

campus
party



Customizando um roteador caseiro

Campus Party Digital Edition 2021

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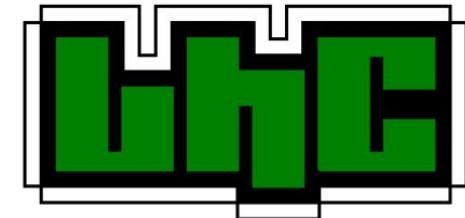
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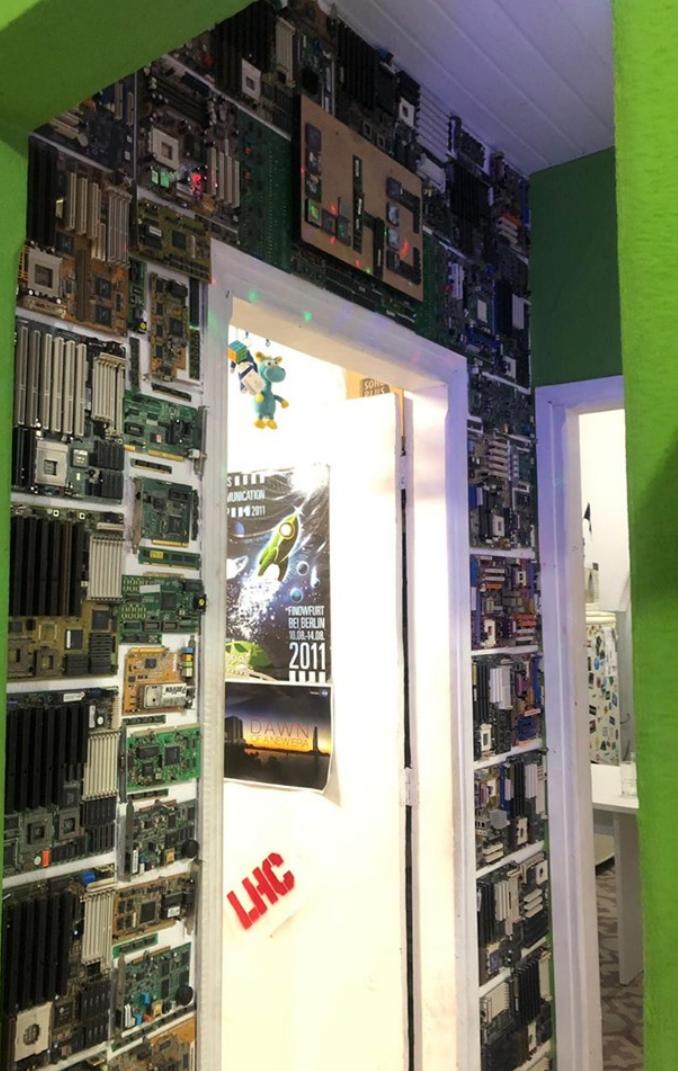
Laboratório Hacker de Campinas

Laboratório de Eletrônica
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Ferramentas
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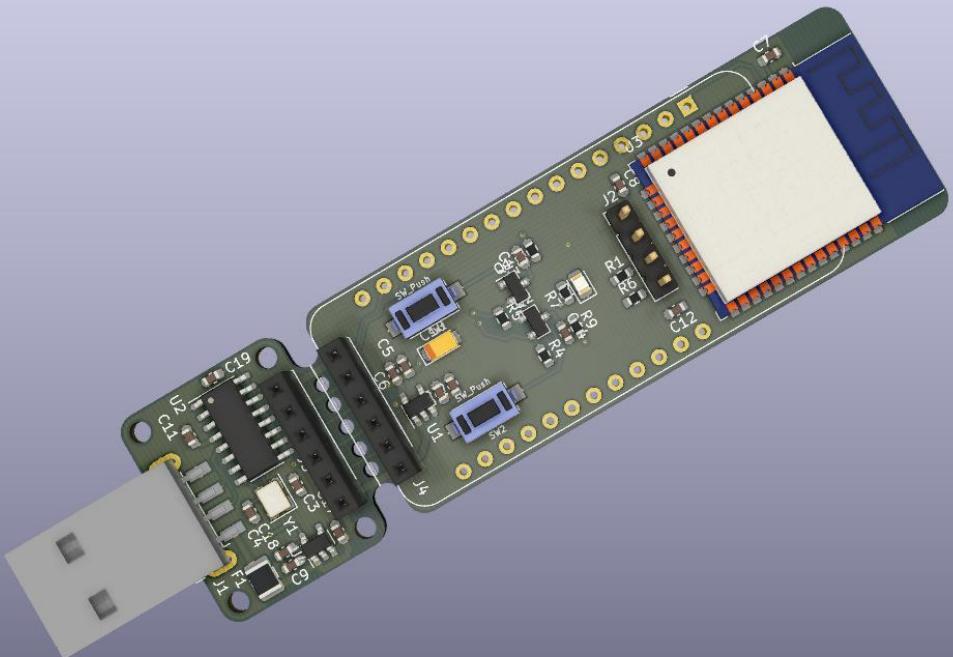




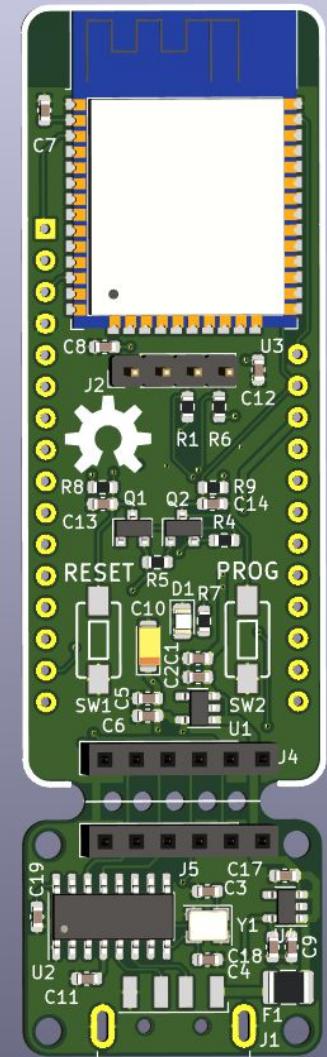
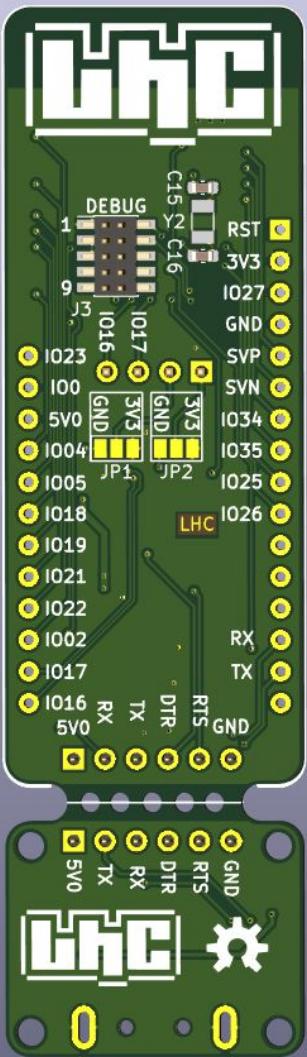
Encontros e Socialização



