

Introdução ao Cisco Packet Tracer

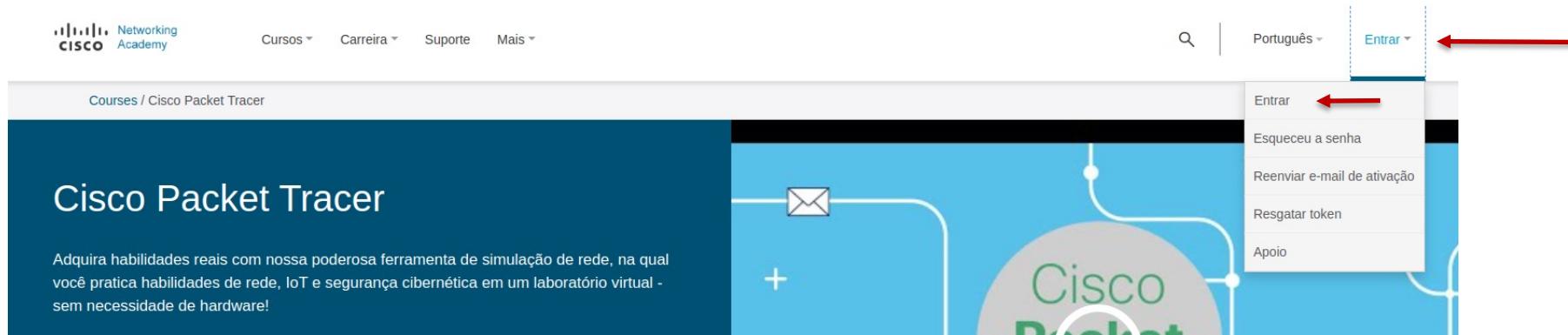
SSC0540 - Redes de Computadores

INTRODUÇÃO

- É uma **ferramenta gratuita** desenvolvida pela Cisco para estudo dos equipamentos de redes e também dos seus protocolos.
- **Configurações do tipo:** LAN (Local Area Network), MAN (Metropolitan Area Network), e WAN (Wide Area Network) permitindo aos usuários explorar e compreender as características e funcionalidades específicas de cada tipo de rede.
- Equipamentos e protocolos para Internet of Things (**IoT**) permitindo simulações para os ambientes:
 - Smart Home
 - Smart City
 - Industrial
 - Power Grid

CADASTRO E DOWNLOAD

- O simulador poderá ser baixado em <https://www.netacad.com/pt-br/courses/packet-tracer>



CADASTRO E DOWNLOAD

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The screenshot shows a logon page for Cisco NetAcad. At the top right, there are language links for 'BR' and 'PT'. Below them is the Cisco logo. The main heading is 'Faça logon'. There is an 'E-mail' input field containing a placeholder '|'. A large blue button labeled 'Próximo' is centered below the input field. At the bottom left, there are links for 'Desbloquear conta?', 'Esqueceu o endereço de e-mail?', and 'Ajuda'. At the bottom center, it says 'Não possui uma conta? [Registrar-se](#)' with a red arrow pointing to the 'Registrar-se' link.

CADASTRO E DOWNLOAD

The screenshot shows the Cisco Networking Academy interface. At the top, there's a navigation bar with links for 'Minha NetAcad', 'Recursos', 'Cursos', 'Careers', and 'Quem somos'. A red arrow points to the 'Recursos' link. Below the navigation, a breadcrumb trail shows 'Página inicial / Estou aprendendo'. The main content area has a heading 'Estou aprendendo' and a sub-section 'Cursos nos quais me inscrevi'. A message states 'Você não se inscreveu em nenhum curso.' Below this, a button labeled 'Navegar pelo catálogo do curso' is enclosed in a rounded rectangle. To the right, there's a search bar, user profile information for 'Rodrigo', and two buttons: 'Atualizar status' and 'Navegar pelo catálogo do curso'. A dropdown menu is open under the 'Recursos' link, containing options: 'Certificações Cisco e vouchers', 'Encontre uma academia', 'Baixar o Packet Tracer' (which is highlighted with a blue background and a red arrow pointing to it), 'Todos os recursos', and 'Alumni Courses'. On the far right, there's a 'Status' filter set to 'Todos os status' and a pagination section showing 'Exibindo 6' with a dropdown arrow.

Cisco Networking Academy

Minha NetAcad Recursos Cursos Careers Quem somos

Página inicial / Estou aprendendo

Estou aprendendo

Cursos nos quais me inscrevi

Você não se inscreveu em nenhum curso.

Navegar pelo catálogo do curso

Certificações Cisco e vouchers

Encontre uma academia

Baixar o Packet Tracer

Todos os recursos

Alumni Courses

Último login em 08/30/2020 at 16:06 PM

Atualizar status Navegar pelo catálogo do curso

Status Todos os status

Exibindo 6

Visualize os cursos concluídos e finalizados na transcrição do NetAcad Learning

CADASTRO E DOWNLOAD

Windows Desktop Version 8.2.1 Em inglês

[Download de 64 bits](#)

[Download de 32 bits](#)

Ubuntu Desktop versão 8.2.1 em inglês

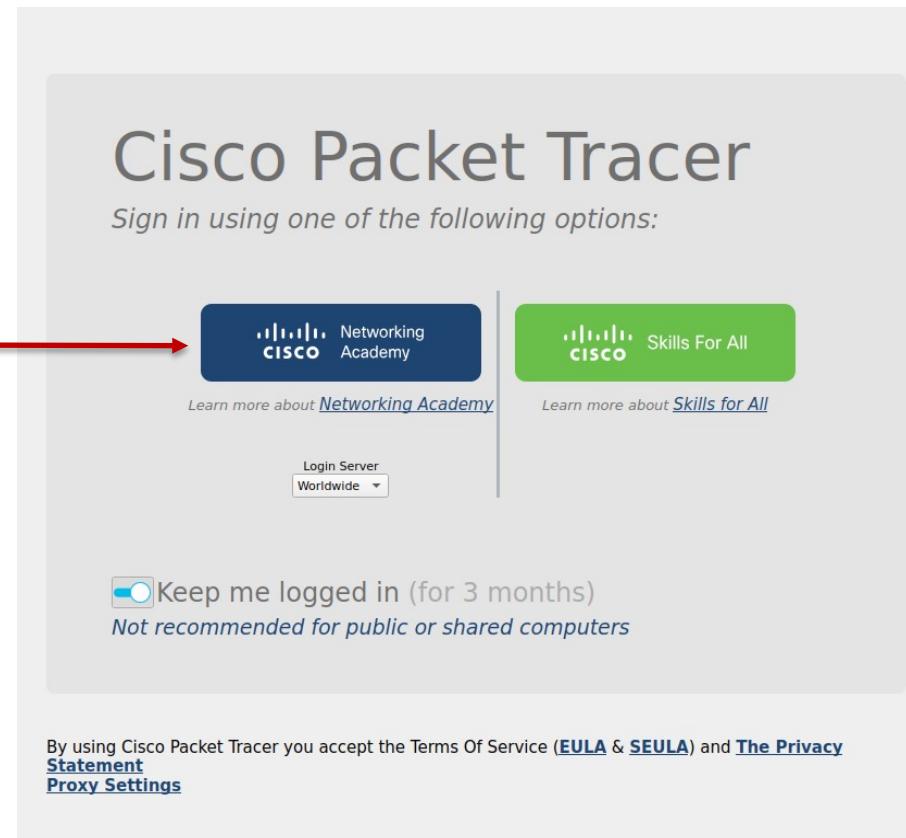
[Download de 64 bits](#)

macOS versão 8.2.1 em inglês

[Download de 64 bits](#)

