

Customization

All there is about customizing MID

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POST installation / Companion Applications

Note: Commands and package names are from a CentOS 7.7+ Distribution. Translate to your fav. Linux Distribution

Screen Saver : classic xscreensaver

```
$ su
yum install xscreensaver xscreensaver-base xscreensaver-extras xscreensaver-extras-base
xscreensaver-glx-base xscreensaver-glx-extras
exit
$
```

Sound Audio Mixer : Pulse Audio Control

```
$ su
yum install avucontrol
exit
$
```

Web Browser : firefox or google-chrome

(firefox is already installed and it's a personal preference really!)

```
$ su
yum install google-chrome-stable
exit
$
```

Image Editor : gimp

```
$ su
yum install gimp
exit
```

```
$
```

Office Suite (Text, spreadsheet, etc) : libreoffice

```
$ su
yum install libreoffice
exit
$
```

PDF Viewer : xpdf or evince

```
$ su
yum install xpdf
exit
$
```

Multi-Media (audio, video, etc) : vlc

```
$ su
yum install vlc vlc-extras
exit
$
```

SGI Open Inventor

```
$ su
yum install Inventor Inventor-data Inventor-examples Inventor-Xt
exit
$
```

Blender (download from blender.org is always recommended)

```
$ su
yum install blender blender-fonts
exit
$
```

Vector Image Editor : inkscape

```
$ su
yum install inkscape
```

```
exit  
$
```

Useful X11 Apps : <must have really>

```
$ su  
yum install xorg-x11-apps  
exit  
$
```

X11 Development Apps : <must have really for MaXX Dev.

```
$ su  
yum groupinstall "X Software Development"  
exit  
$
```

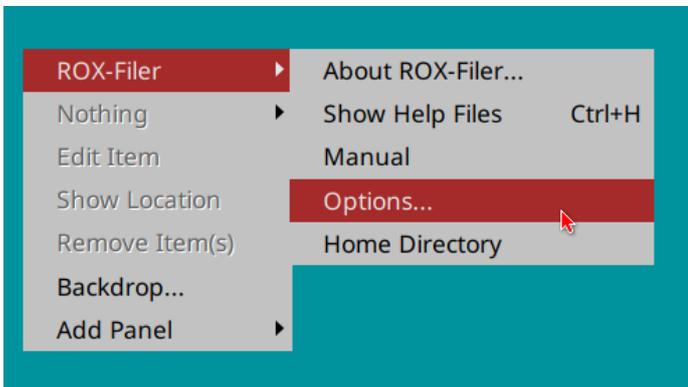
Desktop Background Color

Change the Desktop background color

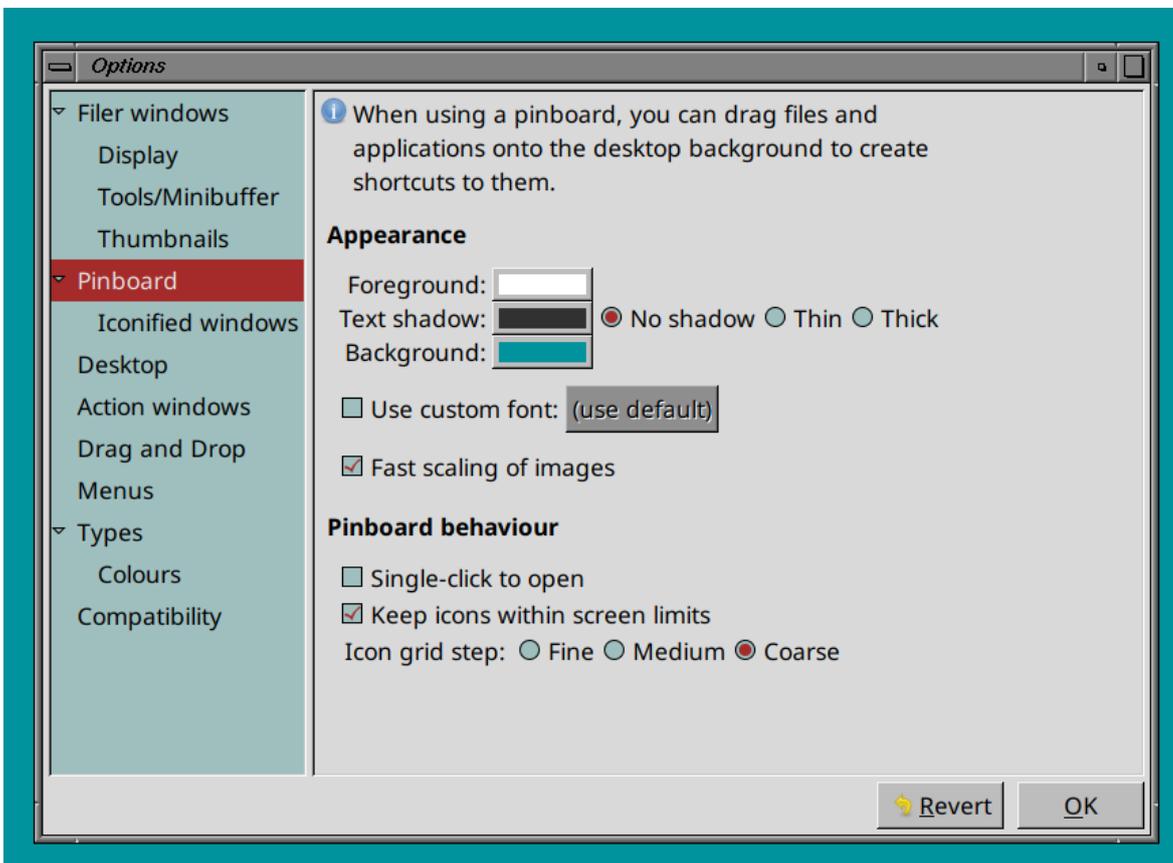
Temporary solution until IRIX fm is implemented in MaXX Desktop

