

# Tranferència del ParaVision 4.0, 5.0 i 5.1

En comptes d'instal·lar les diferents versions del ParaVision des dels DVD d'instal·lació, provo a transferir les carpetes de les diferents versions del ParaVision instal·lades a l'estació de treball HP xw4100 actual,

## Mida de les particions al BioSpec

Aquestes són les particions definides als dos discos durs de l'estació de treball actual:

```
[root@cie-55-30 opt]# df -hl
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda5       20G   5.3G   14G   29% /
/dev/sda2       494M   23M  446M    5% /boot
/dev/sda3       20G   18G   320M   99% /home
/dev/sda7      104G   89G   11G   90% /opt
none            1.8G    0   1.8G    0% /dev/shm
/dev/sdb1      459G  270G  166G   62% /BiospecData
```

Un cop transferit el contingut d'interès a */opt*, caldrà comprovar què hi ha a */home* i decidir què cal transferir.

## Mida de les carpetes a */opt* al BioSpec

```
[root@cie-55-30 opt]# du -hs /opt/*
8.0K    /opt/backupHOWTO.sxw
17M    /opt/dd-4096-rser-file
33M    /opt/dd-8192-rser-file
116K   /opt/first_steps_readme-new.pdf
20M    /opt/gnuplot-4.0.0
2.1M   /opt/gnuplot-4.0.0.tar.gz
83M    /opt/hp
16K    /opt/lost+found
41G    /opt/Photorec
37G    /opt/PV4.0
15M    /opt/PV4.0 Distribution Documentation
2.0G   /opt/PV5.0
9.5G   /opt/Pv5.1
8.0K   /opt/RECOVERED_FILES
335M   /opt/Technical Documentation for BioSpec and PharmaScan Systems
```

Si descartem la carpeta */opt/Photorec*, les carpetes a transferir fan un total aproximat de 60 GBytes, i no hauríem de tenir problemes per transferir-les al volum lògic */opt* de 100 GBytes a la nova estació de treball.

## Problema amb la transferència i solució

El primer intent de transferir la carpeta `/opt/PV5.0` dona un error,

```
root@cie-50-205:/opt# rsync -Hvax --progress --stats
sermn@cie-55-30.uab.cat:/opt/PV5.0 .
The authenticity of host 'cie-55-30.uab.cat (158.109.55.30)' can't be
established.
RSA key fingerprint is f0:85:77:15:56:fe:91:c0:b0:b9:ed:ec:59:bf:30:60.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'cie-55-30.uab.cat,158.109.55.30' (RSA) to the
list of known hosts.
sermn@cie-55-30.uab.cat's password:
protocol version mismatch - is your shell clean?
(see the rsync man page for an explanation)
rsync error: protocol incompatibility (code 2) at compat.c(62)
rsync: connection unexpectedly closed (0 bytes received so far) [Receiver]
rsync error: error in rsync protocol data stream (code 12) at io.c(226)
[Receiver=3.1.1]
root@cie-50-205:/opt#
```

Als següents enllaços s'explica una possible causa de l'error i com resoldre'l: esborrar o canviar el nom del fitxer `.bashrc`,

- [Rsync seems incompatible with .bashrc \(causes "is your shell clean?"\)](#)
- [rsync error: protocol incompatibility](#)
- [WTF! protocol version mismatch - is your shell clean?](#)

malauradament, la solució de canviar el nom del fitxer `~/.bashrc` no funciona en aquest cas,

```
root@cie-50-205:/opt# rsync -Hvax --progress --stats
sermn@cie-55-30.uab.cat:/opt/PV5.0 .
sermn@cie-55-30.uab.cat's password:
protocol version mismatch - is your shell clean?
(see the rsync man page for an explanation)
rsync error: protocol incompatibility (code 2) at compat.c(62)
rsync: connection unexpectedly closed (0 bytes received so far) [Receiver]
rsync error: error in rsync protocol data stream (code 12) at io.c(226)
[Receiver=3.1.1]
```

i amb una cerca més exhaustiva a Internet trobo que el problema és que la versió de `rsync` a l'estació de treball del BioSpec és massa vella i que no és compatible amb el protocol de la versió de `rsync` a la nova estació de treball. Per resoldre el problema cal indicar a aquesta darrera que empri una versió anterior del protocol fent servir l'opció `--protocol="30"`.