nodeLHC



github.com/lhc/nodeLHC-ESP32



Checklist

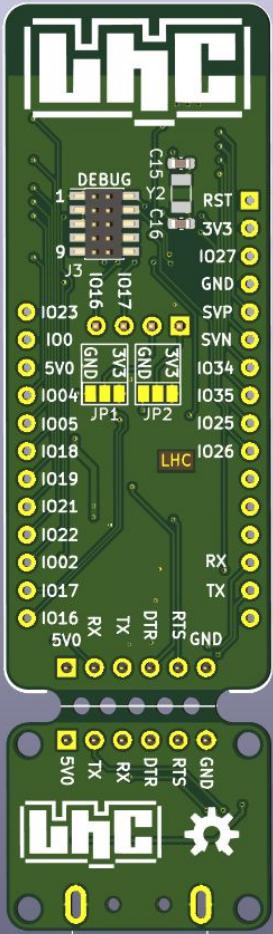
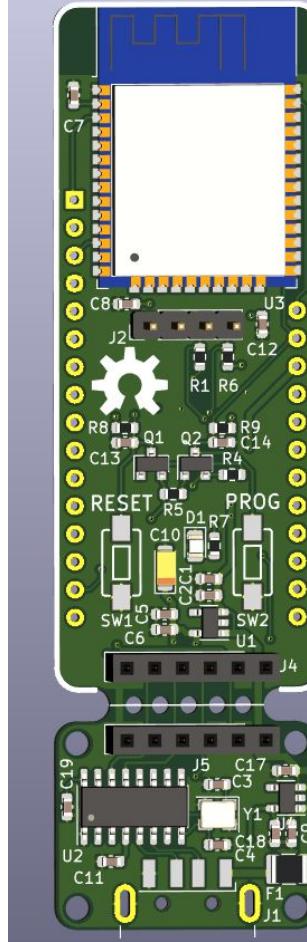
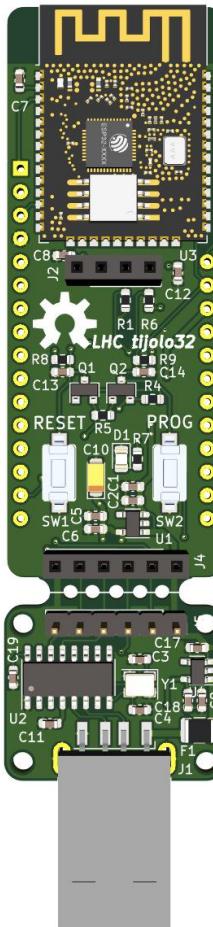
- LIVE 1 - Explicação geral e desenho
- LIVE 2 - Revisão esquemático e desenho da PCB parcial
- Lista de pessoas interessadas nos módulos
- 20/11 às 20 horas : Feedback comunidade
- LIVE 3 no dia 22 de janeiro de 2021 - Finalizar placa com KiCad
- Enviado o e-mail de confirmação aos interessados ao módulos ESP32
- Lista de interessados na compra coletiva
- Reunião online para novos revisores.
- Validar artes na PCB (LHC/ Open Hardware)
- Videoconferência Revisão do nodeLHC: 25 Maio 2021 às 20 horas

Próximos passos

- Listar BOM / Orçamentos
- Produção PCB na PCBWay

Checklist Review 01 nodeLHC

Itens	Check	Double Check
Alimentação 3V3	Fechado	Fechado
RX/TX	Fechado	Fechado
Reset e Boot	Fechado	Fechado
Conversor USB para UART	Fechado	Fechado
Conector Debug/JTAG	Fechado	Fechado
OLED	Fechado	Fechado
ESP32-WROOM pinout	Fechado	Fechado



