

# **UPX compression of binaries and DLLs for OpenOffice.org builds for Microsoft Windows (revision 1.2)**

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## **Introduction**

This document is the result of 4 months testing UPX technology applied to executables and DLLs provided regularly by Czech and Slovak Native-Lang teams for Microsoft Windows operating system.

## **What is UPX?**

UPX (<http://upx.sourceforge.net/>) is a free, portable, extensible, high performance executable packer for several different executable formats. It achieves an excellent compression ratio and offers very fast decompression. Your executables suffer no memory overhead or other drawbacks.

UPX is copyrighted software distributed under the terms of the GNU General Public License, with special exceptions granting the free usage for commercial programs as stated in the UPX License Agreement.

## **Results of testing**

See appendix A.

## **Creation of UPX builds or UPXifying already installed OpenOffice.org**

To create so called UPX-build, download packer binary for Microsoft Windows from <http://upx.sourceforge.net/> (file upx124w.zip or upx190w.zip) and unpack the downloaded archive (e.g. into C:\Upx). First build classic installation set and then apply the following commands to all DLLs in solver (you can also use UPX on the already installed OpenOffice.org, thus running the following commands in e.g. C:\Program Files\OpenOffice.org1.1):

```
set PATH=%PATH%;C:\Upx
upx --best --crp-ms=999999 --nr2d *.dll
```

When running UPX on already installed OpenOffice.org, do not forget to run this command also on DLLs in component and filter directories to get the best performance possible (you can do that by adding "component/\*.dll filter/\*.dll" at the end of the second command line). Slightly modified version is needed for all .EXE files (to leave icons of shortcuts untouched):

```
upx --best --crp-ms=999999 --nr2d --compress-icons=0 *.exe
```

## Conclusion

The results show that using UPX does not bring any significant advantage over classic builds with the exception of saved disk space. This could be because of the use `--best` command line argument. With at least 128MB of memory the first start of UPX build is a little bit faster, but next starts are almost always slower which in itself is a significant disadvantage.

Saved storage is very significant. Installation sets are about 10% smaller, but there is about 30% difference between installed non-UPX and UPX OpenOffice.org.

Thus we recommend to use UPX builds only where disk space is tight and we will provide UPX build for each final version<sup>1</sup>.

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<sup>1</sup> We will first inspect the effect of other compressing programs to shorten the size of installation sets.

## Appendix A: Results (data from users@cs.openoffice.org)

Hardware			Software			Normal times		UPX times		Normal size		UPX size	
Processor type	Frequency (MHz)	RAM (MB)	OS	OpenOffice.org	UPX	1 <sup>st</sup> run without quickstart	next run without quickstart	1 <sup>st</sup> run without quickstart	next run without quickstart	Installation set	installed build	Installation set	installed build
Pentium III	450	256	WinNT4SP6	Ooo11rc2_cz	1.24	30	4,5	19	6	68185712	142268284	61250328	93740202
Pentium III	850	512	Win2000SP4	Ooo11rc3_cz	1.90b	18	2	12	3				
Celeron	1100	128	Win98SE	Ooo11rc3_cz	1.90b	13	3	13	5	68568873	143720247	61663527	94848515
Pentium	150	32	Win98SE	Ooo11rc3_cz	1.90b	97	81	127	115				
Pentium	150	64	Win2000SP3 (FAT32)	Ooo11rc3_cz	1.90b	55	37	64	53				
Pentium 4	2680	512	Win2000SP1 – server	Ooo11rc3_cz	1.90b	7	3	7	3				
Celeron	600	64	Win98SE	Ooo11rc3_cz	1.90b	33	28	33	29				
Celeron	466	256	Win98SE	Ooo11rc3_cz	1.90b	13	9	28	12				
Celeron	466	256	Win2000SP1 – server	Ooo11rc3_cz	1.90b	17	6	17	8				
Celeron	1100	128	Win98SE	Ooo11rc3_cz	1.90b	14	5	12	4				
Pentium	150	32	Win98SE	Ooo11rc3_cz	1.90b	54	35	58	46				
Athlon	1700	128	Win2000SP3	Ooo11rc3_cz	1.90b	17	15	27	17				