

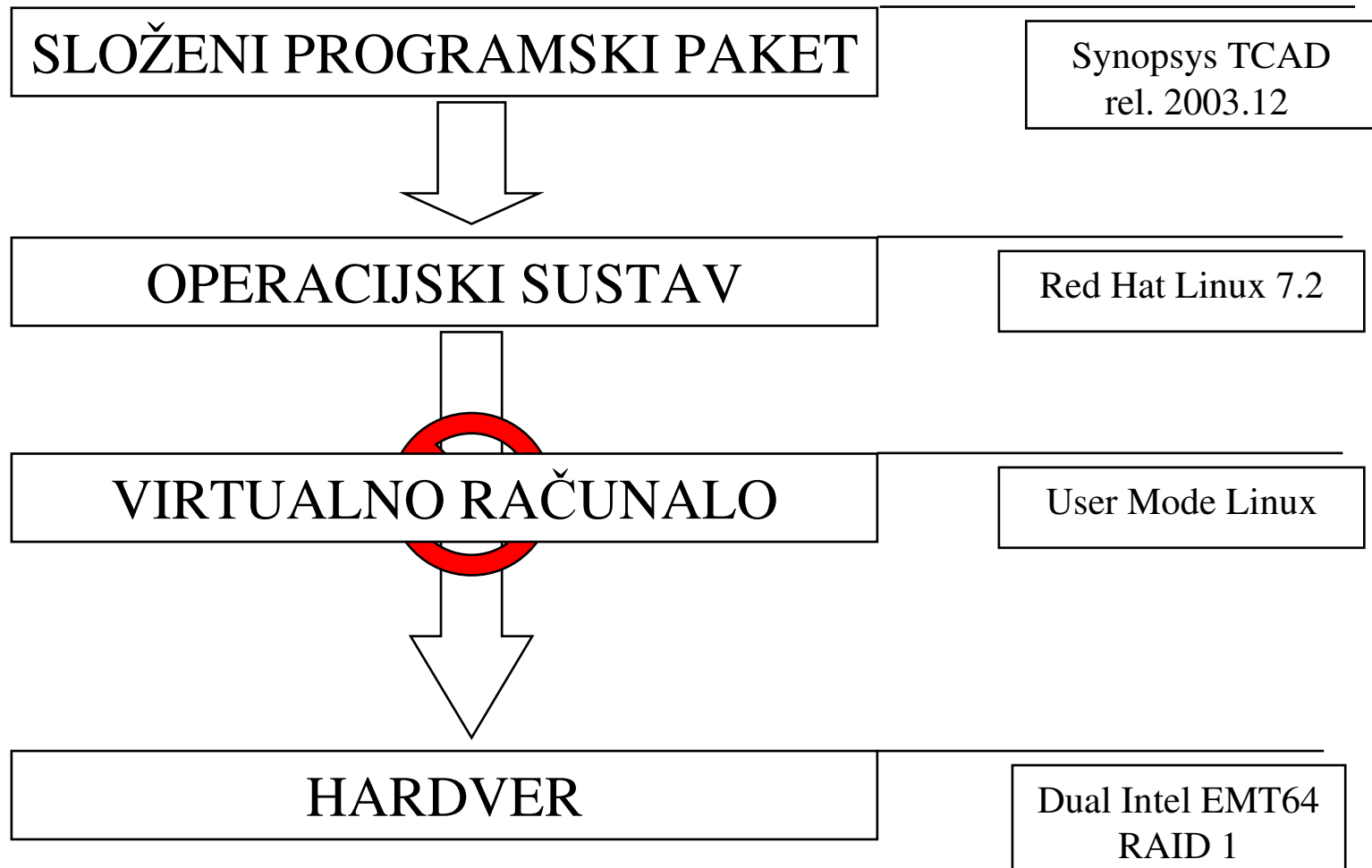
Primjena virtualnih računala u instalaciji i administraciji složenih programskih paketa

