



## Apex Firmware Update Instructions

### UPDATING FIRMWARE

The AquaController Apex system includes the ability to update the software that runs the controller and modules, otherwise known as firmware. The process of updating the firmware is also known as flashing which is a term derived from the fact that the firmware is stored in “flash” memory on the modules. The ability to update the firmware allows problems that were discovered after shipment to be fixed as well as add new features for years to come. The firmware is updated on the Apex Base module through the same network connection you use to access the Web Interface. When the Apex Base Module is updated, new versions of the firmware for supported Apex Modules is copied to the Base Module as well. Using commands from the Web Interface of the Apex Display, you can easily update the Apex Module firmware through the AquaBus. This means you don’t have to tear your system apart to perform an update. The Apex Flash Utility is used to update the firmware on the Base Module and must be run from a typical Microsoft Windows computer. Follow the directions in the following section to prepare your computer to run the Apex Flash Utility.

NOTE: Other computer platforms including Apple Macintosh OS 10 can be used to run the Apex Flash Utility. See the Readme.txt file included with the firmware download for more information.

---

### PREPARING THE UPDATE

1. Install Microsoft .Net framework version 3.5.

- a. Downloaded the .NET framework from Microsoft's site  
<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=ab99342f-5d1a-413d-8319-81da479ab0d7>
  - b. Follow the directions from Microsoft to install the .NET framework
2. Download the Apex firmware package
  - a. Go to <http://www.neptunesys.com>
  - b. Open the Support tab
  - c. Click Downloads
3. Unzip the Apex firmware package to a folder on your PC
  - a. Make note of the folder you unzip the Apex firmware package
  - b. The Apex Flash Utility and the firmware package will be unzipped

NOTE: Newer versions of Microsoft Windows come with unzip utilities. If you are running an older version of Microsoft Windows, you may have to download and install a software package to unzip the Apex firmware package. To unzip a file, typically you can right-click the downloaded file and select "extract" or "unzip" from the right-click menu.

---

## UPDATING THE APEX BASE MODULE FIRMWARE



WARNING: Backup your AquaController Apex configuration before updating firmware. See the directions in the section titled **Error! Reference source not found.** The Apex Flash Utility will not delete your settings but you should have a backup on hand just in case.

NOTE: The firmware update will not work if the Apex Base module is connected to your network through a wireless bridge. You should have the Apex base module hardwired to the network when performing firmware updates.

NOTE: The AquaController Apex will only allow update from computers on its home network (subnet). This is to prevent unauthorized access from outside your home network.

1. Browse to the folder where the Apex firmware package was unzipped in the previous section.
2. Double-click **Apex Flash Utility.exe** the Apex Flash Utility should open as shown in *Figure 1 - The Apex Flash Utility*.

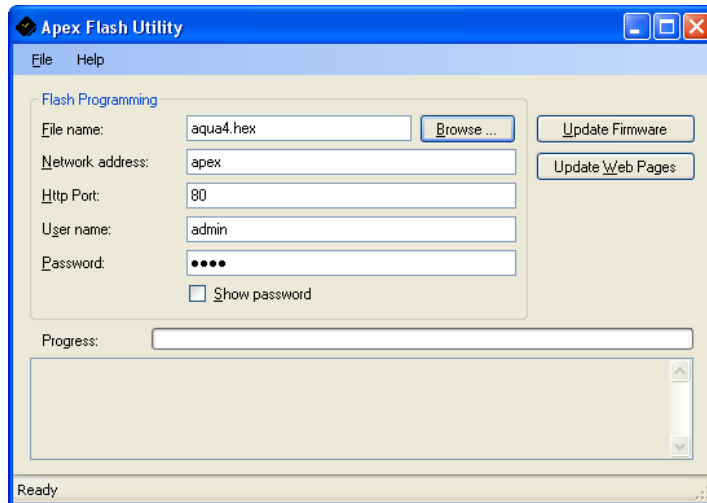


Figure 1 - The Apex Flash Utility

3. The **File** name field contains the name of the firmware file you are about to flash to the Apex Base Module. It defaults to the file that came with the downloaded package. If you would like to change the file to flash, type the file name in the box or click the Browse button to select the file.
4. Enter the **Network Address** to the Apex controller you wish to update.
  - a. Accept the default of Apex if you have not renamed the AquaController Apex.
  - b. If you have changed the host name, enter the new host name.
  - c. Alternately, you can simply enter the IP address that is assigned to the Apex Base Module (current IP address assigned can be viewed from the Apex Display at System – Net Setup – IP Address).

NOTE: For best results, use the IP address of the AquaController Apex in the Apex Flash utility, not the host name. This is especially important if you are using automatic IP address assignment (DHCP) as the IP address for the device can change when the AquaController Apex re-boots after updating the firmware.

