



Introdução ao Cisco Packet Tracer

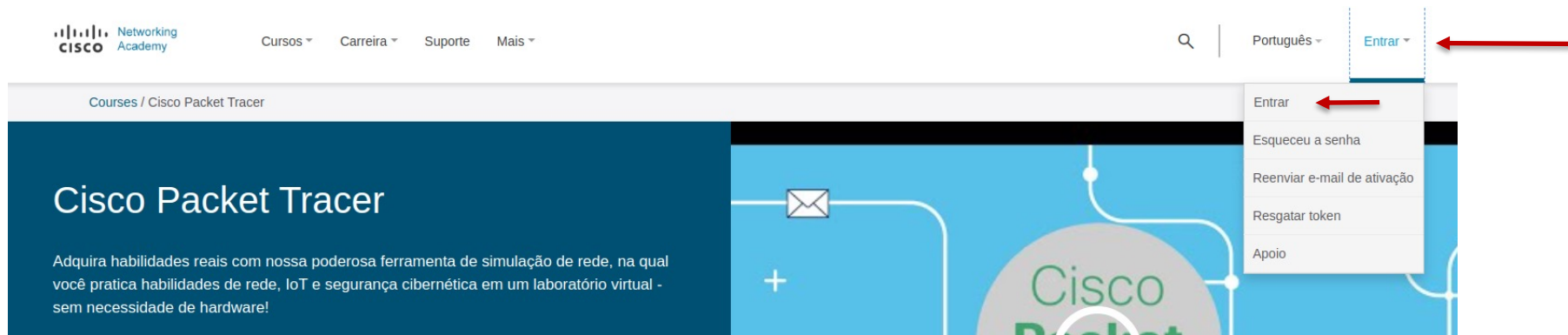
SSC0540 - Redes de Computadores

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>



The screenshot displays the Cisco Academy website interface. At the top left, the Cisco Academy logo is visible. Navigation links for 'Cursos', 'Carreira', 'Suporte', and 'Mais' are present. A search icon and a language selector set to 'Português' are on the right. A red arrow points to the 'Entrar' button in the language menu. Below the language menu, a dropdown menu is open, listing options: 'Entrar', 'Esqueceu a senha', 'Reenviar e-mail de ativação', 'Resgatar token', and 'Apoio'. A red arrow points to the 'Entrar' option in this dropdown. The main content area features a dark blue header with the text 'Cisco Packet Tracer' and a sub-header 'Courses / Cisco Packet Tracer'. Below this, a blue banner contains the text: 'Adquira habilidades reais com nossa poderosa ferramenta de simulação de rede, na qual você pratica habilidades de rede, IoT e segurança cibernética em um laboratório virtual - sem necessidade de hardware!'. The banner also includes a white envelope icon, a plus sign, and a large 'Cisco Packet' logo.

CADASTRO E DOWNLOAD

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



The image shows a screenshot of the Cisco login page. At the top, there is the Cisco logo and a globe icon with 'BR' and 'PT' indicating the language. The main heading is 'Faça logon'. Below it is an 'E-mail' label and an empty text input field. A blue button labeled 'Próximo' is positioned below the input field. Underneath the button are three links: 'Desbloquear conta?', 'Esqueceu o endereço de e-mail?', and 'Ajuda'. At the bottom, there is a link 'Registrar-se' with a red arrow pointing to it from the right.

CADASTRO E DOWNLOAD



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Rodrigo ▾

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6 ▾

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CADASTRO E DOWNLOAD

Windows Desktop Version 8.2.1 Em inglês

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Ubuntu Desktop versão 8.2.1 em inglês

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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*



Cisco Packet Tracer
Sign in using one of the following options:

 **Networking Academy**
[Learn more about Networking Academy](#)

 **Skills For All**
[Learn more about Skills for All](#)

Login Server
Worldwide ▾

Keep me logged in (for 3 months)
Not recommended for public or shared computers

By using Cisco Packet Tracer you accept the Terms Of Service ([EULA](#) & [SEULA](#)) and [The Privacy Statement](#)
[Proxy Settings](#)

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Op. básicas

Inspecionar, Organizar e Testar

Logical Physical x: -287, y: -34 [Root] 02:15:00

Modo do simulador

Equipamentos e Dispositivos

Modo de funcionamento

Time: 00:04:27

Realtime Simulation

4331 4321 1941 2901 2911 819IOX 819HGW 829 1240 PT-Router PT-Empty 1841 2620XM 2621XM 2811

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

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

[Root] 02:15:00

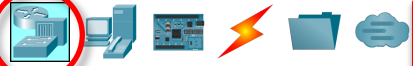

Logical Physical x: -287, y: -34

1. Equipamentos de Rede

2. Roteadores

Time: 00:04:27

Realtime Simulation

	
	4331 4321 1941 2901 2911 819IOX 819HGW 829 1240 PT-Router PT-Empty 1841 2620XM 2621XM 2811

