

LibreOffice

Online & the Cloud

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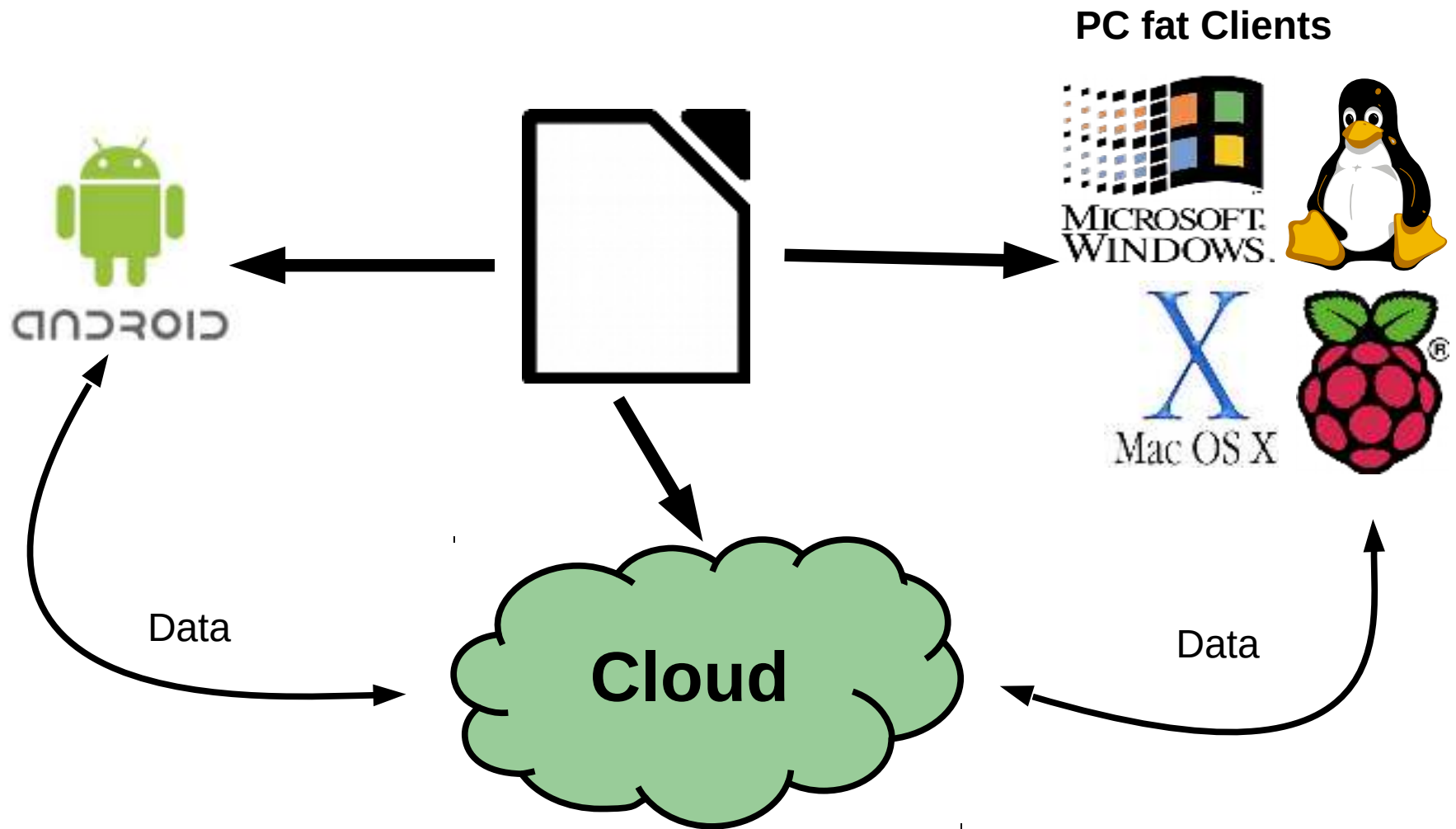
mmEEKS, #libreoffice-dev, irc.freenode.net

*“Stand at the crossroads and look; ask for the
ancient paths, ask where the good way is,
and walk in it, and you will find rest for your
souls...” - Jeremiah 6:16*

