

nRF Cloud

Quick Start Guide

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1 Introduction

nRF Connect for Cloud (nrf Cloud) is an Internet of Things (IoT) cloud service that is hosted by Nordic Semiconductor. It allows developers and innovators to quickly and easily connect Nordic based *Bluetooth*® low energy and LTE devices to the Internet of Things and explore the vast opportunities that the IoT provides.

Once connected to nRF Cloud, you can monitor the data that is sent to and from your device, as well as manipulate and use the data in various ways.

There is no limitation on the number of devices that you can connect to your nRF Cloud account, but there is a limitation on the total number of messages that nRF Cloud will process per account. The current message limit is 1 million messages per nRF Cloud account.

To get started with nRF Cloud, follow the steps outlined in this Quick Start Guide:

1. Create an nRF Cloud account.
2. Before you can connect a BLE device to nRF Cloud, you need to BLE set up and connect a Bluetooth gateway through which your devices can connect to your nRF Cloud account. nRF Cloud provides gateways for PCs, and on iOS and Android phones.
3. Program the precompiled nRF Cloud demo application on an nRF5 Development Kit and connect it to nRF Cloud.

After the first tests, go further and develop your own IoT application! Nordic Semiconductor's [development tools](#) and the [nRF5 SDK](#) provide many examples of standard and custom *Bluetooth* profiles that you can use to jump start your project. You can also connect a Nordic Thingy:52™ to your nRF Cloud account and explore the many sensor examples that it offers.

2 Creating an nRF Cloud account

You must create an nRF Cloud before you can start using the service.

Complete the following steps to create an nRF Cloud account:

1. Navigate to nrfcloud.com and click **Create Account**.
2. Enter your email address and choose a password. Then click **Create Account**.
nRF Cloud will send you a verification email with a 6-digit verification code.
Alternatively, if you already have a Nordic Semiconductor DevZone account, you can connect using that.

Thats it! You can now sign in to your nRF Cloud account with one of the methods described above. After signing in, you will be directed to the nRF Cloud dashboard, which displays the number of gateways and devices that are connected to your nRF Cloud account and other useful information. At your first log in, you will be offered to take a interactive tour of the nRF Cloud features.

3 Setting up a *Bluetooth* gateway

Bluetooth low energy devices require a gateway to connect to the internet. *Bluetooth* cannot connect to the internet directly because it does not support internet protocols and bluetooth range is limited.

Various devices can serve as gateway. Nordic Semiconductor provides software to turn a PC, an iOS device, or an Android device into a *Bluetooth* gateway that connects to your nRF Cloud account. Note that you need an nRF5 Development Kit or USB dongle if you want to use your PC as Bluetooth gateway.

There is no limit on the number of Bluetooth gateways that you can add to your nRF Cloud account. However, the maximum of 1 million messages applies per account, regardless of how many devices and gateways are connected to your nRF Cloud account.

Nordic Semiconductor recommends using a phone as a Bluetooth Gateway. Go to the App Store or Play Store and search for "Nordic Semiconductor Gateway". Download and install the app. Once installed, log the phone Gateway into your nRF Cloud account the same way you created your account in section 2.

To set up a PC gateway, you must install nRF Connect and the nRF Cloud Gateway plugin, and register your gateway in nRF Cloud. Complete the following steps:

1. Download and install nRF Connect from the [nRF Connect GitHub repository](#).
2. Connect an nRF5 Development Kit or an nRF51 USB dongle to the computer.
3. Click the nRF Connect icon to start nRF Connect.
If you are asked to update the firmware, accept the updates.
4. Install the nRF Cloud Gateway plugin:
 - a) Click **Add/Remove apps** in the header of nRF Connect.
All available plugins for nRF Connect will be displayed.
 - b) Click the **Install** button for the nRF Cloud Gateway Application.
5. Start the nRF Cloud gateway:
 - a) Click **Launch app** in the header of nRF Connect.
 - b) On the card for the nRF Cloud Gateway Application, click **Launch**.
You will be directed to a login screen for your nRF Cloud account.
6. Enter the email address and password for your nRF Cloud account.
You will be directed to the gateway status screen.
7. Sign into your account at [nrfcloud.com](#) and check the nRF Cloud dashboard.
The number of *Bluetooth* gateways should now have changed to 1. (note that the PC Gateway does not support DevZone login, so to support PC Gateways on your account, you cannot use the DevZone option to create your nRF Cloud account)
8. Optional: Change the gateway name in the nRF Cloud gateway view.
If you do not change the gateway name, it will be given a random name.

4 Testing the demo application

To test your setup, program the precompiled nRF Cloud demo application on an nRF5 Development Kit and connect the kit through the gateway to your nRF Cloud account.

The nRF Cloud demo application demonstrates simple two-way communication between a *Bluetooth* low energy device and the Internet of Things. The demo application can run on both nRF51 and nRF52 Development Kits.

Complete the following steps to connect your device to nRF Cloud and interact with it:

1. Program the demo application code to an nRF5 Development Kit:
 - a) Download the HEX file of the [nRF Cloud demo application](#).
 - b) Connect an nRF5 Development Kit to your PC or Mac via a USB cable.
The development kit will show up as a JLINK hard drive.
 - c) Drag the application HEX file that you downloaded on the JLINK hard drive.
This will program the nRF Cloud demo application to your development kit.
2. Connect the development kit to your nRF Cloud account:
 - a) Log into your nRF Cloud account at nrfcloud.com.
 - b) In the menu at the left-hand side of the nRF Cloud dashboard, click **Bluetooth Gateways**.
An additional menu will slide out.
 - c) In the slide-out menu, select the gateway that you want to use.
 - d) In the gateway view that appears, click **Add Device**.
 - e) In the Add device pane that appears, click **Bluetooth**.
The gateway will start scanning for nRF5 Development Kits in the vicinity of the gateway.
The results of the scan should include a device with the name "nRF Cloud Demo". This is the nRF5 Development Kit running the nRF Cloud demo application.
 - f) In the scan results, click the nRF Cloud Demo device to connect it.
The device will appear in the gateway view as a device card below the gateway icon.
3. Test the connection:
 - a) Open the device view by clicking the nRF Demo device card.
The nRF Demo device view contains several different cards. One of these cards shows the development kit with its four buttons and four LEDs.
 - b) Click some of the buttons depicted on the card.
The corresponding LED state will toggle both on the card and on the development kit.
 - c) Press some of the buttons on the development kit.
The corresponding LED state will toggle both on the development kit and on the card.

You have now connected your first *Bluetooth* device to nRF Cloud. As a next step, download the Nordic Semiconductor SDK and start developing your own application!

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The SVHC (Substances of Very High Concern) candidate list is continually being updated. Complete hazardous substance reports, material composition reports and latest version of Nordic's REACH statement can be found on our website www.nordicsemi.com.

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