To change the color used for your backgrounds:

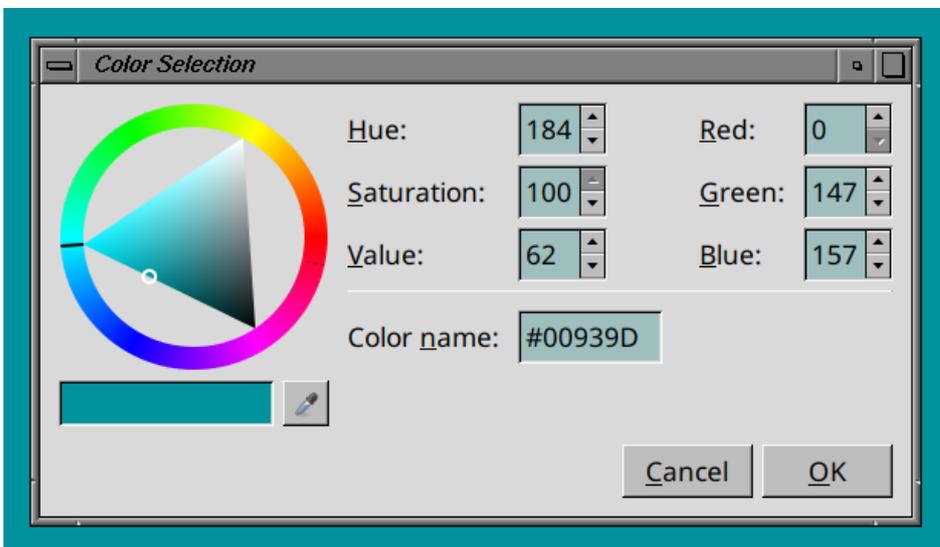
1. Move your mouse cursor over an unoccupied area of your Desktop (free of icons), and Right Click to open the desktop's popup menu and then select **ROX-Filer** and then **Options...**



2. Select **Pinboard** from the left navigation menu panel.



3. Click on Background **color chooser button** and make a selection. Press OK when finish.



4. Press **OK** button to confirm your new selection.

If a background image is selected for your Desktop, the background color wont show. You must clear the Background image. Follow this [guide](#) .

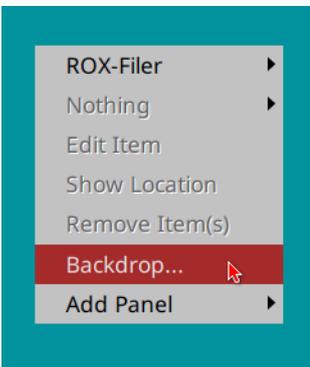
Desktop Background Image

Change the Desktop background image

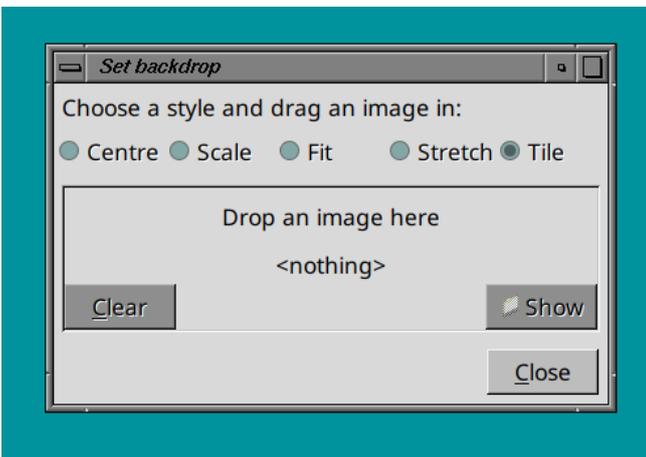
Temporary solution until IRIX fm is implemented in MaXX Desktop