Talk Overview

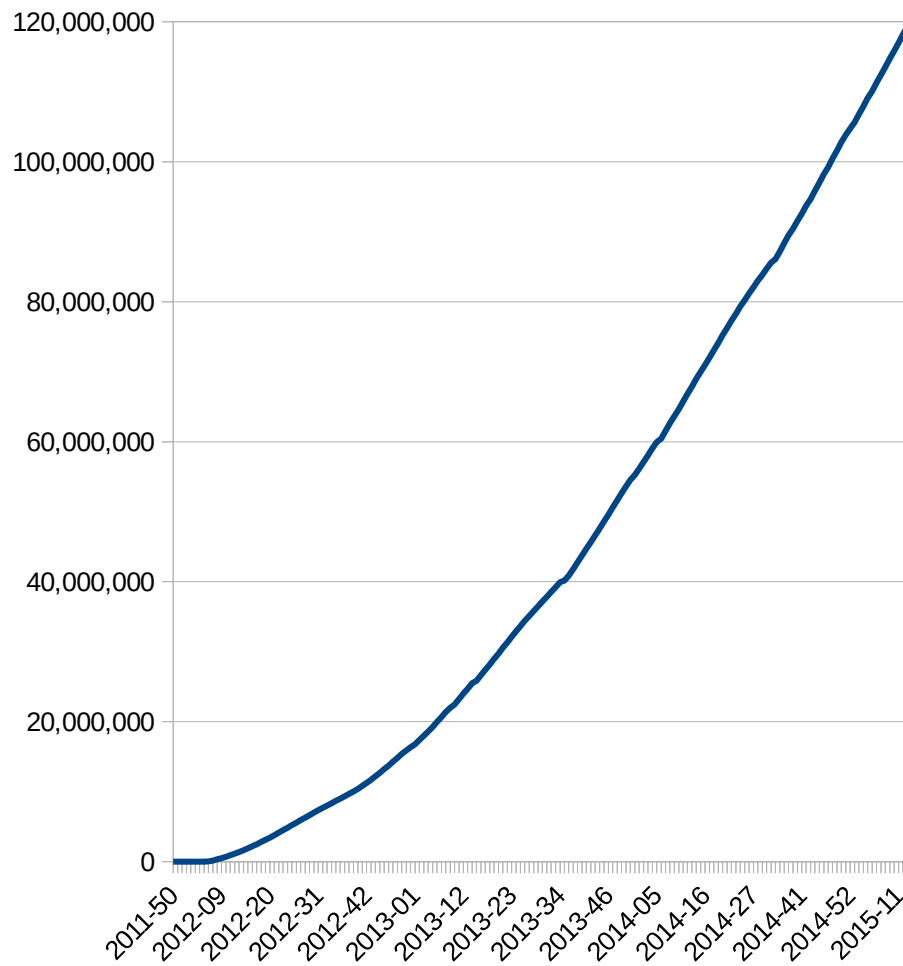
- The goal – Ubiquity
 - PC, Mobile, Cloud
- PC update
- Android / Mobile bit
- Cloud Grist
 - Architecture
 - Security
 - Integration
- Conclusion

LibreOffice Ubiquity ...



Achieving Ubiquity

The PC part of the story ...

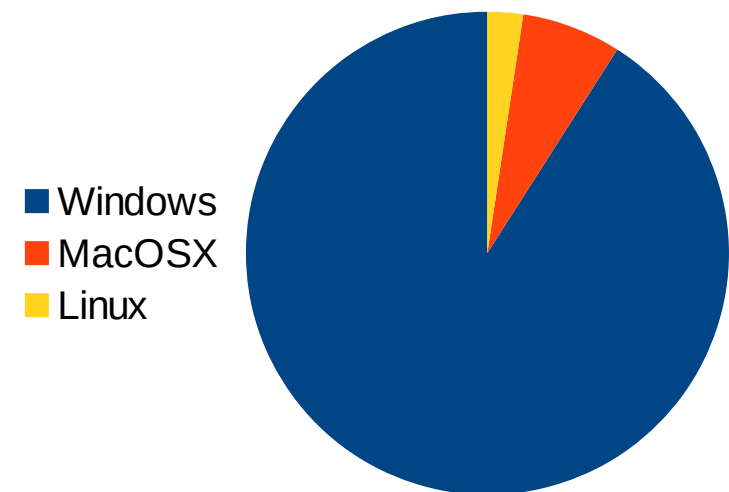


Tracking direct download
Update Ping origins.

Excludes all Linux Distributions
downloads

~120m so far (+ Linux)

This time last year was ~65m



There is no silver-bullet
(but code re-use is nearly it)

LibreOfficeKit – re-using a core

- A very simple C & C++ API for LibreOffice
- Exposes the core value of LibreOffice:
 - File format filters
 - Tiled rendering (converting documents to pixels)
 - Exposes editing, selections etc.
- A very simple ~header-only API – no linking
 - fully abstract: fn pointers, opaque structs etc.
 - No sockets opened, no plugins / simple init.
 - Global error messages.
- LibreOffice Online, Android, 'loconv' built on this.