Primeiro Acesso

1. Clicar em **Networking Academy**
2. Inserir a credencial criada no registro





→ Op. básicas



→ Inspeccionar, Organizar e Testar

Logical Physical x: -287, y: -34

[Root] 02:15:00

Modo do simulador

Equipmentos e Dispositivos

Modo de funcionamento

Time: 00:04:27

Realtime Simulation



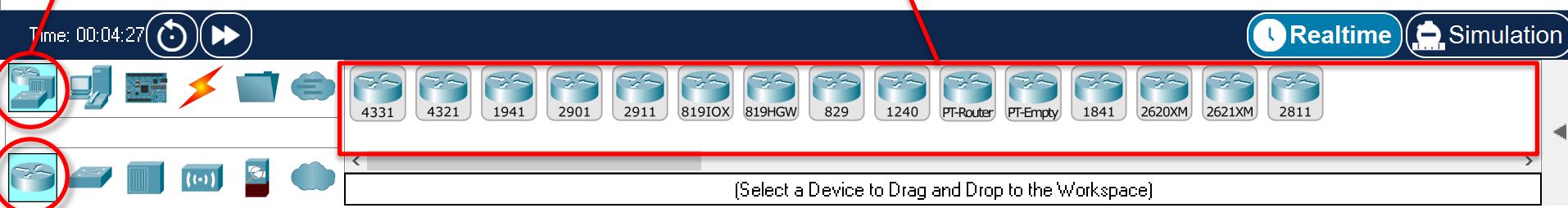
(Select a Device to Drag and Drop to the Workspace)



Logical Physical x: -287, y: -34

[Root] 02:15:00

1. Equipamentos de Rede



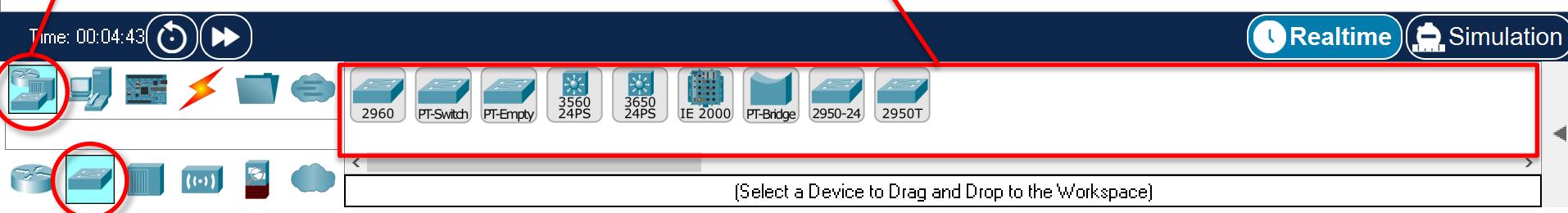
2. Roteadores



[Logical] [Physical] x: -248, y: -83

[Root] 02:23:00

1. Equipamentos de Rede



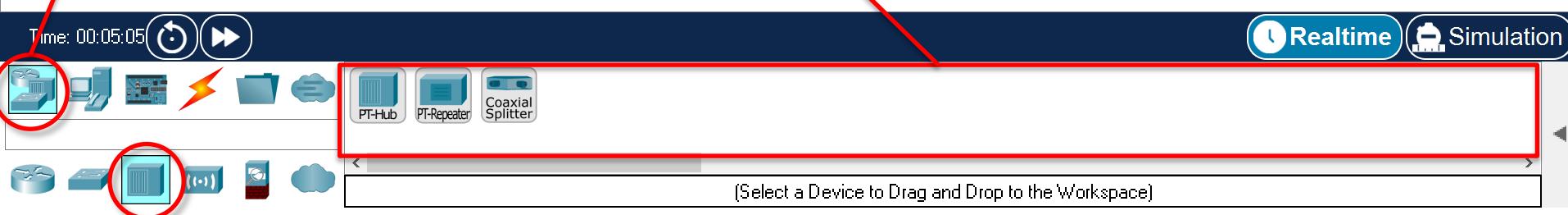
2. Switches



Logical Physical x: -344, y: -124

[Root] 02:34:30

1. Equipamentos de Rede



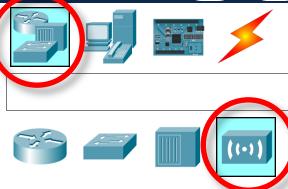
2. Hubs



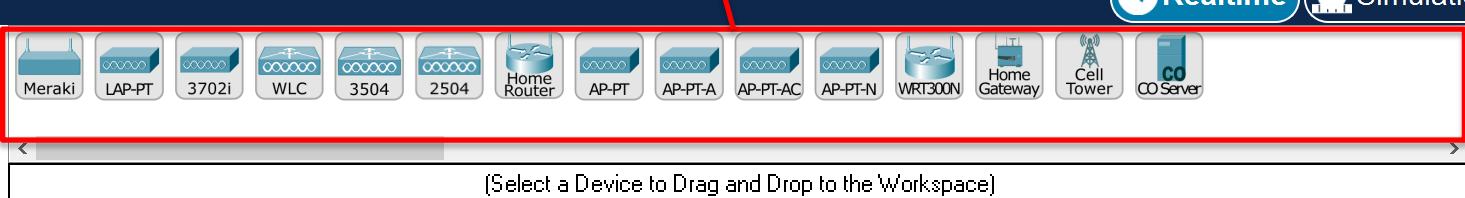
[Logical] [Physical] x: -378, y: 125

[Root] 02:56:30

1. Equipamentos de Rede



2. Rede sem fio



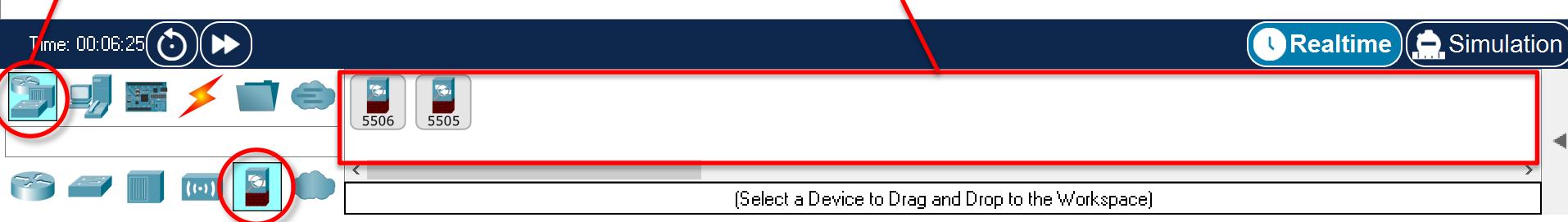
(Select a Device to Drag and Drop to the Workspace)