# Transferència del ParaVision 5.0

## Transferència incompleta dels fitxers

```
root@cie-50-205:/opt# rsync -Hvax --verbose --progress --stats --
protocol="30" sermn@cie-55-30.uab.cat:/opt/PV5.0 .
opening connection using: ssh -l sermn cie-55-30.uab.cat rsync --server --
sender -vvlHogDtprxe.iLsfx . /opt/PV5.0 (10 args)
sermn@cie-55-30.uab.cat's password:
receiving file list ...
expand file_list to 4000 bytes, did move
expand file_list to 8000 bytes, did move
expand file_list to 16000 bytes, did move
expand file_list to 32000 bytes, did move
opendir(PV5.0/prog/curdir/nmrsu/ParaVision/keys): Permission denied
opendir(PV5.0/prog/curdir/nmrsu/ParaVision/pvDatMan): Permission denied
opendir(PV5.0/prog/curdir/nmrsu/ParaVision/shimTool): Permission denied
expand file_list to 64000 bytes, did move
opendir(PV5.0/prog/curdir/nmrsu/keystore): Permission denied
opendir(PV5.0/prog/curdir/mri/ParaVision/keys): Permission denied
opendir(PV5.0/prog/curdir/mri/ParaVision/pvDatMan): Permission denied
opendir(PV5.0/prog/curdir/mri/ParaVision/shimTool): Permission denied
opendir(PV5.0/prog/curdir/mri/ParaVision/pvCam): Permission denied
opendir(PV5.0/prog/curdir/mri/keystore): Permission denied
opendir(PV5.0/prog/curdir/montaner/ParaVision/keys): Permission denied
opendir(PV5.0/prog/curdir/montaner/ParaVision/xtip): Permission denied
opendir(PV5.0/prog/curdir/montaner/ParaVision/pvDatMan): Permission denied
opendir(PV5.0/prog/curdir/montaner/keystore): Permission denied
opendir(PV5.0/prog/curdir/carus/ParaVision/keys): Permission denied
opendir(PV5.0/prog/curdir/carus/ParaVision/xtip): Permission denied
opendir(PV5.0/prog/curdir/carus/ParaVision/pvDatMan): Permission denied
opendir(PV5.0/prog/curdir/carus/keystore): Permission denied
expand file_list to 128000 bytes, did move
expand file_list to 256000 bytes, did move
[Receiver] expand file_list pointer array to 524288 bytes, did move
34202 files to consider
delta-transmission enabled
PV5.0/
...
PV5.0/prog/wobble/pp_birds => PV5.0/prog/wobble/pulsprog_X
PV5.0/prog/xtip/xtip
      2,605,728 100%    4.29MB/s    0:00:00 (xfr#29745, to-chk=2/34202)
total: matches=0 tag_hits=0 false_alarms=0 data=2030754927

rsync[29381] (receiver) heap statistics:
arena:          2326528   (bytes from sbrk)
ordblks:         4      (chunks not in use)
smlblks:         0
hblks:           4      (chunks from mmap)
```

```
hblkhd:      1327104  (bytes from mmap)
allmem:      3653632  (bytes from sbrk + mmap)
usmblks:      0
fsmblks:      0
uordblks:    2191888  (bytes used)
fordblks:    134640  (bytes free)
keepcost:    134304  (bytes in releasable chunk)
```

```
rsync[29306] (generator) heap statistics:
arena:      2134016  (bytes from sbrk)
ordblks:      2  (chunks not in use)
smblocks:      2
hblks:      4  (chunks from mmap)
hblkhd:      1327104  (bytes from mmap)
allmem:      3461120  (bytes from sbrk + mmap)
usmblks:      0
fsmblks:      64
uordblks:    1864160  (bytes used)
fordblks:    269856  (bytes free)
keepcost:    269520  (bytes in releasable chunk)
```