Android / Editing

Android Editing Work ...

- Infrastructural work for tiled editing funded by TDF & our [donors](#).
 - Also implemented **OwnCloud** remote-file-system plugin demonstration
 - Done by Collabora & Igalia
- Not creating a perfect UI, but infrastructure for document editing.
- Built on previous Viewer Work from Collabora / Smoose.
- Ideal client for Cloud Data ...

The numbered list is on the second page:

1. First.
2. Second.
3. Third!

We need to support images too

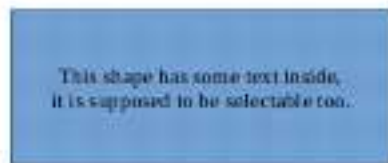
So let's have an image:



that we can select it, and do operations on the

Oh, and shapes too:

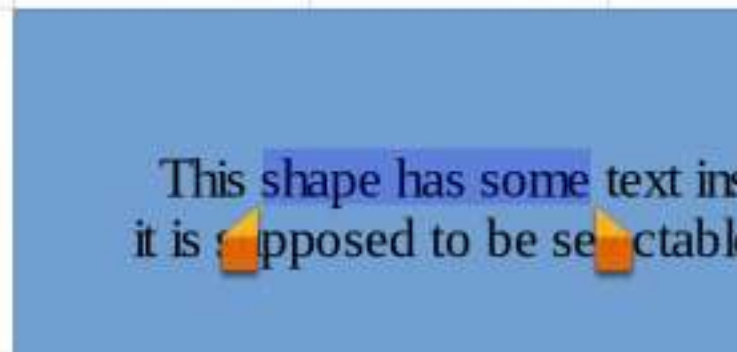
Let's have a shape with text; we need to be able to select the text inside the shape, but also the various individual shapes too:



And this is all for Writer

As much as the above looks as trivial use cases, internally they mean that basically everything has to work, and in fact much more documents (and more complex ones) will be tested against it, to make it easy to evaluate & test the development against.