Logical Physical x: -315, y: -83

[Root] 03:15:00

1. Equipamentos de Rede



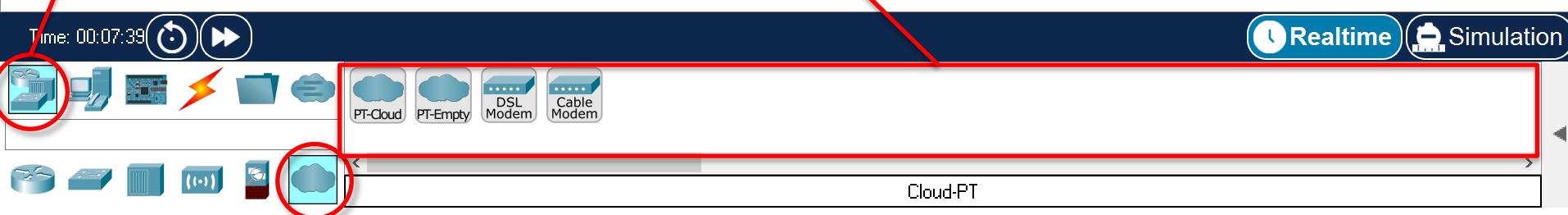
(Select a Device to Drag and Drop to the Workspace)



Logical Physical x: -314, y: 126

[Root] 03:53:00

1. Equipamentos de Rede



2. WAN



[Logical] [Physical] x: -404, y: 121

[Root] 14:18:30

1. Dispositivos finais (hosts)

2. Dispositivos



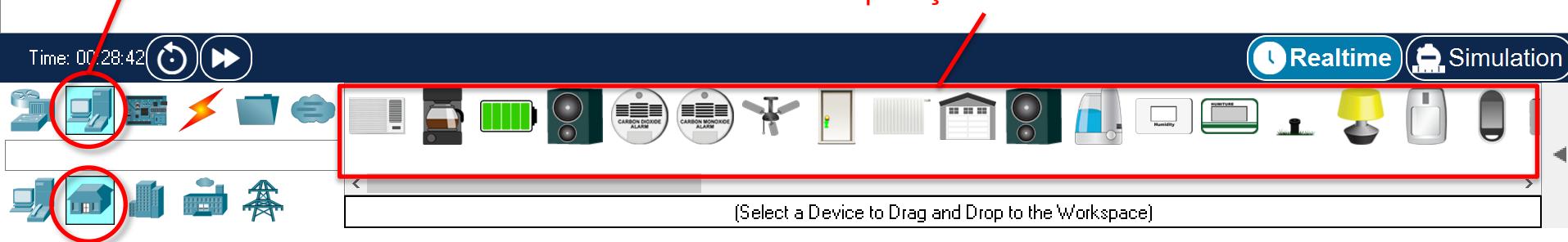


[Logical] [Physical] x: -257, y: 30

[Root] 14:33:00

1. Dispositivos finais (hosts)

2. Aplicações domésticas





[Logical] [Physical] x: -243, y: 48

[Root] 14:45:30

1. Dispositivos finais (hosts)

2. Cidades inteligentes





Logical Physical x: -221, y: 59

[Root] 15:00:00

1. Dispositivos finais (hosts)

2. Aplicações Industriais



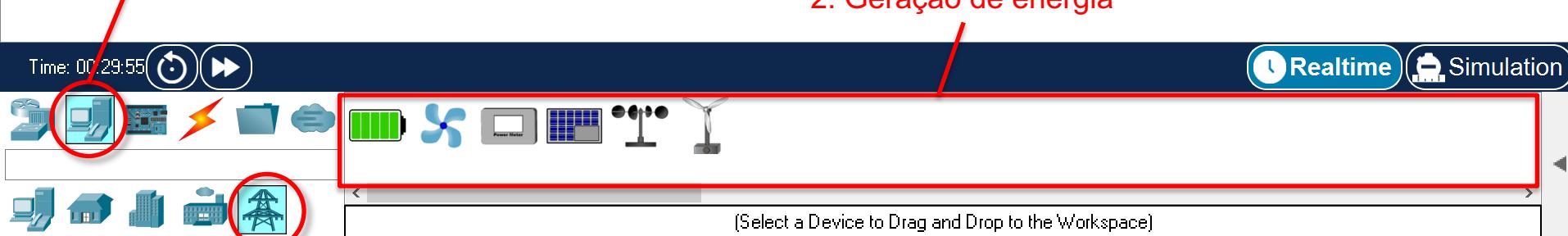


[Logical] [Physical] x: -207, y: 43

[Root] 15:10:00

1. Dispositivos finais (hosts)

2. Geração de energia



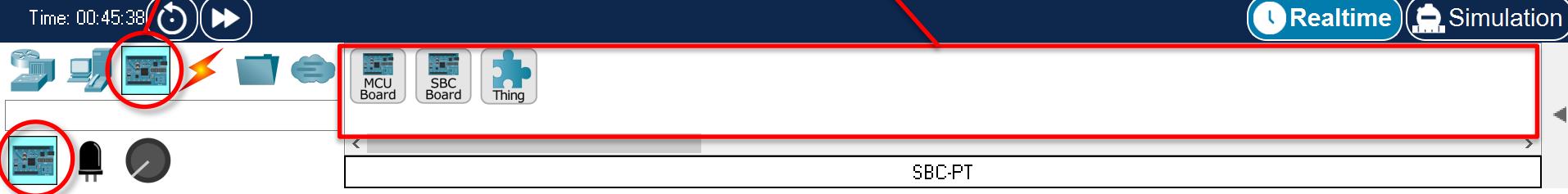


Logical Physical x: -330, y: -30

[Root] ⏪ ⏴ ⏵ ⏶ ⏷ 23:08:00

1. Componentes

2. Placas





Logical Physical x: -211, y: 10

[Root] ⏪ ⏴ ⏵ ⏶ ⏷ 23:24:30

1. Componentes

2. Atuadores

Time: 00:46:10 ⏪ ⏩

Realtime Simulation



(Select a Device to Drag and Drop to the Workspace)



