

ESP8266 Automação com Interface Web e DDNS



DDNS



Por Fernando Koyanagi

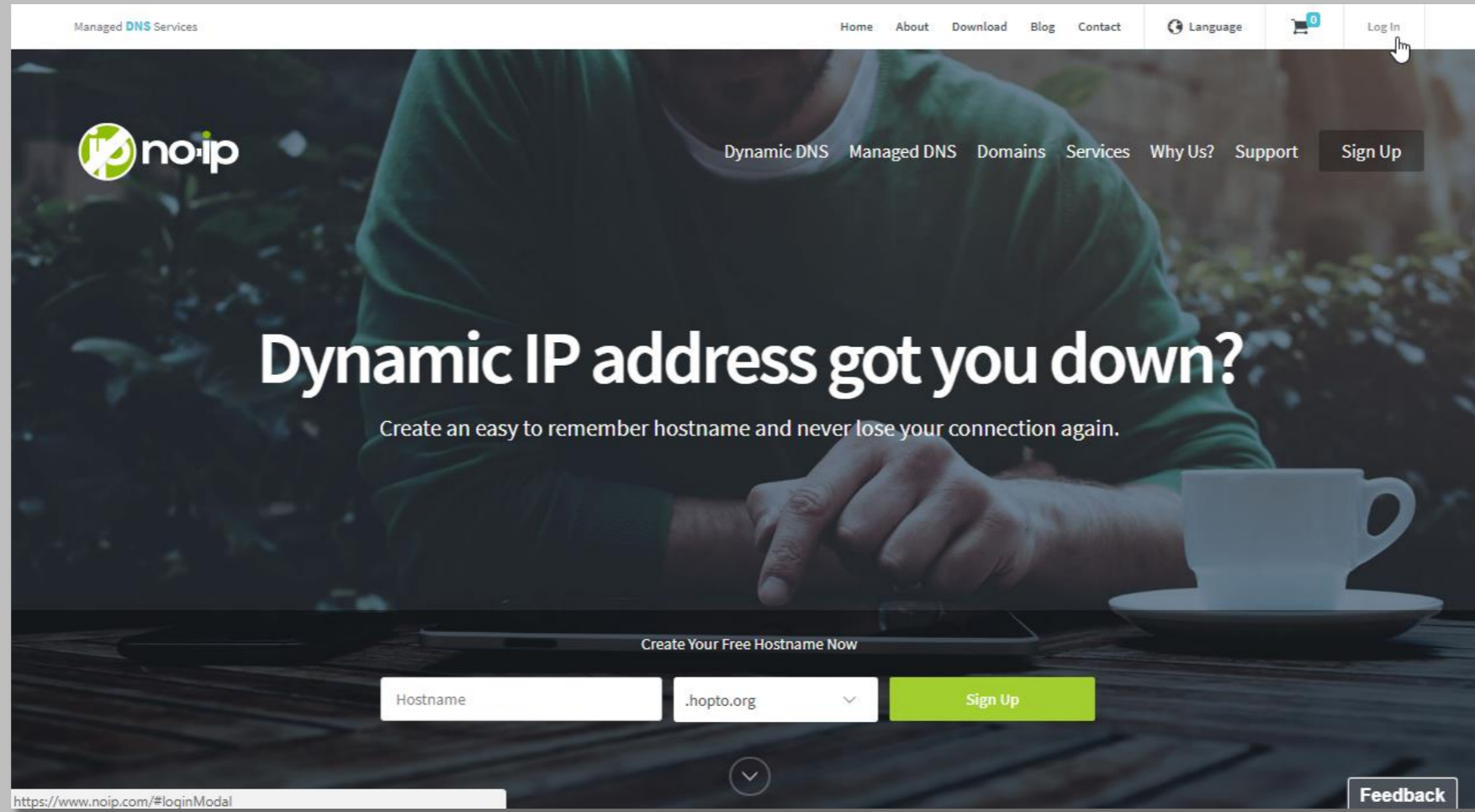
Download dos Arquivos

Faça download dos arquivos com código fonte [aqui](#).



DDNS

Primeiramente é necessário a criação de uma conta no site do [NO-IP](#), que é o serviço que iremos utilizar.