Number of files: 34,202 (reg: 29,803, dir: 4,260, link: 139)

Number of regular files transferred: 29,745

Total file size: 2,052,694,727 bytes

Total transferred file size: 2,030,754,927 bytes

Literal data: 2,030,754,927 bytes

Matched data: 0 bytes

File list size: 808,631

Total bytes sent: 476,000

Total bytes received: 2,032,978,448

sent 476,000 bytes received 2,032,978,448 bytes 7,717,094.68 bytes/sec

total size is 2,052,694,727 speedup is 1.01

rsync error: some files/attrs were not transferred (see previous errors) (code 23) at main.c(1655) [generator=3.1.1]

Els missatges del tipus *opendir(...): Permission denied* indiquen que l'usuari *sermn* a l'ordinador del BioSpec no té permís per accedir a tots els fitxers i/o carpetes. Em connecto a l'ordinador i comprovo que efectivament hi ha carpetes amb permisos restringits a les que no pot accedir l'usuari *sermn*.

## Transferència del ParaVision 5.1

### Transferència incompleta dels fitxers

Inicio la transferència de la carpeta */opt/Pv5.1*

```
root@cie-50-205:/opt# rsync -Hvax --verbose --progress --stats --
```

```
protocol="30" sermn@cie-55-30.uab.cat:/opt/Pv5.1 .
opening connection using: ssh -l sermn cie-55-30.uab.cat rsync --server --
sender -vvHogDtprxe.iLsfx . /opt/Pv5.1 (10 args)
sermn@cie-55-30.uab.cat's password:
receiving file list ...
expand file_list to 4000 bytes, did move
expand file_list to 8000 bytes, did move
expand file_list to 16000 bytes, did move
expand file_list to 32000 bytes, did move
opendir(Pv5.1/prog/curdir/nmrsu/ParaVision/keys): Permission denied
opendir(Pv5.1/prog/curdir/nmrsu/ParaVision/xtip): Permission denied
opendir(Pv5.1/prog/curdir/nmrsu/ParaVision/pvDatMan): Permission denied
opendir(Pv5.1/prog/curdir/nmrsu/ParaVision/shimTool): Permission denied
opendir(Pv5.1/prog/curdir/nmrsu/keystore): Permission denied
opendir(Pv5.1/prog/curdir/mri/ParaVision/keys): Permission denied
opendir(Pv5.1/prog/curdir/mri/ParaVision/xtip): Permission denied
expand file_list to 64000 bytes, did move
opendir(Pv5.1/prog/curdir/mri/ParaVision/shimTool): Permission denied
opendir(Pv5.1/prog/curdir/mri/ParaVision/history): Permission denied
opendir(Pv5.1/prog/curdir/mri/ParaVision/pvCam): Permission denied
opendir(Pv5.1/prog/curdir/mri/ParaVision/pvDatMan): Permission denied
opendir(Pv5.1/prog/curdir/mri/keystore): Permission denied
opendir(Pv5.1/prog/curdir/montaner/ParaVision/keys): Permission denied
opendir(Pv5.1/prog/curdir/montaner/ParaVision/xtip): Permission denied
opendir(Pv5.1/prog/curdir/montaner/ParaVision/pvDatMan): Permission denied
opendir(Pv5.1/prog/curdir/montaner/keystore): Permission denied
expand file_list to 128000 bytes, did move
expand file_list to 256000 bytes, did move
[Receiver] expand file_list pointer array to 524288 bytes, did move
expand file_list to 512000 bytes, did move
[Receiver] expand file_list pointer array to 1048576 bytes, did move
80167 files to consider
delta-transmission enabled
Pv5.1/
