

Como dados são compartilhados em uma rede?



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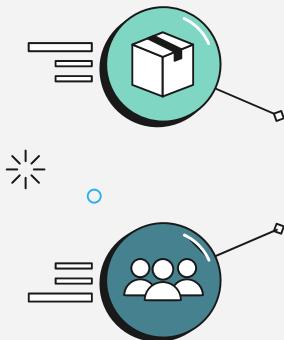


01

Introdução

Introdução

- O que é uma rede de computadores?
- Qual a sua importância?
- Tipos de redes
(LAN, PAN, WAN, MAN)
- Exemplos de uso



Introdução - Tipos de redes



LAN (Local Area Network) – Rede Local



PAN (Personal Area Network) – Rede Pessoal

Introdução - Tipos de redes



MAN (Metropolitan Area Network) – Rede Metropolitana



WAN (Wide Area Network) – Rede de Longa Distância

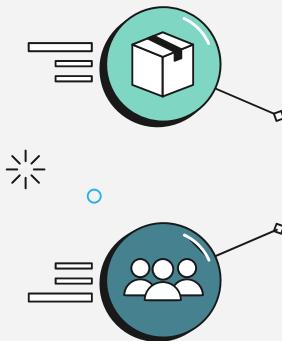


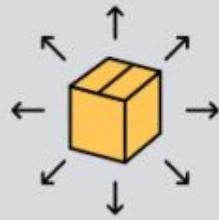
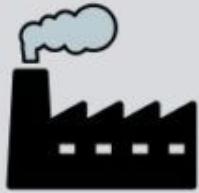
02

Organização e transmissão

Organização e Transmissão

- **Divisão em pacotes**
 - Como pode uma mensagem ser enviada via ar???
- **Uso de protocolos**
 - Como formatar o envio de uma mensagem
- **Caminho a ser seguido na rede**
 - Como o “wifi” sabe pra quem estou enviando uma mensagem?
- **Reunião dos Pacotes no Destino**
 - A remontagem do quebra cabeça



