

INTRODUCTION

This guide will help you upgrade your NAO to the latest OS and software versions. In order to do it smoothly, make sure you follow this sequence:

- FIRST, you need to upgrade your NAO (NAOqi);
- THEN, upgrade Choregraphe and the SDKs;
- FINALLY, we recommend you to check your existing projects.

Remember you can always refer to the [NAO Documentation - Upgrading my robot](#) for more details of each step.

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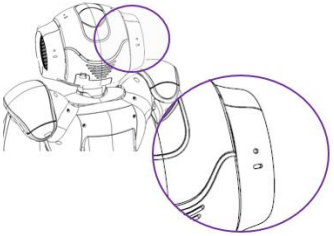
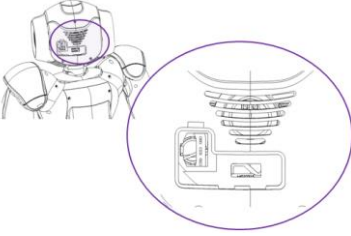
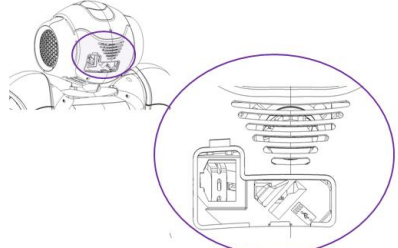
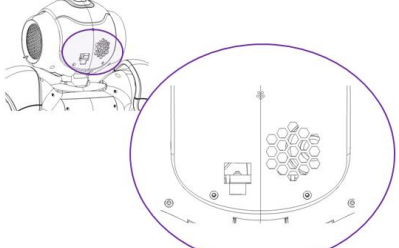
1 - UPGRADE YOUR NAO

PREREQUISITES

o [Check your NAO and your NAOqi versions](#)

- The new software version 2.1.2 runs on NAO V4 and V5. Check your robot's version and make sure your NAO is a V4 or a V5 before you upgrade it to 2.1.2.
- Owner of former NAO versions like V3 or V3.2 should contact our customer support: http://www.aldebaran.com/customer_care as the NAOqi 2.1.2 is not compatible with these versions of NAO.

To identify your NAO version, check the design on the back of the head:

V5		V4	
V3.3		V3+, V3.2	

To check the NAOqi version you are currently using, you need to go to the NAO webpage:

- Press NAO's chest button once – while NAO is connected to the internet;
- When NAO says the four numbers of its IP address, write them down;
- Open a web browser and enter this IP address in the address bar;
- Complete the user name with "nao" and the password you have set for the robot;
- You will then get access to the NAO webpage and the NAOqi version.

If you need more details on the NAO webpage see: http://doc.aldebaran.com/2-1/nao/webpage_access.html

○ [Get your robot ready](#)

Once you have checked your NAO version and before starting the upgrade, prepare your robot by:

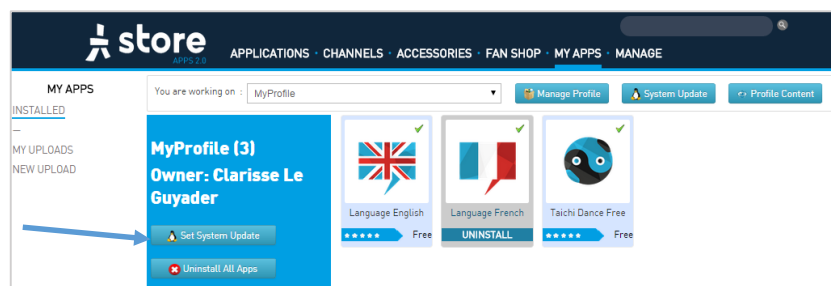
- Checking the battery - NAO must be fully charged so that the upgrade is running without interruptions.
- Making sure the sound level is high enough, so that you can hear important information during the upgrade.

