

# SYSTEM ARCHITECTURE GUIDELINES

September 3, 2019

# MARK OS

## DESKTOP SUPPORT

|            |                     |                     |                  |          |               |          |               |
|------------|---------------------|---------------------|------------------|----------|---------------|----------|---------------|
| Compositor | X11 fragment server | Notification Center | Full Screen Mode | Popovers | Accessibility | Launcher | AI Assistance |
|------------|---------------------|---------------------|------------------|----------|---------------|----------|---------------|

## MEDIA

|  |  |  |  |   |  |   |
|--|--|--|--|---|--|---|
| <b>AV</b><br>Audio + Video<br>Decoding using the best hardware or software decoder available | <b>Animation</b><br>2D + 3D<br>Transformations | <b>Audio</b><br>Patching for virtual audio devices, playback, recording and sync | <b>Image</b><br>GPU Acceleration for basic image processing. | <b>Text</b><br>TTF/OTF library. Full color Emoji and text rendering | <b>OpenAL</b><br>Positional audio support. | <b>Engine</b><br>Framework for quick multimedia-rich apps and games |
|--|--|--|--|---|--|---|

## CORE SERVICES

|                     |  |   |  |   |  |  |
|---------------------|--|---|--|---|--|--|
| <b>Address Book</b> | <b>Messaging</b><br>Social networks, SMS, email. | <b>Keychain</b><br>Security, Certificates, keys | <b>Landmark</b><br>Foundational programmatic interfaces for the OS | <b>Chromium</b><br>Integration with the Chromium project for a built-in web rendering engine. | <b>Index</b><br>Search and preview optimization (thumbnails) | <b>SysData</b><br>Undo/Redo, Clipboard, system properties store. |
|---------------------|--|---|--|---|--|--|

## CORE OS

|   |   |                                 |   |   |
|---|---|---------------------------------|---|---|
| <b>Fast</b><br>Perform common 2D/3D operations, FFT, and Neural tasks with hardware acceleration. | <b>Directory</b><br>Collected information about users, workgroups, printers and other network services. | <b>Raw</b><br>Raw GPU framework | <b>Disk Notifier</b><br>Notifies when local or remote volumes are mounted or unmounted. | <b>System notifier</b><br>Notifies when there are network changes. Provides network config. |
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## KERNEL

|  |   |   |
|--|---|---|
| <b>LINUX</b><br>LTS Kernel with CONFIG_PREEMPT | <b>Filesystem</b><br>Ext4 (Default), ExFAT, eCryptfs, NTFS<br>Protocols: sshfs, NFS | <b>Networking</b><br>Monitor network traffic<br>Virtual network devices |
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