Logical Physical x: -207, y: 120

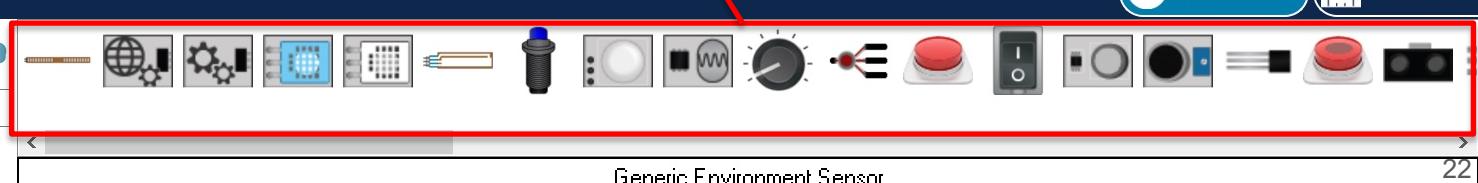
[Root] ⏪ ⏴ ⏵ ⏶ ⏷ 23:36:30

1. Componentes

Time: 00:46:34 ⏪ ⏩



2. Sensores



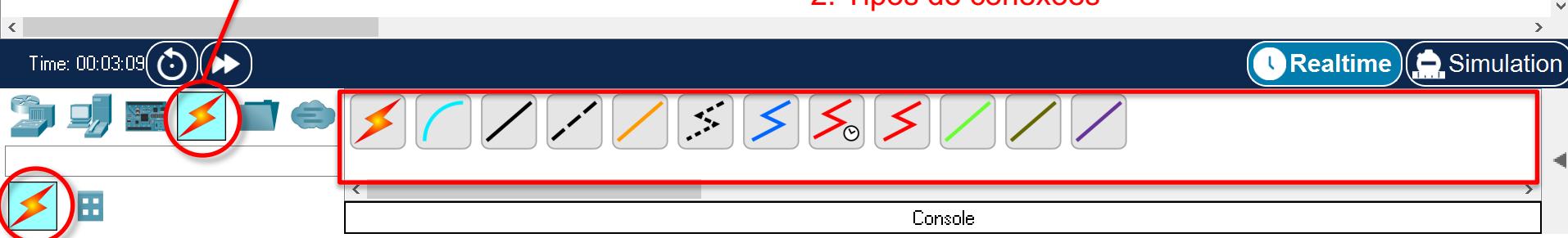


Logical Physical x: 121, y: 7

[Root] 01:36:00

1. Conexões

2. Tipos de conexões

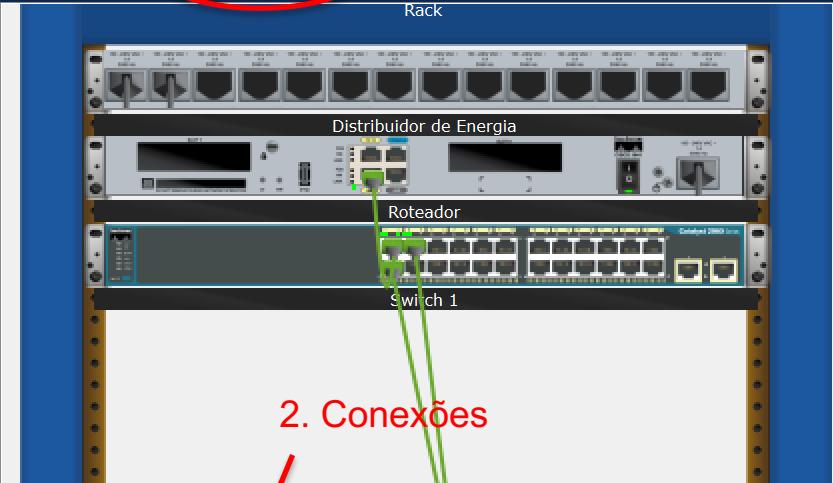


1. Modo Físico

File Edit Options View Tools Extensions Window Help



Main Wiring Closet 1282m, y: 1239m 10:17:00

**2. Conexões****3. Tipos de conexões: Modo Físico**

Time: 00:20:15

Realtime Simulation

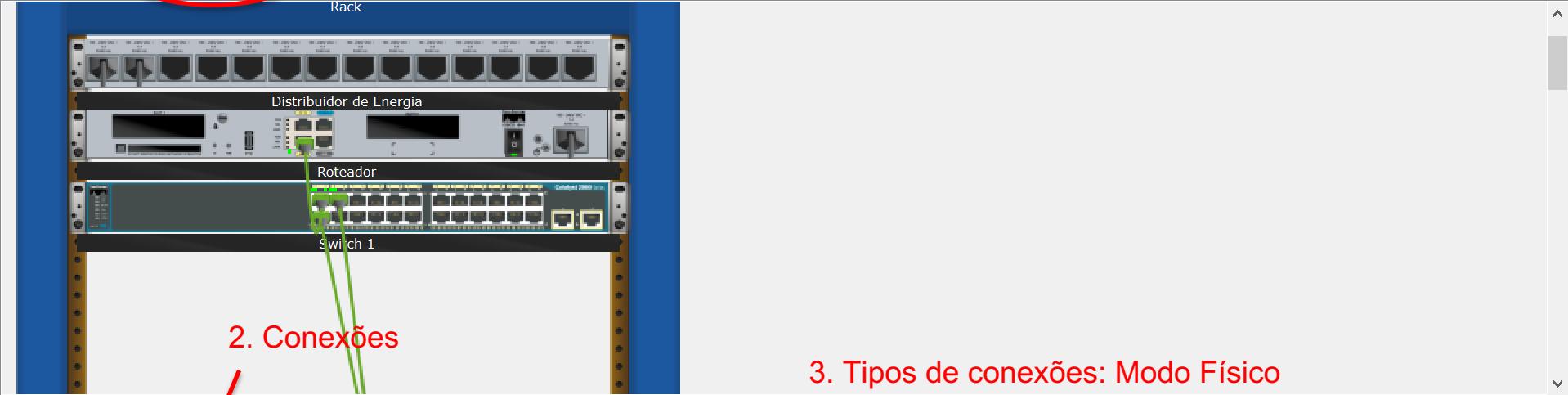
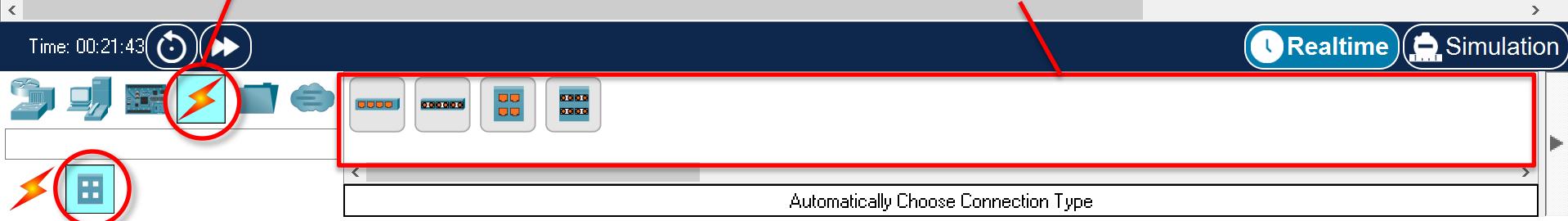