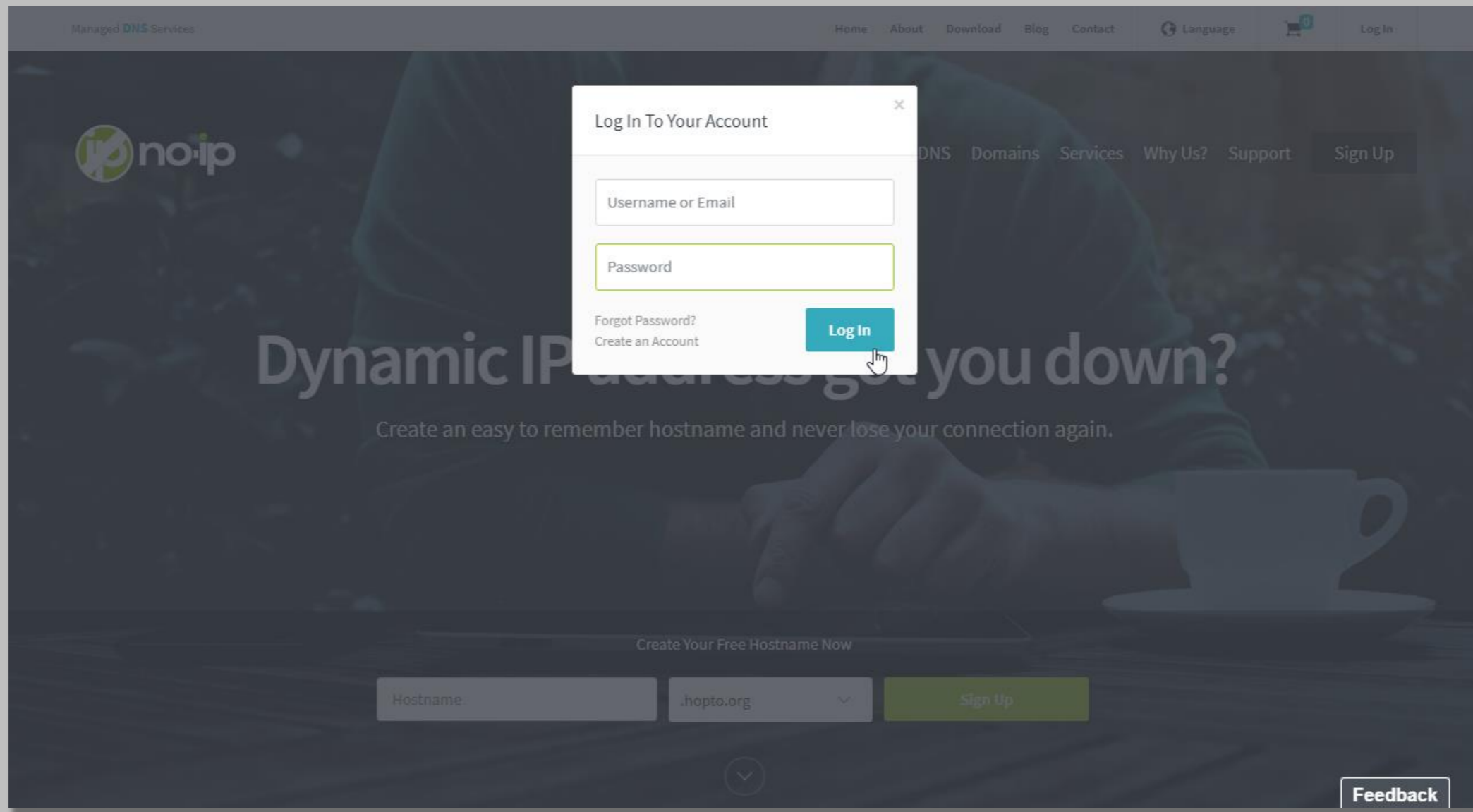


The screenshot shows the NO-IP website homepage. At the top, there is a navigation bar with links for Home, About, Download, Blog, Contact, Language, and Log In. The main header features the NO-IP logo and a menu with links for Dynamic DNS, Managed DNS, Domains, Services, Why Us?, Support, and a prominent Sign Up button. The central banner displays the headline "Dynamic IP address got you down?" with the subtext "Create an easy to remember hostname and never lose your connection again." Below this, a form titled "Create Your Free Hostname Now" includes a text input field for the hostname, a dropdown menu currently set to ".hopto.org", and a green "Sign Up" button. A "Feedback" button is located in the bottom right corner. The URL bar at the bottom left shows "https://www.noip.com/#loginModal".



DDNS

Agora com a conta já criada, faça o login no site



The screenshot shows the no-ip website with a modal window titled "Log In To Your Account". The modal contains the following elements:

- no-ip logo
- Navigation menu: Home, About, Download, Blog, Contact, Language, Log In, Sign Up
- Input fields: "Username or Email" and "Password"
- Buttons: "Log In" (highlighted with a mouse cursor), "Forgot Password?", and "Create an Account"
- Background text: "Dynamic IP addresses get you down? Create an easy to remember hostname and never lose your connection again."
- Footer: "Create Your Free Hostname Now", "Hostname: .hopto.org", "Sign Up", and "Feedback"



