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# **Procedure: Movo Ros Indigo to Kinetic Migration**

**IMPORTANT**: Before attempting to migrate to ROS Kinetic, you should make backups of both of your MOVO computers. The process is risky and you could lose data.

## Step 1: Uninstall movo-core

From your computer, open a shell on Movo2:

Then stop the robot service and uninstall it:

ssh movo@movo2

movostop rosrun movo\_bringup uninstall\_movo\_core

## Step 2: Upgrade Movo1

A. Connect MOVO2 to the internet with an Ethernet-to-USB converter. You can verify the connection in a terminal with the command:

ping 8.8.8.8

If it pings, you should see a line like that:

64 bytes from 8.8.8.8: icmp\_seq=1 ttl=55 time=4.46 ms B. Stay in the terminal and checkout to the ROS Kinetic branch on MOVO2.

cd ~/movo\_ws/src

git fetch

git checkout kinetic-devel

Make sure your local changes are committed before the checkout. To checkout anyway and reject the local changes, add the -f flag like so :

git checkout -f kinetic-devel

C. Run the script setup\_internet\_on\_movo1 on **MOVO2** and say yes to the prompt. This will setup MOVO2 as an internet bridge for MOVO1.

./movo\_common/si\_utils/scripts/setup\_internet\_on\_movo1 D. Start an SSH terminal to MOVO1.

ssh movo@MOVO1

E. Upgrade the packages on MOVO1.

sudo apt-get update -y sudo apt-get upgrade -y

F. Stay in the terminal for the next step.

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# Step 3: Install Ubuntu 16.04 on Movo 1

- A. Install Ubuntu 16.04 by following the next commands:
- B. Install Ubuntu 16.04 by following the next commands:When asked about the auto-restart of libraries, answer yes:

	Configuring libssl1.0.0:amd64	
There are when cert Since the you will you wish prompted; automatic upgrade.	services installed on your system which need to be a ain libraries, such as libpam, libc, and libssl, are se restarts may cause interruptions of service for th normally be prompted on each upgrade for the list of to restart. You can choose this option to avoid bein instead, all necessary restarts will be done for you ally so you can avoid being asked questions on each	estarted upgraded. ne system, services ng Library
Restart s	ervices during package upgrades without asking?	

When asked about the dhcp config, keep the one you have (N or O option)

⊗		
Setting up libgnutlsxx28:amd64 (3.4.10-4ubuntu1.4)		
Setting up libgmpxx4ldbl:amd64 (2:6.1.0+dfsg-2)		
Setting up libgmp-dev:amd64 (2:6.1.0+dfsg-2)		
Setting up nettle-dev (3.2-1ubuntu0.16.04.1)		
Setting up libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.4)		
Setting up libgnutls-dev:amd64 (3.4.10-4ubuntu1.4)		
Setting up iputils-ping (3:20121221-5ubuntu2)		
Setcap is not installed, falling back to setuid		
Setting up libisccfg-export140 (1:9.10.3.dfsg.P4-8ubuntu1.10)		
Setting up libirs-export141 (1:9.10.3.dfsg.P4-8ubuntu1.10)		
Setting up isc-dhcp-common (4.3.3-5ubuntu12.10)		
Setting up isc-dhcp-server (4.3.3-5ubuntu12.10)		
Installing new version of config file /etc/apparmor.d/usr.sbin.dhcpd		
configuration file /etc/dhcp/dhcpd.conf		
==> Modified (by you or by a script) since installation.		
==> Package distributor has shipped an updated version.		
what would you like to do about it ? Your options are:		
Y or I : install the package maintainer's version		
N or O : keep your currently-installed version		
D : show the differences between the versions		
2 : start a shell to examine the situation		
The default action is to keep your current version.		
*** dhcpd.conf (Y/1/N/0/D/Z)  default=N  ? N		

When asked about the ssh\_config, keep the one you have (N or O option). When asked about the unattended-upgrades, keep the local version.

sudo do-release-upgrade





When asked if you want to remove packages, answer yes

Finally, when asked to reboot, answer No and power off MOVO. Then close the terminals.

