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Upgrading Twinstar CompletePBX from v.4.6.1 to v.4.6.2

Jul 31, 2017 | PBX Upgrade, PBX Upgrade Instructions

Document version: 1.0

This document provides instructions for upgrading Xorcom Twinstar CTS2000/3000/4000 Servers running CompletePBX v.4.6.1 to the version 4.6.2.

Prior to performing the upgrade, it is strongly recommended that you backup your current server using the Xorcom Rapid Recovery tool (<http://www.xorcom.com/Rapid-Recovery>).

IMPORTANT NOTES!

* *The Primary server must be the active server before you start with upgrading. Note: The "Primary" server is the server to which the Atribank USB port marked as "Main" is connected.*

* *The DRBD partition must be synchronized ("UpToDate") on both servers before you start the server update. To verify that the DRBD partition is synchronized on both servers, run the following command:*

```
# cat /proc/drbd
version: 8.4.6 (api:1/proto:86-101)
GIT-hash: 833d830e0152d1e457fa7856e71e11248ccf3f70 build by phil@Build64R6, 2015-04-09 14:35:00
```

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```
0: cs:Connected ro:Primary/Secondary ds:UpToDate/UpToDate A r-----  
ns:224601636 nr:0 dw:12700 dr:224619705 al:12 bm:0 lo:0 pe:0 ua:0 ap:0 ep:1 wo:f oos:0
```

Update Procedure

1. On both servers, disconnect DRBD communication:

```
drbdadm disconnect r0
```

2. On the active server, disable the servers switching and the TwinStar watch dog process:

```
twinstar-ctl freeze  
twinstar disable-wd
```

3. On the primary server, update the software as follows:

```
cd /tmp  
wget http://updates.xorcom.com/servers/tools/cpbx-4.6.2-upgrade.tar.gz  
tar xzf cpbx-4.6.2-upgrade.tar.gz  
cd cpbx-4.6.2-upgrade  
./run-upgrade
```

The amount of time required to complete the upgrade process depends on the available Internet bandwidth. It can be quite lengthy.

The upgrade log is saved in the `upgrade.log` file.

The `run-upgrade` script performs the upgrade in several stages. The current stage is saved in the stage file that is created in the same folder where the script is installed.

If the script fails for any reason (e.g., particular YUM repository is temporarily unavailable, etc.) then it is usually safe enough to run the script again. The `run-upgrade` will resume from the point where it was interrupted.

If the software upgrade has been completed successfully the following message will appear:

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```
*** Upgrade completed successfully.
```

```
Reboot the PBX.
```

4. On the primary server, reboot the server as follows:

```
reboot
```

5. On the primary server, it is possible that after reboot the DRBD will not start automatically. In this case the usual information will not display in the `/proc/drbd`. In order to fix the problem, start the DRBD manually, as follows:

```
/etc/init.d/drbd start
```

6. On the primary server, disconnect DRBD communication and disable the TwinStar watch dog process, as follows:

```
drbdadm disconnect r0
```

```
twinstar disable-wd
```

7. Only if there are some Atribanks connected: on the primary server, reset the Atribank devices, as follows:

```
/etc/init.d/asterisk stop
```

```
/etc/init.d/dahdi stop
```

```
/usr/share/dahdi/xpp_fxloader reset
```

Wait until Asterisk and the other services start automatically.

```
#lsusb
```

```
Bus 002 Device 001: ID 0000:0000
```

```
Bus 001 Device 005: ID e4e4:1162
```

```
Bus 001 Device 001: ID e4e4:1162
```

```
Bus 003 Device 001: ID 0000:0000
```

```
Bus 004 Device 001: ID 0000:0000
```

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After a while, depending on the number and type of Astribanks installed, proof that the Asterisk process is running will be displayed:

```
[root@srv-a ~]# ps -A | grep asterisk
7236 ? 00:00:00 safe_asterisk
7246 ? 00:00:01 asterisk
```

8. On the primary server, remove the old kernel if necessary.

Check the installed kernels:

```
# rpm -q kernel
kernel-2.6.32-504.16.2.el6.x86_64
kernel-2.6.32-573.18.1.el6.x86_64
```

As you can see there is one old kernel kernel-2.6.32-504.16.2.el6.x86_64 that can be uninstalled.

```
yum -y remove kernel-2.6.32-504.16.2.el6.x86_64
```

The primary server has been upgraded. Some additional actions must be performed on the server after the backup server is upgraded.