ation Document

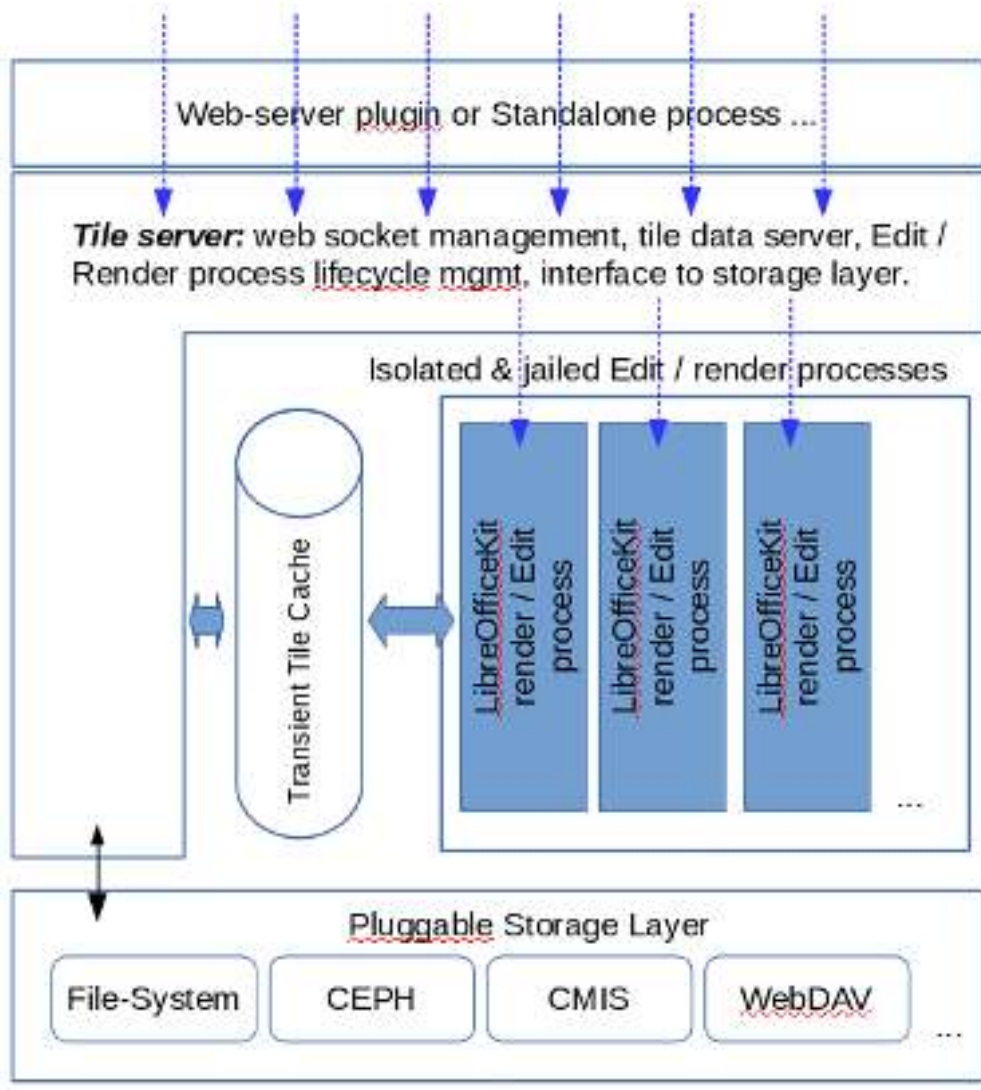


Grab me for a demo ...
Or checkout the app-store ...

LibreOffice Online

Architecturally ...

LibreOffice On-Line Architecture Sketch.



- Strong process isolation in chroots
- Tile caching, to release LibreOffice processes
- Javascript front-end based on Leaflet.

