

Clonezilla - prebacivanje preslike na hardverski drugačiji poslužitelj



Kako uštediti što više vremena, prebaciti sve dokumente i konfiguracijske datoteke sa starog na novi poslužitelj, bez dodatne instalacije osnovnog operacijskog sustava i k tomu još na posve novi hardware i da sve to zajedno proradi iz prve?

Na gore navedena pitanja pokušao sam pronaći odgovor s programom Clonezilla. Clonezilla je program za kloniranje diska, o kojemu je već bilo spomena na ovom Portalu, a više informacija možete pronaći na sljedećim linkovima (http://clonezilla.org/, https://sysportal.carnet.hr/search/node/clonezilla).

"Donor" za kloniranje je stari Dell server nabavljen davne 2005. godine. Server i dalje radi, no problem je, naravno, prostor na disku. Budući da mi je u ruke došao potpuno novi Dell PowerEdge, pružila se prilika isprobati kloniranje diska na novi server, a time i zadovoljiti znatiželja da će sve raditi bez ikakvih problema. U nastavku ćemo opisati proceduru kloniranja i prijenosa na novi poslužitelj. Naglasak ovog članka je kloniranje na server s potpuno drugačijim hardwareom. Nažalost, ne možemo garantirati da će baš svaka kombinacija starog i novog hardwarea funkcionirati bez potrebe za dodatnim intervencijama.

Prvo treba napraviti klon od starog poslužitelja. Dok se radi kloniranje, na novom poslužitelju napravit ćemo particije točno kako su i na starom poslužitelju. Prilikom kreiranja particija na novom poslužitelju one mogu biti veće nego postojeće (uostalom, to nam je i bio cilj), a ukoliko želite iste veličine particija, novi poslužitelj ne morate ni particionirati. Za kreiranje particija poslužit ćemo se s Gparted editorom (http://gparted.org/).

Da vidimo koji je CPU na starom poslužitelju (da bi kasnije mogli usporediti s novim poslužiteljem)

server:~# lscpu Architecture: i686 CPU op-mode(s): 32-bit, 64-bit Byte Order: Little Endian CPU(s): 2 On-line CPU(s) list: 0.1 Thread(s) per core: 2 Core(s) per socket: 1 Socket(s): 1 Vendor ID: GenuineIntel CPU family: 15 Model: 4 Model name: Intel(R) Xeon(TM) CPU 3.00GHz Stepping: 1 CPU MHz: 2992.428 BogoMIPS: 5984.85 L1d cache: 16K L2 cache: 1024K

Pogledajmo kako izgledaju particije na starom poslužitelju:

server:~# fdisk -l



Disk /dev/sda: 204.7 GiB, 219823472640 bytes, 429342720 sectors Units: sectors of 1 * 512 = 512 bytes Sector size (logical/physical): 512 bytes / 512 bytes I/O size (minimum/optimal): 512 bytes / 512 bytes Disklabel type: dos Disk identifier: 0x5f374a7c

Device Boot Start End Sectors Size Id Type /dev/sda1 63 3148739 3148677 1.5G 82 Linux swap / Solaris /dev/sda2 * 3148740 4192964 1044225 509.9M 83 Linux /dev/sda3 4192965 29366819 25173855 12G 83 Linux /dev/sda4 29366820 429337124 399970305 190.7G f W95 Ext'd (LBA) /dev/sda5 29366883 39841199 10474317 5G 83 Linux /dev/sda6 39841263 42989939 3148677 1.5G 83 Linux /dev/sda7 42990003 429337124 386347122 184.2G 83 Linux

Iste ćemo napraviti na novom poslužitelju, samo znatno znatno većeg kapaciteta.

S Gparted pokrećemo poslužitelj i kreiramo sedam particija od sda1-sda7. Particije u ovom postupku ne treba mountati.