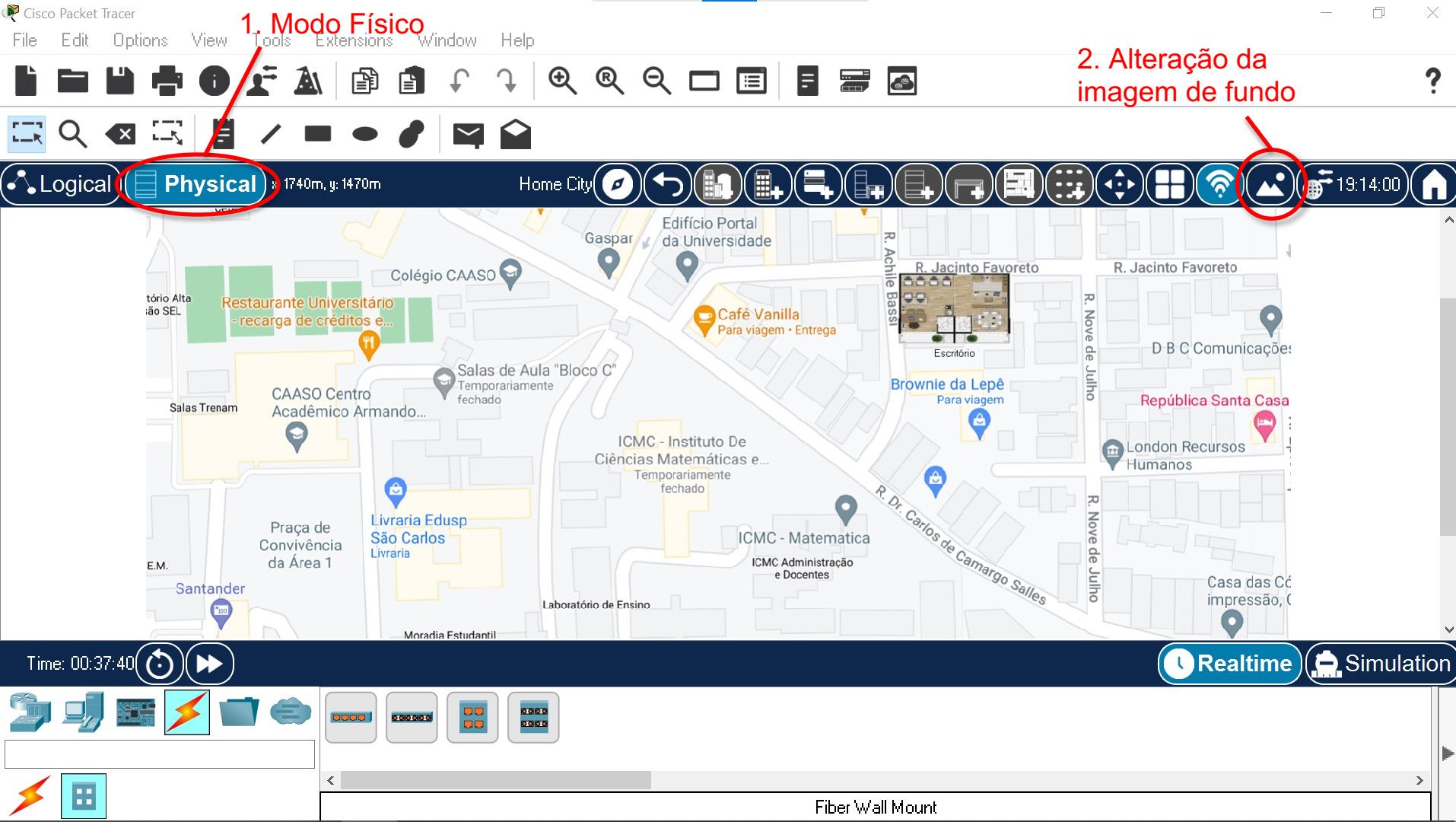
1. Modo Físico

File Edit Options View Tools Extensions Window Help

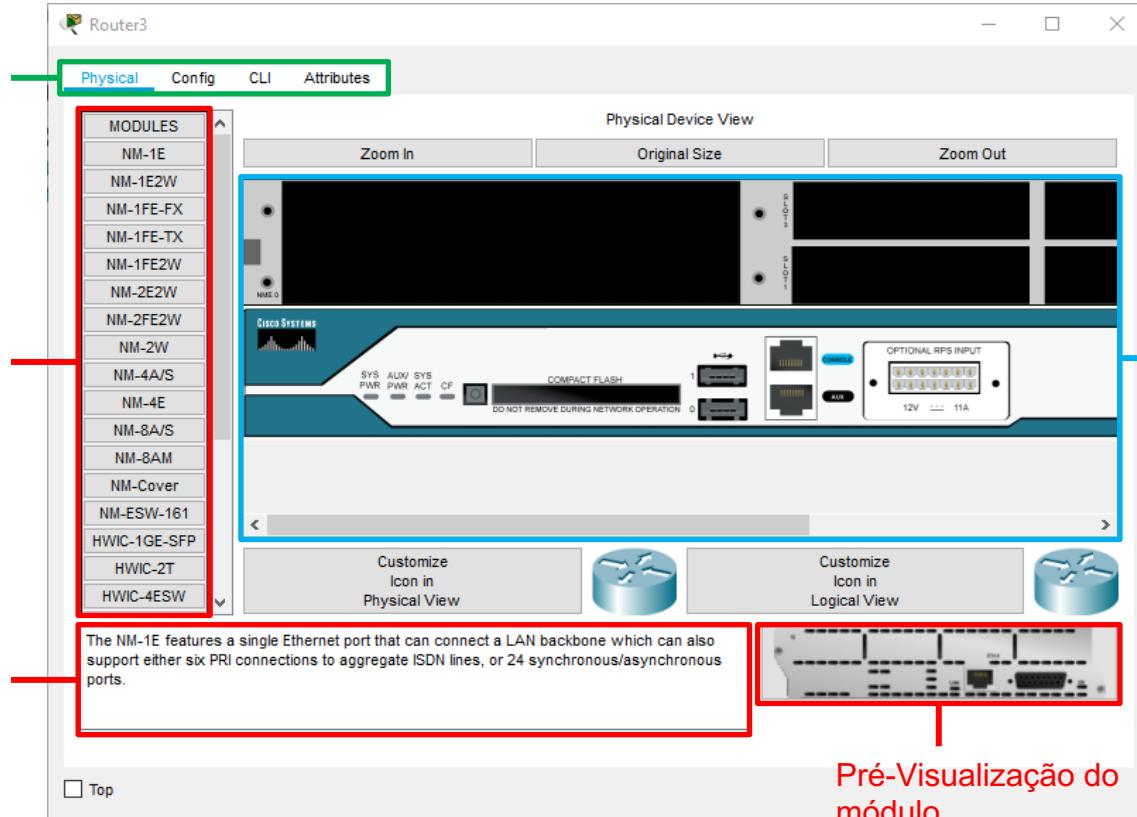


Main Wiring Closet 11:02:00

**3. Tipos de conexões: Modo Físico**



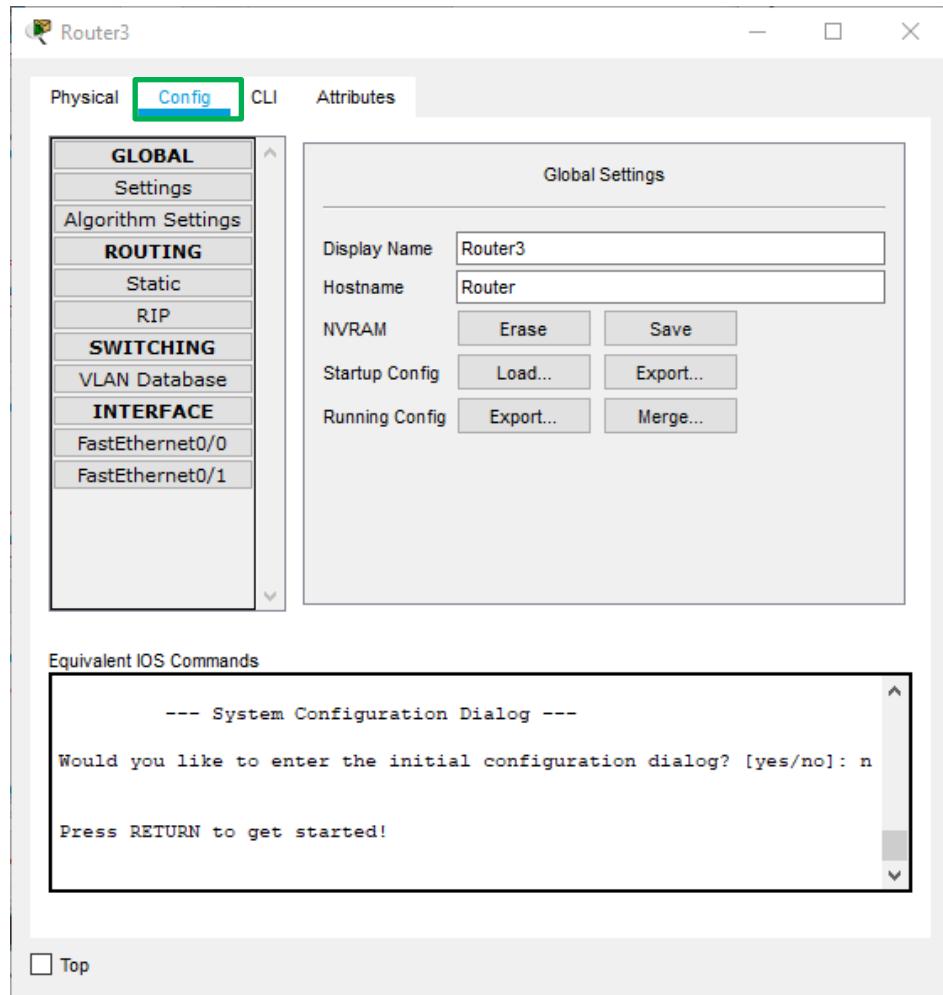
CONFIGURAÇÃO DO ROTEADOR



CONFIGURAÇÃO DO ROTEADOR

Na opção “Config”, alteramos:

- Nome
- Arquivo de configuração
- Algoritmo de Roteamento
- VLAN
- Configuração de Interfaces



CONFIGURAÇÃO DO ROTEADOR

Configuração do roteador/switch por linha de comando (CLI)

- Utilizado em configuração reais
 - Permite mais opções de configuração
 - Exigido em certificações

Sistema operacional Cisco responsável pelos comandos : **IOS**