To change the image used for your backgrounds:

1. Move your mouse cursor over an unoccupied area of your Desktop (free of icons), and Right Click to open the desktop's popup menu and then select **Backdrop...**



2. The **Set backdrop** Window should appear momentarily.

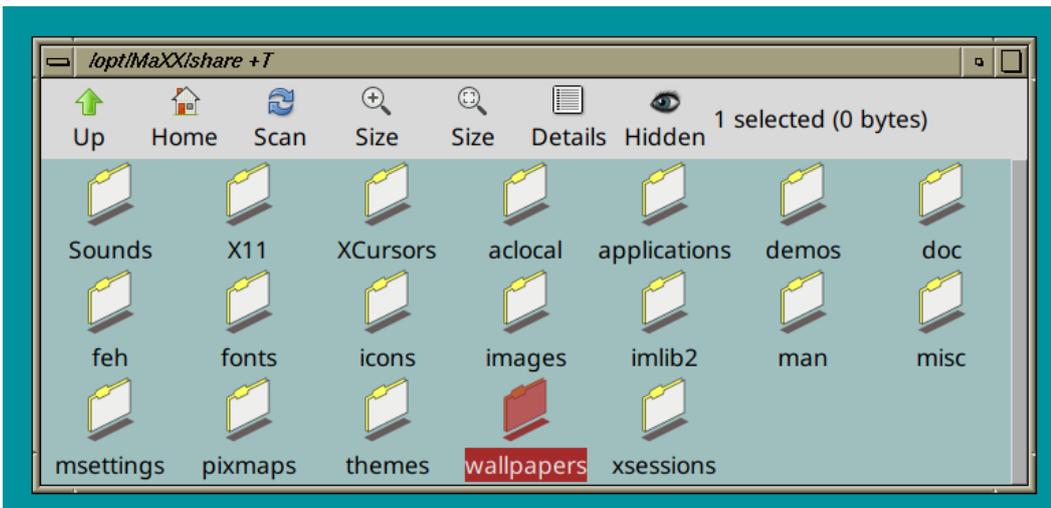
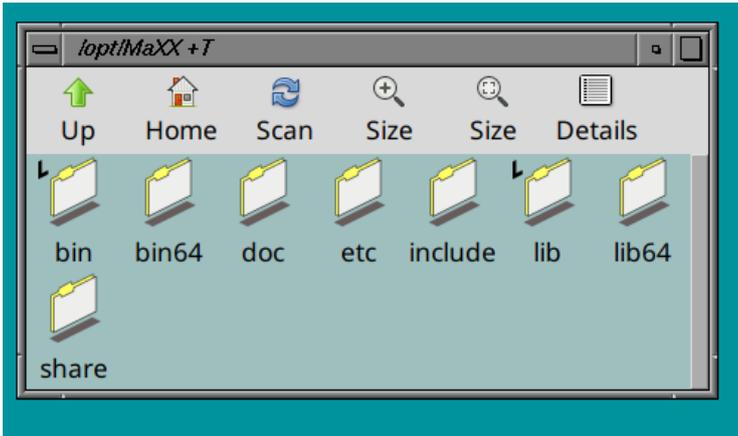


3. There are many ways to select an image for your background:

- If an image is currently selected, click on **Show button** to reveal its location in a File Manager window. From there you can navigate and select a new one.
- Navigate to the image's location using the File Manager. You can open a new File Manager window with the **META+h**

key shortcut.

- Use the MaXX Desktop icon folder located on the right edge of your screen to open a File Manager window and navigate to MaXX's wallpapers location.



4. Select the image file and drag it back to the Drop an image here area of the Set backdrop window we opened previously.



5. Chose the layout style for the image and press the Close button to complete.

Choose a style and drag an image in:

Centre Scale Fit Stretch Tile

Schemes and Themes

First, let's look at how MaXX Desktop is managing both GTK+ Themes for GNOME applications and SGI Schemes for X11/Motif applications.