DDNS

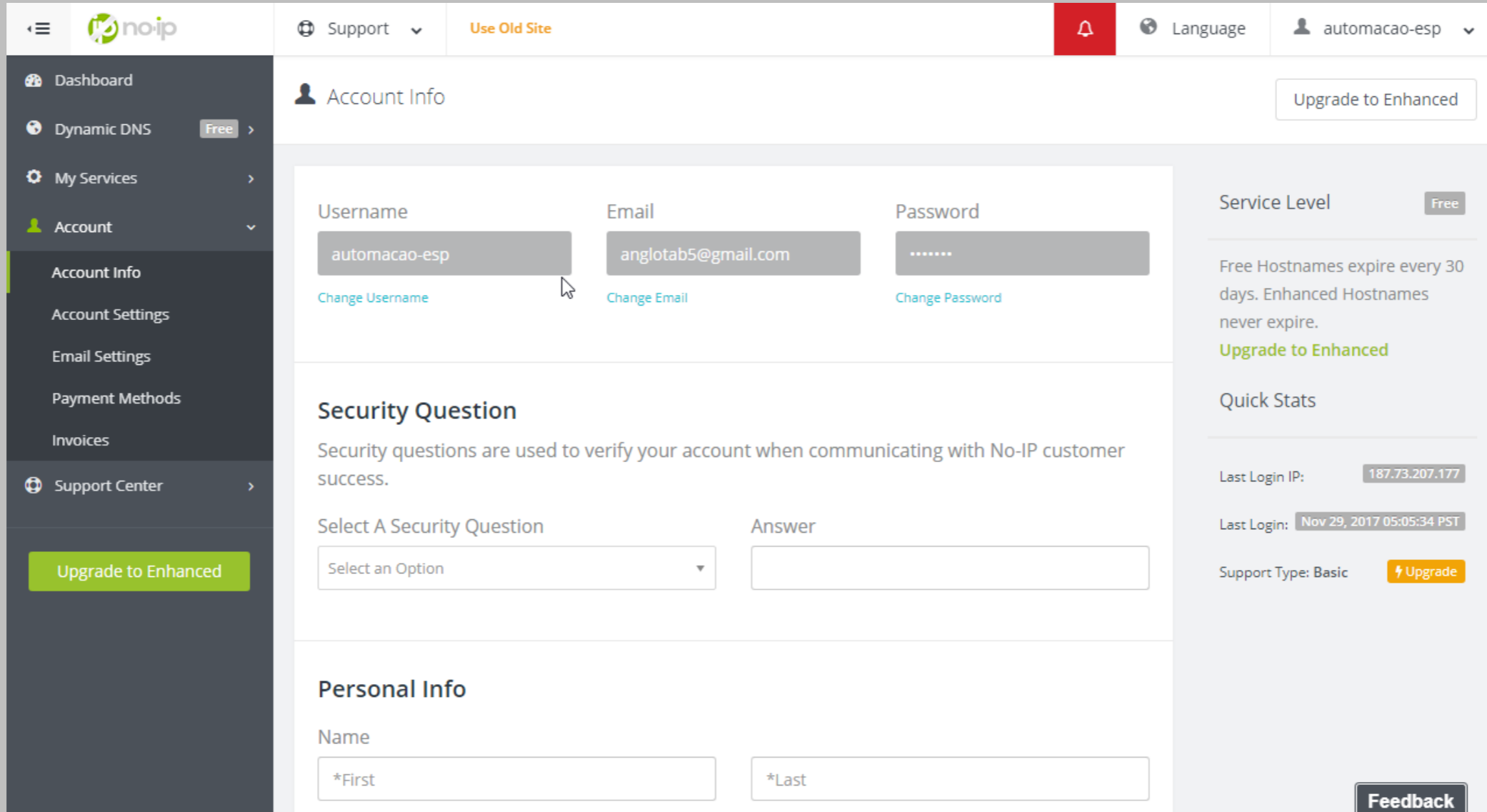
Defina o “hostname” e o “Domain”, o Record Type deixe como está (A), depois de preencher clique em “Add hostname”. Após isso vá para a configuração da conta clicando em Account. Nesse caso usamos o “automacaoesp.ddns.net”.

The screenshot displays the No-IP dashboard interface. At the top, there is a navigation bar with the No-IP logo, a 'Support' dropdown, a 'Use Old Site' link, a notification bell, a 'Language' dropdown, and a user profile for 'automacao-esp'. A left sidebar contains menu items: 'Dashboard', 'Dynamic DNS' (marked 'Free'), 'My Services', 'Account' (highlighted with a mouse cursor), and 'Support Center'. A green 'Upgrade to Enhanced' button is located below the sidebar. The main content area features a 'Dashboard' header with another 'Upgrade to Enhanced' button. Below this, there are two summary cards: one showing '1 Active hostname' with a checkmark, and another showing '1 host without recent dynamic updates' with a warning icon and the instruction to 'Configure automacaoesp.ddns.net now'. To the right is an 'Account Overview' section with a teal header, displaying 'Account Type: Free', 'Last Login IP: 187.73.207.177', and 'Last Login: Nov 29, 2017 05:05:34 PST', along with an 'Upgrade to Enhanced' button. Below the summary cards is a 'Quick Add' form with fields for 'Hostname' (containing 'myhost'), 'Domain' (a dropdown menu set to 'ddns.net'), and 'Record Type' (a dropdown menu set to 'A'). A 'More Records' button is next to the Record Type field. A green 'Add Hostname' button is at the bottom right of the form. A link 'Need help setting up your device?' is on the bottom left. At the bottom of the dashboard, there are promotional banners for 'Dynamic DNS Client for' and 'No-IP Support'. A footer contains a 'Purchase More Hostnames' link and a 'Feedback' button. The browser address bar at the bottom left shows 'https://my.noip.com/#'.



DDNS

Defina o “USERNAME” e salve as configurações.