<https://github.com/lhc/nodeLHC-ESP32/>

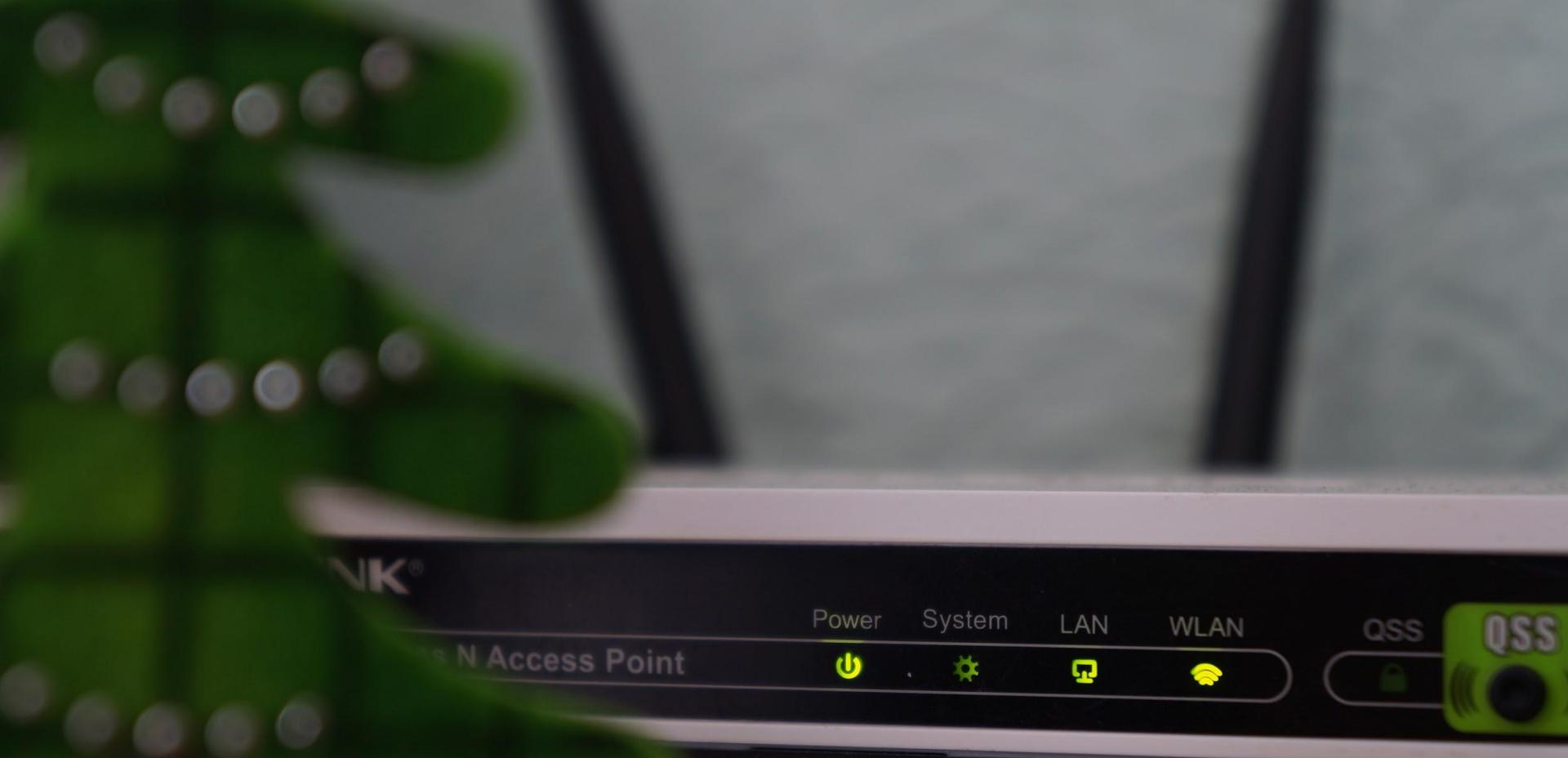


Photo by Misha Feshchak on Unsplash

Diversas notícias

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Nova botnet IoT mira vulnerabilidades de roteadores Tenda

Chamada de Ttint, botnet permite ataques DDoS e possui 12 funções de acesso remoto contra os roteadores de usuários

 Da Redação, editado por Daniel Junqueira  12/10/2020  16h55



Roteadores FiberHome usados no Brasil têm falhas de segurança

Roteadores FiberHome HG6245D e FiberHome RP2602 (e outros, possivelmente) têm backdoors e outras falhas de segurança



Por Emerson Alecrim
28/01/2021 às 17:49

NEWS

<https://tecnoblog.net/406714/roteadores-fiberhome-falhas-seguranca-brasil/>

[Início](#) » [Antivírus e Segurança](#) » Roteadores da D-Link e TP-Link continuam sendo invadidos no Brasil

Roteadores da D-Link e TP-Link continuam sendo invadidos no Brasil

Ataques mudam servidores de DNS nos roteadores e direcionam usuário para golpes de phishing e mineração de criptomoeda



Por Paulo Higa
12/07/2019 às 14:27

NEWS

<https://tecnoblog.net/298570/roteadores-da-d-link-e-tp-link-continuam-sendo-invadidos-no-brasil/>

Microsoft visita casas no Brasil para trocar roteadores com malware Trickbot

Microsoft fez parceria com operadoras de rede no Brasil para atender casas de clientes com roteador infectado pelo malware homônimo do grupo de hackers Trickbot



Por [Pedro Knoth](#)
12/07/2021 às 19:28

NEWS

<https://tecnoblog.net/460760/microsoft-visita-casas-no-brasil-para-trocara-roteadores-com-malware-trickbot/>

Anatel vai barrar roteadores Wi-Fi que venham com senha fácil

Anatel estabelece normas de segurança para equipamentos de rede e determina regras para criptografia e atualizações na internet

NEWS

Cerca de 400 mil roteadores no Brasil foram infectados para minerar criptomoedas

Por Rafael Rodrigues Da Silva | 04 de Dezembro de 2018 às 21h30

Malware VPNFilter em roteadores: oito fatos que você precisa saber

Vírus pode agir sem levantar suspeitas diretamente no roteador de Internet; saiba tudo sobre a ameaça

Por Paulo Alves, para o TechTudo

12/06/2018 06h00 · Atualizado há 10 meses



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Quadrilha especializada em furto de roteadores é presa no Rio de Janeiro

Grupo teria causado prejuízo calculado em cerca de R\$ 5,4 milhões somente na empresa de telefonia Claro, maior vítima do grupo

Nielmar de Oliveira, Agência Brasil

05/11/2018 às 14h13

Relatório sobre roteadores

Em 2020 foram testados 127 tipos de roteadores doméstico

Fraunhofer FKIE: Significant security flaws detected in Home Routers

June 26, 2020

Alarming findings are published in the »Home Router Security Report 2020« by the Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE. Of the 127 home routers tested from seven major manufacturers, nearly all were found to have security flaws, some of them very severe. The problems range from missing security updates to easily decrypted, hard-coded passwords and known vulnerabilities that should have been patched long ago.



Esse site pode INVADIR o seu roteador!

111.837 visualizações • 24 de jun. de 2021

1 like

20 MIL

1 dislike

52

COMPARTELHAR

SALVAR

...



Gabriel Pato
703 mil inscritos

INSCREVER-SE

openwrt.org



- Mais de 1070 dispositivos suportados *
- Código Aberto : <https://git.openwrt.org/openwrt/openwrt.git>
- Criado para substituir o firmware padrão dos roteadores
- Comunidade ativa
- Customização da build (Você pode melhorar e incluir bibliotecas e softwares)
- Suporte com diversas arquiteturas
- Promissora para aplicações IoT Linux embarcado

Funcionalidades

Instalar mais softwares em seu roteador.