- MaXX Desktop is managing both the SGI Scheme and GTK+ theme for you. Meaning, when you make a selection via the `scheme_selector`, MaXX Desktop changes both X11/Motif and GTK+ configurations for you.
- MaXX Desktop is using the original SGI Scheme files found on IRIX. We added a few too.
- The SGI Scheme files are located in : **`/opt/MaXX/share/X11/schemes`** and are read only.
- The SGI Scheme files are under the SGI Special License Agreement. Contact us prior to redistribute them.
- There is one Scheme per entry in the schemes directory. For example : the **IndigoMagic** scheme correspond to **`/opt/MaXX/share/X11/schemes/IndigoMagic`**
- A SGI Scheme is composed of X11-Resources files and include rules that defines preset values like color, sizes and fonts for all X11/Motif Widgets and applications.
- When a X11/Motif application starts under MaXX Desktop, dynamically generated Scheme definition files gets injected into the Xt Core Widget. It's done deep inside our own version of `libXt` library and this way we do not miss a thing, it's clean and that's how SGI did it back then!
- Wish to know more, refer to the - IRIX Interactive Desktop - Integration Guide document in chapter 3 for more detail. MaXX Desktop does not yet implements all the functionality as describe in the SGI document.

MaXX Desktop Scheme

The current MaXX Desktop Scheme setting is store in the file **`$HOME/.maxxdesktop/MAXX_THEME`**

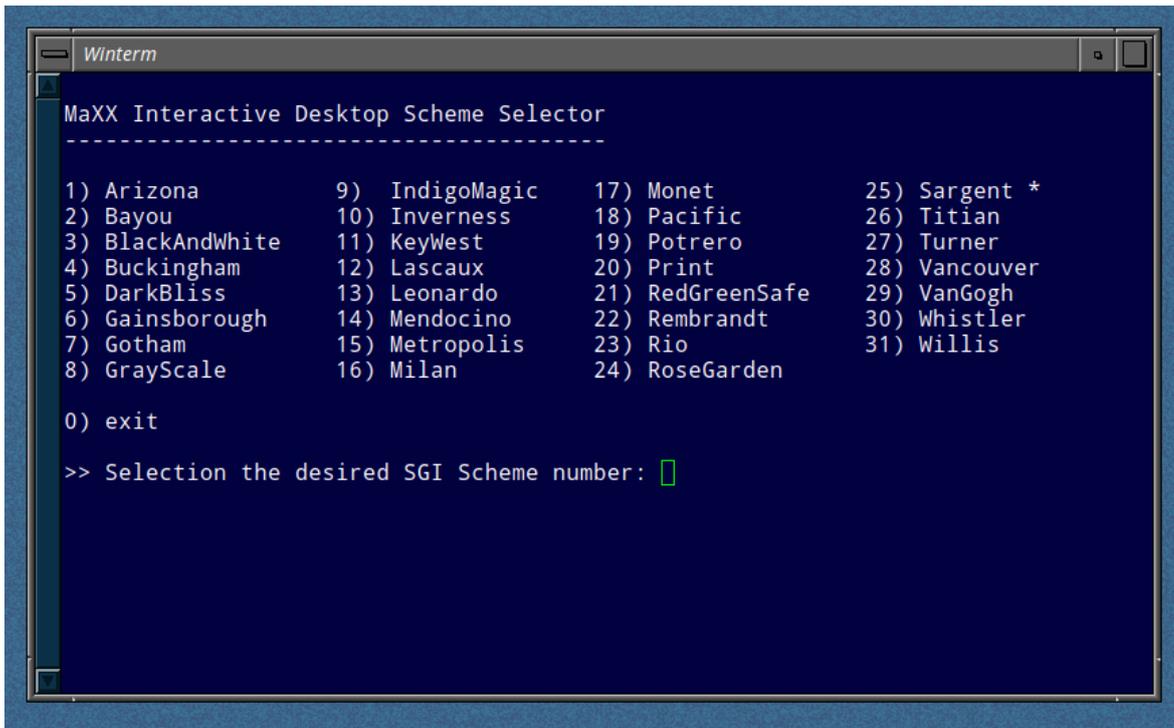
```
$ cat $HOME/.maxxdesktop/MAXX_THEME
IndigoMagic
```

This setting is and must be one word and one line. No special character.

We recommend to use the `scheme_selector.sh` instead of manually editing the file.

Change the Current Scheme

1. Open a Winterm session and type: `scheme_selector.sh` and press ENTER



2. Make your selection and voila! Both the desktop settings have been updated and window manager restarted with your new selection.

3. Older X11 applications are not aware of the change, therefor you needs to restart them if you wish to use the new Scheme.

Current supported SGI Schemes/Themes in MaXX Desktop v2.1

(Which is all of SGI Scheme found on IRIX 6.5.30 plus a few new customs)

| | | |
|---|--|--|
| <ul style="list-style-type: none">• Arizona• Bayou• BlackAndWhite• DarkBliss• Gainsborough• Gotham• IndigoMagic• Inverness• Lascaux• Leonardo• Metropolis | <ul style="list-style-type: none">• Milan• Pacific• Potrero• RedGreenSafe• Rembrandt• RoseGarden;• Sargent• VanGogh• Willis• Buckingham | <ul style="list-style-type: none">• GrayScale• KeyWest• Mendocino• Monet• Print• Rio• Titian• Turner• Vancouver• Whistler |
|---|--|--|

Improve Modern Look and Feel

“

You can customize even further the Modern look and feel by editing the Xdefaults.modern

Adding a modern flare to the widgets.