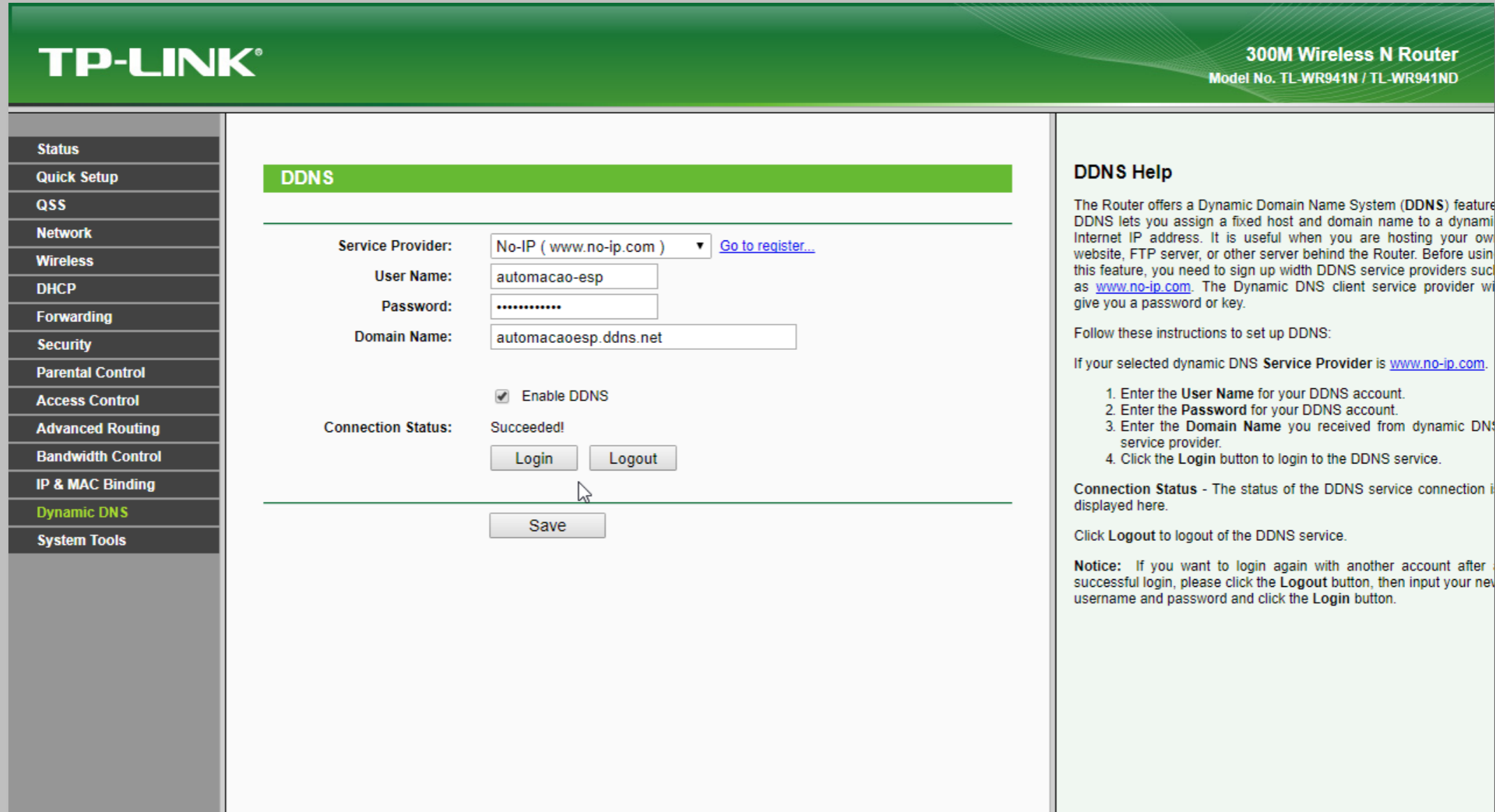
The screenshot shows the No-IP account settings page. The top navigation bar includes the No-IP logo, a Support dropdown, a 'Use Old Site' link, a notification bell, a Language dropdown, and a user profile dropdown for 'automacao-esp'. The left sidebar contains navigation links for Dashboard, Dynamic DNS (Free), My Services, Account, Account Info, Account Settings, Email Settings, Payment Methods, Invoices, Support Center, and an 'Upgrade to Enhanced' button. The main content area is titled 'Account Info' and features a 'Free' badge and an 'Upgrade to Enhanced' button. The 'Username' field is set to 'automacao-esp', the 'Email' field is 'anglotab5@gmail.com', and the 'Password' field is masked with dots. Below these fields are links for 'Change Username', 'Change Email', and 'Change Password'. The 'Security Question' section includes a dropdown menu for 'Select A Security Question' and an 'Answer' input field. The 'Personal Info' section has input fields for '*First' and '*Last' names. On the right side, there is a 'Service Level' section with a 'Free' badge and text explaining that free hostnames expire every 30 days, while enhanced ones do not. Below this is a 'Quick Stats' section showing 'Last Login IP: 187.73.207.177', 'Last Login: Nov 29, 2017 05:05:34 PST', and 'Support Type: Basic' with an 'Upgrade' button. A 'Feedback' button is located at the bottom right.



DDNS

Agora acesse o roteador e clique em Dynamic DNS:

Preencha os campos com o nome de usuário que você havia definido na configuração da conta, a senha e o Domain Name, que nesse caso foi “automacaoesp.ddns.net”, ative a opção “Enable DDNS” e clique em salvar. Agora ele irá dar a mensagem “Succeeded!” caso tenha dado certo.



TP-LINK® 300M Wireless N Router
Model No. TL-WR941N / TL-WR941ND

DDNS

Service Provider: No-IP (www.no-ip.com) [Go to register...](#)

User Name: automacao-esp

Password:

Domain Name: automacaoesp.ddns.net

Enable DDNS

Connection Status: Succeeded!

Login Logout

Save

DDNS Help

The Router offers a Dynamic Domain Name System (DDNS) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP address. It is useful when you are hosting your own website, FTP server, or other server behind the Router. Before using this feature, you need to sign up with DDNS service providers such as [www.no-ip.com](#). The Dynamic DNS client service provider will give you a password or key.

Follow these instructions to set up DDNS:

If your selected dynamic DNS Service Provider is [www.no-ip.com](#):

1. Enter the **User Name** for your DDNS account.
2. Enter the **Password** for your DDNS account.
3. Enter the **Domain Name** you received from dynamic DNS service provider.
4. Click the **Login** button to login to the DDNS service.

Connection Status - The status of the DDNS service connection is displayed here.

Click **Logout** to logout of the DDNS service.

Notice: If you want to login again with another account after a successful login, please click the **Logout** button, then input your new username and password and click the **Login** button.