VPN

MQTT

Teste de velocidade de Internet

Softwares personalizados



Vantagens

Customização

Modificar regras de segurança

Atualizações

Comunidades com bons feedbacks

Suporte a diversos equipamentos

Desvantagens e Observações

- Novas versões mínimo de 16MB RAM
- Não tem suporte para todos os roteadores
- Garantia do fabricante
- Suporte apenas da comunidade

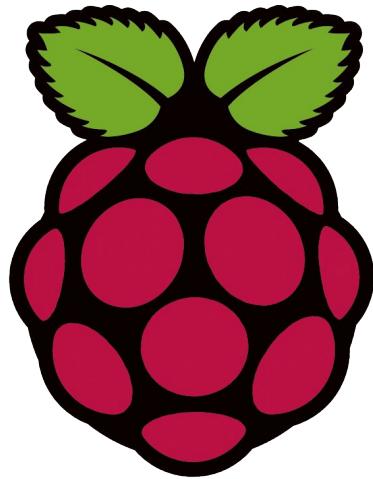
Duas opções

- Roteador tradicionais de baixo custo
- Raspberry PI

Roteadores de baixo custo



Customizar com Raspberry Pi



fonte: <https://www.raspberrypi.org/>

Download do firmware

You are here / [Home](#) / Bem vindo ao Projeto OpenWrt

This translation is older than the [original page](#) and might be outdated. See what has [changed](#).

Learn about OpenWrt

[Supported devices](#)[Packages](#)[Downloads](#)[Documentation](#)[Quick start guide](#)[User guide](#)[Developer guide](#)[Security](#)[FAQ](#)[Forum](#)

Contributing

[Submitting patches](#)[Reporting bugs](#)[Contributing to wiki](#)

Project

[About OpenWrt](#)[Rules](#)[Infrastructure](#)

Bem vindo ao Projeto OpenWrt

O projeto OpenWrt é um sistema operacional Linux voltado para dispositivos embarcados. Em vez de tentar criar um único firmware estático, o OpenWrt fornece um sistema de arquivos totalmente gravável com gerenciamento de pacotes. Isso libera você da seleção e configuração do aplicativo fornecidas pelo fornecedor e permite que você personalize o dispositivo por meio do uso de pacotes para atender a qualquer aplicativo. Para os desenvolvedores, o OpenWrt é a estrutura para construir um aplicativo sem ter que construir um firmware completo em torno dele; para os usuários, isso significa a capacidade de personalização completa, para usar o dispositivo de maneiras nunca imaginadas.

Veja a [Tabela de Dispositivos](#) suportados. Para obter mais informações sobre a organização do projeto OpenWrt, consulte a página [Sobre o OpenWrt](#).

Baixar o OpenWrt



Outdated release!

This OpenWrt release is no longer receiving updates. You should switch to a newer release.

The OpenWrt Community is proud to present the OpenWrt 18.06 stable version series. It is the first stable version after the OpenWrt/LEDE project merger and the successor to the previous stable LEDE 17.01 and OpenWrt 15.05 major releases.

The OpenWrt 18.06 series focuses on modernizing many parts of the system, on backporting network offload support for eligible targets and on laying the groundwork for regular future release updates.

Current old-stable release - OpenWrt 18.06.9

The current old-stable version series of OpenWrt is 18.06, with **v18.06.9** being the last service release of the series. It was released on 9 December 2020. No new releases in this series are

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Table of Hardware

This is the main Table of Hardware, listing all devices that are supported by OpenWrt.

Using the Table of Hardware

- Sort the columns by clicking the column header
- Enter your filter criteria in the white fields
You can filter for partial matches, e.g.
 - D-Li, D-Lin, D-Link, Net, Netg, ...
 - DIR-6, TL-WR, 3700, 43, 430, 4300, ...

Other Resources

- If your device is supported:

[Learn how to install OpenWrt on your Router.](#)

- Looking for other ways to view the Table of Hardware?

[Devices supported by current OpenWrt release](#), [Full Details](#), [Dataclouds](#), [All Views](#)

- Help maintain this page:

[Add a device to the ToH or edit a device in the ToH](#)

DO NOT BUY DEVICES WITH 4MB FLASH / 32MB RAM if you intend to flash an up-to-date and secure OpenWrt version (18.06 or later) onto it! See [4/32 warning](#) for details.



- 1) 4/32 devices do not have sufficient resources (flash and/or RAM) to provide secure and reliable operation. See [OpenWrt on 4/32 devices](#) what you can do now.
- 2) OpenWrt support for 4/32 devices will end after 2019. After 19.07, no further OpenWrt images will be built for 4/32 devices. See [OpenWrt on 4/32 devices](#) what you can do now.

Filter: Current release ▾

#	Brand	Model	Versions	Supported Current Release	Device Page	Device Techdata
1	3Com	3CRWER100-75		14.07	3crwer100_75	View/Edit data
2	3Com	3CRWER100-75		14.07	3crwer100_75	View/Edit data
3	4G Systems	AccessCube (MeshCube)		8.09.2	access_cube	View/Edit data

- Cuidados
- Confirmar versão do equipamento



Filtered by model*~TL-WR740N

Show all (remove filter/sort)

#	Brand	Model	Versions	Supported Current Release	Device Page	Device Techdata
		TL-WR740N				
1	TP-Link	TL-WR740N	v4.20, v4.21, v4.22, v4.25, v4.26, v4.27, v4.28	18.06.9	tl-wr740n	View/Edit data
2	TP-Link	TL-WR740N	v5 (EU)	18.06.9	tl-wr740n	View/Edit data
3	TP-Link	TL-WR740N	v6	18.06.9	tl-wr740n	View/Edit data
4	TP-Link	TL-WR740N	v1	18.06.9	tl-wr740n	View/Edit data
5	TP-Link	TL-WR740N	v3	18.06.9	tl-wr740n	View/Edit data
6	TP-Link	TL-WR740N	v4.23, v4.24	18.06.9	tl-wr740n	View/Edit data
7	TP-Link	TL-WR740N	v2.1 (BR)	18.06.9	tl-wr740n	View/Edit data