1. Open the Xdefaults.modern file in the text editor.

```
$ xedit $HOME/.maxxdestop/Xdefaults.d/Xdefaults.modern
```

2. Add the follow entries.

```
!! Modern Look and Feel Tweaks

*XmList.shadowThickness: 2

*XmFrame.shadowThickness: 1
*XmMenuShell*shadowThickness: 1

*XmScale.shadowThickness: 1

*XmText*shadowThickness: 2
*XmTextField*shadowThickness: 2

*XmScrollBar.shadowThickness: 2
*XmScrolledWindow.shadowThickness: 2
*XmScrolledWindow*XmScrollBar.shadowThickness: 2
*XmMainWindow.XmScrollBar.shadowThickness: 2

*XmPushButton.shadowThickness: 1
*XmPushButtonGadget.shadowThickness: 1
*XmPushButton.highlightThickness: 1
*XmPushButtonGadget.highlightThickness: 1

*XmPushButton.marginHeight: 6
```

```
*XmPushButton.marginWidth: 7
```

```
*XmPushButtonGadget.marginHeight: 6
```

3. Save and exit the editor

4. Update and restart the Desktop

```
$ update-desktop
```

```
$ tellwm fast_restart
```

Note: existing applications must restart in order to take into effect the changes.

Improve Font Rendering in Modern Look and Feel

This page will assist you improving the quality, clarity and crispiness of text rendering. This is a very important aspect of the user experience that is over looked and, when properly configured, can yield better results considering the fact that the Font Engine that is currently shipped with every Linux Distribution has some limitations.

Tip number one - Pixel Density

The first trick when it comes to improve text rendering is to increase the pixel density of your monitor by using the highest resolution possible. The more pixels per square/inch(DPI), the better chance you have at improving the text clarity. Apple did it and even made up a new technology called Retina Display®, which is basically ultra high resolution monitor for the same physical size. In the rest of the world, we call it HiDPI. It's more complex under the hood because UI components must now deal with variable font sizes and be able to adjust live the changes in pixel density.

What's my Real Pixel Density

Find out your native DPI by calculating it from this [website](#). Keep that DPI information close because it will be used to adjust your X Display Server and in a XFT hint further down below.

What's my Reported Pixel Density

Now let's find out how the X Server is configured. One reliable way to find out is to use the **xdpyinfo** command as demonstrated below. From the output below we can establish the monitor resolution, its reported sizes and dot per inch, aka DPI.

```
$ xdpinfo | grep -B 2 resolution
screen #0:
  dimensions:    3840x2160 pixels (1219x686 millimeters)
  resolution:    80x80 dots per inch
```

Adjust your X Server configuration

Editing your X Server configuration file is the simplest and most reliable way to adjust the desired DPI and to provide your monitor(s) true physical dimensions.

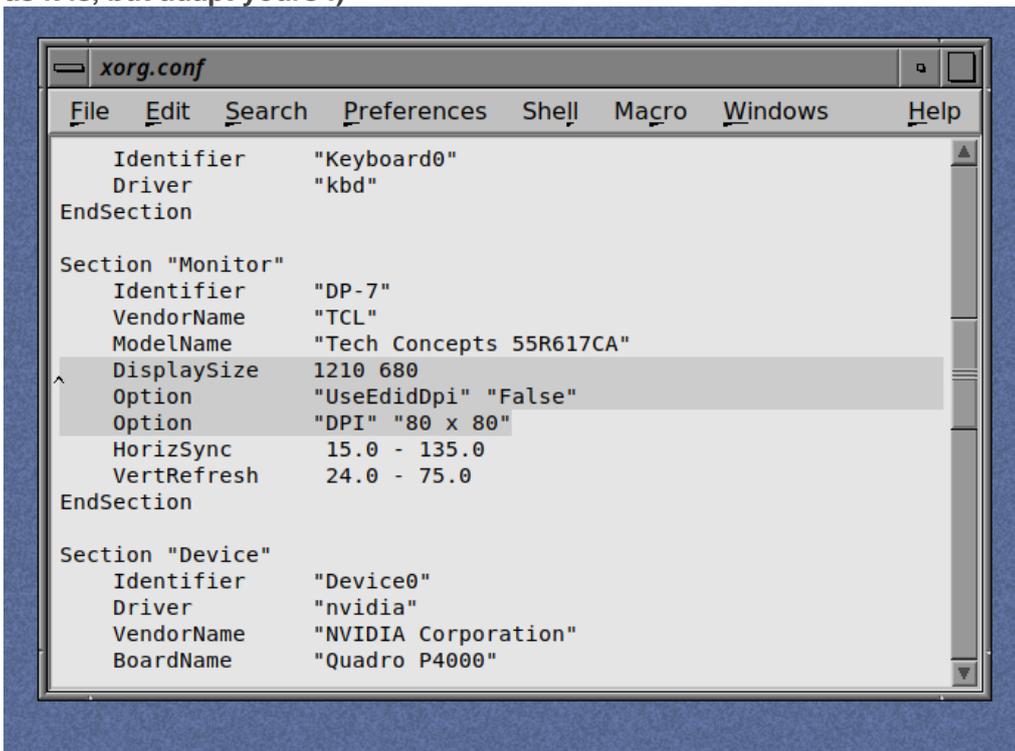
You will need superuser access level for this manipulation