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

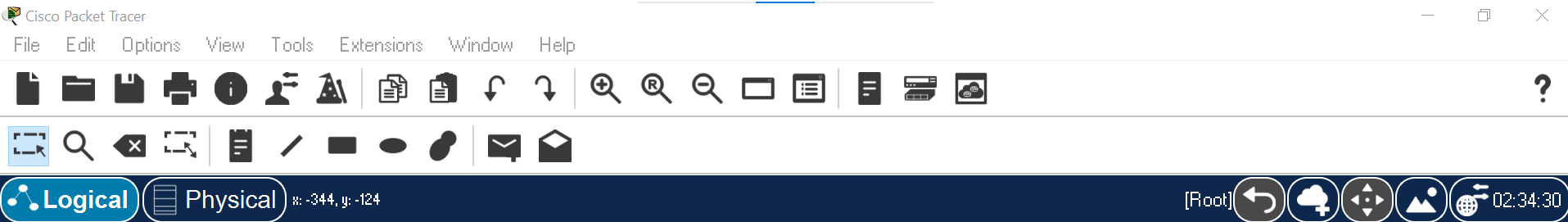
1. Equipamentos de Rede

2. Switches

Time: 00:04:43 Realtime Simulation

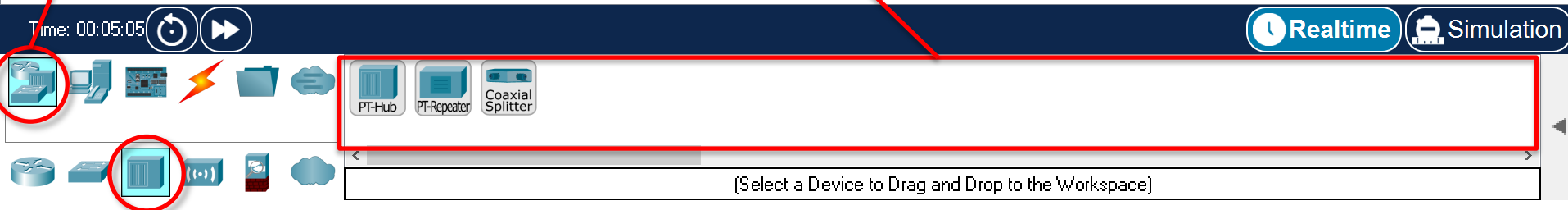
2960 PT-Switch PT-Empty 3560 24PS 3650 24PS IE 2000 PT-Bridge 2950-24 2950T

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



1. Equipamentos de Rede

2. Hubs
























1. Equipamentos de Rede

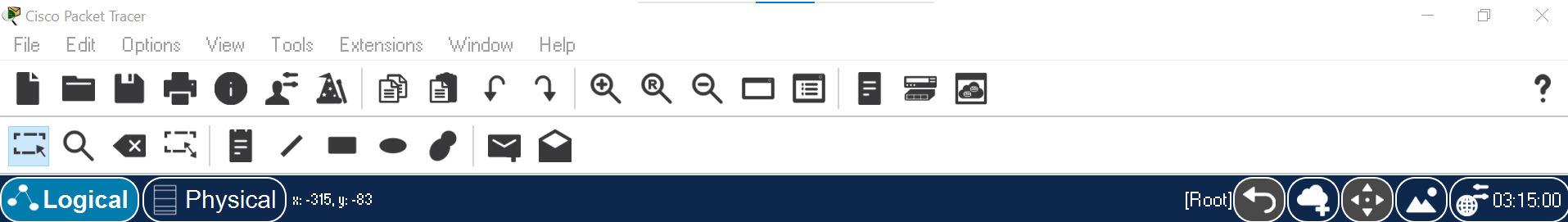
2. Rede sem fio

Time: 00:05:48

Realtime Simulation

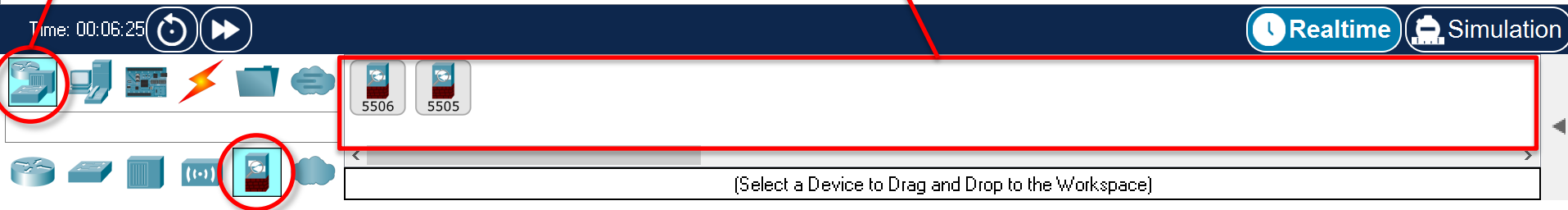
																				
--	--	---	---	---	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---

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



1. Equipamentos de Rede

2. Segurança



1. Equipamentos de Rede

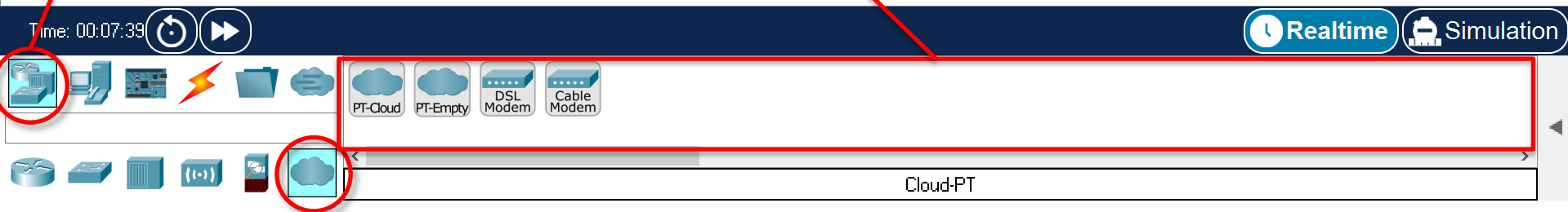
2. WAN

Time: 00:07:39

Realtime Simulation

PT-Cloud PT-Empty DSL Modem Cable Modem

Cloud-PT

The image shows the bottom toolbar of the Cisco Packet Tracer interface. It contains various icons for network components. A red circle highlights the 'Network Equipment' icon (a server rack), with a red arrow pointing to the text '1. Equipamentos de Rede'. Another red circle highlights the 'WAN' icon (a cloud with a lightning bolt), with a red arrow pointing to the text '2. WAN'. The toolbar also includes icons for power, folder, cloud, and other network devices. Below the icons, there are labels for 'PT-Cloud', 'PT-Empty', 'DSL Modem', and 'Cable Modem'. At the bottom right, there is a 'Cloud-PT' label.