DDNS

Voltando para a página do NO-IP, clique no menu lateral “Hostnames”, verifique se apareceu o registro do seu roteador, como mostra abaixo:

The screenshot shows the NO-IP website interface. The top navigation bar includes a hamburger menu, the NO-IP logo, a 'Support' dropdown, a 'Use Old Site' link, a notification bell, a 'Language' dropdown, and a user profile 'automacao-esp'. The sidebar menu on the left contains: Dashboard, Dynamic DNS (Free), Hostnames (selected), Groups, Dynamic Update Client, Device Configuration Assistant, My Services, Account, and Support Center. At the bottom of the sidebar is a 'Upgrade to Enhanced' button. The main content area is titled 'Hostnames' and features a 'Create Hostname' button, a search bar, and a table of hostnames. The table has columns for Hostname, Last Update, IP / Target, and Type. One hostname is listed: 'automacaoesp.ddns.net' with a last update of 'Nov 29, 2017 05:05 PST' and an IP of '187.73.207.177'. A 'Modify' button is next to it. On the right, there is a 'Service Level' section showing 'Free' and a warning that free hostnames expire every 30 days. Below that is a 'Hostnames Count' widget with a circular progress indicator showing '1 / 3'. At the bottom right, there is a 'Purchase More Hostnames' link and a 'Feedback' button.

Hostname	Last Update	IP / Target	Type
automacaoesp.ddns.net	Nov 29, 2017 05:05 PST	187.73.207.177	A



DDNS

O último passo, é redirecionar a porta do roteador para o aparelho da rede interna. Definimos o IP do aparelho (192.168.1.111), logo, vamos entrar na tela “Forwarding” -> “Virtual Servers” do roteador e clicar em “Add new”, Irá exibir a seguinte tela:

The screenshot shows the TP-LINK 300M Wireless N Router web interface. The top navigation bar includes the TP-LINK logo and the router model information: "300M Wireless N Router Model No. TL-WR941N / TL-WR941ND". A left sidebar menu lists various settings: Status, Quick Setup, QSS, Network, Wireless, DHCP, Forwarding (highlighted), Virtual Servers, Port Triggering, DMZ, UPnP, Security, Parental Control, Access Control, Advanced Routing, Bandwidth Control, IP & MAC Binding, Dynamic DNS, and System Tools. The main content area is titled "Add or Modify a Virtual Server Entry" and contains the following fields:

- Service Port: 80 (with a hint "(XX-XX or XX)")
- IP Address: 192.168.1.111
- Protocol: ALL (dropdown menu)
- Status: Enabled (dropdown menu)
- Common Service Port: --Select One-- (dropdown menu)

At the bottom of the form are "Save" and "Back" buttons. To the right of the form is a "Virtual Servers Help" section with the following text:

Virtual servers can be used for setting up public services on your LAN. A virtual server is defined as a service port, and all requests from Internet to this service port will be redirected to the computer specified by the server IP. Any PC that was used for a virtual server must have a static or reserved IP address because its IP address may change when using the DHCP function.

- **Service Port** - The numbers of External Ports. You can enter a service port or a range of service ports (the format is XXX - YYY, XXX is Start port, YYY is End port).
- **IP Address** - The IP address of the PC running the service application.
- **Protocol** - The protocol used for this application, either TCP, UDP, or All (all protocols supported by the Router).
- **Status** - The status of this entry, "Enabled" means the virtual server entry is enabled.
- **Common Service Port** - Some common services already exist in the pull-down list.
- **Modify** - To modify or delete an existing entry.

To setup a virtual server entry:

1. Click the **Add New...** button.
2. Select the service you want to use from the **Common Service Port** list. If the **Common Service Port** menu does not list the service that you want to use, enter the number of the service port or service port range in the **Service Port** box.
3. Enter the IP address of the computer running the service application in the **IP Address** box.
4. Select the protocol used for this application in the Protocol box, either TCP, UDP, or All.
5. Select the **Enabled** option in the **Status** pull-down list.
6. Click the **Save** button.

Note: It is possible that you have a computer or server that has more than one type of available service. If so select another service, and type the same IP address for that computer or server.

To modify or delete an existing entry:

1. Find the desired entry in the table.
2. Click **Modify** or **Delete** as desired on the **Modify** column.

Click the **Enable All** button to make all entries enabled.



DDNS

Preencha a porta que irá redirecionar, o IP do aparelho da rede interna e o protocolo pode deixar como "ALL", a não ser que você trabalhe com apenas um específico, e deixe o Status como "Enabled" para ficar ativo. Salve.

TP-LINK® 300M Wireless N Router
Model No. TL-WR941N / TL-WR941ND

- Status
- Quick Setup
- QSS
- Network
- Wireless
- DHCP
- Forwarding
- Virtual Servers
- Port Triggering
- DMZ
- UPnP
- Security
- Parental Control
- Access Control
- Advanced Routing
- Bandwidth Control
- IP & MAC Binding
- Dynamic DNS
- System Tools

Virtual Servers

ID	Service Port	IP Address	Protocol	Status	Modify
1	80	192.168.1.111	ALL	Enabled	Modify Delete

Add New... Enable All Disable All Delete All

Previous Next

Virtual Servers Help

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DDNS

Feito isso, já estará funcionando. Independente do endereço de IP Externo, ao você acessar o “automacaoesp.ddns.net” na porta padrão 80, você cairá na porta 80 do aparelho da rede interna cujo IP é 192.168.1.111. Lembre-se de deixar esse endereço fixo.