This tutorial is not a **HOW-TO xorg.conf**. Google is your friend in case you need to learn about the xorg.conf file content.

The example below is for a Linux system configured with a single **xorg.conf** file located in **/etc/X11** directory.

```
$ cd /etc/X11
$ su - // or sudo -s depending on your Linux flavor
cp xorg.conf xorg.conf.1 // making a backup first
/opt/MaXX/bin/xnedit xorg.conf
exit
$
```

Below is the **Monitor Section** of a xorg.conf configuration for a **TCL 55" 4K HDR 60Hz Display**. Don't use as it is, but adapt yours :)



From the Monitor Section, in the first highlighted line we notice the **DisplaySize** attribute and values, they are the physical dimensions (in mm) of the viewable area. Not the monitor itself. Add this line into your Monitor Section.

Second line of interest, is the **Option** attribute with its values that instructs the X Server to not use the Monitor's EDID DPI, but rather the provided DPI values at the the line below. This line is optional but relevant in many scenario where the reported DPI is wrong of off by any margin.

Third line of interest, is the **Option** attribute that specify the monitor's DPI value to use. Add this line with your

previously calculated DPI values.

It is important to note that all those Monitor values are tied up to a Monitor Identifier and can be referred to later in a later configure section.

Save and Exit. The best way to apply your settings is to either restart the X Server or simple Restart the system.

To Revert Back to your previous Configuration

```
$ cd /etc/X11
$ su - // or sudo -s depending on your Linux flavor
cp xorg.conf xorg.conf.2 // making a backup of your second file
cp xorg.config.1 xorg.conf // restore original file
exit
```

Save and Exit. The best way to apply your settings is to either restart the X Server or simple Restart the system.

Tip number two - Tuning

By tuning up your Font Engine with custom hints, that are relevant to your reality (monitor hardware specs, its size and resolution), it can better render texts for you .

Test you current monitor

User the following monitor test [page](#) to see where your monitor fit and which hints works best for you. This site is a gold-mine of information as well...

Tuning Font Rendering Engine

To give you all the possible chances, let's adapt the default values of the MaXX Desktop XFT/FreeType specific configuration file *Xdefaults.xft* file found in your MaXX Desktop *\$HOME/.maxxdesktop/Xdefaults.d* configuration directory.

Open the configuration file with the TextEditor and adapt the configuration based on your need.

From a Winterm, run xnedit Text Editor. You can refer to our [Hints & Shortcuts](#) page for alternative ways

```
$ cd $HOME
$ cd .maxxdesktop/Xdefaults.d
$ xnedit Xdefaults.xft
```

Below are the optimal settings we recommend for running MaXX Desktop in Modern Look and Feel. Apply the

calculated **DPI** value and the optionally the **subpixel** mode found during your monitor testing (at the beginning of this guide).

```
...

!!! Font options - ~/.fonts.conf seems to override this

!! Resolution for Xft in dots per inch (e.g. 96 in my calculated DPI)
Xft.dpi:          96

!! Type of subpixel antialiasing (none, rgb, bgr, vrgb or vbgr)
Xft.rgba:        rgb

!! What degree of hinting to use (hintnone, hintslight, hintmedium, or hintfull)
Xft.hintstyle:   hintslight

!! Should always be left at false
Xft.autohint:    false

!! LCD Filtering to use (lcdnone lcddefault lcdlight lcdlegacy)
Xft.lcdfilter:   lcdnone

Xft.hinting:     true
Xft.antialias:   true
```

After you done with editing, save your changes, exit the TextEditor and run the commands below to update the desktop and restart the window manager with your new settings.

```
$ update-desktop
$ tellwm fast_restart
```

