Unifying /usr/bin and /usr/sbin

a.k.a.

UsrMove is not done until SbinMerge is done

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Flock 2024, Rochester 8.8.2024

4-way split

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/bin	/usr/bin
/sbin	/usr/sbin

(Some) History

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initrds

`http://lists.busybox.net/pipermail/busybox/2010-December/074114.html`

Getting rid of separate /usr

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systemd/TheCaseForTheUsrMerge

Features/UsrMove — Fedora 17 (2012)

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technical debt — *something that made sense at the time, but now is just creating drag* [me]

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There are no "root-only" programs —
separate /usr/sbin/ is now just technical debt too

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systemd sets clean environment for all services, with
`/usr/sbin:/usr/bin`
(09082a94b64f0b3b6cec44d4d8f423ab9abd1630, 2010)

Unifying /usr/sbin and /usr/bin

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Idea: make /usr/sbin a symlink to /usr/bin,
just like /bin is a symlink to /usr/bin

Changes/Unify_bin_and_sbin — Fedora 41, 2024

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`filesystem.rpm` — the actual layout on disk

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  - packages remain installable at all times

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2. Adjust SELinux policy to make /sbin and /bin equivalent

307 files changed, 862 insertions(+), 1261 deletions(-)

The plan

...ctd

3. Apply conditional fixes to packages:
FBTFS:

```
%install
ln -s %{buildroot}%{_bindir}/foo \
      %{buildroot}%{_sbindir}/foo
```

and FTI:

```
Transaction failed: Rpm transaction failed.
- file /usr/sbin/sestatus conflicts between attempted
installs of policycoreutils-3.6-5.fc41.x86_64
        and policycoreutils-3.6-5.fc41.x86_64
- file /usr/sbin/named-checkzone conflicts between attempted
installs of bind-utils-32:9.18.26-1.fc41.x86_64
        and bind-utils-32:9.18.26-1.fc41.x86_64
```

The plan

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4. Fix dependencies between packages:

Package `a.rpm` has `%files: %_sbindir/foo`
Package `b.rpm` has `Requires:/usr/sbin/foo`
When rebuilt, `a.rpm` now has `/usr/bin/foo`, `b.rpm` FTI.

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→ Add compat **`Provides`**`:/usr/sbin/foo`

`a.rpm` adds:

```
%if "%_bindir" == "%_sbindir"
Requires: filesystem(unmerged-sbin-symlinks)
Provides: /usr/sbin/foo
%endif
```

`filesystem.rpm` will automatically create a symlink when a file is moved

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<crash>

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— Missing compat symlinks for paths *not used* in `Requires`

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The merge is complete: `/bin/foo`, `/sbin/foo`, and `/usr/sbin/foo` all point to `/usr/bin/foo`

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