VLAN: Yes
Modem: -
WLAN Hardware: Atheros AR9331
WLAN 2.4GHz: b/g/n
WLAN 5.0GHz: -
WLAN driver: [ath9k](#)
Detachable Antennas: -
 Bluetooth: -
 miniPCI ports: ↗
 USB ports: -
 SATA ports: -
 Video ports: -
 Audio ports: -
 Phone ports: -
 Serial: Yes
Serial connection parameters: ↗
 JTAG: ↗
 LED count: 8
 Button count: 2
 GPIOs: -
Power Supply: 9 VDC, 0.6 A
OpenVPN performance: ↗
Wireguard performance: ↗
 Device Page: [tl-wr740n](#)
 Forum search: [TL-WR740N](#)
 Git search: [TL-WR740N](#)
 WikiDevi URL: https://wikidevi.wi-cat.ru/TP-LINK_TL-WR740N_v4.x
 WikiDevi ID: [TP-LINK_TL-WR740N_v4.x](#)
OEM Device Homepage URL: <https://www.tp-link.com/us/home-networking/wifi-router/tl-wr740n/>
Firmware OEM Stock URL: <https://www.tp-link.com/us/support/download/tl-wr740n/v4/>
Firmware OpenWrt Install URL: <http://downloads.openwrt.org/releases/18.06.9/targets/ar71xx/tiny/openwrt-18.06.9-ar71xx-tiny-tl-wr740n-v4-squashfs-factory.bin>
Firmware OpenWrt Upgrade URL: <http://downloads.openwrt.org/releases/18.06.9/targets/ar71xx/tiny/openwrt-18.06.9-ar71xx-tiny-tl-wr740n-v4-squashfs-sysupgrade.bin>
Installation method(s): GUI OEM, U-Boot TFTP + serial recovery, see devicepage
Recovery method(s): U-Boot TFTP + serial recovery

Picture:



Exemplo com roteadores da marca TP-Link

The screenshot shows the TP-Link TL-WR740N web interface. On the left, there's a sidebar with various menu items: Advanced Routing, Bandwidth Control, IP & MAC Binding, Dynamic DNS, System Tools (selected), Time Settings, Diagnostic, Firmware Upgrade (selected), Factory Defaults, Backup & Restore, Reboot, Password, System Log, and Statistics. The main content area has a title "150M Wireless Lite N Router Model No. TL-WR740N / TL-WR740ND". It displays the "Firmware Upgrade" section. The "File:" field has a "Browse..." button and a message "No file selected.". Below it, "Firmware Version:" is listed as "3.17.0 Build 140520 Rel.75075n" and "Hardware Version:" as "WR740N v4 00000000". At the bottom is an "Upgrade" button. An orange arrow labeled "2" points to the "Browse..." button, and another orange arrow labeled "3" points to the "Upgrade" button.

The screenshot shows the TP-Link Maintenance page. The top navigation bar includes Quick Start, Interface Setup, Advanced Setup, Access Management, and Maintenance (selected). Below the navigation is a sub-menu with Administration, Time Zone, Firmware (selected), SysRestart, and Diagnostics. The main content area is titled "Firmware/Romfile Upgrade". It shows the current firmware version as "5.0.0 Build 141114 Rel.26463" and fields for "New Firmware Location" (set to "Escolher arquivo"), "New Romfile Location" (set to "Escolher arquivo" with a note "Nenhum arquivo selecionado"), and "Romfile Backup" (set to "ROMFILE SAVE"). A status message at the bottom says "It might take several minutes, don't power off it during upgrading." A large red arrow labeled "1" points to the "Maintenance" tab in the top navigation bar, and another red arrow labeled "2" points to the "Firmware" tab in the sub-menu.

Raspberry PI

Filtered by model*~raspberry PI

Show all (remove filter/sort)

#	Brand	Model	Versions	Supported Current Release	Device Page	Device Techdata
		raspberry PI				
1	Raspberry Pi Foundation	Raspberry Pi 2	B 1.0/1.1	19.07.7	raspberry_pi	View/Edit data
2	Raspberry Pi Foundation	Raspberry Pi 3	B	19.07.7	raspberry_pi	View/Edit data
3	Raspberry Pi Foundation	Raspberry Pi 3	B+	19.07.7	raspberry_pi	View/Edit data
4	Raspberry Pi Foundation	Raspberry Pi	A	19.07.7	raspberry_pi	View/Edit data
5	Raspberry Pi Foundation	Raspberry Pi	B	19.07.7	raspberry_pi	View/Edit data
6	Raspberry Pi Foundation	Raspberry Pi	B+	19.07.7	raspberry_pi	View/Edit data
7	Raspberry Pi Foundation	Raspberry Pi	Zero W	19.07.7	raspberry_pi	View/Edit data
8	Raspberry Pi Foundation	Raspberry Pi 4	B	snapshot	raspberry_pi	View/Edit data
9	Raspberry Pi Foundation	Raspberry Pi 2	B 1.2	19.07.7	raspberry_pi	View/Edit data
10	Raspberry Pi Foundation	Raspberry Pi 4	400	snapshot	raspberry_pi	View/Edit data
11	Raspberry Pi Foundation	Raspberry Pi	Zero	19.07.7	raspberry_pi	View/Edit data
12	Raspberry Pi Foundation	Raspberry Pi 4	Compute Module 4	snapshot	raspberry_pi	View/Edit data
13	Raspberry Pi Foundation	Raspberry Pi 3	Compute Module 3	19.07.7	raspberry_pi	View/Edit data

USB ports: 4x 2.0, 1x µUSB (power)

SATA ports: -

Video ports: Composite, HDMI, LVDS, Camera

Audio ports: Headphone jack, HDMI

Phone ports: -

Comments AV ports: Require a special cable in order to use composite video

Serial: Yes

Serial connection parameters: 115200 / 8N1

JTAG: Yes

LED count: 2

Button count: -

GPIOs: more than 20

Power Supply: 5.1 VDC, 2.5 A

OpenVPN performance: ↴

Wireguard performance: ↴

Device Page: [raspberry_pi](#)

Forum search: ↗ [Raspberry Pi 3](#)

Git search: ↗ [Raspberry Pi 3](#)

WikiDevi URL: ↗ https://wikidevi.wi-cat.ru/RPF_Raspberry_Pi_3_Model_B

WikiDevi ID: ↗ [RPF_Raspberry_Pi_3_Model_B](#)

OEM Device Homepage URL: ↗ <https://www.raspberrypi.org/products/raspberry-pi-3-model-b/>

Firmware OEM Stock URL: ↗ <https://www.raspberrypi.org/downloads/>

Firmware OpenWrt Install URL: ↗ <http://downloads.openwrt.org/releases/19.07.7/targets/brcm2708/bcm2710/openwrt-19.07.7-brcm2708-bcm2710-rpi-3-ext4-factory.img.gz>

Firmware OpenWrt Upgrade URL: ↗ <http://downloads.openwrt.org/releases/19.07.7/targets/brcm2708/bcm2710/openwrt-19.07.7-brcm2708-bcm2710-rpi-3-ext4-sysupgrade.img.gz>