Tiles cached in client



Performance Background #1

- LibreOffice in-use in multi-user remote/X environments
- Load avg 0.05/0.3/0.34 for 73 live users in writer, and 10 in calc.
- 4 CPU Quad-Core estimated 200-300 concurrent users.
- If rented servers in the cloud are truly cheaper it should be cheap.

```
xterm (on linux-i3od)
top - 12:15:59 up 5:35, 8 users, load averages: 0.05, 0.3, 0.34
Task: 692 total, 1 running, 687 sleeping, 0 stopped, 5 zombie
Cpu0:  20.8%u,  4.1%o,  0.0%si, 63.8%id,  0.0%wa,  0.0%st,  1.0%ni,  0.0%ht,  0.0%rt
Cpu1:  1.2%u,  0.2%o,  0.0%si, 98.4%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu2:  0.3%u,  1.3%o,  0.0%si, 98.3%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu3:  0.3%u,  1.0%o,  0.0%si, 98.7%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu4:  12.2%u,  2.2%o,  0.0%si, 84.4%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu5:  0.7%u,  0.3%o,  0.0%si, 98.9%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu6:  4.0%u,  1.0%o,  0.0%si, 95.0%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu7:  0.3%u,  0.3%o,  0.0%si, 99.3%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu8:  0.3%u,  1.0%o,  0.0%si, 98.6%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu9:  0.3%u,  2.0%o,  0.0%si, 97.7%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu10:  0.3%u,  0.3%o,  0.0%si, 99.3%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu11:  1.0%u,  0.3%o,  0.0%si, 98.6%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu12:  1.0%u,  0.3%o,  0.0%si, 98.6%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu13:  0.3%u,  0.3%o,  0.0%si, 99.3%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu14:  0.3%u,  0.3%o,  0.0%si, 99.3%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Cpu15:  0.3%u,  1.0%o,  0.0%si, 98.6%id,  0.0%wa,  0.0%st,  0.0%ni,  0.0%ht,  0.0%rt
Mem: 40234k total, 24250k used, 14410k free, 263k buffers
Swap: 20480k total, 0k used, 20480k free, 1892k buffers

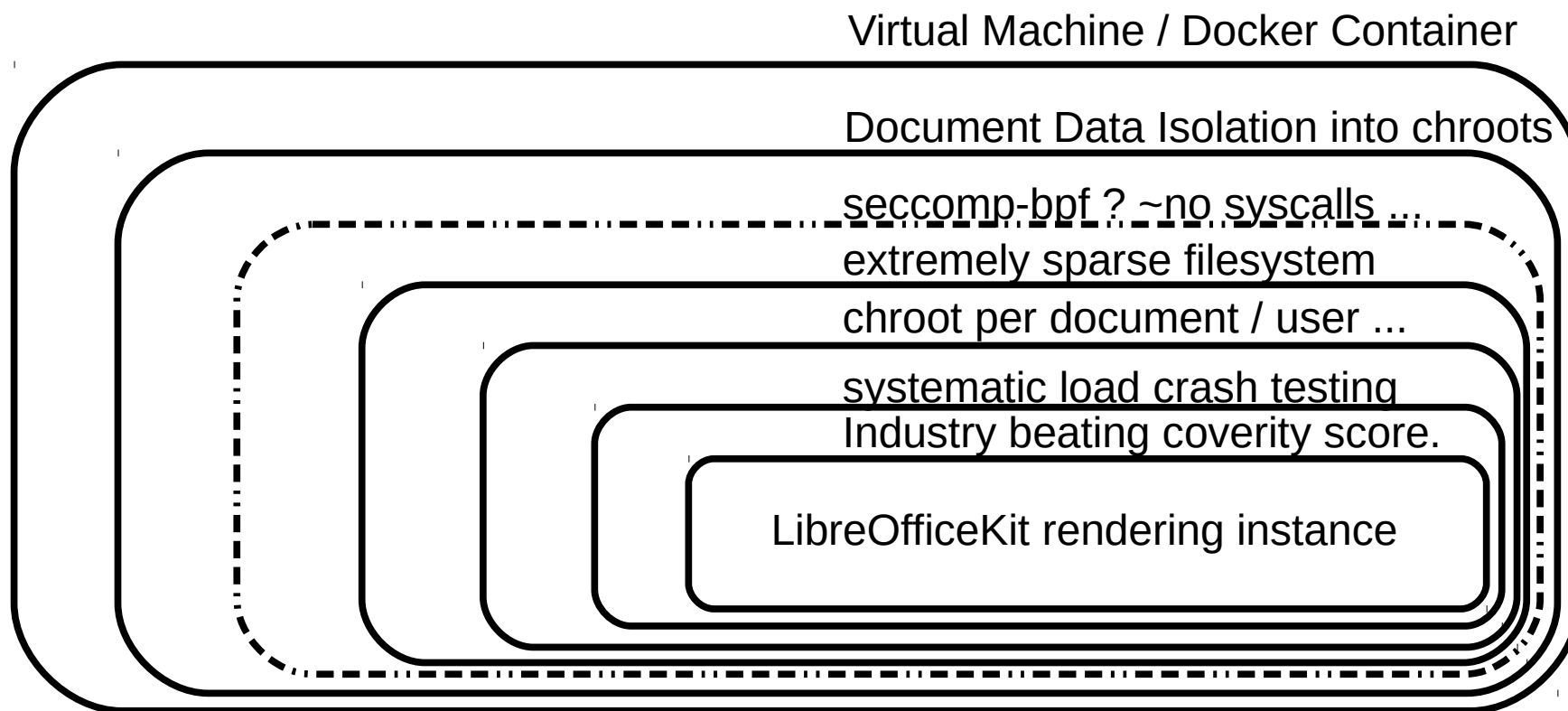
PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM     time+  COMMAND
27488      0    0  635k 104k  68k  S   0.2   0.1   0:01.26 soffice.bin
24476      0    0  12.2g 1.0g  34k  S   3.4   1.0   2:20.24 soffice.bin
2818       0    0  12.7g 288k  89k  S   0.6   0.1   0:13.91 soffice.bin
27847      0    0  16.6k  40k  10k  S   0.0   0.0   0:00.40 accounting.py
412       0    0  12.2g 1.0g  88k  S   3.4   1.0   2:49.94 soffice.bin
27469      0    0  187k  15k  10k  S   0.0   0.0   0:00.03 sshd [sshd.0]
28029      0    0  12.2g 362k  32k  S   0.0   0.0   0:04.07 soffice.bin
13937      0    0  1069k 184k  91k  S   1.0   0.1   0:01.70 soffice.bin
27475      0    0  625k  125k  76k  S   0.3   0.1   0:03.40 soffice.bin
22919      0    0  12.7g 443k  98k  S   0.8   0.1   0:13.50 soffice.bin
179937      0    0  19.2g 165k  80k  S   1.0   0.1   1:07.05 soffice.bin
47200      0    0  12.7g 294k  87k  S   1.0   0.1   0:05.27 soffice.bin
18169      0    0  12.7g 161k  93k  S   1.1   0.1   0:12.87 soffice.bin
24149      0    0  12.2g 1.7g 100k S   3.6   1.0   2:58.47 soffice.bin
28825      0    0  853k  117k  73k  S   1.0   0.1   0:02.79 soffice.bin
27663      0    0  12.2g 783k  96k  S   1.0   0.2   1:18.61 soffice.bin
27424      0    0  8940 1672  952  R   1.0   0.0   0:00.22 top
819       0    0  0  0  0  S   0.0   0.0   0:00.00 htop
1677      0    0  12.2g 287k  90k  S   0.8   0.1   0:07.73 soffice.bin
2805      0    0  3994k 482k 2772  S   0.0   0.0   0:14.00 cpuid
5812      0    0  12.2g 700k  82k  S   0.7   0.1   0:14.27 soffice.bin
2026      0    0  3040  516  372  S   0.0   0.0   0:00.02 nmap
1783      0    0  12.2g 273k  81k  S   0.8   0.1   0:11.85 soffice.bin
5916      0    0  12.2g 327k  96k  S   0.7   0.1   0:12.40 soffice.bin
11115      0    0  12.7g 209k  84k  S   0.4   0.1   0:11.42 soffice.bin
17405      0    0  12.2g 325k  95k  S   0.7   0.1   0:14.43 soffice.bin
14278      0    0  663k  125k  67k  S   0.2   0.0   0:00.67 soffice.bin
12012      0    0  1059k 161k  88k  S   1.1   0.1   0:05.62 soffice.bin
13609      0    0  12.2g 1.7g 96k  S   3.6   1.0   2:04.27 soffice.bin
28248      0    0  12.2g 165k  82k  S   1.1   0.1   0:12.29 soffice.bin
27663      0    0  873k  245k  73k  S   0.6   0.1   0:12.40 soffice.bin
22972      0    0  12.2g 207k  99k  S   1.3   0.1   1:37.70 soffice.bin
27879      0    0  12.2g 280k  98k  S   0.8   0.1   1:12.71 soffice.bin
23029      0    0  625k  151k  80k  S   0.3   0.1   0:05.02 soffice.bin
22959      0    0  12.2g 420k  96k  S   0.9   0.1   1:05.25 soffice.bin
1 root      0    0  8072  740  630  S   0.0   0.0   0:00.48 init
2 root      0    0  0  0  0  S   0.0   0.0   0:00.00 kthreadd
3 root      0    0  0  0  0  S   0.0   0.0   0:00.00 klogd/klogd
4 root      0    0  0  0  0  S   0.0   0.0   0:00.22 ksoftirqd/0
5 root      0    0  0  0  0  S   0.0   0.0   0:00.00 watondog/0
6 root      0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/1
7 root      0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/2
8 root      0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/3
9 root      0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/4
10 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/5
11 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/6
12 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/7
13 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/8
14 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/9
15 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/10
16 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/11
17 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/12
18 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/13
19 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/14
20 root     0    0  0  0  0  S   0.0   0.0   0:00.00 ksoftirqd/15
```