The screenshot shows a window titled "Router3" with a tab bar at the top. The tabs are labeled "Physical", "Config", "CLI" (which is highlighted with a green border), and "Attributes". Below the tabs, the title "IOS Command Line Interface" is displayed. The main area contains the following CLI session output:

```
Router(config-router)#
%SYS-5-CONFIG_I: Configured from console by console

Router(config-router)#end
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
 as VLAN database mode is being deprecated. Please consult user
 documentation for configuring VTP/VLAN in config mode.

Router(vlan)#
%SYS-5-CONFIG_I: Configured from console by console

Router(vlan)#exit
APPLY completed.
Exiting....
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#

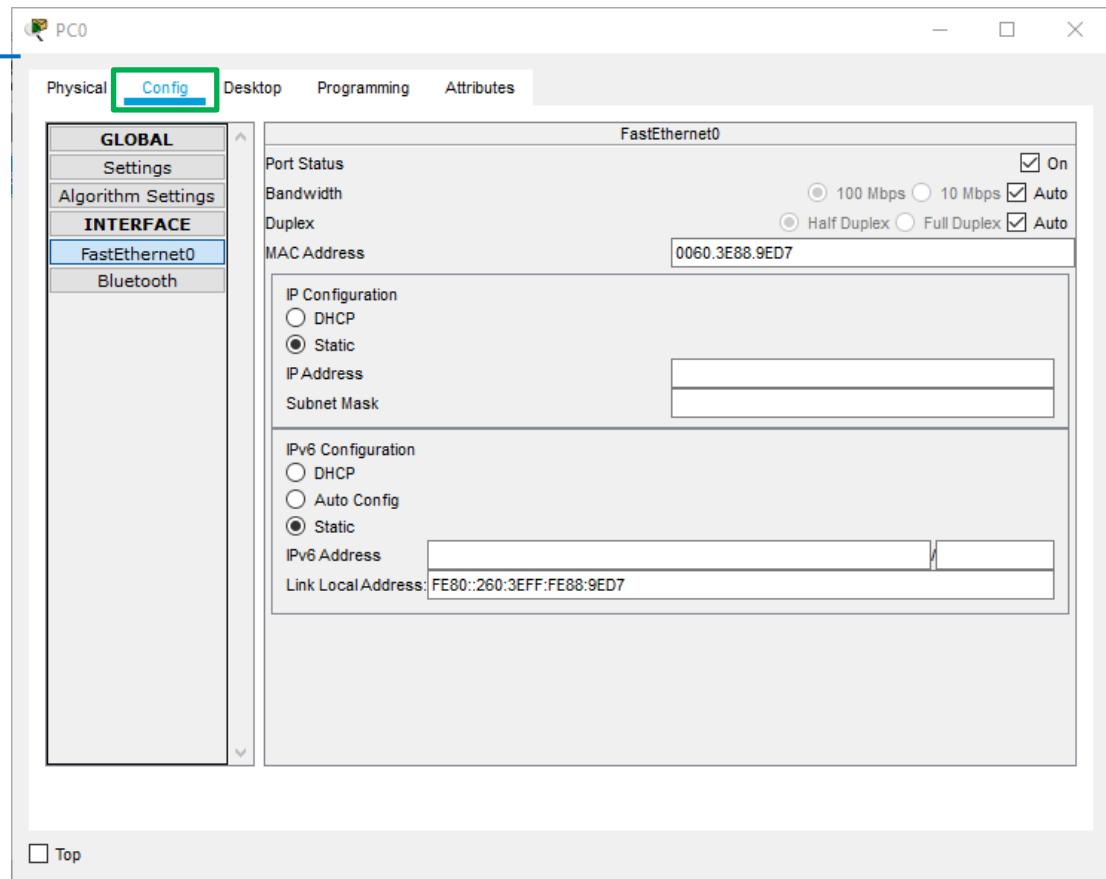
Ctrl+F6 to exit CLI focus
```