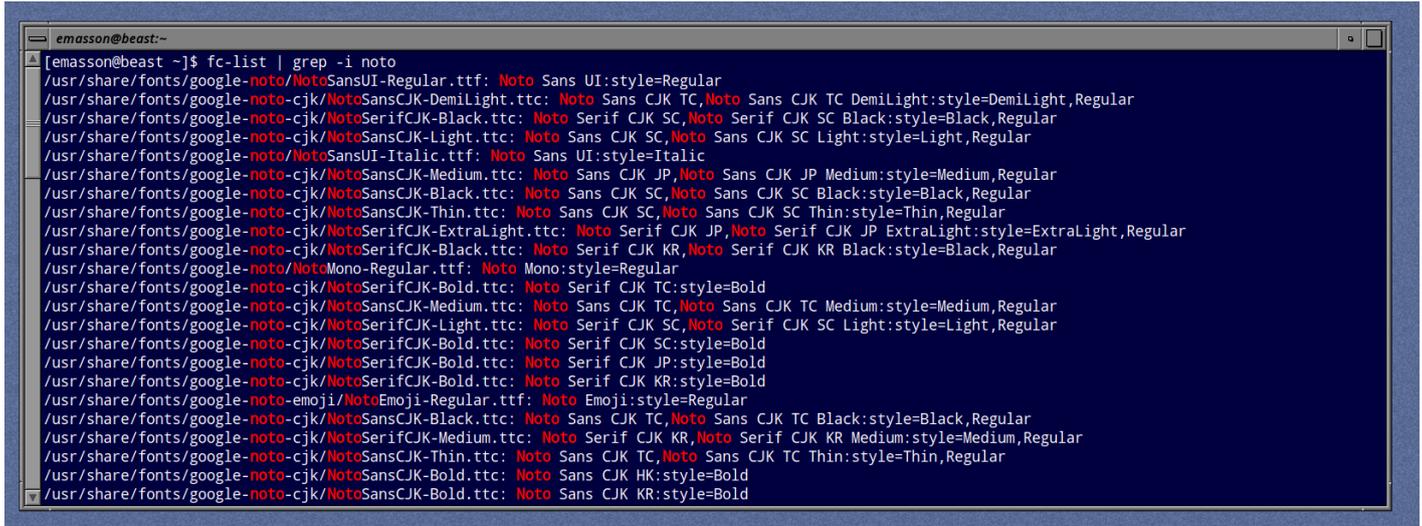
Tip number three - Install better Fonts

Make sure you have installed the Noto-Font packages as per our Guide's Prerequisites section

Refer to your Linux Distribution [Guide Prerequisites](#) for the exact package names and instruction. This step should already be done at the installation of MaXX Desktop v2.1+

Confirm that the Noto Fonts are installed

Open a Winterm from Toolchest, and type the fc-list command to query the system. You should see something similar to the picture below. If not, go back to previous step, do not claim 200\$ and install the fonts.



```
emasson@beast:~$ fc-list | grep -i noto
/usr/share/fonts/google-noto/NotoSansUI-Regular.ttf: Noto Sans UI:style=Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-DemiLight.ttf: Noto Sans CJK TC,Noto Sans CJK TC DemiLight:style=DemiLight,Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Black.ttf: Noto Serif CJK SC,Noto Serif CJK SC Black:style=Black,Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Light.ttf: Noto Sans CJK SC,Noto Sans CJK SC Light:style=Light,Regular
/usr/share/fonts/google-noto/NotoSansUI-Italic.ttf: Noto Sans UI:style=Italic
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Medium.ttf: Noto Sans CJK JP,Noto Sans CJK JP Medium:style=Medium,Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Black.ttf: Noto Sans CJK SC,Noto Sans CJK SC Black:style=Black,Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Thin.ttf: Noto Sans CJK SC,Noto Sans CJK SC Thin:style=Thin,Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-ExtraLight.ttf: Noto Serif CJK JP,Noto Serif CJK JP ExtraLight:style=ExtraLight,Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Black.ttf: Noto Serif CJK KR,Noto Serif CJK KR Black:style=Black,Regular
/usr/share/fonts/google-noto/NotoMono-Regular.ttf: Noto Mono:style=Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Bold.ttf: Noto Serif CJK TC:style=Bold
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Medium.ttf: Noto Sans CJK TC,Noto Sans CJK TC Medium:style=Medium,Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Light.ttf: Noto Serif CJK SC,Noto Serif CJK SC Light:style=Light,Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Bold.ttf: Noto Serif CJK SC:style=Bold
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Bold.ttf: Noto Serif CJK JP:style=Bold
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Bold.ttf: Noto Serif CJK KR:style=Bold
/usr/share/fonts/google-noto-emoji/NotoEmoji-Regular.ttf: Noto Emoji:style=Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Black.ttf: Noto Sans CJK TC,Noto Sans CJK TC Black:style=Black,Regular
/usr/share/fonts/google-noto-cjk/NotoSerifCJK-Medium.ttf: Noto Serif CJK KR,Noto Serif CJK KR Medium:style=Medium,Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Thin.ttf: Noto Sans CJK TC,Noto Sans CJK TC Thin:style=Thin,Regular
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Bold.ttf: Noto Sans CJK HK:style=Bold
/usr/share/fonts/google-noto-cjk/NotoSansCJK-Bold.ttf: Noto Sans CJK KR:style=Bold
```