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

[Root] 14:18:30

Logical Physical x: -404, y: 121

1. Dispositivos finais (hosts)

2. Dispositivos

Time: 00:28:13

Realtime Simulation

PC Laptop Server Meraki Server Network Controller Printer IP Phone VoIP Device Phone TV Tablet Smart Phone Generic Wireless Generic Wired Sniffer

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

1. Dispositivos finais (hosts)

2. Aplicações domésticas

Time: 00:28:42

Realtime Simulation

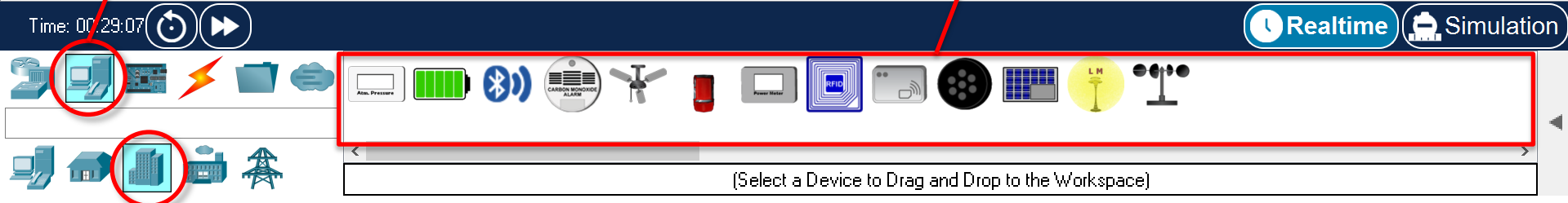
(Select a Device to Drag and Drop to the Workspace)

1. Dispositivos finais (hosts)

2. Cidades inteligentes

Time: 00:29:07

Realtime Simulation



The image shows the device palette in Cisco Packet Tracer. It contains various icons for devices and smart city components. Two red circles highlight specific icons: one for a laptop (representing a host) and one for a smart building (representing a smart city). A red rectangle highlights the entire palette area.

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

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

[Root] 15:00:00

Logical Physical x: -221, y: 59

1. Dispositivos finais (hosts)

2. Aplicações Industriais

Time: 00:29:35

Realtime Simulation

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

1. Dispositivos finais (hosts)

2. Geração de energia

Time: 00:29:55 [Refresh] [Play]

Realtime Simulation

[Computer] [Server] [Lightning Bolt] [Folder] [Handshake] [Battery] [Fan] [Power Meter] [Solar Panel] [Microphone] [Antenna]

[Computer] [House] [Building] [Factory] [Tower]

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

1. Componentes

2. Placas

Time: 00:45:38

Realtime Simulation

MCU Board SBC Board Thing

SBC-PT

1. Componentes

2. Atuadores

Time: 00:46:10

Realtime Simulation

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

1. Componentes

2. Sensores

Time: 00:46:34

Realtime Simulation

Generic Environment Sensor 22

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

[Root] [Undo] [Redo] [Home] [Back] [Forward] [Refresh] [Help]

Logical Physical x: 121, y: 7

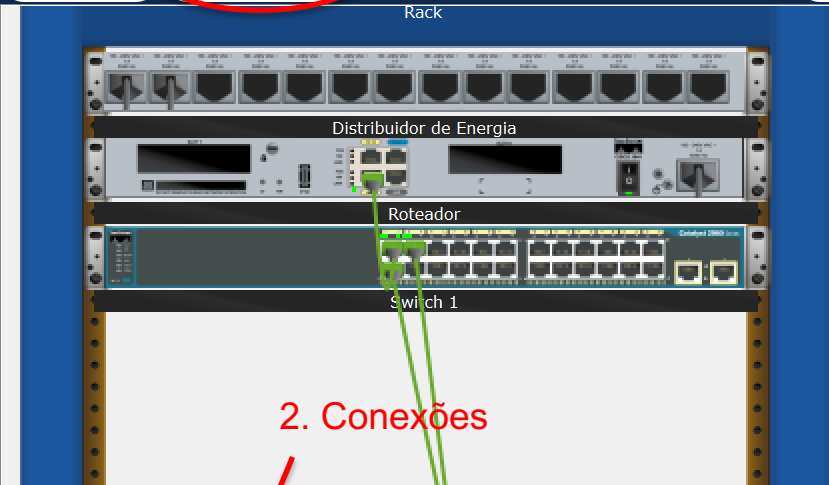
1. Conexões

2. Tipos de conexões

Time: 00:03:09 [Refresh] [Play]

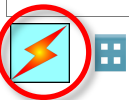
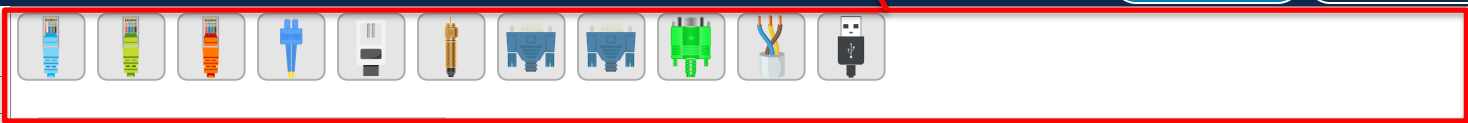
Realtime Simulation

