

Oren Laadan [orenl@cs.columbia.edu] wrote:

| (sorry from the delay, been away :)

| Eric W. Biederman wrote:

| > "Serge E. Hallyn" <serue@us.ibm.com> writes:

| >

| >> Sorry, I was focusing on the virtual server needs.

| >>

| >> devpts is it's own fs so I was fully expecting to make it mountable

| >> multiple times so a container can have it's own /dev/pts/0. So what

| >> other virtual devices would we want to be able to rec-reate for a

| >> migrated application? (I wonder (a) what gregkh will say about having

| >> a device namespace, and (b) what the sysfs implications will be)

| >

| > Depends. There are things like the loop device that could be interesting.

| > There may be some others. I haven't looked at it enough detail to get

| > beyond the fact that in some sense it isn't just limited to pts devices.

| >

| > A multimount devpts is interesting though.

| Devices I had to deal with (in zap) so far - to be able to ckpt/restart
(and migrate) a desktop session:

| * /dev/rtc (e.g. for mplayer)

| * /dev/dsp

| * /dev/random ? (to isolate entropy pools ?)

| * virtual consoles - e.g. in zap, an X server that uses a virtual device
runs inside a pod/container/VE (and X per-se requires a virtual console)

| * virtual terminals - e.g. in zap we allow access to a pod from the host
without a need to run 'sshd' inside and setup a network in the pod. (Then
with a suitable utility and network access to the host, this also allows
sort of remote (a-la serial) console access).

| >From inside the pod it looks like /dev/tty{1,2,...}, so one can run 'getty'
processes inside the pod. From the outside (for the admin, e.g.) it is an
extended /dev/tty that has an extra ioctl to multiplex access, so the
admin (program) can ask to be connected to tty X of pod Y, and it will
connect to that console (like connecting via serial line).

This sounds really interesting. Were these devices part of a complete

device namespace ? IOW, does say /dev/tty2 in each pods have the same major/minor number (4,2) ? Does each '/dev/tty2' have a separate entry in sysfs ?

| The main advantage is that as a virtual device it can be migrated (with
| its buffers, if not empty, as they reside inside the pod) so upon restart
| they go with the 'getty' processes that use them. The (old) admin will
| see the line dropped, and the (new) admin after the migration can connect
| at the new machine.

| Oren.

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