Pv5.1/QTP/
Pv5.1/classes/
Pv5.1/classes/bin/
Pv5.1/classes/doc/
...
Pv5.1/prog/wobble/pulsprog_X
          676 100%   0.65kB/s   0:00:01 (xfr#68077, to-chk=4/80167)
Pv5.1/prog/wobble/pp_birds => Pv5.1/prog/wobble/pulsprog_X
Pv5.1/prog/xtip/xtip
      2,620,912 100%   1.54MB/s   0:00:01 (xfr#68078, to-chk=2/80167)
total: matches=0 tag_hits=0 false_alarms=0 data=9946559856

rsync[13266] (receiver) heap statistics:
arena:          5783552   (bytes from sbrk)
ordblks:         4   (chunks not in use)
smlblks:         0
hblks:          4   (chunks from mmap)
```

```
hblkhd:      1851392  (bytes from mmap)
allmem:      7634944  (bytes from sbrk + mmap)
usmblks:      0
fsmblks:      0
uordblks:    5384448  (bytes used)
fordblks:    399104  (bytes free)
keepcost:    398768  (bytes in releasable chunk)

rsync[12324] (generator) heap statistics:
arena:      5783552  (bytes from sbrk)
ordblks:      2  (chunks not in use)
smblocks:      2
hblks:      4  (chunks from mmap)
hblkhd:      1851392  (bytes from mmap)
allmem:      7634944  (bytes from sbrk + mmap)
usmblks:      0
fsmblks:      64
uordblks:    5056720  (bytes used)
fordblks:    726832  (bytes free)
keepcost:    726496  (bytes in releasable chunk)

Number of files: 80,167 (reg: 68,143, dir: 11,894, link: 130)
Number of regular files transferred: 68,078
Total file size: 9,971,551,075 bytes
Total transferred file size: 9,946,559,856 bytes
Literal data: 9,946,559,856 bytes
Matched data: 0 bytes
File list size: 1,708,132
Total bytes sent: 1,089,440
Total bytes received: 9,952,136,811

sent 1,089,440 bytes  received 9,952,136,811 bytes  8,236,016.76 bytes/sec
total size is 9,971,551,075  speedup is 1.00
rsync error: some files/attrs were not transferred (see previous errors)
(code 23) at main.c(1655) [generator=3.1.1]
```

però, com en el cas del ParaVision 5.0, no es transfereixen tots els fitxers per un problema de permisos d'accés de l'usuari *sermn* al BioSpec.

## Configuració de sudo al BioSpec per rsync

Per resoldre el problema amb els permisos de les carpetes i/o fitxers, segueixo les instruccions descrites a [Running remote rsync as root when root login is disabled](#), i afegeixo l'usuari remot (*sermn*) al fitxer */etc/sudoers* al BioSpec per autoritzar-lo a executar la comanda `sudo rsync` i tenir accés a totes les carpetes i fitxers:

```
[root@cie-55-30 etc]# visudo
```

```
...
[root@cie-55-30 etc]# more sudoers
# sudoers file.
#
# This file MUST be edited with the 'visudo' command as root.
#
# See the sudoers man page for the details on how to write a
# sudoers file.

[...]

sermn ALL= NOPASSWD:/usr/bin/rsync
```

i faig servir la comanda rsync amb noves opcions

```
# rsync -Hvax --verbose --progress --stats --protocol="30" -e \
  "ssh" --rsync-path="sudo rsync" sermn@cie-55-30.uab.cat:/opt/Pv5.1 .
```

Alternativament podria haver fet servir algunes de les solucions descrites a [rsync all files of remote machine over SSH without root user?](#)