Console

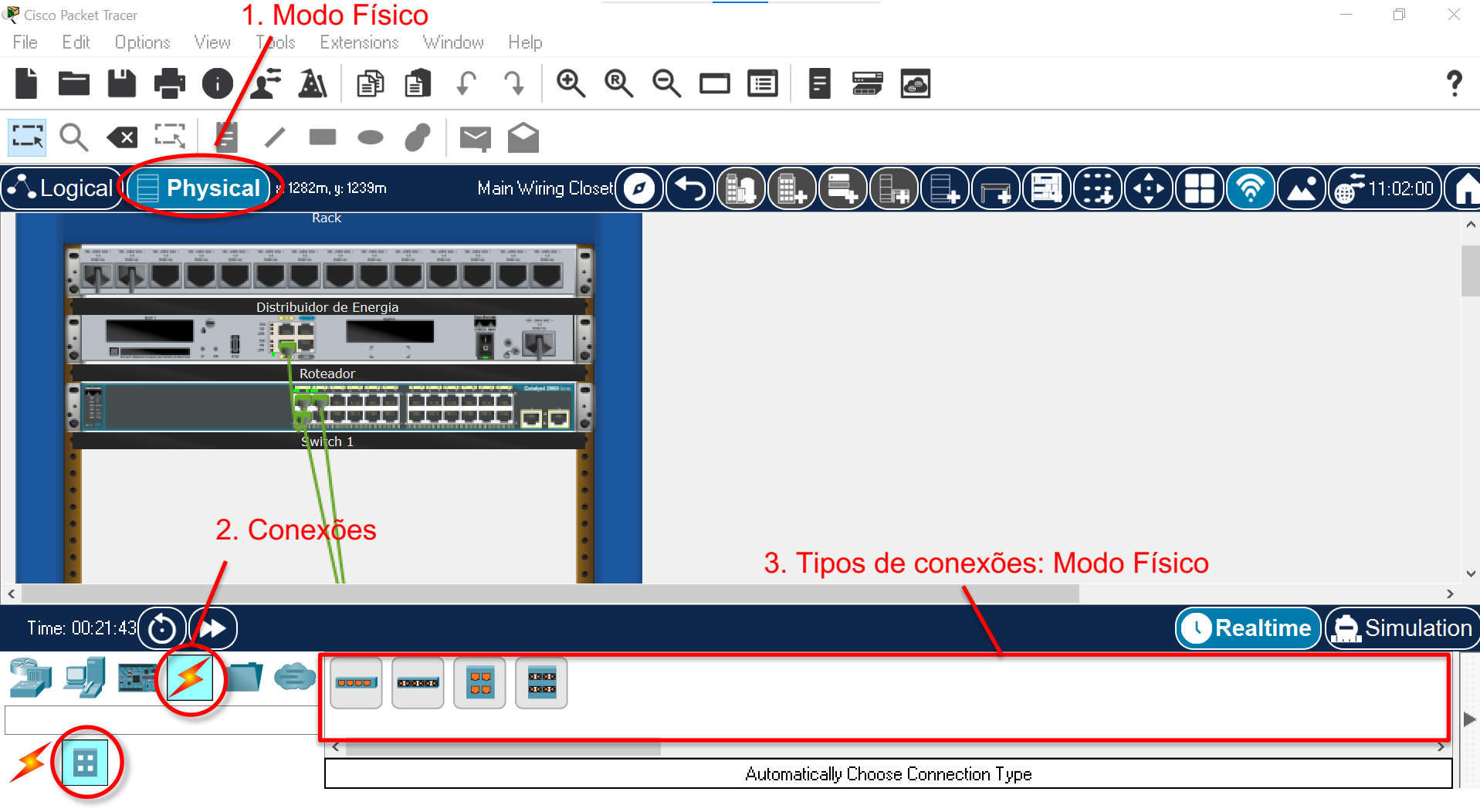


2. Conexões

3. Tipos de conexões: Modo Físico



Automatically Choose Connection Type



1. Modo Físico

2. Conexões

3. Tipos de conexões: Modo Físico



Logical **Physical** 1740m, y: 1470m

Home City



2. Alteração da
imagem de fundo

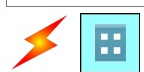


Time: 00:37:40



Realtime

Simulation



Fiber Wall Mount

CONFIGURAÇÃO DO ROTEADOR

Opções do equipamento

Módulos para conexão no equipamento

Descrição do módulo

The screenshot displays the configuration interface for a Cisco Router3. The 'Physical' tab is selected, showing a 'Physical Device View' of the router. The interface includes a 'MODULES' list on the left, a main view area with zoom controls, and a detailed description of the selected module (NM-1E) at the bottom. A red box highlights the 'MODULES' list, another red box highlights the description of the NM-1E module, and a third red box highlights a detailed image of the module. A blue box highlights the main physical device view area.

Router3

Physical Config CLI Attributes

Physical Device View

Zoom In Original Size Zoom Out

MODULES

- NM-1E
- NM-1E2W
- NM-1FE-FX
- NM-1FE-TX
- NM-1FE2W
- NM-2E2W
- NM-2W
- NM-4A/S
- NM-4E
- NM-8A/S
- NM-8AM
- NM-Cover
- NM-ESW-161
- HWIC-1GE-SFP
- HWIC-2T
- HWIC-4ESW

The NM-1E features a single Ethernet port that can connect a LAN backbone which can also support either six PRI connections to aggregate ISDN lines, or 24 synchronous/asynchronous ports.