⊗ 💭 🗊 movo@MOVO1: ~				
Removing libopencv-core-dev:amd64 (2.4.8+dfsg1-2ubuntu1) Removing libopencv-gpu2.4:amd64 (2.4.8+dfsg1-2ubuntu1)				
Removing python-bson (3.2-1build1)				
Processing triggers for man-db (2.7.5-1)				
Processing triggers for fontconfig (2.11.94-Oubuntu1.1)				
Processing triggers for libc-bin (2.23-0ubuntu10)				
Processing triggers for libglib2.0-0:amd64 (2.48.2-0ubuntu4)				
Processing triggers for hicolor-icon-theme (0.15-0ubuntu1.1)				
Processing triggers for gnome-menus (3.13.3-6ubuntu3.1)				
Processing triggers for desktop-file-utils (0.22-1ubuntu5.2)				
Processing triggers for mime-support (3.59ubuntu1)				
Processing triggers for bamfdaemon (0.5.3~bzr0+16.04.20180209-0ubuntu1)				
Rebuilding /usr/share/applications/bamf-2.index				
Processing triggers for install-info (6.1.0.dfsg.1-5)				
Processing triggers for libreoffice-common (1:5.1.6~rc2-0ubuntu1~xenial4)				
System upgrade is complete.				
Restart required				
To finish the upgrade, a restart is required. If you select 'y' the system will be restarted.				
Continue [yN] y				

- C. Boot on the MOVO back up again.
  - a. Open an ssh session on Movo2.
  - b. cd to movo\_ws.
  - c. Run the setup\_internet\_on\_movo1 script. (see step 2-C).
  - d. From another movo2 terminal, open a Movo 1 SSH:

ssh movo@MOVO1.

You should see this message:

We	lcome to Ubuntu	16.04.5 LTS (GNU/Linux 4.4.0-130-generic x86_64)
*	Documentation:	https://help.ubuntu.com
*	Management:	https://landscape.canonical.com
*	Support:	https://ubuntu.com/advantage

If you don't, power off then power on MOVO and try again. If the problem persists, you should flash MOVO1 with your Ubuntu 14.04 image and try the migration procedure again. It requires you taking off the skin on the Movo base. Call us.



D. From the SSH terminal, update your MOVO ROS code on MOVO1:

cd ~/movo\_ws/src git fetch git checkout kinetic-devel

E. Run the packages update script and say yes to all prompts.

./movo\_common/si\_utils/scripts/setup\_movo\_pc\_migration

F. Build the Kinova MOVO ROS Kinetic package after restarting the SSH connection

exit ssh movo@MOVO1 cd ~/movo\_ws rm -rf build/ devel/ catkin\_make

G. Close the SSH connection.

exit

## Step 4: Upgrade Movo 2

Connect directly to Movo 2. Don't do it by SSH because the Movo is reconfiguring its Wi-Fi during the update.

A. Upgrade the packages.

sudo apt-get update -y sudo apt-get upgrade -y B. Install Ubuntu 16.04 by following the instructions after this command: sudo do-release-upgrade If you encounter an error message stating that the upgrade couldn't be calculated. Use these commands to unhold the specified packages:

sudo apt-mark unhold libassimp-dev sudo apt-mark unhold libassimp3 sudo apt-mark unhold python-pyassimp

When asked about the auto-restart of libraries, answer yes:





When asked about the dhcp config, keep the one you have (N or O option)



When asked about the unattended-upgrades, keep the local version



When asked if you want to remove packages, answer yes





Finally, when asked to reboot, answer No and power off MOVO.

C. After the reboot, open a terminal, run the packages update script and say yes to all prompts.

./movo\_ws./src/movo\_common/si\_utils/scripts/setup\_movo\_pc\_migration D. Build the Kinova MOVO ROS Kinetic package:

> reset source /opt/rps/kinetic/setup.bash cd ~/movo\_ws rm -rf build/ devel/ catkin\_make

If you have any problems during the migration, please send a mail to : support@kinova.ca