Firmware OpenWrt snapshot Install URL: ↗ <http://downloads.openwrt.org/snapshots/targets/bcm27xx/bcm2710/openwrt-bcm27xx-bcm2710-rpi-3-ext4-factory.img.gz>

Firmware OpenWrt snapshot Upgrade URL: ↗ <http://downloads.openwrt.org/snapshots/targets/bcm27xx/bcm2710/openwrt-bcm27xx-bcm2710-rpi-3-ext4-sysupgrade.img.gz>

Installation method(s): SD card, see devicepage

Comment installation: Use an existing computer to flash disk image to MicroSD card

Recovery method(s): SD card

Comment recovery: Use an existing computer to flash disk image to MicroSD card

Picture:



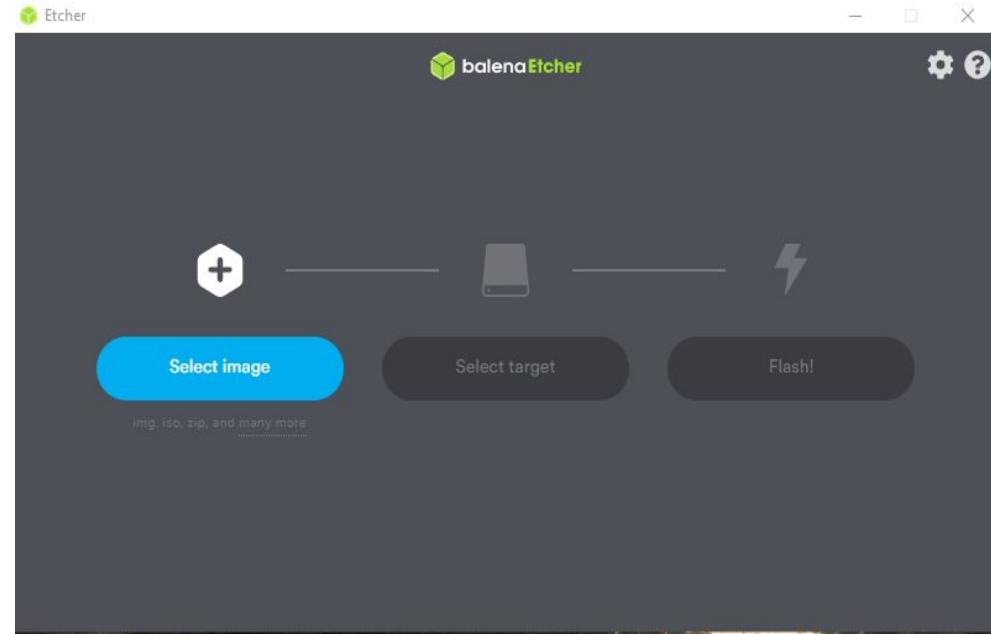
Comments: The bootloader is an image on MicroSD Card (the data partition can be resized to provide more storage), you may need to boot up Raspbian (released in or after April 2018) and set up WiFi country-code first before install OpenWrt

Gravação da Imagem

Algumas ferramentas

DD (via terminal)

BalenaEtcher com visual gráfico



Dica para Raspberry PI ou placa de desenvolvimento: baixar imagens com nomenclatura que tenha ext3 ou ext4.

The screenshot shows a forum post on a dark-themed platform. The title of the post is "OpenWRT - Tutorial para criar e configurar o OpenWRT no VirtualBox". The author is "TiagoFidel". The post was made on "out '20" and has 1 like. The post content includes instructions for setting up a VirtualBox environment for OpenWRT, mentioning Pop!_OS 20.04 LTS. It lists prerequisites (VirtualBox and Guest Additions) and provides terminal commands for Ubuntu derivatives. The post continues with instructions for selecting an OpenWRT image, comparing two types: "combined-squashfs.img.gz" (which uses Squashfs and has a 230 MB limit) and "combined-ext4.img.gz" (which uses Ext4 and allows disk expansion). It also notes that the Ext4 version requires a larger partition. The post concludes with a download link to the OpenWRT website.

OpenWRT - Tutorial para criar e configurar o OpenWRT no VirtualBox

■ OpenWRT

TiagoFidel out '20

Olá, vou detalhar os passos que realizei para criar o ambiente virtual para testar o OpenWRT.
Os passos abaixo foram executados no Pop!_OS 20.04 LTS.

- Pre requisitos:
Precisamos instalar o **VirtualBox** e o **VirtualBox Guest Additions**

Nas distros derivadas do Ubuntu basta executar os comandos abaixo:

```
sudo apt-get update
```

```
sudo apt-get install virtualbox  
sudo apt install build-essential dkms linux-headers-$(uname -r)
```

Com o VirtualBox preparado vamos escolher a imagem para trabalharmos:

Vamos trabalhar com a Imagem x86 64 bit. Há duas variações para essa imagem:

1. **combined-squashfs.img.gz** Essa versão usa o esquema tradicional do OpenWRT, um sistema de arquivos Squashfs que somente permite leitura e outra partição de leitura e gravação onde são salvos as configurações e pacotes.
Devido à forma que essa imagem é montada, ela só permite 230 MB para armazenamento para pacotes adicionais e configurações.
2. **combined-ext4.img.gz** Essa imagem usa apenas uma partição do tipo Ext4 e é permitido leitura e gravação, dando a possibilidade para ampliar o tamanho do disco. Mas nesse caso perdemos as opções da Factory Reset, pois esse recurso precisa da partição squashfs .

Vamos usar a versão Ext4, pois teremos mais liberdade de uso, já que não teremos tanto limites de hardware.

- Download

Podemos encontrar a versão estável do OpenWRT nesse link: <https://downloads.openwrt.org/>, vou utilizar a última versão estável disponível nesse momento que é a **19.07.4**.

Faça o download da imagem, você pode baixar via browser ou terminal.

Usuário de administração

192.168.1.1

OpenWrt

Authorization Required

Please enter your username and password.

Username

root

Password

Login

Reset

Dica para uma senha não tradicional

CasaHacker

Status ▾ System ▾ Network ▾ Logout

No password set!

There is no password set on this router. Please configure a root password to protect the web interface.

Router Password

SSH Access

SSH-Keys

Router Password

Changes the administrator password for accessing the device

Password



Use a Securely Generated Password

UjbkJ3NPZ9K4mZE

Firefox will save this password for this website.