Customize Icon in Physical View

Customize Icon in Logical View

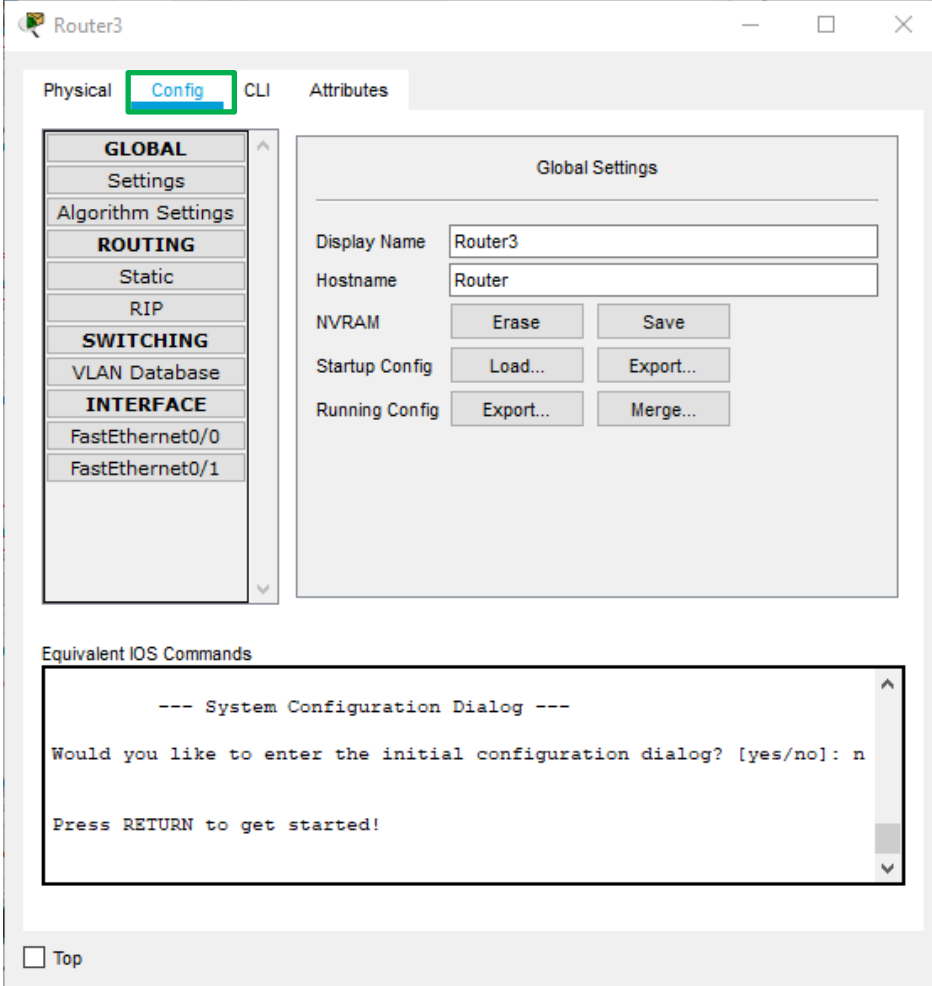
Pre-Visualização do equipamento

Pre-Visualização do módulo

CONFIGURAÇÃO DO ROTEADOR

Na opção “**Config**”, alteramos:

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



Router3

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

ROUTING

- Static
- RIP

SWITCHING

- VLAN Database

INTERFACE

- FastEthernet0/0
- FastEthernet0/1

Global Settings

Display Name: Router3

Hostname: Router

NVRAM: Erase Save

Startup Config: Load... Export...

Running Config: Export... Merge...

Equivalent IOS Commands

```
--- System Configuration Dialog ---  
  
Would you like to enter the initial configuration dialog? [yes/no]: n  
  
Press RETURN to get started!
```

