

DeviceHQ Developer User Guide

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Contents

Overview	4
Node-RED Applications	5
Developing Node-RED Applications.....	6
Creating a New Node-RED Application.....	7
Uploading an Application.....	8
Configuring an Uploaded New Application.....	9
Adding an Application to the App Store	10
Updating an Existing Application	11
Configuring an Updated Application	12
Create a New Application from an Existing Application.....	13

Overview

MultiTech DeviceHQ™ is a cloud-based tool set for managing the latest generation of MultiTech devices. It incorporates all the functionality of MultiTech Device Manager. DeviceHQ takes remote device management and maintenance to a new level, by providing an application marketplace, allowing users to browse applications or build their own then easily deploy them to and customize them for remote devices from anywhere.

Node-RED Applications

Once the MutliConnect Conduit has been configured so that it can connect to DeviceHQ, it is ready to be used as a development platform for creating Node-RED applications.

There are three ways to build a Node-RED Application:

- You can create a new application by dragging nodes onto the workspace and connecting them to create a flow.
- You can update an application by importing an existing Node-RED flow via the Import Menu.
- You can download an existing application and then upload the changes as a new application.

A good tutorial on the basics of developing Node-RED applications can be found at:
<https://www.youtube.com/watch?v=f5o4tlz2Zzc>.

Developing Node-RED Applications

The following steps show how to create your own applications:

1. Open a browser and connect to the Conduit's local UI at <https://192.168.2.1>.
2. Select **Apps** from the menu on the left. Then select **Installed Apps** from the sub-menu. The screen will display all apps that are installed on the Conduit. If no apps have been installed, the only "app" that is shown is the Development app. The Development app is the default workspace. This is where you begin developing a new app.
3. Connect to the Node-RED server. Right click the **Node-RED** link and select **Open link in new window**.
4. Log into Node-RED. The default username and password are both **admin**. The workspace of the current running app will be displayed. If there are no apps running, the workspace will be blank.

Creating a New Node-RED Application

The following are the steps needed to create a Node-RED application from scratch.

For more detailed information on creating a basic flow, go to: <http://nodered.org/docs/getting-started/first-flow.html>.

For more detailed information on creating a more advanced flow, go to: <http://nodered.org/docs/getting-started/second-flow.html>.

1. Drag and drop any of the pre-defined nodes onto the workspace.
2. Connect the pre-defined nodes together by dragging between the output port of one to the input port of the other.
3. To see the app run, you must click the **Deploy** button. The results are shown on the **debug** tab. Any time a flow is changed, the Deploy button must be clicked before the new behavior will be shown.

Once the app has been created, tested, and deployed it can then be uploaded.

Uploading an Application

1. Navigate to the Conduit UI.
2. Select **Apps** from the menu bar on the left.
3. Click **Upload App** from the sub-menu.
4. Complete the form.
 - a. Enter the username and password for DeviceHQ.
 - b. Choose the workspace you want to package and upload.
 - c. Enter a name for the application. The name must be unique to DeviceHQ.
 - d. Enter a version number. Any string may be entered for the version.
5. Click **Publish**.

Note: Once you click **Publish**, a message shows the upload has started. Once complete, a success message will be shown.
6. Verify the upload was successful.

Note: Even though the upload to DeviceHQ has completed, it will not show in the local list of installed apps. To add the app to your list, you need to schedule a download from DeviceHQ to your Conduit. Downloading the app from DeviceHQ reserves its space on the Conduit and shows the app listed under installed apps.

Configuring an Uploaded New Application

Once an application has been uploaded to DeviceHQ, you will not see the app listed in the Store. Before the app can be shown in the Store, it must be configured. To configure an app:

