

# Mono(tm) Binary Kernel Support for Linux

To configure Linux to automatically execute Mono-based .NET binaries (in the form of .exe files) without the need to use the mono CLR wrapper, you can use the BINFMT\_MISC kernel support.

This will allow you to execute Mono-based .NET binaries just like any other program after you have done the following:

1. You MUST FIRST install the Mono CLR support, either by downloading a binary package, a source tarball or by installing from Git. Binary packages for several distributions can be found at:

<https://www.mono-project.com/download/>

Instructions for compiling Mono can be found at:

<https://www.mono-project.com/docs/compiling-mono/linux/>

Once the Mono CLR support has been installed, just check that `/usr/bin/mono` (which could be located elsewhere, for example `/usr/local/bin/mono`) is working.

2. You have to compile BINFMT\_MISC either as a module or into the kernel (`CONFIG_BINFMT_MISC`) and set it up properly. If you choose to compile it as a module, you will have to insert it manually with `modprobe/insmod`, as `kmod` cannot be easily supported with `binfmt_misc`. Read the file `binfmt_misc.txt` in this directory to know more about the configuration process.
3. Add the following entries to `/etc/rc.local` or similar script to be run at system startup:

```
# Insert BINFMT_MISC module into the kernel
if [ ! -e /proc/sys/fs/binfmt_misc/register ]; then
    /sbin/modprobe binfmt_misc
    # Some distributions, like Fedora Core, perform
    # the following command automatically when the
    # binfmt_misc module is loaded into the kernel
    # or during normal boot up (systemd-based systems).
    # Thus, it is possible that the following line
    # is not needed at all.
    mount -t binfmt_misc none /proc/sys/fs/binfmt_misc
fi

# Register support for .NET CLR binaries
if [ -e /proc/sys/fs/binfmt_misc/register ]; then
    # Replace /usr/bin/mono with the correct pathname to
    # the Mono CLR runtime (usually /usr/local/bin/mono
    # when compiling from sources or CVS).
    echo ':CLR:M::MZ::usr/bin/mono:' > /proc/sys/fs/binfmt_misc/register
else
    echo "No binfmt_misc support"
    exit 1
fi
```

4. Check that .exe binaries can be ran without the need of a wrapper script, simply by launching the .exe file directly from a command prompt, for example:

`/usr/bin/xsd.exe`

## Note

If this fails with a permission denied error, check that the .exe file has execute permissions.