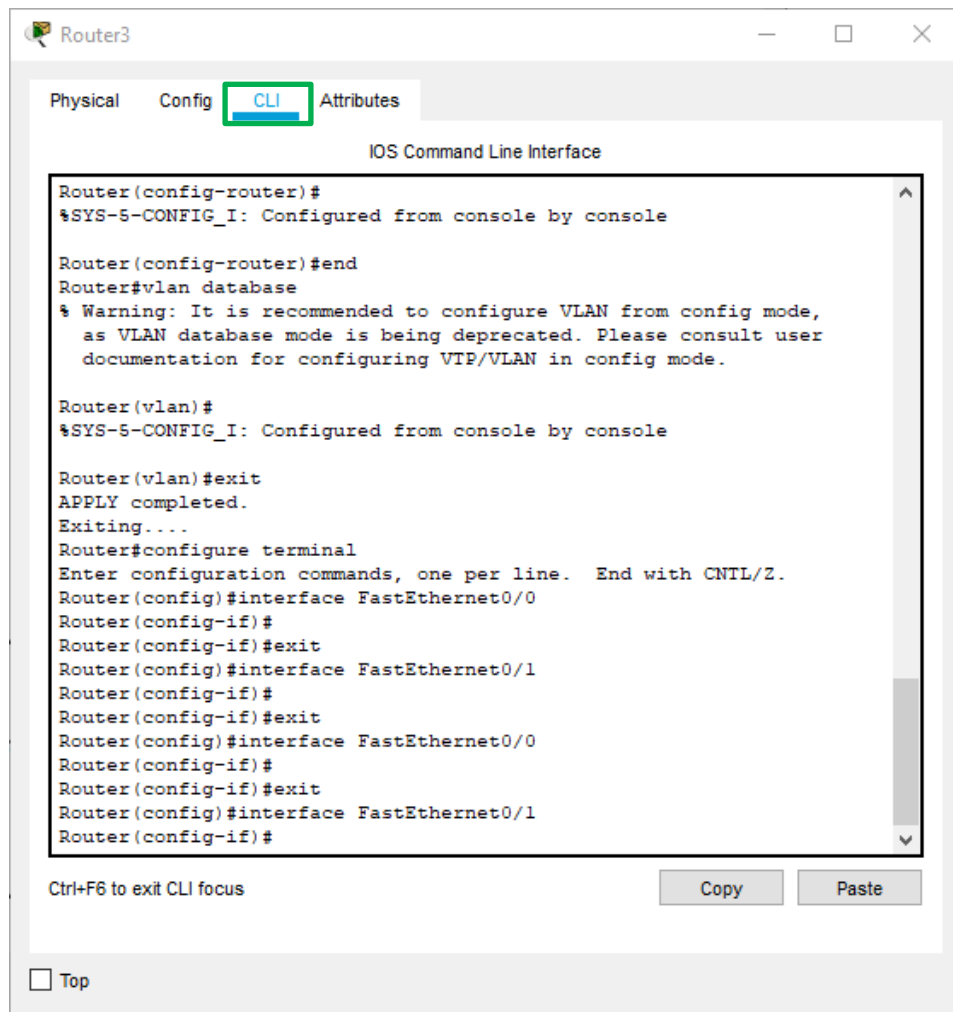
Top

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 Cisco Router3 window with the CLI tab selected. The terminal output displays the following commands and responses:

```
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

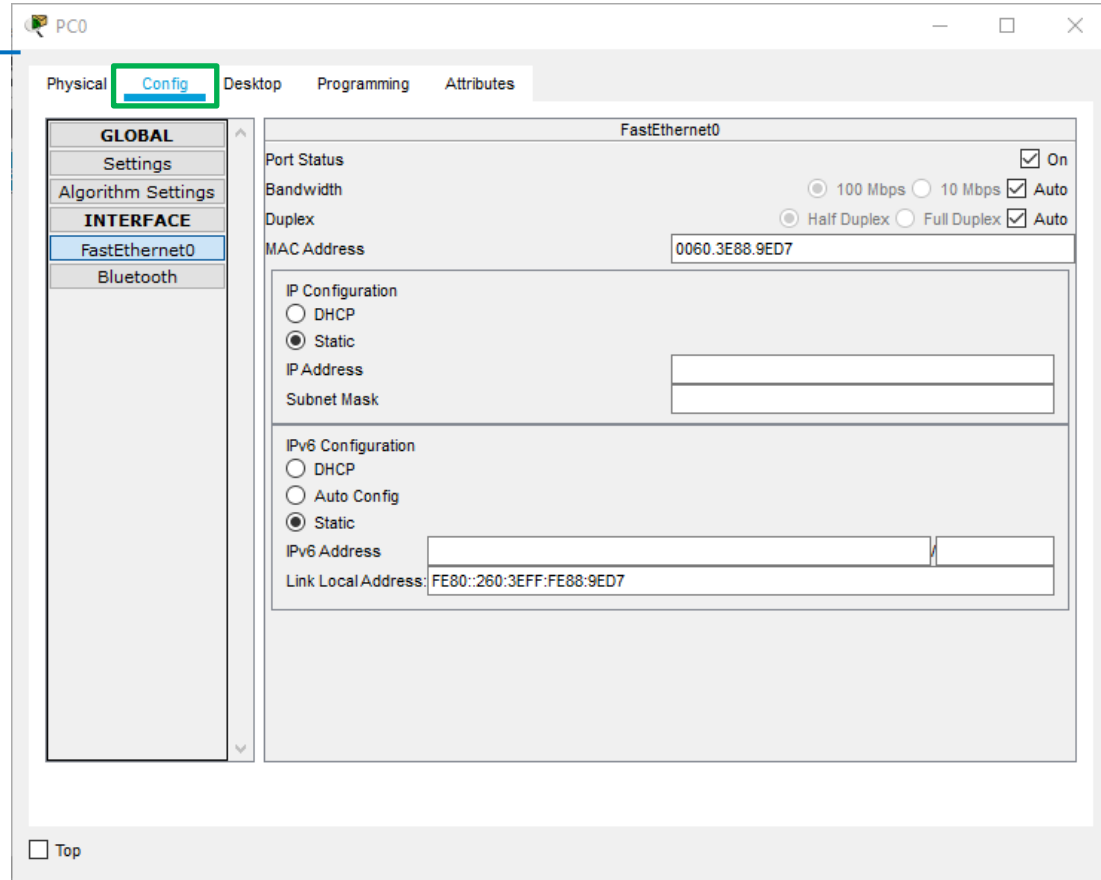
Router(vlan)#exit
APPLY completed.
Exiting...
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface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

At the bottom of the window, there is a "Ctrl+F6 to exit CLI focus" message, "Copy" and "Paste" buttons, and a "Top" button.