1. Log into DeviceHQ.
2. Click on the **Developer** button. Your app will be listed. If there isn't a developer button, you need to get a Developer Key. To get a Developer Key, click on your email address in the upper right corner and choose **My Profile**. Then click **Get Developer Key**. The Developer tab will now be displayed
3. Click the edit icon for the app. A dialog box will appear.
4. Click the **Version** tab.
5. Click the **Edit** icon for the version.
 - a. The **Type** is currently restricted to apps only.
 - b. Set the status to **Active**.
 - **New**: This is the default status of any app that has just been uploaded. New versions are not available to download.
 - **Active**: Only one version can be active at a time. The Active version will be selected by default when users are scheduling an app for download. If the status of a version is set to Active, the previously Active version will automatically be set to Archived.
 - **Archived**: This is a version of the app that is no longer available for download.
 - **Deprecated**: This is a versions of the app that is no longer available for download.
 - c. The **Notes** field is used to track changes to each version.
 - d. Click **Save**.
6. Once the version information has been updated, click the **Publish** tab.
 - a. Choose **Public** or **Private**. A **Public** app will be visible to all users of the store. A **Private** app will only be visible to users who belong to the same account.
 - b. The status should show **Active**. Only Active apps will be shown in the store.
 - c. Select the Terms of Service that you want to distribute the app under. Users must accept the Terms of Service before they are able to download the app to their Conduit.
7. Click the **Description** tab.
 - a. The **Title** is the name you chose when the app was uploaded. It may be changed, and will be reflected in the Store.
 - b. The **Description** is a longer explanation of what the app does. The description will be displayed in the Store when a user requests more details about the app.
 - c. The **Icon** is an image file that is used as the icon for the Store. The image will be resized to be 50x50 pixels.
 - d. Click **Save**.

The app will now appear in the Store.

Adding an Application to the App Store

1. Open a browser and go to <https://www.devicehq.com>.
2. Login.
3. Select the **Developer** tab.
4. Find the newly uploaded app and click the **Edit** icon.
5. Select the **Versions** tab and click the **Edit** icon to edit the version.
6. Change the status to **Active** and enter a short version description in the notes field.
7. Click **Save**.
8. On the **Description** tab:
 - a. If desired, change the name of the app.
 - b. Enter a description of the app.
Note: This will appear in the App Store.
 - c. Select an icon for the app.
9. Select the **Publish** tab.
 - a. Select if this app will be **Public** or **Private**. Note: All DeviceHQ users will be able to see and use **Public** apps. Only users of the same account will be able to use **Private** apps.
 - b. Set the status to **Active**.

Note: If the status is **Inactive**, the app will not appear in the Store

 - c. Select the license agreement you want for your app.
10. Click **Save**. The application will now be displayed in the store.

Updating an Existing Application

The following process is used to update an existing application, it explains how to edit an application and upload the changes to DeviceHQ. This process assumes that you have downloaded an application to your Conduit.

1. Log into the Conduit's UI.
2. On the menu on the left, click **Apps**.
3. Click **Installed Apps**.
4. Verify that the app to be modified is currently running. If the app is not currently running, click the **pencil** icon in the installed apps list and it will run.
5. Open Node-RED.
6. Update the app.
7. Click **Deploy** and verify that app has been updated.
8. Return to the Conduit UI and click **Apps** on the menu on the left.
9. Click **Upload App**.
 - a. Enter the username and password for your DeviceHQ account.
 - b. Choose **Existing App** from the Type drop down menu.
 - c. The **App ID** will be filled in automatically.
 - d. Enter a **Version**. The old version number is displayed by default.
 - e. Click **Publish**. A message will display at the start of the upload and once the upload is completed.

Configuring an Updated Application

Once an app has been updated, the new version must be configured so it will show in the Store. To configure a new version:

1. Log into DeviceHQ.
2. Click the **Developer** button on the top menu. You app will be listed.
3. Click the **Edit** icon for the updated app.
4. Click the **Versions** tab.
5. Click the **Edit** icon for the new version.
 - a. **Type** is currently restricted to apps only.
 - b. Set the status to **Active**. The previous Active version will be set to Archived.
 - c. The **Notes** field is used to track version changes.
 - d. Click the **Save** button. The new version information will be displayed.
6. Click the **Close** button. The app now appears in the Store with the updated Active version.

Create a New Application from an Existing Application

You can download an app from DeviceHQ and use it as a base for a new application. To do this, download the app that you want to your Conduit. This app will serve as the base for your new app.

1. Log into the Conduit.
2. Click the **Apps** link in the menu on the left.
3. Click **Installed Apps** to see the apps currently installed on the Conduit. Make sure the app you want to build from is currently running.
4. Open Node-RED.
5. Make desired changes to the base app. To test the changes and see the app run, click the **Deploy** button. To save any changes you make to the flow, you must click the **Deploy** button.
6. Once the app has been updated and tested, upload the new app. For information on how to upload an app, see [Uploading an Application](#).