Here's a quick reminder of what works well for various situations

| | | |
|---------------|-------------------------|---|
| Interface | Noto Sans UI Regular 10 | On Ubuntu 20.04 the font Noto Sans is to be used as a substitute |
| Documents | Noto Serif Regular 11 | |
| Monospace | Noto Mono Regular 13 | |
| Window Titles | Noto Sans UI Regular 11 | On Ubuntu 20.04 the font Noto Sans is to be used as a substitute |

Here is an excellent [guide](#) from someone very passionate about quality fonts. Highly recommended.

Improve the Modern Look and Feel Fonts

Edit the Xdefaults.modern file in the Text Editor.

```
$ xedit $HOME/.maxxdesktop/Xdefaults.d/Xdefaults.modern
```

Here are the changes we recommend for HD and above. You may change the font sizes to better match your resolution and monitor size. Those are ideal for a 4K (3820x2160) on a 37" or more monitor.

On Ubuntu 20.04 the font **Noto Sans** is to be used as a substitute

```
...
*windowTitleFont:      Noto Sans UI:style=Italic:weight=400:size=11
```

```
*feedbackFont:      Noto Sans UI: style=Italic: weight=400: size=10
*iconTitleFont:    Noto Sans UI: style=Regular: size=9

*renderTable:      xft
*xft*fontType:     FONT_IS_XFT
*xft*fontName:     Noto Sans UI Regular
*xft*fontSize:     12
```

After you done with editing, save your changes and run the commands below to update the desktop and restart the window manager.

```
$ update-desktop
$ tellwm fast_restart
```

Terminal Font Settings

Change the Winterm Font

File location : `$HOME/.maxxdesktop/TerminalFontName`

```
Noto Mono
```

Change the Winterm Font size

File location : `$HOME/.maxxdesktop/TerminalFontSize`

```
13
```

MaXX Compositor

XCompMng still relevant, if used for the right reasons

As of MaXX Interactive Desktop Indy v1.0, we ship a Composition Manager called XcompMgr. XcompMgr is our tweaked version of Keith Packard's Compositor with many contributors over the years. People are saying it's a bit old and they are right! However, it's simple, easy to maintain and it works just fine for what we need it to be.

The reasoning behind using XcompMgr is mainly to leverage server-side composition and window content caching. This reduce dramatically Expose events (redraws) that forces X11 windows to redraw themselves over and over when damaged. On a complex graphic application, well your machine is wasting valuable resources redrawing itself.

The drawback in that due to the nature of X11, there is a lot of back and forth to and from the XServer... However, if you have a decent system with a good GPU card, what the heck, go for drop shadows... And it still way less eye-candy *crap happening than on *others. The performance hit is marginal on fast hardware, reducing expose events by a BIG factor and it looks smashing (if you want to).

Try these two variations of XcompMgr on a winterm window:

- No shadow but super fast server-side composition with reduced Expose events (default)

```
$ XcompMgr -a
```

- For nice shadows and fewer Expose events (but less efficient from a X11 protocol point of view)

```
$ XcompMgr -C -f
```

Testing out To see how it works, just move any window over let say, gmemuage or gr_osview and you will understand... try without XcompMgr first, then with the two options.

There are lots of options, I invite you to try them... XcompMgr -h for help

```
$ XcompMgr v1.1.5 beta MaXX Desktop Edition
usage: XcompMgr [options]
Options
  -d display
    Specifies which display should be managed.
  -r radius
    Specifies the blur radius for client-side shadows. (default 12)
  -o opacity
```

Specifies the translucency for client-side shadows. (default .75)

-l left-offset

Specifies the left offset for client-side shadows. (default -15)

-t top-offset

Specifies the top offset for client-side shadows. (default -15)

-I fade-in-step

Specifies the opacity change between steps while fading in. (default 0.028)

-O fade-out-step

Specifies the opacity change between steps while fading out. (default 0.03)

-D fade-delta-time

Specifies the time between steps in a fade in milliseconds. (default 10)

-a

Use automatic server-side compositing. Faster, but no special effects.

-c

Draw client-side shadows with fuzzy edges.

-C

Avoid drawing shadows on dock/panel windows.

-f

Fade windows in/out when opening/closing.

-F

Fade windows during opacity changes.

-n

Normal client-side compositing with transparency support

-s

Draw server-side shadows with sharp edges.

-S

Enable synchronous operation (for debugging).