CONFIGURAÇÃO DO HOST

Na opção “**Config**”, alteramos:

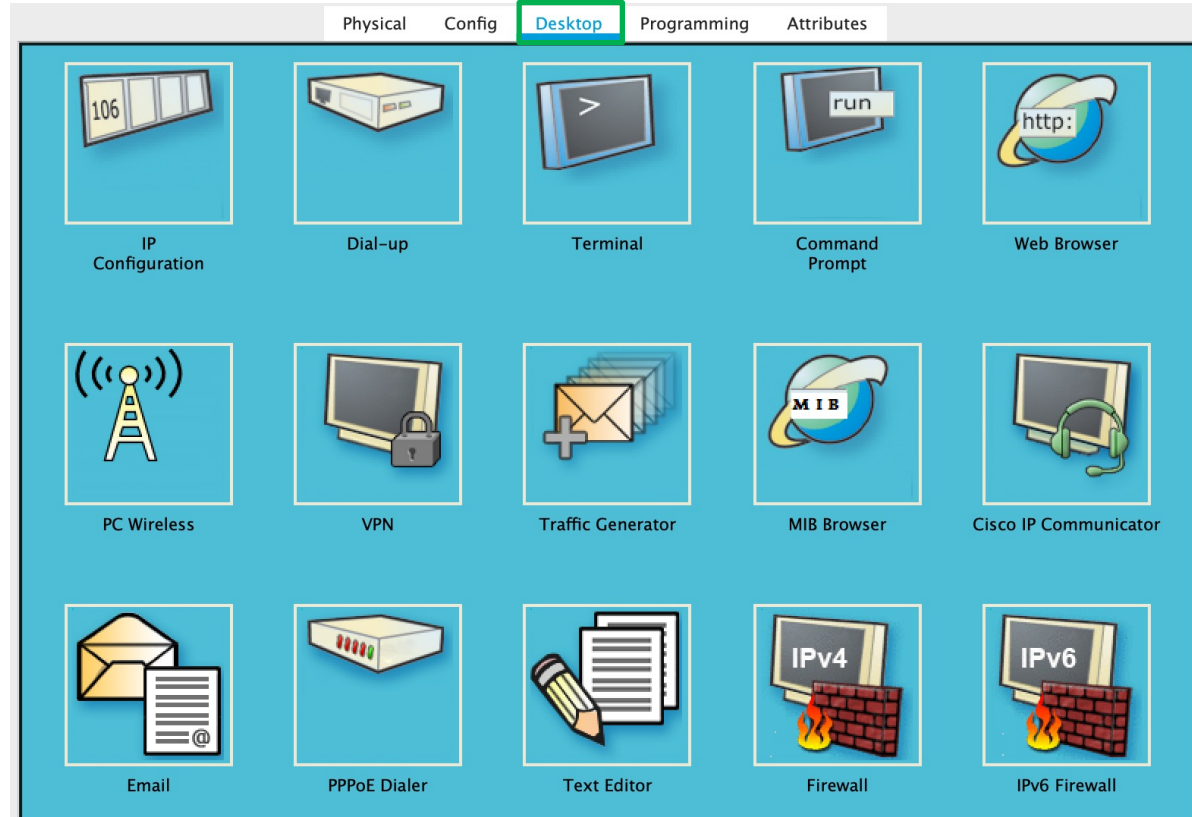
- Nome do host
- Gateway (IP da interface com o roteador)
- Endereço IP (DHCP ou estático)
- Máscara de Rede



CONFIGURAÇÃO DO HOST

Na opção “Desktop”:

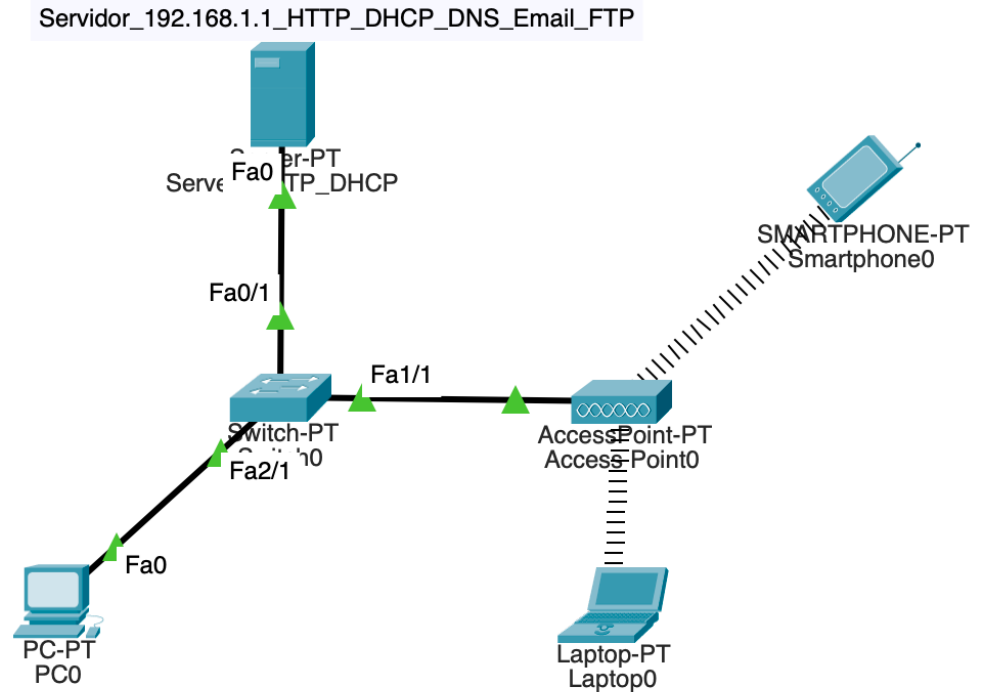
- Configuração do endereço IP, Máscara de Rede, Gateway e DNS
- Terminal
- Navegador
- Email
- Firewall
- Outras configurações



Exemplo Prático 1

Equipamentos:

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