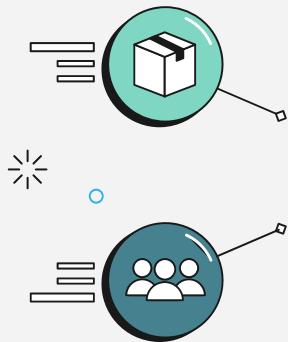




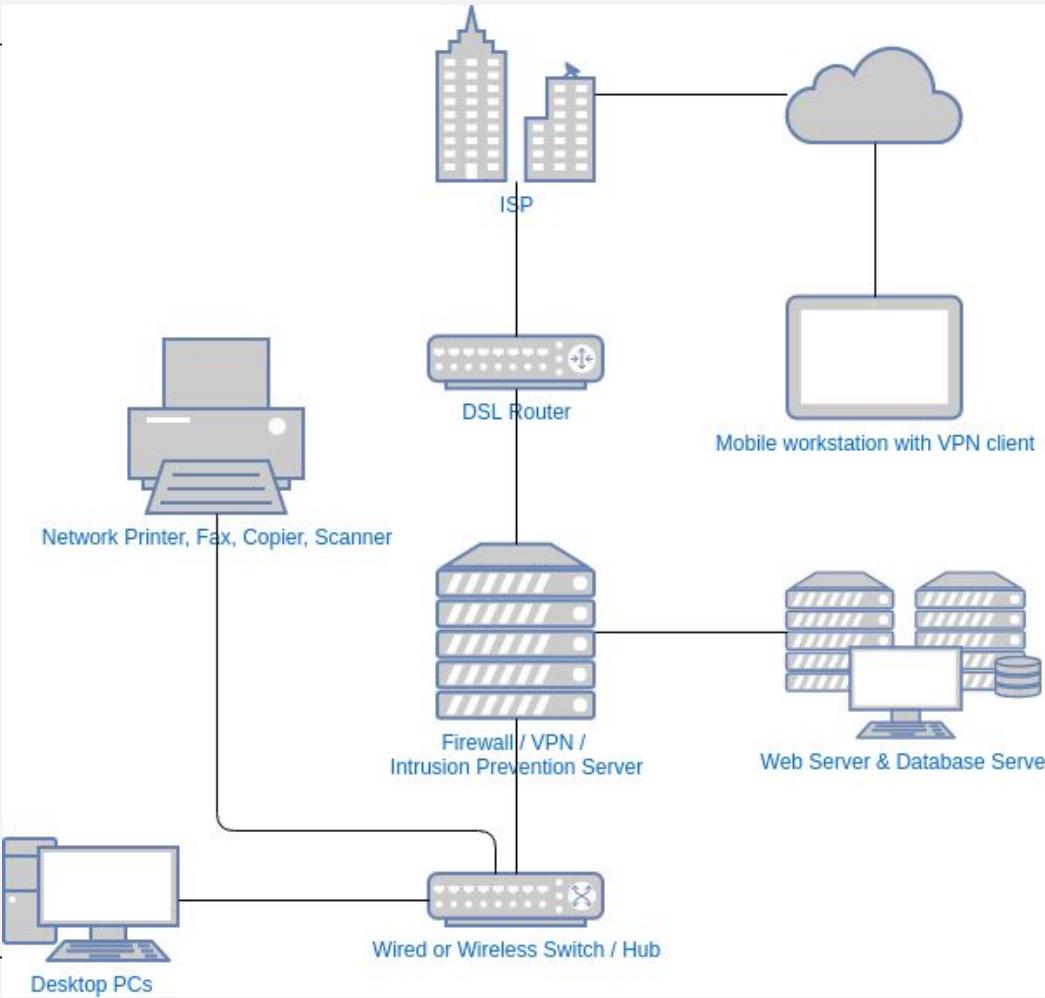
03

Dispositivos

Organização e Transmissão



- **Quem são os dispositivos envolvidos no processo?**
 - Host
 - Switch
 - Roteador
 - Modem
 - Servidor
 - Firewall





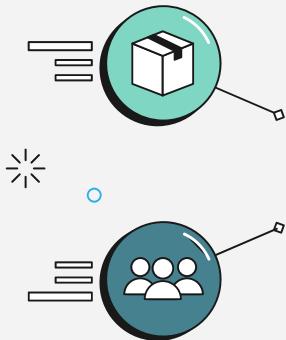
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Origem e destino

Origem e destino

- **Como a “internet” sabe quem sou eu e para quem eu vou enviar mensagens?**

- Quais são os processos de identificação e rastreamento de envio/recebimento de informações?



- Endereçamento IP
- DNS
- Tabelas de roteamento
- Comutação de pacotes



05

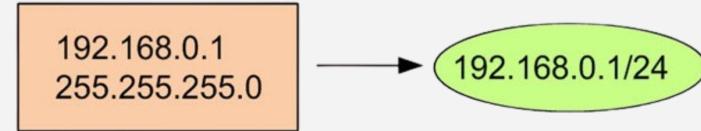
Simulação

Máscara de Rede

Como funciona?

A máscara de rede é dividida em 4 bytes (32 bits), podendo ser configurados sob demanda.

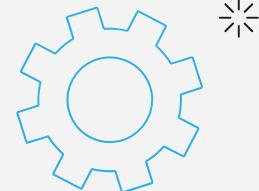
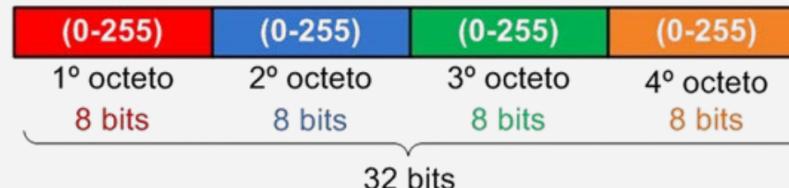
Cada byte contém 8 bits que são designados para escolher a quantidade de sub-redes e a quantidade de hosts por rede.