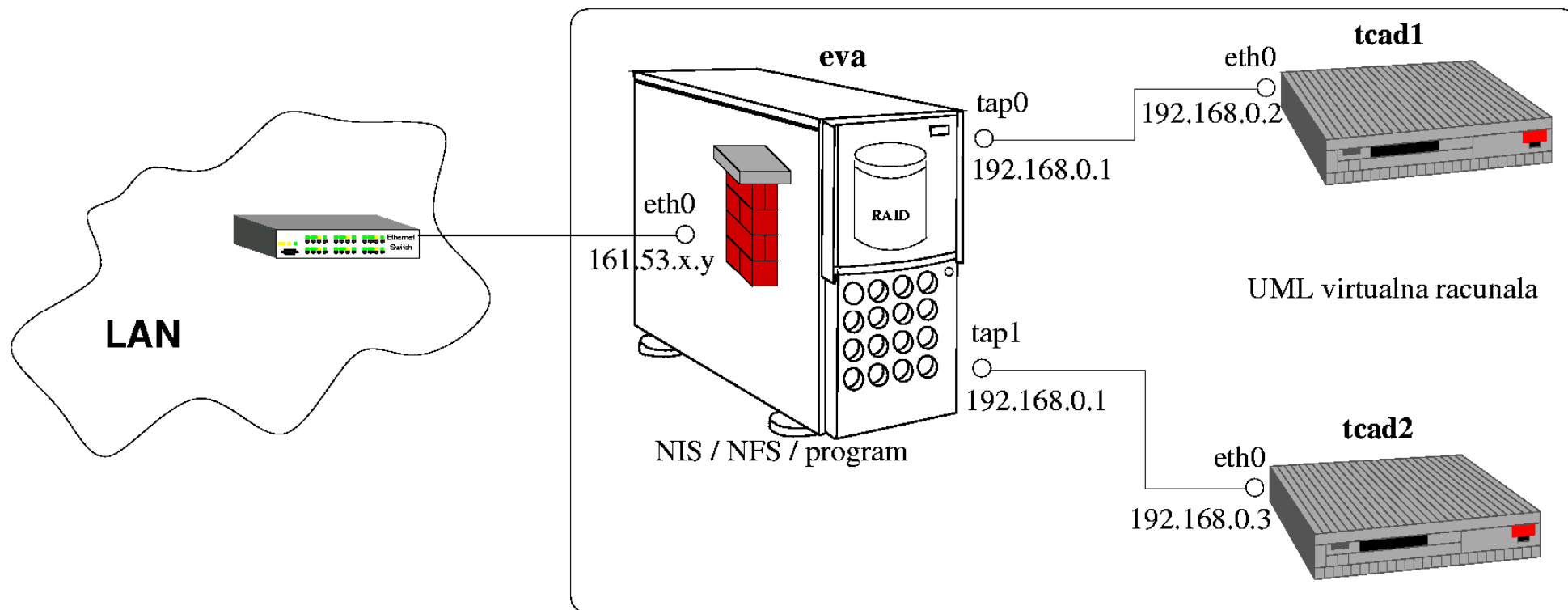
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- Problem instalacije nekih programskih paketa na OS i hardver
- Planiranje rješenja pomoću virtualnih računala
- Implementacija rješenja i neki problemi
- Faza testiranja i eksploatacije
- Zaključci
- Reference







- Višestruka virtualna računala
- Zajednički diskovni prostor – NFS
- Zajednička baza korisnika – NIS
- Poslužitelj licenci na drugom umreženom računalu
- Vatrozid na matičnom računalu
- Veza isključivo preko ssh (sa X tuneliranjem)