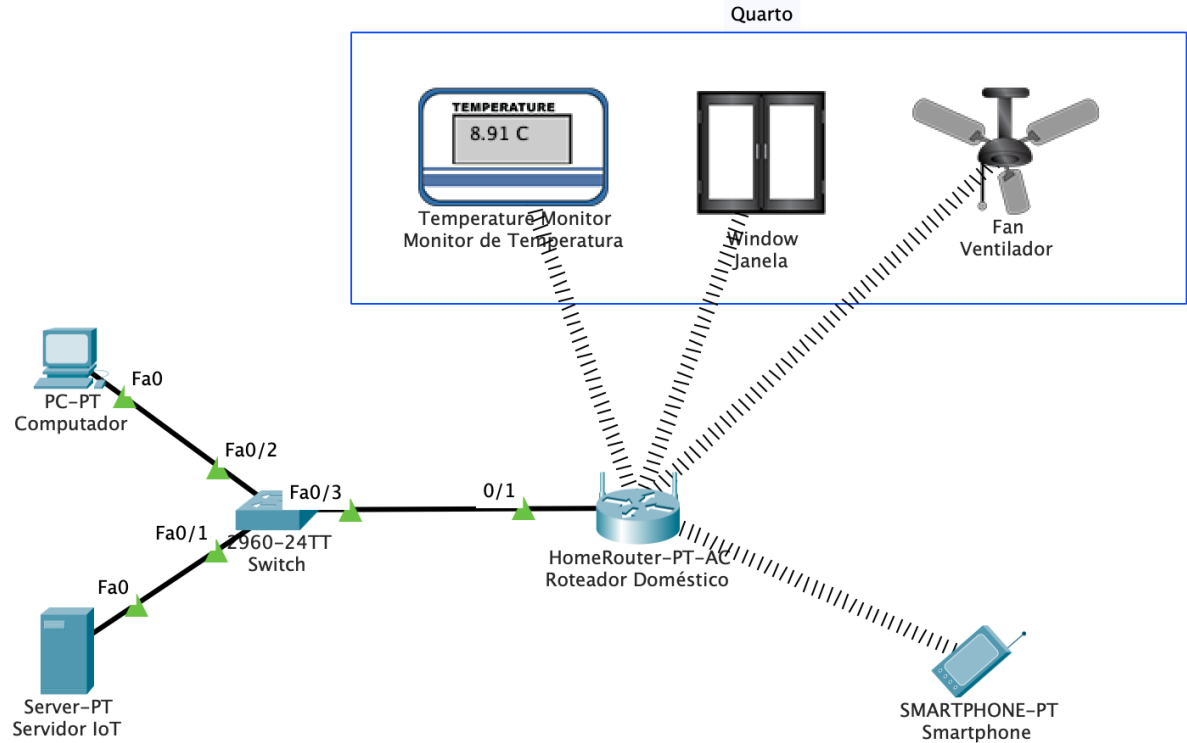


Objetivo: Construir a topologia, configurar os serviços e realizar os testes de comunicação

Exemplo Prático 2

Equipamentos:

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

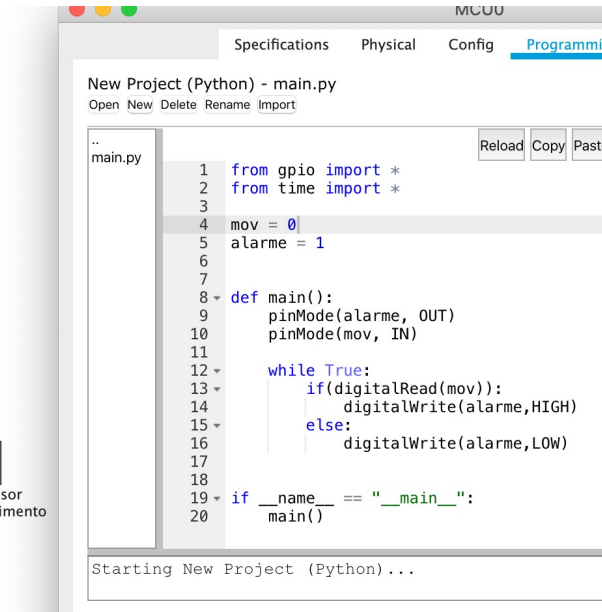
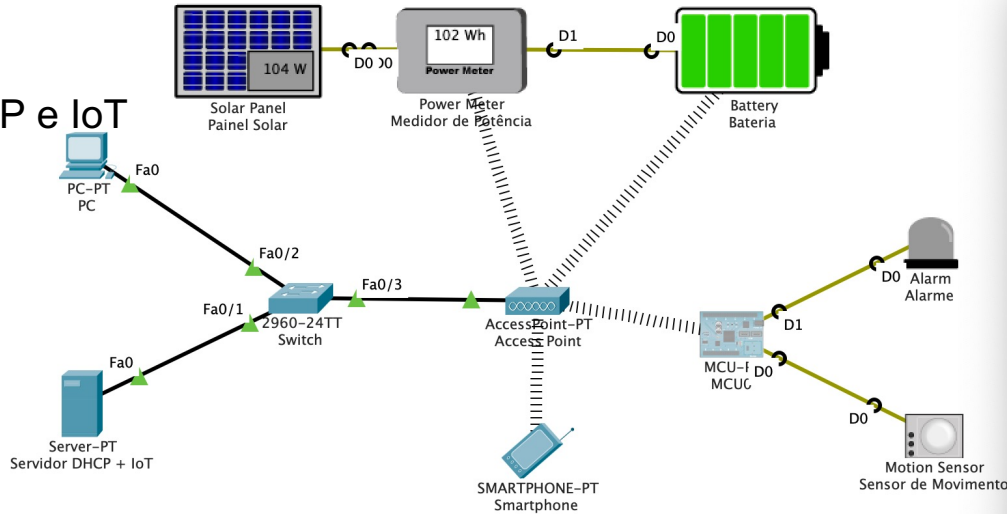


Objetivo: Construir a topologia, configurar os serviços, realizar os testes de comunicação e monitorar os dispositivos IoT

Exemplo Prático 3

Equipamentos:

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



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>