Em www.fernandok.com

Download arquivo **INO** do código fonte



Modificações no arquivo automacao.ino

Faça a alteração das configurações abaixo para as configurações da sua rede e coloque o número do gpio máximo disponível na sua placa + 1 em MAX_PIN_COUNT.

```
//Mude para os dados da sua rede
#define SSID "TesteESP"
#define SENHA "87654321"
#define IP "192.168.1.111"
#define GATEWAY "192.168.1.1"
#define SUBNET "255.255.255.0"

//Quantidade máxima de pinos, lembrando que os gpios
//geralmente começam em 0.
//Se o gpio máximo for 16, por exemplo, coloque 17
#define MAX_PIN_COUNT 17
```



Modificações no arquivo automacao.html

No arquivo arquivo automacao.html altere na linha 117 a URL para a que você cadastrou no site de ddns no-ip

```
//Mude pelo ddns que você cadastrou  
const URL = "http://automacaoesp.ddns.net/";
```



Plugin para gravar arquivos

Você deve incluir o plugin na IDE Arduino para gravar arquivos na flash do esp8266. Faça o download do plugin [aqui](#). Descompacte o arquivo e se estiver no Windows coloque o arquivo .jar em:

C:\Users\<seu_usuario>\Documents\Arduino\tools\ESP8266FS\tool\esp8266fs.jar

Se usar Mac coloque o arquivo .jar em:

~/Documents/Arduino/tools/ESP8266FS/tool/esp8266fs.jar

Reinicie a IDE do Arduino. Agora uma nova opção aparecerá em Ferramentas. Esta opção, chamada de “ESP8266 Sketch Data Upload” vai gravar o conteúdo da pasta “data” na flash do ESP8266.

A pasta “data” deve estar dentro da pasta do arquivo .ino atual.

Se quiser gravar um arquivo html, por exemplo:

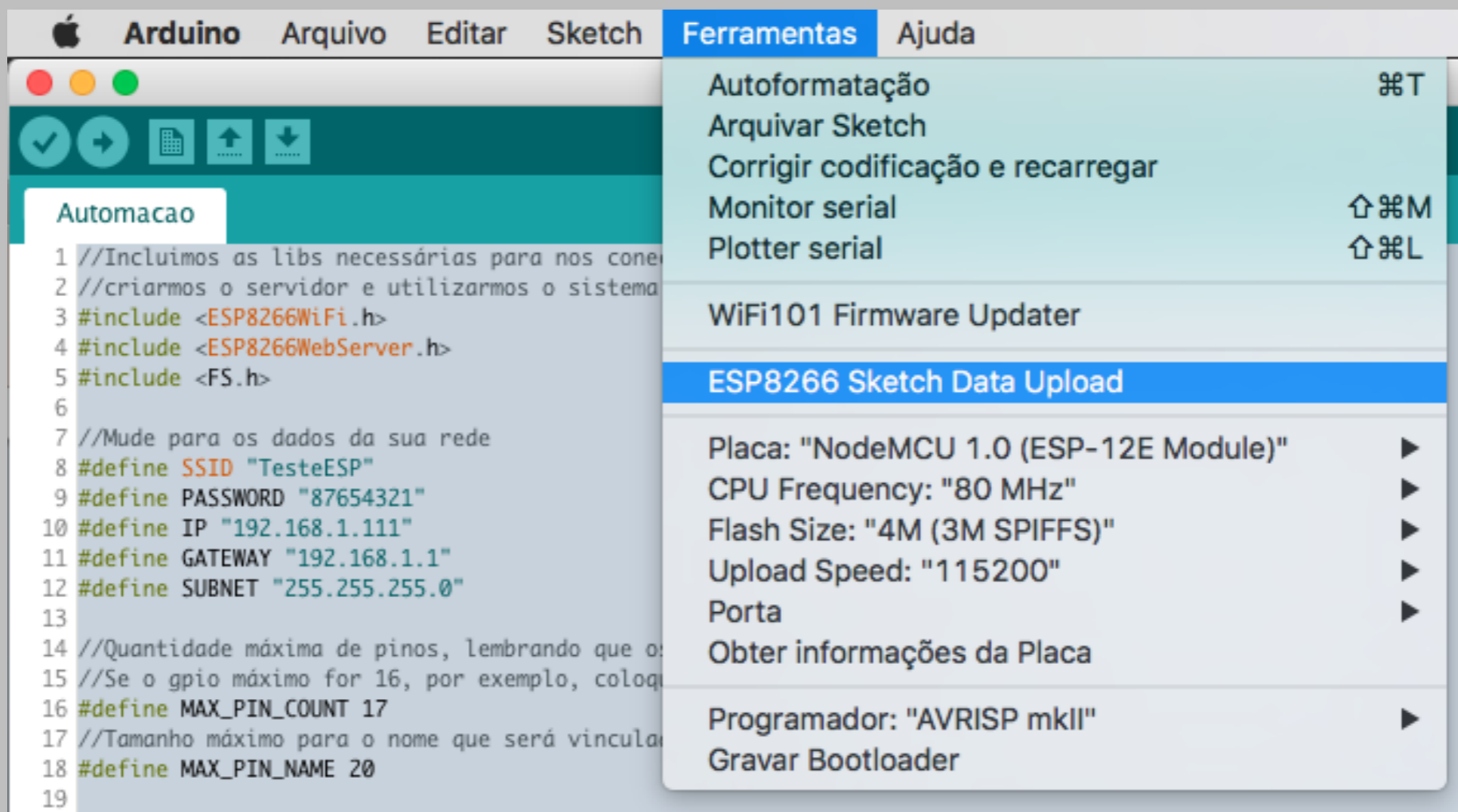
~/Automacao/automacao.ino

~/Automacao/data/automacao.html



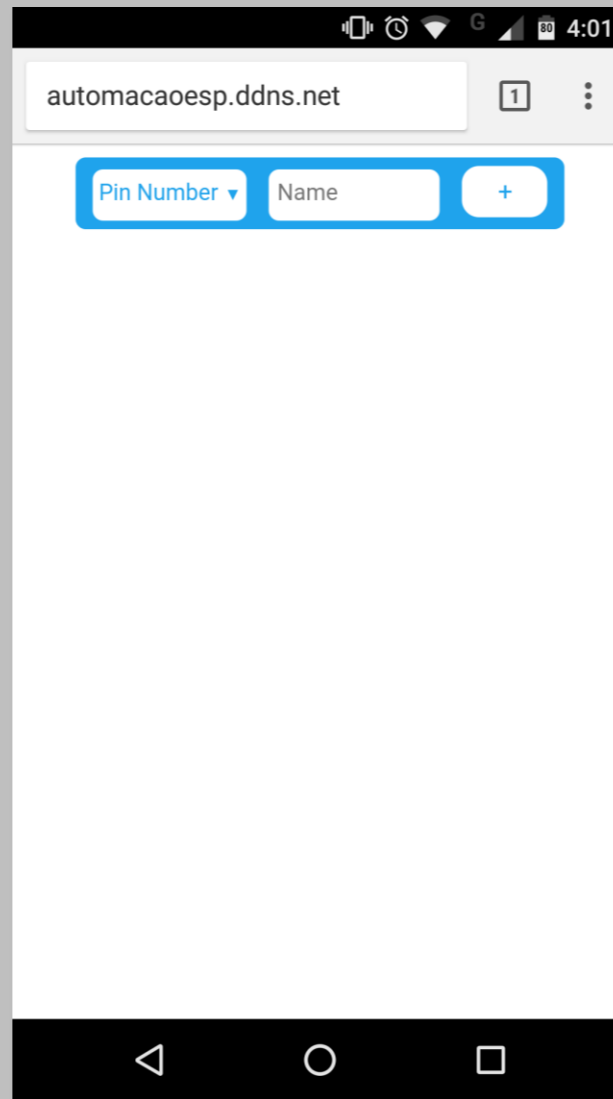
Gravar arquivo html

Clique nesta opção para enviar o arquivo automacao.html que está na pasta “data” para o sistema de arquivos do ESP



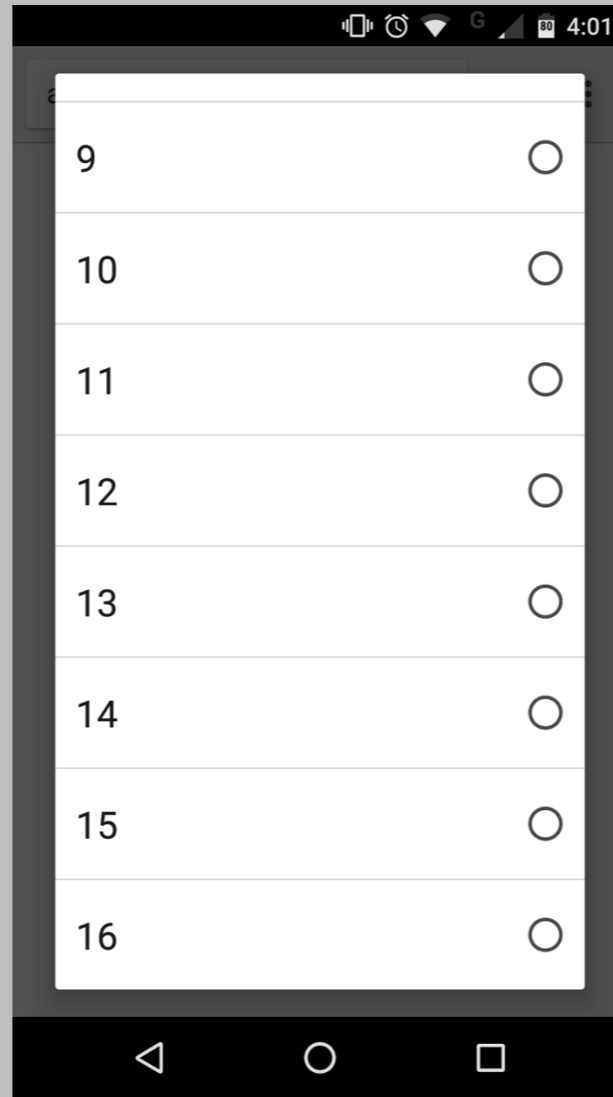
Testando

Ainda na IDE do arduino, clique na seta para compilar e enviar o código para o ESP. Agora vá até o navegador e digite na barra de endereços a url que você cadastrou no site no-ip. O resultado deve ser o seguinte:



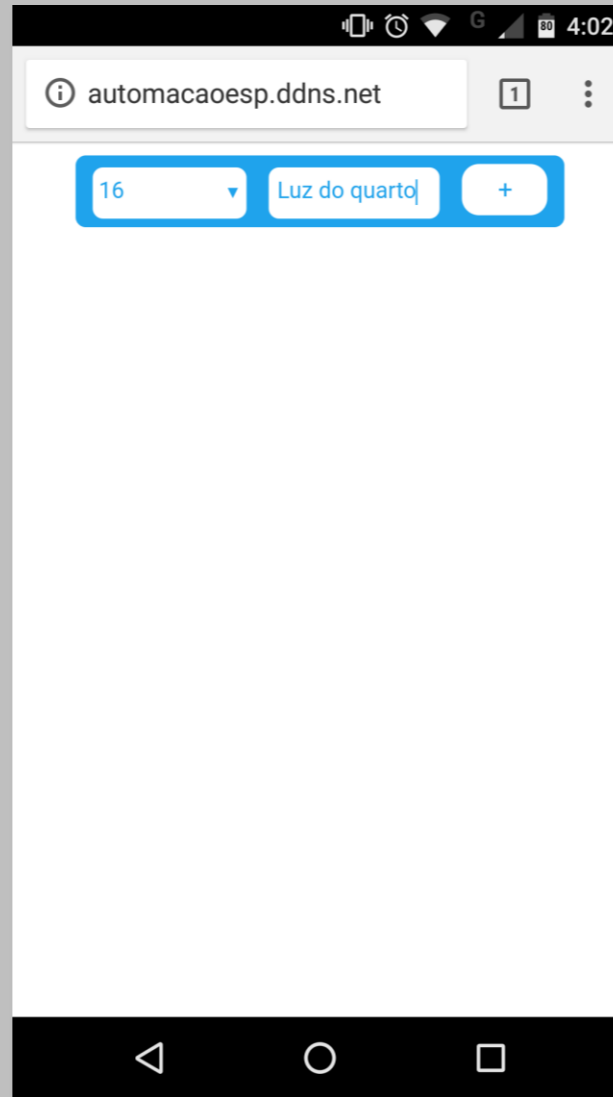
Testando

Clque “Pin Number” e escolha o número de um pino da lista que aparecer:



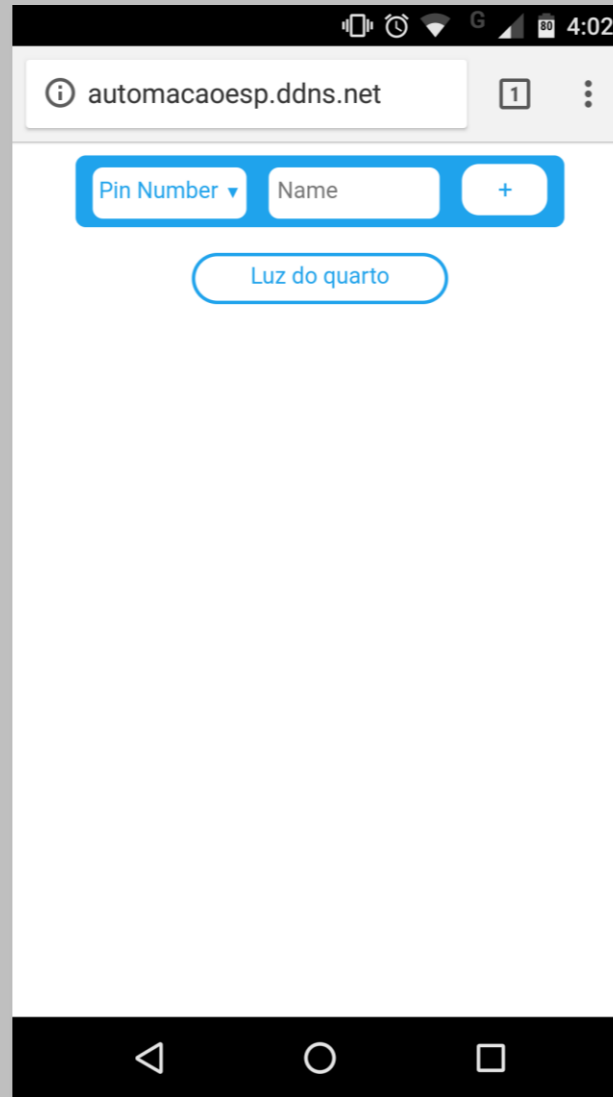
Testando

Digite o nome do botão que vai comandar o pino selecionado e clique em “+”:



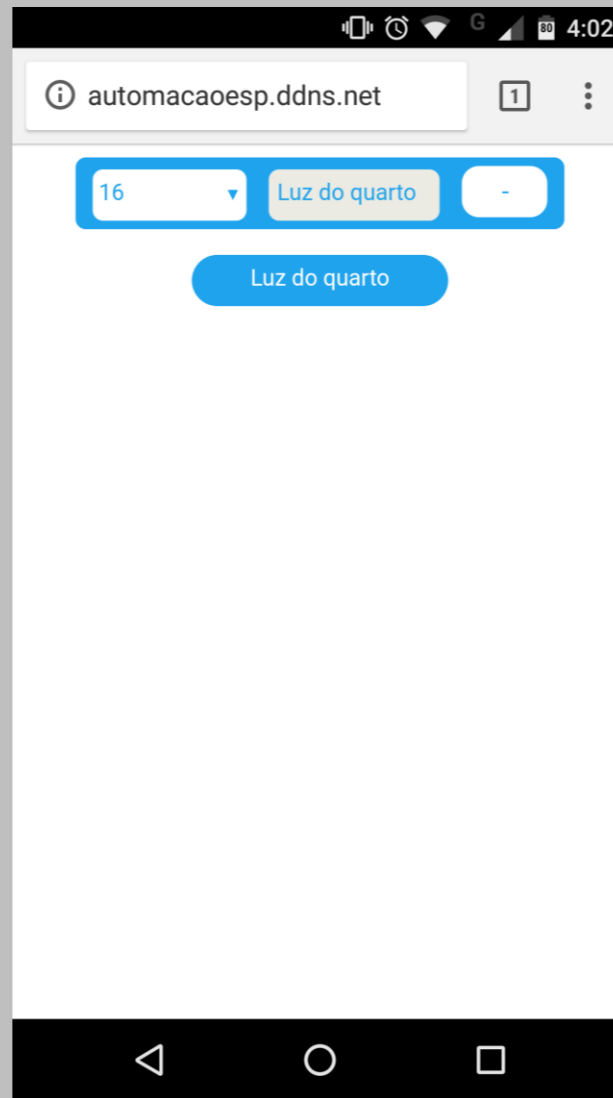
Testando

Um botão com o nome escolhido aparecerá na lista:



Testando

Quando clicar no botão ele ficará azul e o pino com o número que você escolheu ficará em HIGH. Caso queira que o pino volte para LOW apenas clique no botão novamente. Para remover o botão clique em “-”



Em www.fernandok.com

Download arquivo **INO** do código fonte