1. Instalacija OS-a i programskog paketa
2. Prevođenje kernela OS-a
3. Konfiguracija OS-a i mrežnih servisa
4. Predložak datotečnog sustava virtualnog računala
5. Skripta za upravljanje virtualnim računalima



```
grga@roth:grga$ ssh -l tcadadm eva
tcadadm@eva's password:
Welcome to eva !
This is the home of the semiconductor simulations.
```

```
[tcadadm@eva tcadadm]$ /etc/init.d/vm_tcad1 status
```

```
Status of VM tcad1 :
linux (pid 6277 6325 6396 6398 6400 6402 6404 6409 6414 6439 6440 6486 8082 8128 8214
      8508 85128620 8690 8700 8704 8706 8820 8832 8862 8876 8884 8910 8996 9313 9515 9517
      9519 9523 2208 2221 4485 4498 5153 5203 5928 5974 6014 6044 6094 ) is running...
PID is 6277
Lock file is /var/UML/log/tcad1.lock
```

```
[tcadadm@eva tcadadm]$ ping tcad1
PING tcad1 (192.168.0.2) 56(84) bytes of data.
64 bytes from tcad1 (192.168.0.2): icmp_seq=0 ttl=64 time=762 ms
...
```

```
--- tcad1 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2008ms
rtt min/avg/max/mdev = 50.655/621.183/1050.606/420.245 ms, pipe 3
```

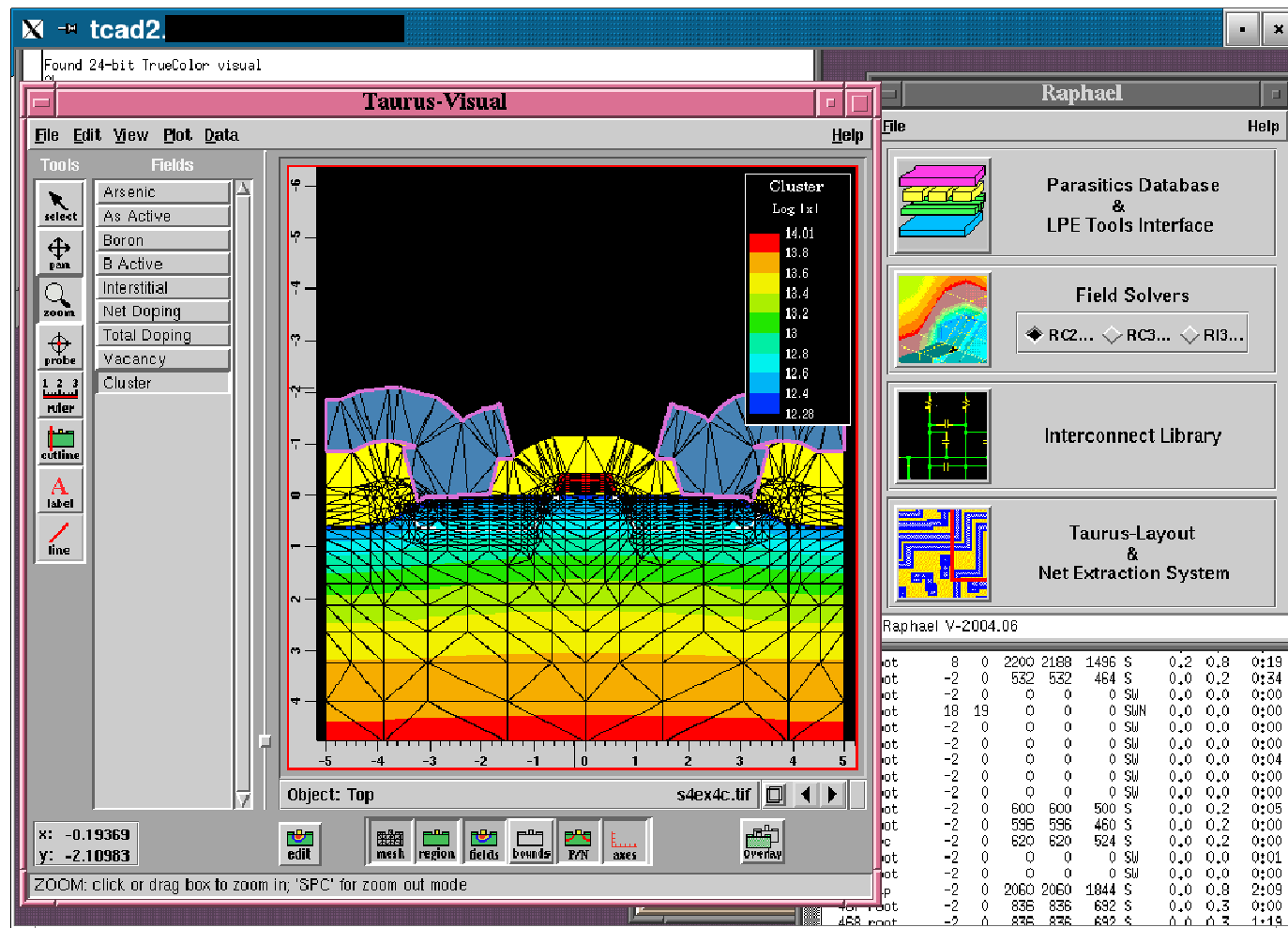
```
[tcadadm@eva tcadadm]$ ssh tcad1
tcadadm@tcad1's password:
Last login: Fri Sep 29 19:10:12 2006 from eva
TCAD-VM virtual simulation system
Welcome !
```



```
[tcadadm@tcad1 tcadadm]$ mount
/dev/ubd/0 on / type ext3 (rw)
/proc on /proc type proc (rw)
devfs on /dev type devfs (rw)
devpts on /dev/pts type devpts (rw,mode=0622)
none on /opt type hostfs (rw,/opt)
eva:/home on /home type nfs
(rw,rsize=8192,wsiz=8192,timeo=14,intr,addr=192.168.0.1)
```

```
[tcadadm@tcad1 tcadadm]$ ypswhch -m
netgroup.byuser eva
netgroup.byhost eva
netgroup eva
rpc.bynumber eva
rpc.byname eva
hosts.byaddr eva
hosts.byname eva
group.bygid eva
group.byname eva
passwd.byname eva
ypservers eva
passwd.byuid eva
```





