Kill focused window*
bindsym $mod+q kill

*# Program Launcher*
# start dmenu (a program launcher)
# bindsym $mod+d exec --no-startup-id dmenu_run

# A more modern dmenu replacement is rofi:
# bindcode $mod+40 exec "rofi -modi drun,run -show drun"

*# My version of rofi - with icons*
bindsym $mod+d exec --no-startup-id ~/bin/rofi-gm

# There also is i3-dmenu-desktop which only displays applications
# that have a .desktop file.
# It is a wrapper around dmenu, so you need that installed.
# bindcode $mod+40 exec --no-startup-id i3-dmenu-desktop

*# Change focus*
bindsym $mod+j focus left
bindsym $mod+k focus down
bindsym $mod+l focus up
bindsym $mod+semicolon focus right

# alternatively, you can use the cursor keys:
bindsym $mod+Left focus left
bindsym $mod+Down focus down

```

```
bindsym $mod+Up focus up
bindsym $mod+Right focus right

*# Move focused window*
bindsym $mod+Shift+j move left
bindsym $mod+Shift+k move down
bindsym $mod+Shift+l move up
bindsym $mod+Shift+semicolon move right

# alternatively, you can use the cursor keys:
bindsym $mod+Shift+Left move left
bindsym $mod+Shift+Down move down
bindsym $mod+Shift+Up move up
bindsym $mod+Shift+Right move right

*# Split in horizontal orientation*
bindsym $mod+h split h

*# Split in vertical orientation*
bindsym $mod+v split v

*# Fullscreen mode for the focused container*
bindsym $mod+f fullscreen toggle

*# Change container layout (stacked, tabbed, toggle split)*
bindsym $mod+s layout stacking
bindsym $mod+w layout tabbed
bindsym $mod+e layout toggle split

*# Toggle between tiling & floating*
bindsym $mod+Shift+space floating toggle

# Change focus between tiling / floating windows
bindsym $mod+space focus mode_toggle

# Define names for default workspaces for which we configure key bindings
# Use variables to avoid repeating the names in multiple places.
set $ws1 "1"
set $ws2 "2"

*# Switch to workspace N*
bindsym $mod+1 workspace number $ws1
bindsym $mod+2 workspace number $ws2

*# Move focused container to workspace N*
bindsym $mod+Shift+1 move container to workspace number $ws1
bindsym $mod+Shift+2 move container to workspace number $ws2

*# Reload the configuration file*
bindsym $mod+Shift+c reload

*# restart i3 inplace* (preserves your layout/session, can be used to upgrade)
bindsym $mod+Shift+r restart

# exit i3 (logs you out of your X session)
bindsym $mod+Shift+e exec "i3-nagbar -t warning -m 'You pressed the exit s"
```

```
# resize window (you can also use the mouse for that)
mode "resize" {
    # These bindings trigger as soon as you enter the resize mode

    # Pressing left will shrink the window's width.
    # Pressing right will grow the window's width.
    # Pressing up will shrink the window's height.
    # Pressing down will grow the window's height.

    bindsym j resize shrink width 10 px or 10 ppt
    bindsym k resize grow height 10 px or 10 ppt
    bindsym l resize shrink height 10 px or 10 ppt
    bindsym semicolon resize grow width 10 px or 10 ppt

    # same bindings, but for the arrow keys
    bindsym Left resize shrink width 10 px or 10 ppt
    bindsym Down resize grow height 10 px or 10 ppt
    bindsym Up resize shrink height 10 px or 10 ppt
    bindsym Right resize grow width 10 px or 10 ppt

    # back to normal: Enter or Escape or $mod+r
    bindsym Return mode "default"
    bindsym Escape mode "default"
    bindsym $mod+r mode "default"
}
```

```
bindsym $mod+r mode "resize"
```

```
# ===== GM: MY ADDITIONS =====
```

# Class	Border	Backgr	Text	Indicator
client.focused	#BBFF00	#AA0000	#FFFFFF	#FF0000
client.unfocused_inactive	#0000AA	#0000AA	#FFFFFF	#FFFFFF
client.unfocused	#0000AA	#0000AA	#FFFFFF	#FFFFFF
client.background	#ffffff			

```
focus_follows_mouse no
```

```
# FLOATING WINDOWS - force pop-up and dialogs to float
for_window [window_role="pop-up"] floating enable
for_window [window_role="task_dialog"] floating enable
for_window [instance="openDialog"] floating enable
for_window [instance="findDialog"] floating enable
for_window [instance="saveDialog"] floating enable
```

