

## osFree demo CD (some technical details)

We have uploaded our new [osFree ISO image 0.0.4.1](#). Since the previous [osFree ISO image 0.0.4](#), it has some advancements. For example, the previous setup used a small 500-byte executable, which used only one OS/2 API function – DosPutMessage, imported from a single msg.dll (which is a forwarder to doscalls.dll), the new setup includes a bigger minicmd.exe LX executable (9 kilobyte in size), which uses more OS/2 API's.

It must be noted, that these executables still have no thunks for calling 16-bit API's. For that, we use our own invention, sub32.dll, which stands for “VIO/KBD/MOU 32-bit Subsystems”. This DLL is treated a special way by our LX loader – an executable is linked against EMXWRAP.DLL, which is a 32-bit wrapper over VIO/KBD/MOU 16-bit API's, taken from EMX. This way gcc compiler and other GNU packages can work with only 32-bit API's, and do not use 16-bit ones. The same way, we use 32-bit API's only. But when our LX loader sees the reference to EMXWRAP module, it resolves this reference by linking with SUB32. So, SUB32.DLL is a kind of EMXWRAP alias. Our L4 implementation of OS/2 API, in our demo, runs a minicmd.exe test executable, linked with SUB32 and DOSCALLS, whereas on IBM's OS/2, it depends on EMXWRAP.DLL from EMX runtime. But when EMX EMXWRAP.DLL wraps 16-bit API's by 32-bit ones, osFree SUB32 is a real 32-bit implementation, which does not depend on 16-bit API's.

Similar 32-bit VIO/KBD/MOU API's had the IBM's OS/2 Warp Connect (PowerPC Edition). So, it is not new. In the future, we plan to add support for 16-bit OS/2 API's for binary compatibility. It is planned to make an implementation of LX loader which will on-the-fly convert a mixed 16/32 bit executable to a pure 32-bit, changing all 32→16 bit thunks on the fly, to the calls to pure 32-bit API's.

DOSCALLS.DLL is a virtual DLL in a present OS/2. It imports API's from OS/2 kernel. There is DOSCALL1.DLL too, it is an ordinary disk file, whereas DOSCALLS.DLL is a virtual module, which does not exist on the disk, and it references API's, present directly in OS/2 kernel, or indirectly, through functions on doscall1.dll, which in turn, call OS/2 kernel functions.

In osFree, there is no DOSCALL1.DLL, but DOSCALLS.DLL is present as a disk file, not as a virtual module. In our design, there exist a virtual kal.so module, which calls RPC's to OS/2 server. DOSCALLS.DLL is a real disk file, which exports all OS/2 API's, and wrappers over kal.so functions.

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