GParted Edit V	ew <u>Device</u> P	artition Help		NAL AND	
New Delete	Resize/Move	Copy Paste Un	do Apply		🛃/dev/sda (1.82 TiB) 🗸
unallocated 1.82 TH					
Partition	File System	Size	Used	Unused	Flags
unallocated 🗥	unallocated	1.82 Ti	1	-	
Reportions pond	100				



GParted	Edit View Device Partition Help		
New D	Resize/Move Copy Paste Undo Apply	🚮 /dev/	sda (1.82 TiB)
0	New Partition #3 Applying pending operations	#7	
UUI De	pending on the number and type of operations this might take a long time.		
Partit Co	mpleted Operations:		
N	All operations successfully completed		
Ne -1	Details		
* Ne	Create Primary Partition #1 (ext4, 8.00 GiB) on /dev/sda		00:00:00 √
Þ	Create Primary Partition #2 (ext4, 2.00 GiB) on /dev/sda		00:00:00
Þ	Create Primary Partition #3 (ext4, 500.00 GiB) on /dev/sda		00:00:02 🞻
Þ	Create Extended Partition #4 (extended, 1.32 TiB) on /dev/sda		00:00:01
Þ	Create Logical Partition #5 (ext4, 40.00 GiB) on /dev/sda		00:00:01 🞻
	Create Logical Partition #6 (ext4, 2.00 GiB) on /dev/sda		00:00:00
	Create Logical Partition #7 (ext4, 1.28 TiBk on /dev/sda		00:00:05 🚽
7 оре		<u>S</u> ave Details	X <u>C</u> lose

Prilikom kreiranja particija nije nam važan odabir datotečnog sustava ext3 ili ext4 iz razloga što će nakon vraćanja klona (image starog računala) datotečni sustav biti onaj sa starog poslužitelja, a to je u ovom slučaju ext3.

Nakon pripreme particija na novom poslužitelju i završetka procesa kloniranja starog poslužitelja slijedi prijenos kloniranih podataka (preslike) na novi poslužitelj.

Poslužitelj pokrećemo s izmjenjivog medija kako bi pokrenuli program Clonezilla.

Start Clonezilla Start Clonezilla or enter login shell (command line)? Select mode:					
Start_Clonezilla Enter_shell	Start Clonezilla Enter command line prompt				
<0k>	<cancel></cancel>				



Clonezilla - Ope Now we need to mount a device as /home read or save the image in /home/partim ///NOTE/// You should NOT mount the pa The partition name is the device name "hda1" or "sda1", the 2nd partition in in the second disk is "hdb1" or "sdb1" C: is hda1 (for PATA) or sda1 (for PATA sda5)	nsource Clone System (OCS) Mode: /partimag (Clonezilla image(s) repository) so that we can ag. rtition you want to backup as /home/partimag in GNU/Linux. The first partition in the first disk is the first disk is "hda2" or "sda2", the first partition If the system you want to save is MS windows, normally A, SATA or SCSI), and D: could be hda2 (or sda2), hda5 (or
sda1 8G_ext4(In_PERC_H730_Adp_ sda2 2G_ext4(In_PERC_H730_Adp_ sda3 500G_ext4(In_PERC_H730_Adp_ sda5 40G_ext4(In_PERC_H730_Adp_) sda6 2G_ext4(In_PERC_H730_Adp_) sda7 1.3T_ext4(In_PERC_H730_Adp_) sdc1 931.56_ntfs_Podaci(In_Elec)_361866da08247280020ff2c091eb71520)_361866da08247280020ff2c091eb71520 o_)_361866da08247280020ff2c091eb71520)_361866da08247280020ff2c091eb71520 o_361866da08247280020ff2c091eb71520 o_)_361866da08247280020ff2c091eb71520 ments_1078_)_WDC_WD10JMvW-11AJGS3_WD-WXE1E14UYS76
<0k>	<cancel></cancel>

Važno je napomenuti da, prije samog procesa restauracije preslike, Clonezillu treba pokrenuti u "Expert mode" načinu rada, kako bi mogli odabrati dodatne opcije koje su nam potrebne da bi mogli iskoristiti cijeli kapacitet pojedinih particija (podsjetimo se, napravili smo veće particije nego one na donorskom serveru).

Clon	ezilla – Opensource Clone System (OCS)
Choose the mode to r	un the following wizard about advanced parameters:
Beginner	Beginner mode: Accept the default options
<mark>Expert</mark>	Expert mode: Choose your own options
Exit	Exit. Enter command line prompt
<	Ok> <cancel></cancel>

Ako ostavimo osnovne vrijednosti i pokrenemo restauraciju preslike, prenijet će se i smanjeni kapacitet particija, a to nam nije cilj.