## Transferència del ParaVision 5.0

### Transferència completa dels fitxers

```
root@cie-50-205:/opt# rsync -Hvax --verbose --progress \
--stats --protocol="30" -e "ssh" --rsync-path="sudo rsync" \
sermn@cie-55-30.uab.cat:/opt/PV5.0 .
opening connection using: ssh -l sermn cie-55-30.uab.cat "sudo rsync" --
server --sender -vvlHogDtprxe.iLsfx . /opt/Pv5.0 (10 args)
receiving file list ...
expand file_list to 4000 bytes, did move
expand file_list to 8000 bytes, did move
expand file_list to 16000 bytes, did move
expand file_list to 32000 bytes, did move
 7100 files...
expand file_list to 64000 bytes, did move
 11100 files...
 14000 files...
expand file_list to 128000 bytes, did move
 19900 files...
 21900 files...
 24800 files...
 27700 files...
 30600 files...
expand file_list to 256000 bytes, did move
[Receiver] expand file_list pointer array to 524288 bytes, did move
34230 files to consider
```

```
delta-transmission enabled
PV5.0/.hasStarted is uptodate
PV5.0/classes/doc/English/html/qtp/abort_btn.gif is uptodate
PV5.0/classes/doc/English/html/qtp/about.gif is uptodate
PV5.0/classes/doc/English/html/qtp/about.html is uptodate
PV5.0/classes/doc/English/html/qtp/about_btn.gif is uptodate
...
PV5.0/prog/pvlocal/bin/cdrecord.redhat_el3
    343,217 100%    1.13MB/s    0:00:00 (xfr#27, to-chk=2538/34230)
PV5.0/prog/pvlocal/bin/growisofs
    93,397 100%   307.10kB/s    0:00:00 (xfr#28, to-chk=2535/34230)
total: matches=0 tag_hits=0 false_alarms=0 data=958266
```

```
rsync[11915] (receiver) heap statistics:
arena:          2326528    (bytes from sbrk)
ordblks:        4         (chunks not in use)
smlblks:        0
hblks:          4         (chunks from mmap)
hblkhd:         1327104   (bytes from mmap)
allmem:         3653632   (bytes from sbrk + mmap)
usmlblks:       0
fsmblks:        0
uordblks:       2193328   (bytes used)
fordblks:       133200   (bytes free)
keepcost:       132864   (bytes in releasable chunk)
```

```
rsync[11527] (generator) heap statistics:
arena:          2134016   (bytes from sbrk)
ordblks:        2         (chunks not in use)
smlblks:        2
hblks:          4         (chunks from mmap)
hblkhd:         1327104   (bytes from mmap)
allmem:         3461120   (bytes from sbrk + mmap)
usmlblks:       0
fsmblks:        64
uordblks:       1865600   (bytes used)
fordblks:       268416   (bytes free)
keepcost:       268080   (bytes in releasable chunk)
```

```
Number of files: 34,230 (reg: 29,827, dir: 4,264, link: 139)
Number of regular files transferred: 28
Total file size: 2,052,735,064 bytes
Total transferred file size: 958,266 bytes
Literal data: 958,266 bytes
Matched data: 0 bytes
File list size: 808,190
Total bytes sent: 464
Total bytes received: 1,766,945
```



```
sent 464 bytes received 1,766,945 bytes 52,758.48 bytes/sec
total size is 2,052,735,064 speedup is 1,161.44
```

## Verificació

Tipus de fitxer	Ordinador al BioSpec	Nou ordinador pel Biospec
Fitxer normal [1]	29827	29827
Carpeta [2]	4264	4264
Enllaç simbòlic [3]	139	139

```
[1] find ./PV5.0/ -type f | wc -l
```

```
[2] find ./PV5.0/ -type d | wc -l
```

```
[3] find ./PV5.0/ -type l | wc -l
```