5. Enter **HTTP Port** that your AquaController is configured to use for the Web Interface.
  - a. Accept the default of 80 if you have not changed it
  - b. If you have changed the HTTP Port on the Apex, enter the current HTTP Port (current HTTP Port can be viewed from the Apex Display at System – Net Setup – HTTP Port©).
6. Enter the Apex Administrator **User name** and **Password**
  - a. Defaults are admin and 1234

- b. If you have changed the Administrator User Name and Password, enter the current credentials (current user name can be viewed from the Apex Display at System – Net Setup – Admin Login, current password can be viewed from the Apex Display at System – Net Setup – Admin Password).

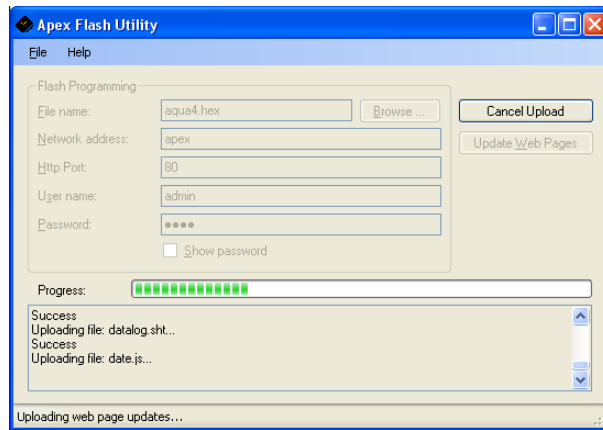
NOTE: You can click the **Show Password** checkbox to

7. Click the **Update Firmware** button to update the firmware
  - a. You should see several update steps occur and when complete, you should see “Operation Complete” in the log at the bottom of the screen.
  - b. Depending on network speeds, the process should take less than a minute.
8. After the firmware has been updated, the AquaController Apex will restart. You can confirm the correct firmware has been installed by running a self test from the Apex Display.
9. Continue updating your system by updating the Web Interface using the directions in the next section.

---

## UPDATING THE APEX BASE MODULE WEB INTERFACE

Once the Apex Base Module Firmware is updated, the next step is to update the Web Interface firmware.



**Figure 2 - Apex Flash Utility Updating Web Pages**

NOTE: Please allow the Apex Base module a few minutes to restart before proceeding with updating the Web Interface firmware.

1. From the Apex Flash Utility with the parameters filled out as in the previous section, click the Update Web Pages button.

2. You should see several update steps occur and when complete, you should see "Operation Complete" in the log at the bottom of the screen.
  - a. The update process should take less than 3 minutes depending on network speeds.

---

## UPGRADING APEX MODULES

The firmware version of software installed on the Apex Base Module can be flashed to each Apex Module through the AquaBus using the directions in this section . The version of firmware installed on all Apex modules is listed in the table at the bottom of the Configuration – Module Configuration – page on the Web Interface.

To upgrade an Apex Module Firmware:

**Apex Display:** Setup – Module Setup – Update Module – use the up/down arrows to highlight the Apex module to update, push Select to update.

**Web Interface:** Configuration – Module Setup – in the Module Configure area, in the Module: box, select the Apex module to update from the dropdown list, click the Update Firmware radio button, click the Submit Module Update button, a new browser window will open to display the update status.

---

## TROUBLESHOOTING WHEN UPDATING USING THE APEX FLASH UTILITY

Do NOT update over a wireless network. It is impossible for the firmware to load correctly over a wireless connection. Please use wired connections only.

For best results, use the IP address of the AquaController Apex in the Apex Flash utility, not the host name. This is especially important if you are using automatic IP address assignment (DHCP) as the IP address for the device can change when the AquaController Apex re-boots after updating the firmware.

If the firmware update fails for some reason and the Apex base module does not boot up correctly, it can still be recovered. An Apex base module with corrupt firmware is indicated by a flashing yellow status LED. To recover the system:

1. Remove power to the Apex Base Module.
2. Restart the Apex flash utility. Make sure that a valid IP address is in the Network Address box (not a hostname)
3. Start the firmware update by pressing the firmware update button.
4. Wait for the firmware update to timeout.
5. Re-apply power to the Apex base module. The status LED will flash yellow, and connect to the flash utility.

Error – Object reference not set to an instance of an object.

Typical Cause – Incorrect Host Name, check the spelling of the host name or enter the IP address of the Apex Base Module.

Error - Waiting for input from Apex: timed out.

Typical Cause – Incorrect password – Check the password and enter the correct value.

Error – Unable to connect to the remote server.

Typical Cause - Wrong HTTP: Port Number – check the setting and enter the correct port number.

If you continue to have trouble updating the firmware, please email the log from the bottom of the Apex Flash Utility window to

[support@neptunesys.com](mailto:support@neptunesys.com).