Performance Background #2

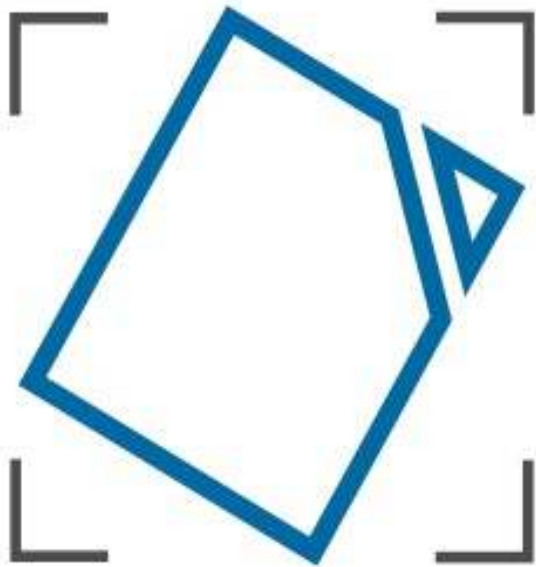
- Tile caching server
 - Avoids need to retain dedicated loaded document state, RAM, etc. for quiescent Office.
 - A serious problem:
 - How many un-closed tabs do you have ?
 - Render tiles → return to idle.
- Tiles pushed into the client for rapid & smooth panning

Security: the onion ...

- Layered approach to protecting infrastructure ...



Deep Document Support



**Document
Liberation**

- **Document Liberation**
- Core Office formats:
 - ODT, ODS, ODP ...
 - DOC, DOCX, XLS, XLSX ...
- And deeper:
Visio, Keynote, Publisher,
Works, Corel Draw, Adobe
Pagemaker, Freehand ...
- The multi-tool folding knife ...