Odabiremo opciju "restoredisk":



VOLUES and DO NUL Change anothing

Clonezilla *Clonezilla is free (GPL) softwa This software will overwrite the backup important files before re ///Hint! From now on, if multip! your selection. An asterisk (*)	- Opensource Clone System (OCS): Select mode are, and comes with ABSOLUTELY NO WARRANTY* e data on your hard drive when restoring! It is recommended to estoring!*** Le choices are available, you have to press space key to mark will be shown when the selection is done///
savedisk saveparts <mark>restoreparts</mark> 1-2-mdisks recovery-iso-zip chk-img-restorable cvt-img-compression encrypt-img decrypt-img exit	Save_local_disk_as_an_image Save_local_partitions_as_an_image Restore_an_image_to_local_disk Restore_an_image_to_local_partitions Restore_an_image_to_multiple_local_disks Create_recovery_Clonezilla_live Check_the_image_restorable_or_not Convert_image_compression_format_as_another_image Encrypt_an_existing_unencrypted_image Decrypt_an_existing_encrypted_image Exit. Enter command line prompt
<0k>	<cancel></cancel>

U načinu "Expert mode" provjerimo da li je uključena opcija "r". Trebala bi biti, a ako slučajno nije odaberite tu opciju:

asterisk (*) will	be shown when the sel	ection is done)
<pre> [*] -g auto [*] -e1 auto [*] -e2 [] -nogui [] -hn0 PC [] -hn1 PC [] -v [] -batch [*] -c [] -t [] -icrc [] -icrc [] -irvd [] -ius [] -icds [] -iefi [] -j1 [*] -j2 [] -cm [] -cs</pre>	Reinstall grub in clie Automatically adjust f sfdisk uses CHS of han Use text output only, Change MS Win hostname Change MS Win hostname Prints verbose message Run clone in batch mod Client waits for confi Client skip restoring Client restores the pr Client skip restoring Try to resize the file stdisk uses the CHS va Ignore CRC checking of Do not remove Linux ud Do not remove NTFS vol Do not update syslinux Skip checking destinat Skip updating boot ent Write MBR (512 B) agai Clone the hidden data Check image by MD5 che Check image by SHA1 ch	Action is done) At disk MBR (only if grub config exists) ilesystem geometry for a NTFS boot partition if exists d drive from EDD(for non-grub boot loader) no TUI/GUI output (based on IP address) after clone (based on MAC address) after clone (based on MAC address) after clone s (especially for udpcast) e (DANGEROUS!) mation before cloning the MBR (Master Boot Record) ebuilt bootloader from syslinux (For Windows only) the EBR (Extended Boot Record) system to fit partition size) tue of hard drive from the saved image partclone ev hardware record after restoring. Imme dirty flag after it is restored related files after restoring. Ion disk size before creating partition table hies in EFI NVRAM after restoring h after image is restored. Not OK for partition table di between MBR and 1st partition ksums ecksums
[] -cmf [] -a	Do NOT force to turn o	HD DMA
		<cancel></cancel>

Na sljedećem upitu odaberite opciju "-k".



Published on sys.portal (https://sysportal.carnet.hr.)

Set advanced paramet anything. Just press ****ATTENTION****(1) T TARGET DEVICE WILL B (partition) to a sma (partition) to a lar	Clonezilla advanced extra parameters Mode: restoredisk ers. If you have no idea, keep the default values and do NOT change Enter. Choose the mode to create the partition table on the target disk: O CREATE A NEW PARTITION TABLE ON THE TARGET DISK. ALL THE DATA ON THE E ERASED!!! (2) Clonezilla will not restore an image from a large disk ller disk (partition). However, it can restore an image from a small disk ger disk (partition). (3) If you do NOT want Clonezilla to create a				
-k	Use the partition table from the image				
-k1	Create partition table proportionally				
-j0 evit	Use dd to create partition (NOT OK if logical drives exist)				
CAIL					
	<ok> <cancel></cancel></ok>				
	<uk> (Cance1/</uk>				

Ova opcija nam je jako važna jer omogućuje programu da iskoristi puni kapacitet particije. Nakon odabira pokrenimo restauriranje.