At the bottom right, there are "Copy" and "Paste" buttons. At the very bottom left, there is a "Top" button.

CONFIGURAÇÃO DO HOST

Na opção “Config”, alteramos:

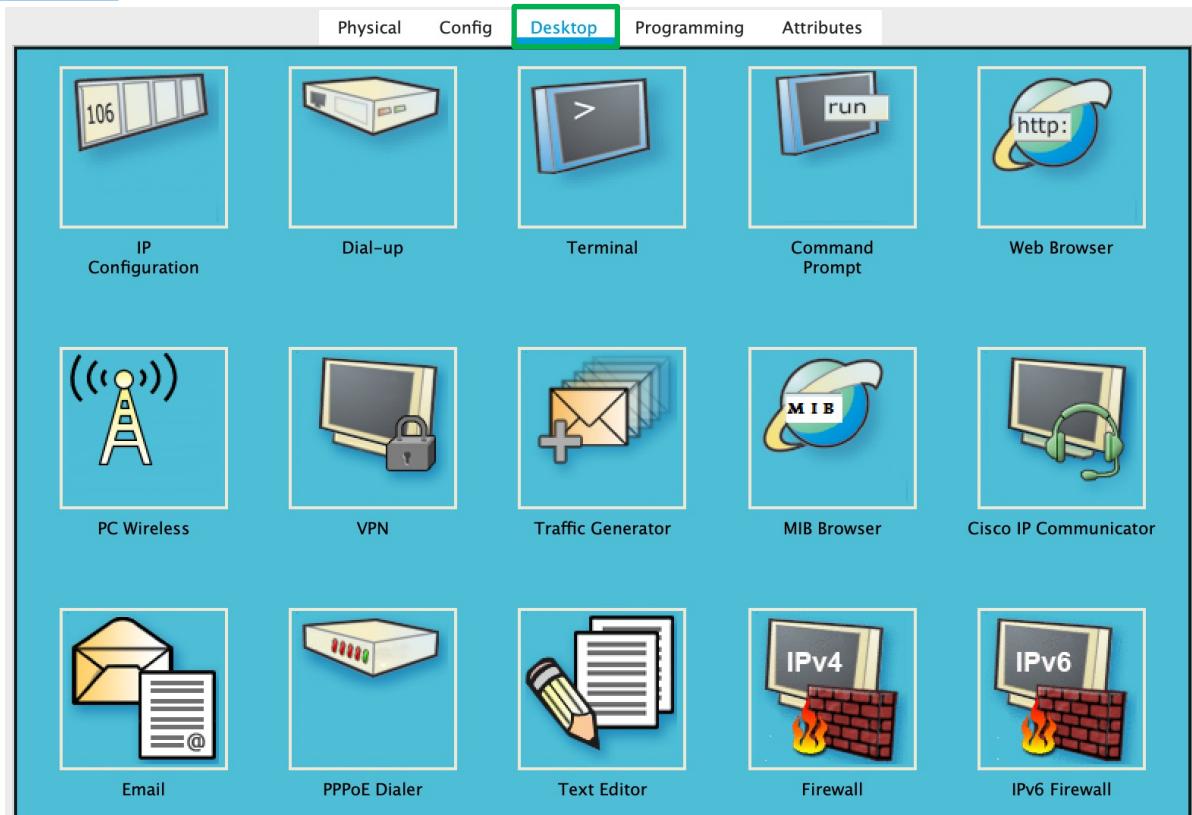
- Nome do host
- Gateway (IP da interface com o roteador)
- Endereço IP (DHCP ou estático)
- Máscara de Rede



CONFIGURAÇÃO DO HOST

Na opção “Desktop”:

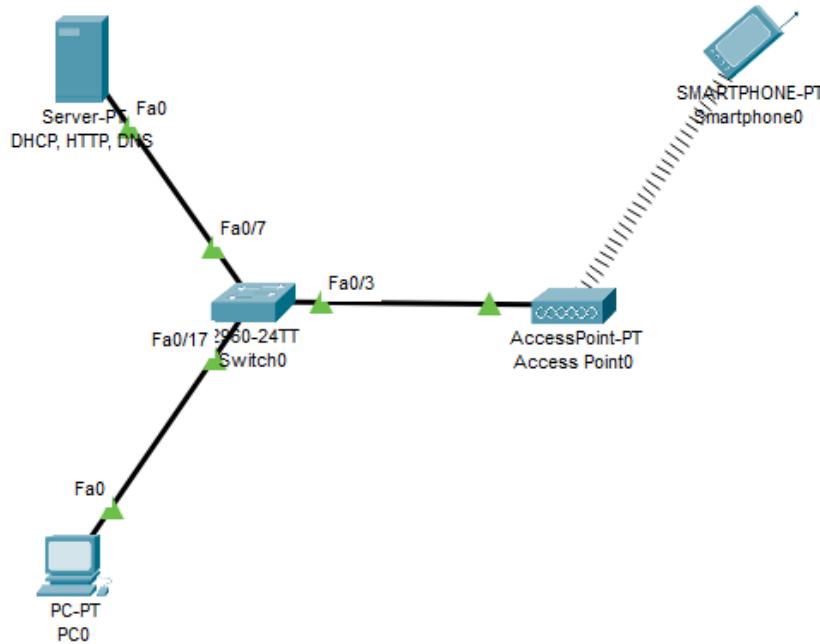
- Configuração do endereço IP, Máscara de Rede, Gateway e DNS
- Terminal
- Navegador
- Email
- Firewall
- Outras configurações