Demos

Document Simple Example - Mozilla Firefox

Document Simple... * +

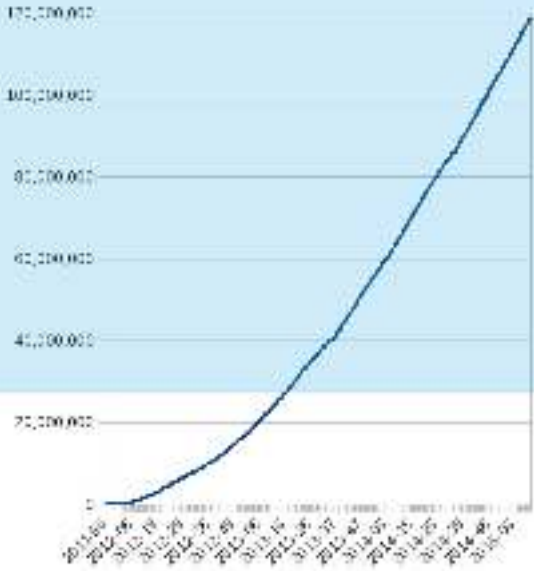
nl?host=vs://localhost:9580&file_path=/demo/model-documents/libreoffice-online/ms-office/2015-06-08-embedded-content-showcase-1col.doc

Google

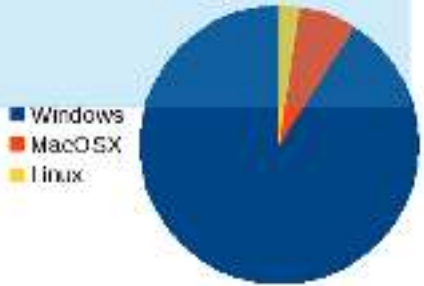
LibreOffice-from-Collabora 4.3

Embedded editable chart

Charts imported from spreadsheet applications remain connected to their original data set and can be easily updated. Settings such as labels, colours, and layout are configurable from within the document in which the chart is embedded.



Tracking direct download Update Ping origins.
Excludes all Linux Distributions downloads
~120m so far, from 65m



Date	Downloads
2013-01-01	0
2013-06-01	10,000,000
2013-12-01	20,000,000
2014-06-01	40,000,000
2014-12-01	60,000,000
2015-06-01	120,000,000

OS	Percentage
Windows	90%
MacOSX	8%
Linux	2%

Jenny

☐ View only

Search document

Jenny**Miller**Graphic Designer /
Communication Specialist

Hello there!



I am a visual communications specialist with a passion for digital mediums. Through a range of successful corporate and artistic projects I have developed a unique style and business-driven approach.

I offer a full concept-to-publication service and no-commitment quotations. I look forward to discussing your business!



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// Education

2011 Design Communications, Master's
University of Maryland

Help

Reset Defaults

+ Back

Next +

Users

Internal Users (e.g., employees, students, contractors)

Number of internal users

Number of internal users with access to legacy/host applications

Number of internal users with access to Web applications

Current average number of identities per internal user

Average number of identities per internal user after deployment

Average % of additions per year for internal users

Average % of changes per year for internal users

Average % of removes per year for internal users

Internal user salary

Benefits/loaded rate uplift percentage

External Users (e.g., customers, partners, suppliers)

Number of external users

Number of external users with access to legacy/host applications

Number of external users with access to Web applications

Current average number of identities per external user

Average number of identities per external user after deployment

Average % of additions per year for external users

Average % of changes per year for external users

Average % of removes per year for external users

Each of the below cells must have a value, even if it is zero.

Resulting Calculations

	Internal	External
Total identities Before Deployment	NA	NA
Total identities After Deployment	NA	NA
Number of Annual Additions	NA	NA
Number of Annual Changes	NA	NA
Number of Annual Removes	NA	NA
Total Number of Events	NA	NA
Current Number of Transactions	NA	NA
Number of Trans. after Deployment	NA	NA
	Annual	Hourly
Fully Loaded User Salary	24,487	38