Nakon završetka procesa vraćanja preslike, slijedi proces finog podešavanja i prilagodba veličinama particija:







ass 5: Checking group summary information esize2fs 1.43.4 (31–Jan–2017) mp: 16/196992 files (6.3% non-contiguous), 14409/393216 blocks Resizing the filesystem on /dev/sda6 to 524288 (4k) blocks. Begin pass 1 (max = 4) Extending the inode table ***** The filesystem on /dev/sda6 is now 524288 (4k) blocks long. Now tuning the file system size on partition /dev/sda7 to fit the partit Running: ocs-resize-part _-batch /dev/sda7 e2fsck -f -y /dev/sda7; resize2fs -p -f /dev/sda7 e2fsck 1.43.4 (31-Jan-2017) Pass 1: Checking inodes, blocks, and sizes Pass 2: Checking directory structure Pass 3: Checking directory connectivity Pass 4: Checking reference counts Pass 5: Checking group summary information home: 67353/24150016 files (5.8% non-contiguous), 15615206/48293390 bloc resize2fs 1.43.4 (31-Jan-2017) Resizing the filesystem on /dev/sda7 to 343407616 (4k) blocks. Begin pass 1 (max = 9006) Extending the inode table Begin pass 2 (max = 3837) Relocating blocks Begin pass 3 (max = 1474) Scanning inode table XXXXXXXXXXXXXXXXXXXXXXX

I napokon - "The moment of truth" - da vidimo što smo napravili.

Boot proces prolazi normalno, prijava na sustav je prošla uspješno, servisi su se podignuli.

Pogledajmo što je s procesorom:

mojserver:# lscpu CPU op-mode(s): 32-bit, 64-bit Thread(s) per core: 2 Core(s) per socket: 8 Socket(s): 1 Vendor ID: GenuineIntel CPU family: 6 79 Model: Model name: Intel(R) Xeon(R) CPU E5-2620 v4 @ 2.10GHzModel: 79 Stepping: 1 CPU MHz: 2097.873 BogoMIPS: 4195.02 Virtualization: VT-x L1d cache: 32K L1i cache: 32K



L2 cache: 256K L3 cache: 20480K

Vidimo da je sustav pokrenut na novom CPU sa 16 jezgri, a prepoznati su i novi mrežni uređaji, kojih sada ima dva komada.

mojserver:# lspci | egrep -i --color 'network|ethernet'
02:00.0 Ethernet controller: Broadcom Corporation NetXtreme BCM5720 Gigabit Ethernet
PCIe
02:00.1 Ethernet controller: Broadcom Corporation NetXtreme BCM5720 Gigabit Ethernet
PCIe

I ona je prepoznata. Kako bi svi PCI uređaji bili prepoznati (u slučaju da imate takvih), instalirajte paket pciutils (ukoliko već nije instaliran). U njemu se nalazi naredba update-pciids, koja će skinuti najnovije ID oznake.

update-pciids
Downloaded daily snapshot dated 2017-07-15 03:15:02
server:#

Ovo je prošlo u redu, a mi ćemo pregledati stanje na particijama:

mojserver: # fdisk -1

```
Disk /dev/sda: 1999.3 GB, 1999307276288 bytes
255 heads, 63 sectors/track, 243068 cylinders, total 3904897024 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x5f374a7c
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1		2048	16779263	8388608	83	Linux
/dev/sda2		16779264	20973567	2097152	83	Linux
/dev/sda3		20973568	1069549567	524288000	83	Linux
/dev/sda4		1069549568	3904897023	1417673728	5	Extended
/dev/sda5		1069551616	1153437695	41943040	83	Linux
/dev/sda6		1153439744	1157634047	2097152	83	Linux
/dev/sda7		1157636096	3904897023	1373630464	83	Linux

Možemo vidjeti da je Clonezilla uspješno uzela cijelu veličinu particija, što smo i htjeli jer smo koristili opciju "-k".

Proces kloniranja starog na novi poslužitelj s novim hardwareom prošao je bez ikakvih problema. Vjerojatno smo ima i malo dodatne sreće zato što su oba poslužitelja od proizvođača DELL. Hoće li tako biti i kod vas ne možemo odgovoriti sa velikom sigurnošću, ali svakako vrijedi pokušati jer stari server i dalje radi i nikakve žurbe nema.

uto, 2017-08-22 11:17 - Zdravko Rašić**Vijesti:** <u>Linux</u> [1] Kategorije: <u>Operacijski sustavi</u> [2] Vote: 5



Vaša ocjena: Nema Average: 5 (1 vote)

story_tag: Clonezilla [3]

Source URL: https://sysportal.carnet.hr./node/1752?page=0

Links

- [1] https://sysportal.carnet.hr./taxonomy/term/11
- [2] https://sysportal.carnet.hr./taxonomy/term/26
- [3] https://sysportal.carnet.hr./taxonomy/term/113