Exemplo Prático 1

Equipamentos:

- Servidor : DHCP, HTTP e DNS
- Switch
- Computador
- Access Point
- Smartphone

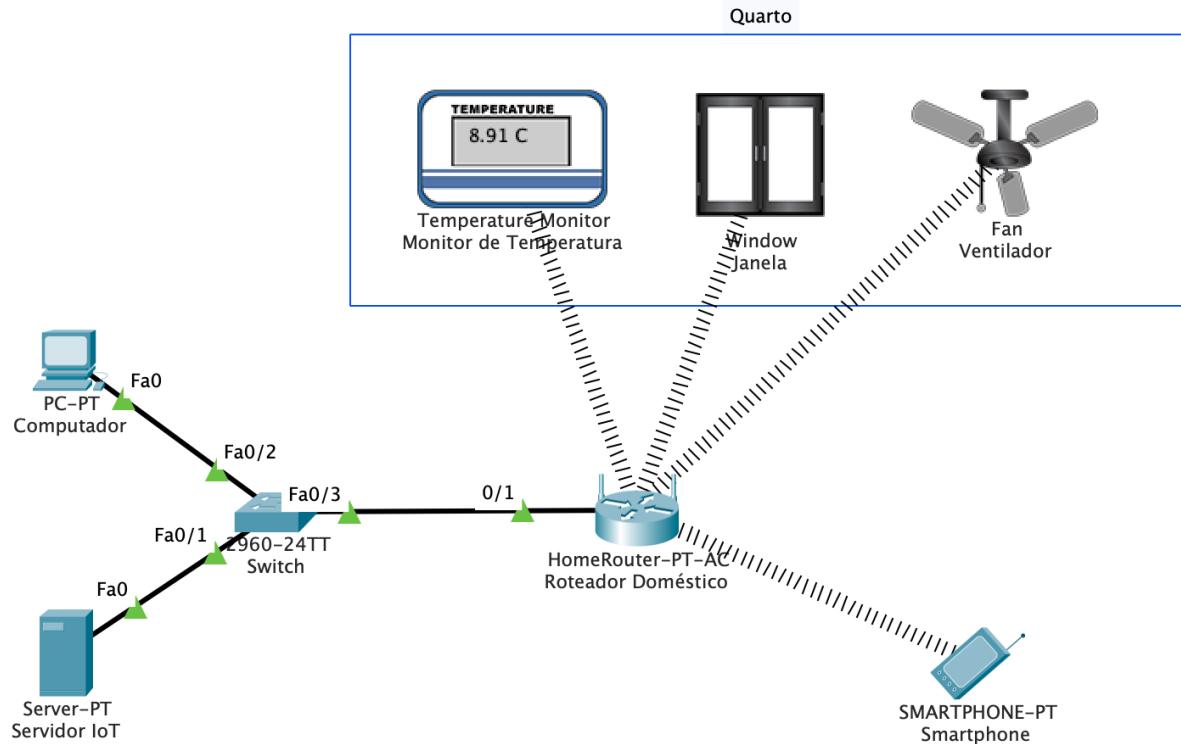


Objetivo: Construir a topologia, configurar os serviços e realizar os testes de comunicação

Exemplo Prático 2

Equipamentos:

- Servidor : IoT
- Switch
- Computador
- Roteador Doméstico
- Smartphone
- Dispositivos IoT

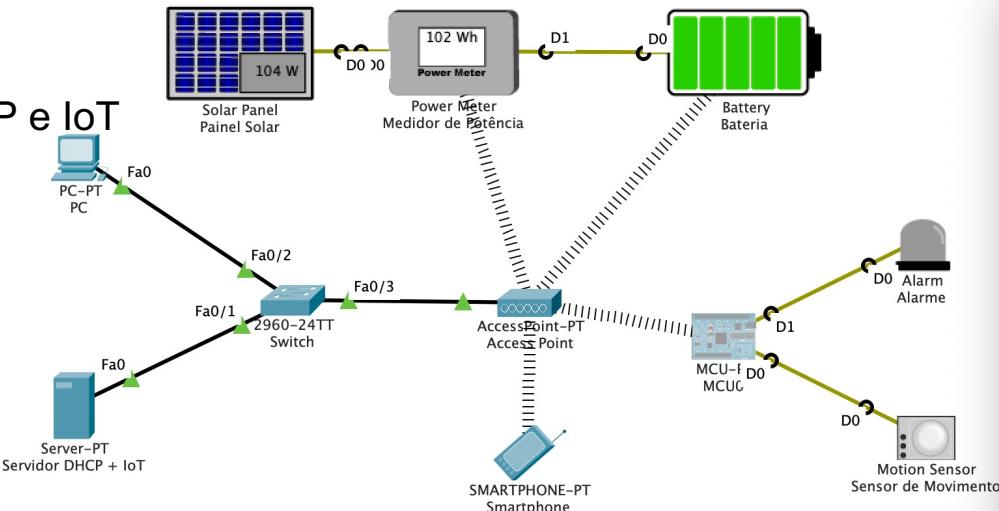


Objetivo: Construir a topologia, configurar os serviços, realizar os testes de comunicação e monitorar os dispositivos IoT

Exemplo Prático 3

Equipamentos:

- Servidor : DHCP e IoT
- Switch
- Computador
- Access Point
- Smartphone
- Placa (MCU)
- Sensores e Atuadores
- Dispositivos IoT



MCUU

Specifications Physical Config Programming

New Project (Python) - main.py

Open New Delete Rename Import

Reload Copy Paste

```
.. main.py
1 from gpio import *
2 from time import *
3
4 mov = 0
5 alarme = 1
6
7
8 def main():
9     pinMode(alarme, OUT)
10    pinMode(mov, IN)
11
12    while True:
13        if(digitalRead(mov)):
14            digitalWrite(alarme,HIGH)
15        else:
16            digitalWrite(alarme,LOW)
17
18
19 if __name__ == "__main__":
20     main()
```

Starting New Project (Python)...

Objetivo: Construir a topologia, configurar os serviços, realizar os testes de comunicação e monitorar os dispositivos IoT

Material Complementar

Configurando um roteador intro

<https://www.youtube.com/watch?v=dzqfvoffMzI>

Rede Local (DHCP, HTTP, DNS e EMAIL)

<https://www.youtube.com/watch?v=hCfyF7sVAGk>

Servidor Web e DNS

<https://www.youtube.com/watch?v=CKqmVwJYL0M&feature=youtu.be>

Modo Físico

https://www.youtube.com/watch?v=_dZ9SjLnUT4

Material Complementar

BGP

<https://www.youtube.com/watch?v=pD1Au-C-fhw&feature=youtu.be>

RIP

<https://www.youtube.com/watch?v=VdMLBi0iYQg&feature=youtu.be>

OSPF

<https://www.youtube.com/watch?v=Eglp2t4zotc>