UPGRADE NAO

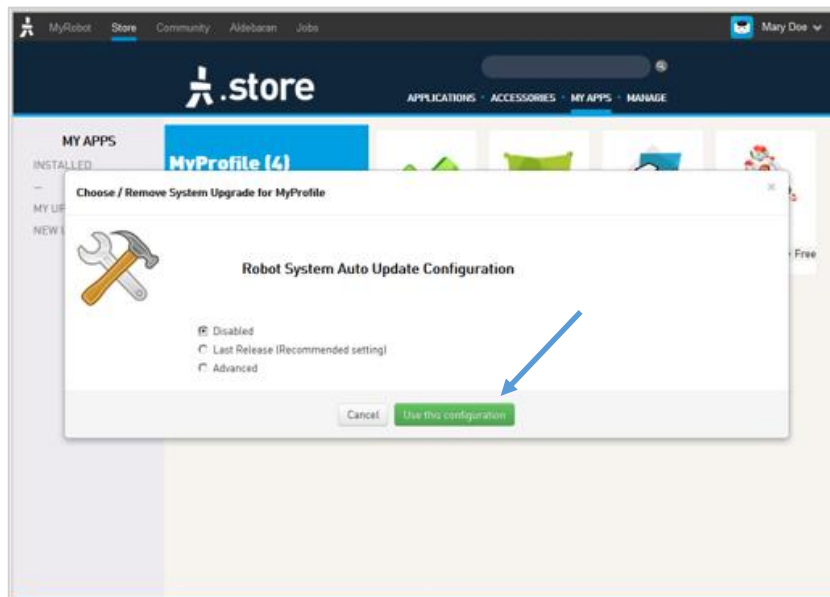
- If you have a NAO V5 or V4 running with NAOqi 2.0, you can use the [automatic upgrade method](#).
- If you have a NAO V4 and the 1.14 NAOqi version, we recommend you to upgrade your robot through Choregraphe - see "[Upgrading with Choregraphe](#)". If you have concerns about the condition of your robot, do not hesitate to run a factory reset - see the [advanced method section](#).

○ [Setting an automatic upgrade](#)

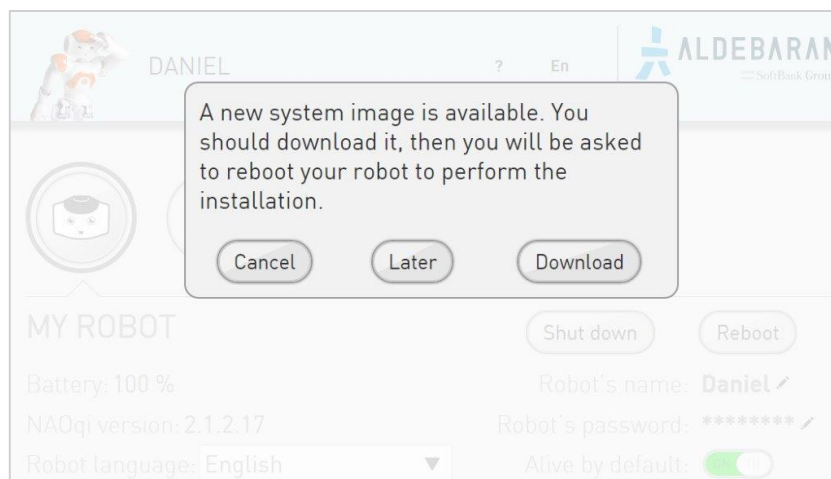
- If your robot has already been upgraded with a 2.x release, you can use the Aldebaran Store to set an automatic system upgrade.
- NAO will download upgrades automatically when online, and will stay up to date.
- Switch on your NAO. On the Aldebaran Store, choose **My Apps**.



- Click on the **System Update** button.



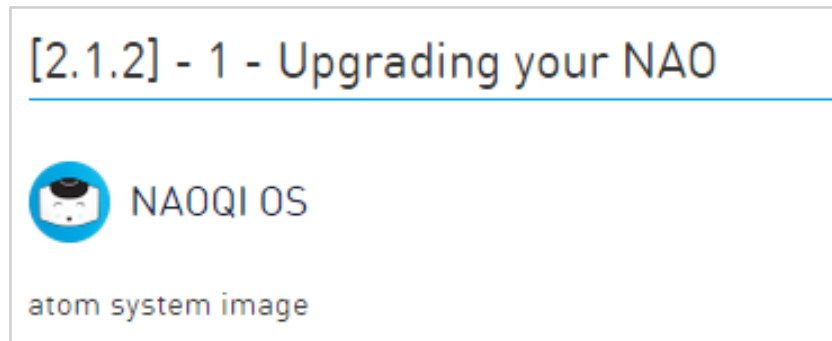
- By default, the “Disabled” option is chosen. In order to do the upgrade, we recommend to select the “Last Release” option. However, the “Advanced” option allows you to select a specific version of NAOqi;
- Click on the **Use this configuration** button: from now on, the Robot is linked to your account and will check automatically for system upgrades;
- To start the upgrade, you need to go to the NAO webpage, refresh it and wait for the following box to pop up:



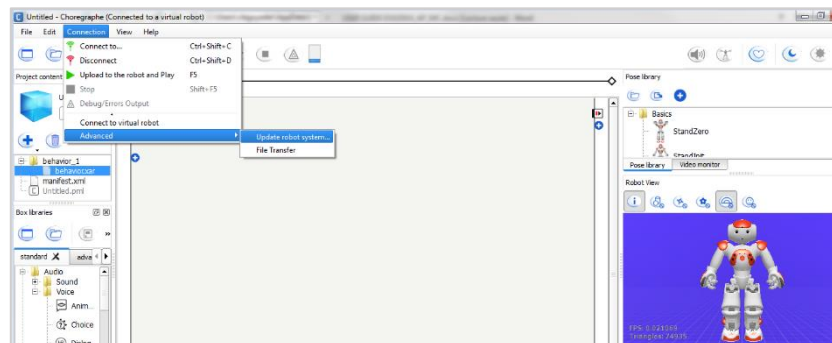
- Click on download to start downloading the upgrade;
- A sound notification and the chest button blinking green will let you know when the upgrade is complete;
- Press the chest button once and NAO will give you its IP address and say “I have downloaded the new system, please reboot me”;
- Then reboot your NAO.

○ [Upgrading with Choregraphe](#)

- Even with this method, you first have to upgrade your NAO with your current Choregraphe version and then move to the Choregraphe upgrade.
- From the [Aldebaran Community website](#), under Resources, Software, Operating System : download the latest version of the NAO System Image on your computer:



- Then launch your current version of Choregraphe;
- Connect to NAO;
- In the Connection drop down menu, select Advanced > Update robot system;



- Select the NAO OS image to upload:
 - e.g.: opennao-atom-system-image-2.1.x.xx.opn
- Click the Open button: the "Authentication required" window appears;
- Enter the login & password:
 - Login is always 'nao'
 - Password is the password you have set on NAO webpage.



- Choregraphe will upload the new image system to NAO and prepare the upgrade. A progression bar is displayed.
- When completed, a message will let you know that you can shut down and restart your robot.

Warning

Do not switch off the robot while the flashing process is running.

Troubleshooting

If something goes wrong during the NAOqi upgrade process, and Choregraphe ends it prematurely, an error code is given in the pop-up. You can get more details regarding the error code in the documentation: [NAO system upgrade failure](#).

o [Advanced upgrading method](#)

The factory reset is another way to upgrade your NAO in some specific cases:

- Your NAO is not booting/working normally;
- You have lost the password of your robot and cannot connect to the NAO webpage;
- You want to downgrade to a previous version of NAOqi.

In these cases, you can choose the “upgrading using NAO flasher with factory reset” method. Please retrieve all the details on the [documentation page](#).

RESTARTING NAO TO LAUNCH THE UPGRADE

To restart NAO after NAOqi’s upgrade, press and hold the robot chest button for about 5 seconds until it gets blue. The LEDs on NAO’s ears will show you the progression of the upgrade.

o [NAO’s LEDs colors:](#)

- NAO’s LEDs blink and change colors during the process and NAO will make some noises during the upgrade. You will find details on the meaning of eyes color during the upgrade in the “[Upgrading](#)” section of the documentation.

Note: the process can last up to 30 minutes

- [Upgrade in progress](#)

- During the upgrading process, you will hear a strong beep sound (echoing), which indicates that one of the cards has its firmware upgraded. This could occur once or several times according to the release content (i.e. the number of firmware to upgrade).

- [Upgrade completed](#)

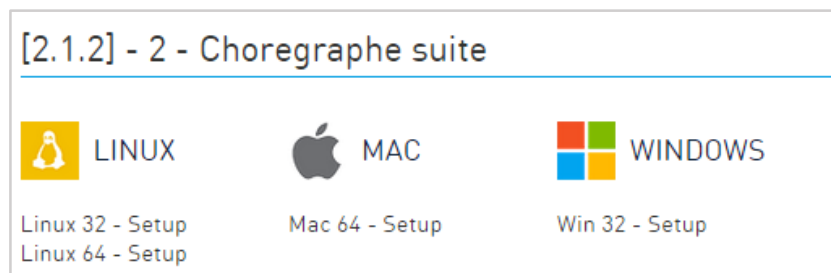
- When the upgrade process is completed, NAO may ask you to perform an auto-diagnostic by saying: "put me in an open space on the floor and touch my head or my bumper ..."
- During this auto-diagnostic, NAO stands up and plays a little animation, so make sure it is in a safe place.
- Then NAO will let you know when the upgrade is done by saying:
"I successfully updated my system. I am now running version <x.y.z>"

2 – UPGRADE CHOREGRAPHE AND THE SDK

UPGRADE CHOREGRAPHE

- You need to login to your Aldebaran Community User Account and your robot must be paired with your account.
- You can check your current version of Choregraphe in the “help” menu, under “About Choregraphe”;
- From the Aldebaran Community website, <https://community.aldebaran.com> under Resources, Software, Software Suite: click on the appropriate version of Choregraphe you need depending on your operating system (Windows, Linux or Mac).