Confirmation

[View Saved Logins](#)

Save

Status

System

Hostname	OpenWrt
Model	Raspberry Pi 3 Model B Rev 1.2
Architecture	?
Firmware Version	OpenWrt 19.07.3 r11063-85e04e9f46 / LuCI openwrt-19.07 branch git-20.136.49537-fb2f363
Kernel Version	4.14.180
Local Time	2020-07-10 17:40:19
Uptime	4h 48m 32s
Load Average	0.00, 0.00, 0.00

Memory

Total Available	<div style="width: 90%;">833.13 MB / 923.13 MB (90%)</div>
Used	<div style="width: 10%;">100.25 MB / 923.13 MB (10%)</div>
Buffered	<div style="width: 0%;">1.10 MB / 923.13 MB (0%)</div>
Cached	<div style="width: 6%;">59.61 MB / 923.13 MB (6%)</div>

Network

IPv4 Upstream
Protocol: Static address

System Administration

SSH Access

Dropbear offers [SSH](#) network shell access and an integrated [SCP](#) server

Dropbear Instance

[Delete](#)

Interface

lan:

[?](#) Listen only on the given interface or, if unspecified, on all

Port

22

Password authentication

[?](#) Allow [SSH](#) password authenticationAllow root logins with
password[?](#) Allow the *root* user to login with password

Gateway Ports

[?](#) Allow remote hosts to connect to local SSH forwarded ports[Add instance](#)[Save & Apply](#) ▾[Save](#)[Reset](#)

Instalando Softwares

OpenWrt Status ▾ System ▾ Services ▾ Network ▾ Logout

Software

Free space:

63% (167.4 MB)

Filter:

htop

[Clear](#)

Download and install package:

[Package name or URL...](#)

[OK](#)

Actions:

[Update lists...](#)

[Upload Package...](#)

[Configure opkg...](#)

[Available](#) [Installed](#) [Updates](#)

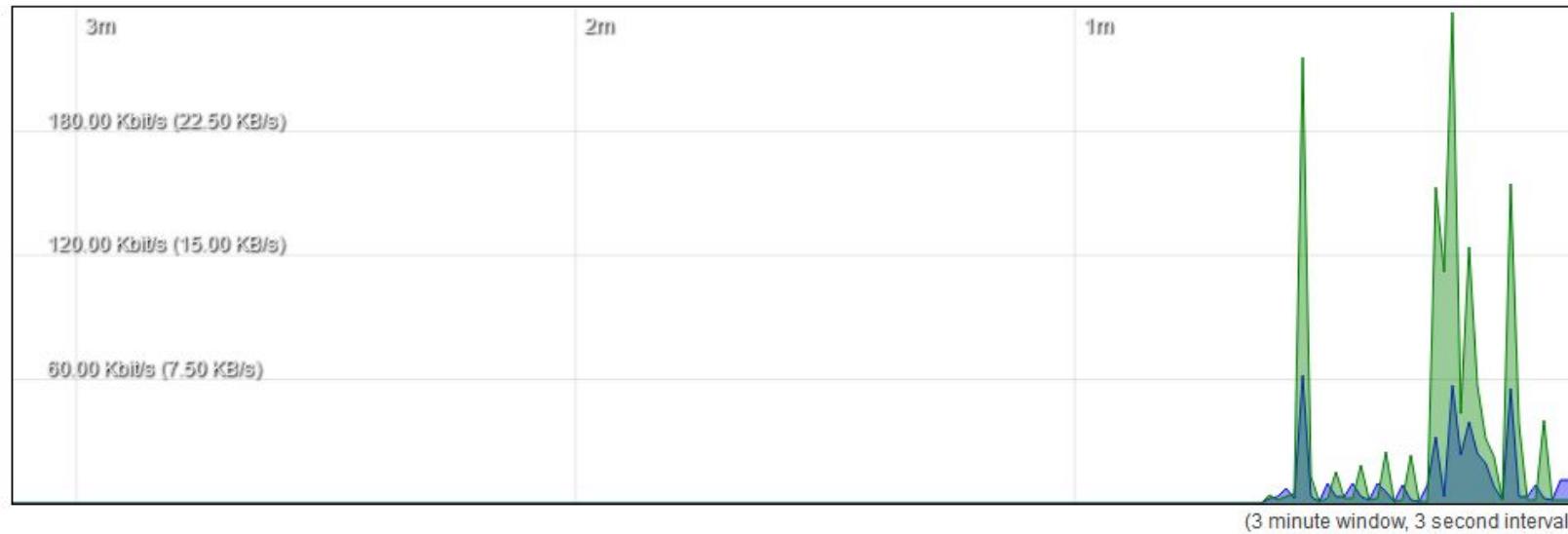
«

Displaying 1-1 of 1

»

Package name	Version	Size (.ipk)	Description
--------------	---------	-------------	-------------

htop	2.2.0-2	57.3 KB	Htop is an ncursed-based process viewer similar to top, but...	Installed
------	---------	---------	--	---------------------------

[Load](#) [Traffic](#) [Wireless](#) [Connections](#)[br-lan](#) [eth0](#) [wlan0](#)

Inbound: 11.38 Kbit/s
(1.42 KB/s)

Average: 12.34 Kbit/s
(1.54 KB/s)

Peak: 62.59 Kbit/s
(7.82 KB/s)

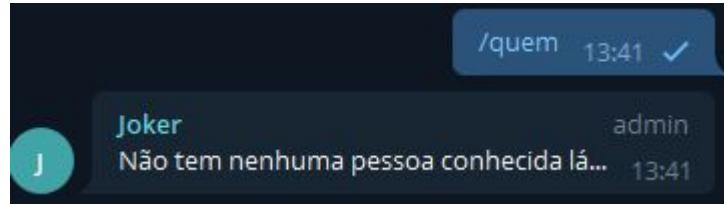
Outbound: 2.36 Kbit/s
(302 B/s)

Average: 37.29 Kbit/s
(4.66 KB/s)

Peak: 238.27 Kbit/s
(29.78 KB/s)