```
# Firefox does client-side decorations
for_window [class="firefox_firefox"] border normal
```

```
# Or using a regex to match the class
# class="(?!i).*firefox.*" → case-insensitive ✓
```

```
new_window pixel 7
default_floating_border normal 10
```

```
# START A FILE BROWSER
# The /home/ is important - won't work without it
# from https://github.com/mate-desktop/caja/issues/1392
```

```
bindsym $mod+u exec caja --no-desktop /home/  
etc ...
```

## \$Mod+d - Program Launcher/Finder

### dmenu\_run

Filtering list of applications: Too minimal for my taste

```
dmenu_run
```

### rofi

#### NAME

rofi - A window switcher, application launcher, ssh dialog, dmenu replacement and more

#### DESCRIPTION

rofi is an X11 pop-up window switcher, run dialog, dmenu replacement, and more. It supports keyboard and mouse navigation, type to filter, tokenized search and more.

### Command in i3/config

```
bindcode $mod+40 exec --no-startup-id ~/bin/my-rofi
```

### Related bash script ~/bin/my-rofi

```
#!/bin/sh  
rofi -combi-modi window,drun,ssh -show combi -icon-theme "Papyrus" -sho
```

## Using scripts to scale floating windows according to screen size

### Default - Float/unfloat but fixed size!

```
bindsym $mod+x floating toggle
```

```
bindsym $mod+x floating toggle ; [floating] resize set 1200 1150 ; move position center
```

### Improved version - allow for differing screen resolutions



Toggle current Window between Tiled and Floating - but calc 95% height

```
# Delegate Float to the i3-floating.. script so can set to 95% for different screens
bindsym $mod+t exec --no-startup-id "~/bin/i3-floating-to-95pct-high.sh 0.6 0.9" mod+t
```

```
bindsym $mod+Shift+t exec --no-startup-id "~/bin/i3-floating-to-95pct-high.sh 0.9 0.9"
mod+T
```

## **~/bin/i3-floating-to-95pct-high.sh WIDTH HEIGHT**

It finds display resolution, rescales and sends messages to i3

```
#!/bin/bash
read W H <<< $(xrandr | grep '*' | awk '{print $1}' | sed 's/x/ /') #
winWidth=$(echo "$W * $1" | bc | cut -d'.' -f1) #
winHeight=$(echo "$H * $2" | bc | cut -d'.' -f1)

i3-msg "floating toggle" #
i3-msg "resize set $winWidth $winHeight"
i3-msg "move position center"
```

## **Force selected windows/programs to float**

Some window should always float: e.g. pop-ups and dialog boxes

```
# FLOATING WINDOWS - force pop-up and dialogs to float
for_window [window_role="pop-up"] floating enable

for_window [window_role="task_dialog"] floating enable

for_window [instance="openDialog"] floating enable

for_window [instance="findDialog"] floating enable

for_window [instance="saveDialog"] floating enable
```

## **On-the-fly config-update/restart**

**# Reload the configuration file**

```
bindsym $mod+Shift+c reload
```

**# Restart i3 inplace (preserves your layout/session, can be used to upgrade i3)**

```
bindsym $mod+Shift+r restart
```

**Edit config file**

```
bindsym $mod+c exec emacs -r ~/.config/i3/config
```

## Expanded shutdown options - MINIMAL USER FEEDBACK

from <https://thevaluable.dev/i3-config-mouseless/>

```
set $mode_system System (l) lock, (e) logout, (s) suspend, (h) hibernate,
set $i3lockwall i3lock

mode "$mode_system" {
    bindsym l exec --no-startup-id $i3lockwall, mode "default"


    bindsym e exec --no-startup-id i3-msg exit, mode "default"
    bindsym s exec --no-startup-id $i3lockwall && systemctl suspend, mode
    bindsym h exec --no-startup-id $i3lockwall && systemctl hibernate, mode
    bindsym r exec --no-startup-id systemctl reboot, mode "default"
    bindsym Ctrl+s exec --no-startup-id systemctl poweroff -i, mode "default"

    # back to normal: Enter or Escape
    bindsym Return mode "default"
    bindsym Escape mode "default"
}

bindsym $mod+BackSpace mode "$mode_system"
```

## Configuring specific windows/programs