9. In order to upgrade the backup server Asterisk needs to run there. Please note that Asterisk is already running on the primary server. If the PBX is configured to register on a SIP server then both primary and backup servers will try to register on it. If this is the case then stop Asterisk on the primary server using the following command:

```
/etc/init.d/asterisk stop
```

10. On both servers, disconnect DRBD communication, as follows:

```
drbdadm disconnect r0
```

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It is possible that DRBD communication is already disconnected on srv-b. In this case you will get an error message from drbdadm which you can ignore.

11. On the backup server, mount the DRBD partition (/replica), start the mysql and asterisk services:

```
cd /usr/share/twinstar/services.d
./10-drbd.run start
./15-filesystem.run start
./20-mysql.run start
./25-asterisk.run start
```

If this was done properly, the communication status (cs) will be 'StandAlone' and state (ro) will be 'Primary' in output of the 'cat /proc/drbd' command. For example:

```
cat /proc/drbd
version: 8.4.6 (api:1/proto:86-101)
GIT-hash: 91b4c048c1a0e06777b5f65d312b38d47abaea80 build by ...
0: cs:StandAlone ro:Primary/Unknown ds:UpToDate/DUnknown r----
   ns:535648 nr:4368 dw:96868716 dr:577970 al:23 bm:5996 lo:0 pe:0 ua:0 ap:0 ep:1 wo:b oos:888
```

12. On the backup server, upgrade the software, as follows:

```
cd /tmp
wget http://updates.xorcom.com/servers/tools/cpbx-4.6.2-upgrade.tar.gz
tar xzf cpbx-4.6.2-upgrade.tar.gz
cd cpbx-4.6.2-upgrade
./run-upgrade
```

The amount of time required to complete the upgrade process depends on the available Internet bandwidth. It can be quite lengthy. The upgrade log is saved in the upgrade.log file. If the software upgrade has been completed successfully the following message will appear:

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```
*** Upgrade completed successfully.
```

```
Reboot the PBX.
```

13. On the backup server, reboot:

```
reboot
```

14. On the backup server, note that after reboot the DRBD may not start automatically. In this case, the usual information will not appear in the `/proc/drbd`. In order to fix the problem, start the DRBD manually, as follows:

```
/etc/init.d/drbd start
```

15. On the primary server, connect DRBD as follows:

```
drbdadm connect r0
```

16. Check the DRBD status on both servers. On the active server something like the following will be displayed:

```
# cat /proc/drbd
version: 8.4.7-1 (api:1/proto:86-101)
GIT-hash: 3a6a769340ef93b1ba2792c6461250790795db49 build by mockbuild@Build64R6, 2016-01-12 13:27:11
0: cs:SyncSource ro:Primary/Secondary ds:UpToDate/Inconsistent A r-----
   ns:144916 nr:0 dw:10424 dr:167973 al:11 bm:0 lo:0 pe:0 ua:0 ap:0 ep:1 wo:f oos:276976
   [=====>.....] sync'ed: 35.6% (276976/421892)K
   finish: 0:00:11 speed: 24,152 (24,152) K/sec
```

On the backup server the following will display:

```
# cat /proc/drbd
version: 8.4.6 (api:1/proto:86-100)
GIT-hash: 91b4c048c1a0e06777b5f65d312b38d47abaea80 build by ...
0: cs:SyncTarget ro:Secondary/Primary ds:Inconsistent/UpToDate A r----
   ns:0 nr:27652 dw:27652 dr:0 al:0 bm:2 lo:0 pe:32 ua:0 ap:0 ep:1 wo:f oos:0
```

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```
[=====>.....] sync'ed: 36.8% (734040/761692)K  
finish: 0:00:52 speed: 13,824 (13,824) K/sec
```

17. Start Asterisk on the primary server:

```
/etc/init.d/asterisk start
```

18. Enable the servers switching. On the primary server:

```
twinstar-ctl unfreeze
```

19. On the secondary server, remove the old kernel if necessary.

Check the installed kernels:

```
# rpm -q kernel  
kernel-2.6.32-504.16.2.el6.x86_64  
kernel-2.6.32-573.18.1.el6.x86_64
```

As you can see there is one old kernel `kernel-2.6.32-504.16.2.el6.x86_64` that can be uninstalled.

```
yum -y remove kernel-2.6.32-504.16.2.el6.x86_64
```

That's all there is to it!

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