US Dollars

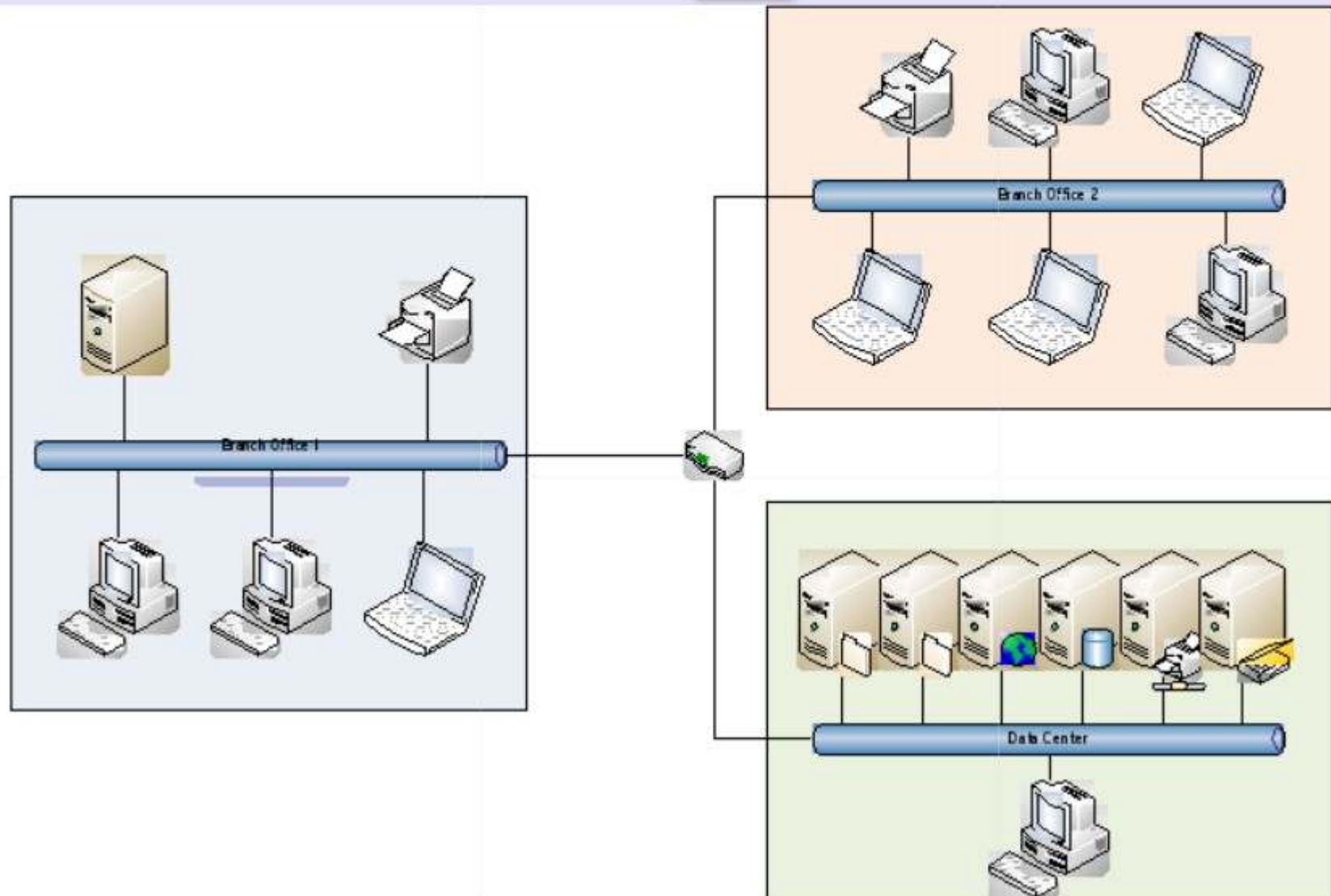
US Dollars

N

Visio Example

☐ View only

+ -



A take from our sponsor:

- Press release:

<https://libreoffice-from-collabora.com/icewarp-and-collabora-are-working-on-libreoffice-online-document-editing-an-open-source-alternative-to-google-apps-office-365/>

- **IceWarp** with its enterprise solutions background and over 14 years of expertise will help LibreOffice to accelerate the development towards a **real product** which can be **reused** by the **open source community** in a wide range of deployment scenarios.
- By creating a **free alternative** that **any provider can implement** without restrictions, the companies aim to restore fair competition to a market dominated by monopoly suppliers, to **drive innovation, compatibility and interoperability** through **open formats**, across **all platforms** and **for everybody**.
- *“Creating alternatives is in our DNA. In the same way customers were looking for Exchange alternatives and made IceWarp what it is today, they will be seeking Google Apps alternatives and we will be ready.”*
— Adam Paclt, IceWarp CEO

A completing puzzle ...

- LibreOffice Online:
 - 8million+ lines of code
 - Fundamental format, rendering, core functionality improvements, fixes etc. ...



Conclusions

- LibreOffice Online is coming ...
 - Checkout IceWarp's implementation
 - Get support & development services from Collabora or ... get stuck in yourself:
 - Become part of an exciting story that is still at the beginning: our best days are ahead of us ...
 - Lots of opportunities to contribute ...
- Thanks to all who support us in the Free Software Community – we can't do it without you.
- Thanks to all who engage constructively in the ecosystem to support and fund our work.

Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27