```
# Firefox does client-side decorations
for_window [class="firefox_firefox"] border normal
```

```
# Or using a regex to match the class
# class="(?!i).*firefox.*" → case-insensitive 
```

### Use `xprop` to find window/dialog *class* or *instance* name

Start `xprop` and then click on the target window/dialog box.

The window's class, role and instance names will be displayed.

## Forcing Windows to have a coloured border

```
new_window pixel 7
default_floating_border normal 10
```

```
## Class          Border  Backgr  Text   Indicator ChildBord
client.focused    #AA0000 #AA0000 #FFFFFF #FF0000   #FF0000
```

```
client.unfocused          #333333 #222222 #888888 #292d2e  #222222
client.unfocused_inactive #0000AA #0000AA #FFFFFF #FFFFFF
```

## Some programs try to take over the desktop ...

### Here's how to *Caja* - Ubuntu Mate's File Browser

```
# from https://github.com/mate-desktop/caja/issues/1392
# The /home/ is important - won't work without it

: bindsym $mod+u exec caja --no-desktop /home/
```

## Scratchpads

### Scratchpads are hidden floating windows

- useful for keeping a terminal or calculator handy

#### # Make the currently focused window a scratchpad

```
bindsym $mod+Shift+minus move scratchpad
```

**bindsym \$mod+Shift+y exec st -n scratch -e mate-terminal**

#### # Show the first scratchpad window

```
bindsym $mod+minus scratchpad show
```

## Integrating Mate and i3

Lots of advantages to keeping top bar controls & status bar

Here's how to replace Marco with i3:

- <https://www.mattgreer.dev/blog/mate-and-i3/>

## Submenus: the *mode* command

Sometimes it's handy to swap into another mode and reuse shortcut keys:

e.g. Make the arrow keys do something other than swap windows ...

**Usual Arrow-key bindings:**

```
bindsym $mod+Left focus left
bindsym $mod+Down focus down
bindsym $mod+Up focus up
bindsym $mod+Right focus right
```

## Temporarily rebind arrow-keys to Resize windows

```
# resize window (you can also use the mouse for that)

mode "resize" {
    # =These bindings trigger as soon as you enter the resize mode=
    # same bindings, but for the arrow keys
    bindsym *Left*  resize shrink width 10 px or 10 ppt    # *Shrink Wi
    bindsym *Right* resize grow width 10 px or 10 ppt      # *Increase
    bindsym *Up*    resize shrink height 10 px or 10 ppt   # *Shrink he
    bindsym *Down*  resize grow height 10 px or 10 ppt     # *Increase

    # *Back to normal: Enter or Escape or $mod+r*
    bindsym *Return* mode "default"
    bindsym *Escape* mode "default"
    bindsym *$mod+r* mode "default"
}

bindsym $mod+r mode "resize"
```

## Rebalancing a tiled workspace

There's no command to do this in i3

An external Python script can be used

- <https://github.com/atreyasha/i3-balance-workspace>

Install i3\_balance\_workspace using pipx

Add this to ~/.config/i3/config

```
# -----
# Balance Window layout using the Python program "i3_balance_workspace"
# installed using: pipx install i3_balance_workspace
# Home on github https://github.com/atreyasha/i3-balance-workspace

bindsym $mod+Shift+b exec --no-startup-id ~/.local/bin/i3_balance_workspa
# -----
```

## Downsides

Not many, especially when combined with Mate

still using it on my desktop, not sure about laptop

Wildly alien desktop for "normies"

## Nice Tweaks

i3-gaps

i3-msg

i3-bar

i3-gaps

## Workspaces can have names

Can always launch some program on a specific desktops

- web browser
- music player
- email ...

## Things to watch out for ...

Inadvertently invoking the Resize Mode

Once in resize mode, most the keystrokes have no effect

- it appears that the desktop is unresponsive
- the only visible change is the "Resize" on the LHS of the tab-bar - it's easy to miss
- Pressing ESC or Return exits resize mode and all works again

## Useful resources

Home site: <https://i3wm.org>

YouTube Tutorial videos: <https://i3wm.org/screenshots/>

Rebalance Tiled Windows: <https://github.com/atreyasha/i3-balance-workspace>

Configuring the i3 Window Manager: a Complete Guide:

- <https://thevaluable.dev/i3-config-mouseless>

Author: Giovanni Moretti

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[Validate](#)