Note for Windows users: it is recommended to use the Setup version.



Once you have downloaded the software:

- Double-click the file to start the installation;
- Accept the license agreement and follow the wizard steps.

Note: Choregraphe version 2.x. will not uninstall Choregraphe 1.14. You can execute both versions side-by-side with the same license key.

For more details, retrieve the Choregraphe suite installation on the documentation “Installing Choregraphe suite” http://doc.aldebaran.com/2-1/getting_started/installing.html#installing-choregraphe-suite


UPGRADE THE SDK

- From the Aldebaran Community website, <https://community.aldebaran.com> under Resources, Software, Software Development Kit: select your programming language and click on the appropriate version depending on your operating system (Windows, Linux or Mac);

[2.1.2] - 3 - Python NAOqi SDK

 LINUX Linux 32 - Binaries Linux 64 - Binaries	 MAC Mac 64 - Binaries	 WINDOWS Win 32 - Binaries Win 32 - Setup
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[2.1.2] - 4 - C++ NAOqi SDK

 LINUX NAOqi SDK - Linux 32 NAOqi SDK - Linux 64 Cross Toolchain - 32 Cross Toolchain - 64	 MAC NAOqi SDK - Mac 64 Cross Toolchain - 64	 WINDOWS NAOqi SDK - Win 32
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[2.1.2] - 5 - Java QiMessaging SDK

 LINUX Linux 32 Linux 64	 MAC Mac 64	 WINDOWS Win 32
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NAOqi OS

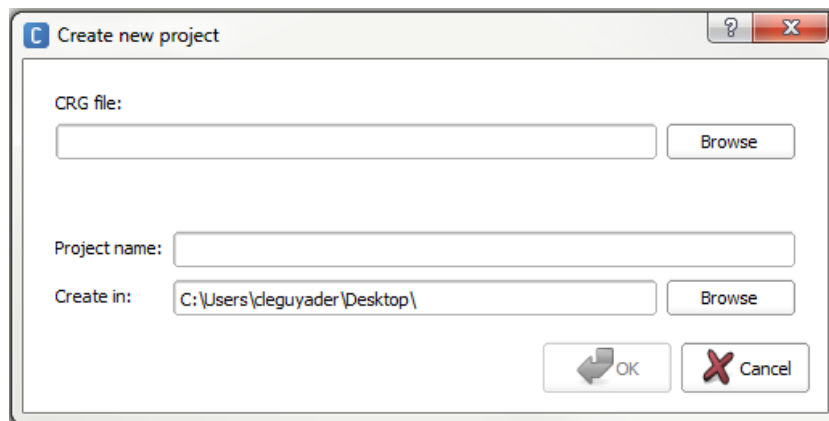
- You can retrieve the installation guides on the on-line documentation:
 - o [Python SDK Install Guide](#)
 - o [C++ SDK Installation](#)

3 – IMPORT AND CHECK YOUR 1.14 PROJECTS

If you're upgrading your system from the 1.14 to the 2. X version, you will need to go through the following steps to import and check your projects:

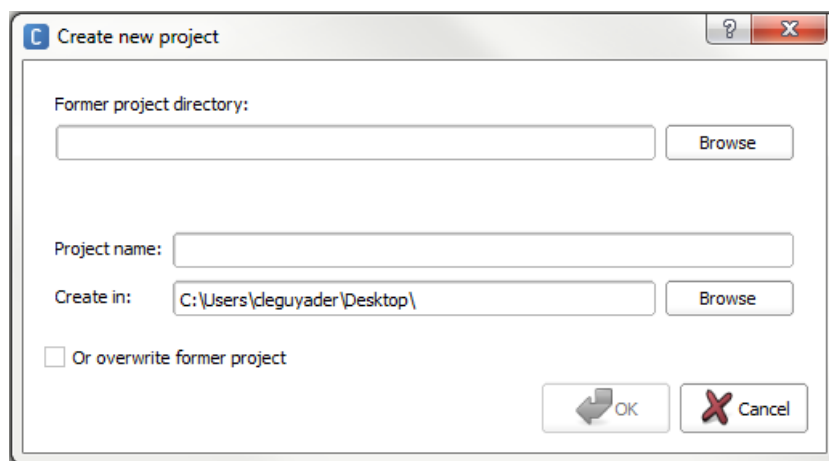
IMPORT YOUR 1.14 PROJECTS

- To import a Project created with a former version of Choregraphe:
- Choose File > Import project from CRG file;



