

Betriebssystem Praktikum 3

Zum Testen unserer Code führen wir folgende Kommandozeilen:

```
ping -c 10 google.com
```

und dann irgendwann stoppen wir den Prozess mit CTRL-Z
danach lassen wir es weiter laufen mit dem cont Befehl.

```
Kleinschell>ping -c 10 google.com
Current process ID: 38374
PING google.com (142.251.36.238) 56(84) bytes of data.
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=1 ttl=118 time=21.3 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=2 ttl=118 time=20.2 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=3 ttl=118 time=20.0 ms
^ZThis process is stopped with SIGTSTP: 38374
Process stopped. PID: 38374
Angehaltene VG PIDs: 38374
Kleinschell>cont 38374
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=4 ttl=118 time=32.4 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=5 ttl=118 time=20.8 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=6 ttl=118 time=21.0 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=7 ttl=118 time=20.7 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=8 ttl=118 time=20.3 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=9 ttl=118 time=20.3 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=10 ttl=118 time=19.9 ms

--- google.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 17202ms
rtt min/avg/max/mdev = 19.852/21.680/32.364/3.586 ms
```

Das Gleiche machen wir als Hintergrundprozess:

Es funktioniert selbstverständlich wie oben.

```
Kleinschell>ping -c 10 google.com&
Background process started with PID: 38378
Background processes: 38378
Kleinschell>PING google.com (142.251.36.238) 56(84) bytes of data.
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=1 ttl=118 time=20.5 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=2 ttl=118 time=20.3 ms
^ZThis process is stopped with SIGTSTP: 38374
cont 38378
Current process ID: 38380
Failed to execute command
Angehaltene VG PIDs: 38374
Kleinschell>64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=3 ttl=118 time=21.8 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=4 ttl=118 time=36.1 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=5 ttl=118 time=20.4 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=6 ttl=118 time=20.7 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=7 ttl=118 time=20.4 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=8 ttl=118 time=20.1 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=9 ttl=118 time=20.5 ms
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=10 ttl=118 time=21.0 ms

--- google.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 19457ms
rtt min/avg/max/mdev = 20.101/22.187/36.107/4.660 ms
```

Wenn es Prozesse gibt, die angehalten sind, kann man den Kleinschell mit dem Exitbefehl nicht verlassen. Das Programm fragt dann, ob wir Hintergrundprozesse beenden wollen und

dann erst können wir den Shell verlassen.

```
Kleinschell>ping -c 5 google.com
Current process ID: 38905
PING google.com (142.251.36.238) 56(84) bytes of data.
64 bytes from muc11s22-in-f14.1e100.net (142.251.36.238): icmp_seq=1 ttl=118 time=20.4 ms
^ZThis process is stopped with SIGTSTP: 38905
Process stopped. PID: 38905
Angehaltene VG PIDs: 38905
Kleinschell>exit
There are still background processes running, cannot exit shell.
Do you want to close all background processes? (y/n) y
All background processes closed
Exiting shell
ubuntu@Ubuntu:~/Desktop/BS_P3$
```