## Transferència del ParaVision 5.1

### Transferència completa dels fitxers

```
root@cie-50-205:/opt# rsync -Hvax --verbose --progress --stats --
protocol="30" -e "ssh" --rsync-path="sudo rsync"
sermn@cie-55-30.uab.cat:/opt/Pv5.1 .
opening connection using: ssh -l sermn cie-55-30.uab.cat "sudo rsync" --
server --sender -vvlHogDtprxe.iLsfx . /opt/Pv5.1 (10 args)
receiving file list ...
expand file_list to 4000 bytes, did move
expand file_list to 8000 bytes, did move
expand file_list to 16000 bytes, did move
expand file_list to 32000 bytes, did move
expand file...
_list to 64000 bytes, did move
12000 files...
15800 files...
expand file_list to 128000 bytes, did move
19800 files...
23700 files...
27500 files...
31300 files...
expand file_list to 256000 bytes, did move
[Receiver] expand file_list pointer array to 524288 bytes, did move
36500 files...
40400 files...
44200 files...
48000 files...
51800 files...
55600 files...
59500 files...
63300 files...
```

```
expand file_list to 512000 bytes, did move
[Receiver] expand file_list pointer array to 1048576 bytes, did move
 69300 files...
 73200 files...
 77000 files...
80168 files to consider
delta-transmission enabled
Pv5.1/.checkedLibDeps is uptodate
Pv5.1/.directory is uptodate
Pv5.1/.hasStarted is uptodate
Pv5.1/classes/doc/English/html/qtp/abort_btn.gif is uptodate
...
Pv5.1/prog/service/configuration.md5
 1,714,138 100% 1.52MB/s 0:00:01 (xfr#128, to-chk=2342/80168)
Pv5.1/prog/service/configuration_5.1_Wed_Oct_31_12:49:53_2012.md5
 1,714,138 100% 7.43MB/s 0:00:00 (xfr#129, to-chk=2341/80168)
total: matches=727 tag_hits=6294 false_alarms=1 data=4737215
```

```
rsync[18966] (receiver) heap statistics:
 arena:          5783552 (bytes from sbrk)
 ordblks:         4 (chunks not in use)
 smlbks:         2
 hblks:          4 (chunks from mmap)
 hblkhd:        1851392 (bytes from mmap)
 allmem:        7634944 (bytes from sbrk + mmap)
 usmlbks:        0
 fsmblks:       128
 uordblks:      5385904 (bytes used)
 fordblks:      397648 (bytes free)
 keepcost:      397312 (bytes in releasable chunk)
```

```
rsync[18880] (generator) heap statistics:
 arena:          5783552 (bytes from sbrk)
 ordblks:         5 (chunks not in use)
 smlbks:         2
 hblks:          4 (chunks from mmap)
 hblkhd:        1851392 (bytes from mmap)
 allmem:        7634944 (bytes from sbrk + mmap)
 usmlbks:        0
 fsmblks:       128
 uordblks:      5058928 (bytes used)
 fordblks:      724624 (bytes free)
 keepcost:      460384 (bytes in releasable chunk)
```

```
Number of files: 80,168 (reg: 68,141, dir: 11,897, link: 130)
Number of regular files transferred: 129
Total file size: 9,971,638,288 bytes
Total transferred file size: 5,229,582 bytes
Literal data: 4,737,215 bytes
```

Matched data: 492,367 bytes  
File list size: 1,706,986  
Total bytes sent: 11,596  
Total bytes received: 6,451,016

sent 11,596 bytes received 6,451,016 bytes 680,274.95 bytes/sec  
total size is 9,971,638,288 speedup is 1,542.97

## Verificació

Tipus de fitxer	Ordinador al BioSpec	Nou ordinador pel Biospec
Fitxer normal [1]	68141	68192
Carpeta [2]	11897	11897
Enllaç simbòlic [3]	130	130

```
[1] find ./Pv5.1/ -type f | wc -l  
[2] find ./PV5.1/ -type d | wc -l  
[3] find ./PV5.1/ -type l | wc -l
```

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