Alguns exemplos simples

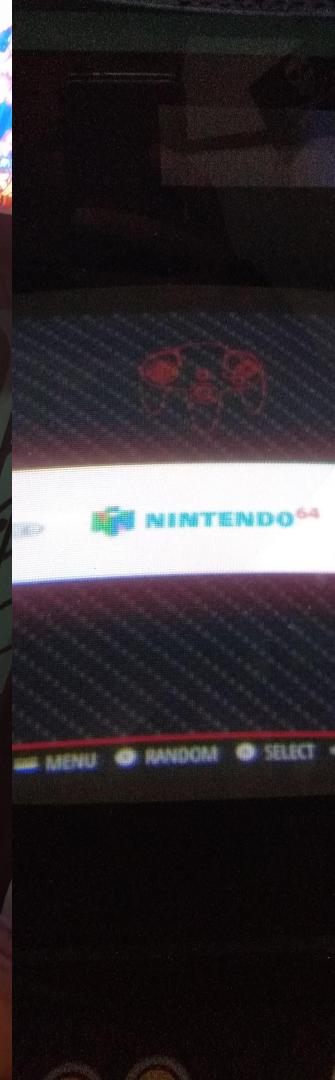
- Verificar quem está conectado na rede.
 - Notificações via bot
- Ligar iluminação no local
 - Identificação a chegada de alguém
- Ativar coisas remotamente
 - Comandos para ativação



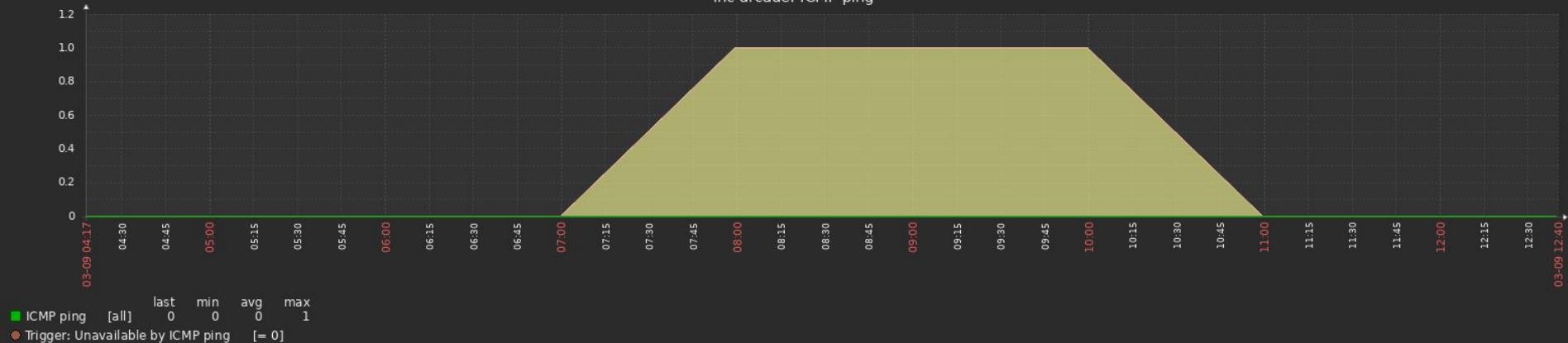
Experiência

- Arcade na rede
- Quando foi ligado
- Tempo ligado
- Esqueceu ligado?

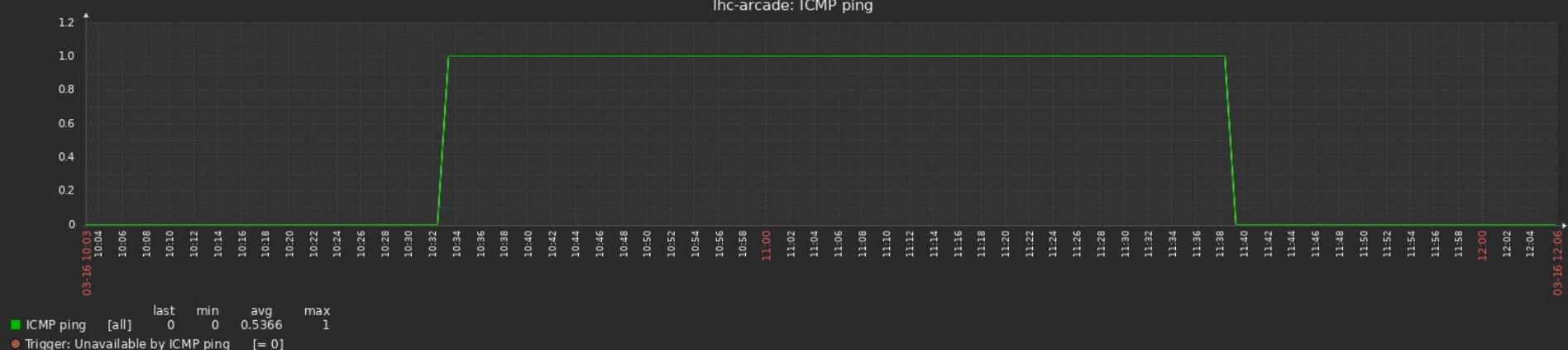




Ihc-arcade: ICMP ping



Ihc-arcade: ICMP ping





27-28.10 | 18:00 - 20:00

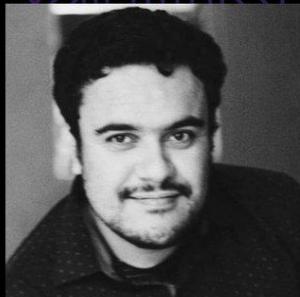
HACKERS ROCKIN' BITS

CURSO ON-LINE OPENWRT

DOUGLAS
ESTEVES



[HTTPS://LHC.NET.BR/](https://lhc.net.br/)



CAIO
VOLPATO



#TroqueSeuFirmware



Doações, Assinaturas

- Paypal
- PIX
- Entre outros

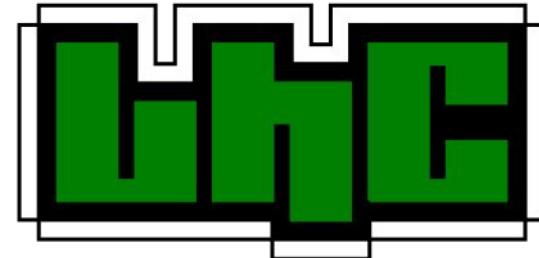
Telegram:
t.me/lhc_campinas



<http://bit.ly/ajude-o-lhc>

Faça parte do LHC

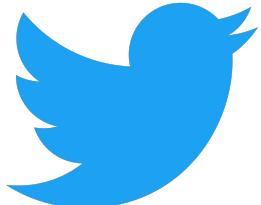
Contribua! participe!



<https://lhc.net.br/>

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