rezultat naredbe top na matičnom računalu

```

19:28:49 up 11 days, 11:18, 5 users, load average: 0.25, 0.72, 0.65
180 processes: 177 sleeping, 2 running, 0 zombie, 1 stopped
CPU states:  cpu    user    nice    system    irq    softirq  iowait    idle
              total  0.7%   0.0%   1.7%   0.0%   0.0%   0.0%   97.4%
              cpu00   2.0%   0.0%   3.0%   0.0%   0.0%   0.0%   95.0%
              cpu01   0.0%   0.0%   0.0%   0.0%   0.0%   0.0%  100.0%
              cpu02   1.0%   0.0%   4.0%   0.0%   0.0%   0.0%   94.9%
              cpu03   0.0%   0.0%   0.0%   0.0%   0.0%   0.0%  100.0%
Mem:  2061484k av, 2020936k used, 40548k free,      0k shrd, 121748k buff
      1364352k actv,      0k in_d, 28592k in_c
Swap: 8000288k av,      0k used, 8000288k free      1516408k cached

```

```

PID USER      PRI  NI  SIZE  RSS  SHARE STAT %CPU %MEM  TIME CPU COMMAND
6277 tcadadm  16   0  3320 3320  3300 R    0.5  0.1  35:18  0  linux
2151 mkoricic  15   0  5800 5800  4872 S    0.5  0.2   0:42  2  magicdev
1902 grga      15   0  2920 2920  2220 S    0.2  0.1   0:00  2  sshd
6572 tcadadm  15   0 26340 25M 26324 T    0.2  1.2   0:00  2  linux
6779 grga      16   0  1444 1444   928 R    0.2  0.0   0:00  0  top
   1 root      15   0    504  504   452 S    0.0  0.0   0:14  3  init

```



- Dva virtualna računala
- Sustav je u upotrebi u istraživanju i nastavi već 6 mjeseci
- Trenutno ima 17 korisnika
- Brzina rada zadovoljavajuća za TCAD programski paket
- Potpuna izolacija virtualnih računala



- Primjenom virtualnih računala riješen problem instalacije potrebnog OS-a na nekompatibilni hardver
- Rješenje je jeftino i skalabilno
- Izolacija virtualnih računala daje sigurnost i jednostavniji backup
- Brzina rada je zadovoljavajuća čak i za CAD programe



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