OR/ AND

- Choose File > Import project from former project directory;



- Browse to select the file to import;
- Optionally, modify the Project name and/or its path;
- Click on OK.

CHECK AND ADAPT YOUR 1.14 PROJECT

Once imported, your 1.14 Projects need to be adapted to take advantage of some new features:

- [Check your Python code](#)
 - The main evolution impacts ALMotion: “Walk to” box has been replaced by “Move to”;
 - To get the whole list of obsolete Methods and Events, see: NAOqi API and SDK 2.1 release note :
http://doc.aldebaran.com/2-1/news/2.0/naoqi_api_rn2.0.html#whats-new-api-2-0

Tip: if you use CTRL+F on the page you will be able to search for “obsolete” key words directly.

- [Use Improved boxes](#)

Here are the major improved boxes that you should cut/replace when importing your projects:

- Locate and upgrade all your “Sit down” and “Stand up” boxes. From now on these boxes call an ALMotion method and will be upgraded automatically in new releases;
- For “Wait”, “Timer”, “Twinkle” and “Fall detector” boxes, make sure you use the new version to avoid multi-threading issues;
- Try the new “Wake up” and “Rest” boxes instead of “Motors on/off” to manage the stiffness and the posture of your NAO;
- Make sure you use the new release of “Sound tracker”, “Movement tracker” and “Robot posture” boxes to get the improved API;
- Try the new “Dialog” features and replace “Choice” boxes: you will be able to add a dialog topic inside a Behavior.

You will find more information in the “improved boxes” section:

http://doc.aldebaran.com/2-1/news/2.0/choregraphe_rn2.0.html#improved-boxes

You can also review the instruction in “Porting a 1.14 Project” section in the documentation:

<http://doc.aldebaran.com/2-1/news/2.0/whatsnew.html#port-your-1-14-projects>

4- GET ADDITIONAL INFORMATION

ALDEBARAN WEBSITES

You can send your questions to Aldebaran customer care www.aldebaran.com/customer_care (you need to be connected to your account).

CORPORATE WEBSITE

www.aldebaran.com

Learn more about Aldebaran story and vision on the corporate website. You will discover the Aldebaran Family of robots: NAO, Pepper and Romeo. Take time to navigate and discover all our solutions to teach, develop or design new experiences with NAO.

COMMUNITY

<https://community.aldebaran.com/en/content/welcome-aldebaran>

Aldebaran Community is a home of exchange where you can ask questions through the forum but also share experiences. Community members will find all resources of documentation and tutorials to improve their skills.

- **ASK, on the Forum:** a place dedicated to knowledge sharing and skill improvement. Discuss with other Community members, share your experiences, browse threads to get answers and discover how to do more with your robot.
- **FIND, in Resources:** the basics for every Aldebaran robot owner. Learn how to program with NAO with our guides. From basic knowledge to specific tutorials, find everything you need in a few clicks:
 - o [Software suite](#)
 - o [Documentation](#)
 - o [Tutorials](#)
 - o [FAQ](#)
- **COLLABORATE, with the projects section:** initiate a project with NAO with other passionate Community members.

NAO WEBPAGE

<http://doc.aldebaran.com/2-1/nao/webpage.html?highlight=nao%20web%20page>

The NAO webpage displays the main settings of your robot. It will help you to manage your robot and check different parameters like the battery level, connection, volume or the Applications uploaded on your NAO. More details are available on the NAO webpage documentation.

A-STORE

<http://cloud.aldebaran.com>

With your Aldebaran Community Account, you will have access to the Aldebaran Store and different categories of Applications like dances, educational Applications, games, sports ... and Channels. Check regularly for new Applications. Check our fan page on <https://store.aldebaran.com>.

Twitter - [@NaoRobot](#) - Facebook - [Aldebaran](#) - Facebook - [Nao the Robot](#)
YouTube - <http://www.youtube.com/user/aldebaranRobotics>