Prefixo da rede

Host

192.168.0.45



Máscara de Rede

Exemplo: /27

255.255.255.224

1º Octeto								
128	64	32	16	8	4	2	1	
1	1	1	1	1	1	1	1	1
2º Octeto								
128	64	32	16	8	4	2	1	
1	1	1	1	1	1	1	1	1
3º Octeto								
128	64	32	16	8	4	2	1	
1	1	1	1	1	1	1	1	1
4º Octeto								
128	64	32	16	8	4	2	1	
1	1	1	0	0	0	0	0	224



Máscara de Rede

Exemplo:

11111111.11111111.11111111.111 | 11111

27 bits para a sub-rede
 $2^{27} = 134.217.728$
Possíveis sub redes

5 bits para host
 $2^5 = 32$ hosts



Máscara de Rede

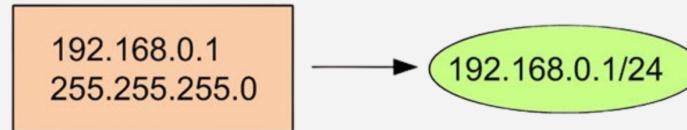
Tabela resumo

À direita, é ilustrado algumas possibilidades de se escolher uma máscara de sub-rede.

HOSTS	REDES	CIDR	MÁSCARA DE SUB-REDE
1	256	/32	255.255.255.255
2	128	/31	255.255.255.254
4	64	/30	255.255.255.252
8	32	/29	255.255.255.248
16	16	/28	255.255.255.240
32	8	/27	255.255.255.224
64	4	/26	255.255.255.192
128	2	/25	255.255.255.128
256	1	/24	255.255.255.0



Padrão IP



**Endereço da
rede**

192.168.0.0

Gateway

192.168.0.1

Broadcast

192.168.0.255

Obrigado!



Perguntas?

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Pana



Amico



Bro



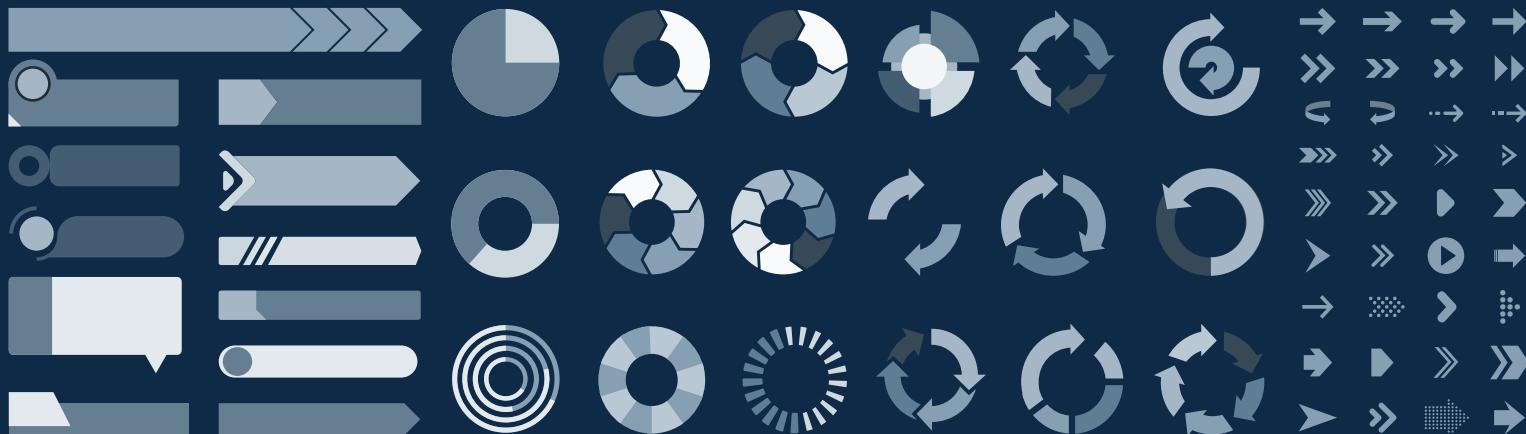
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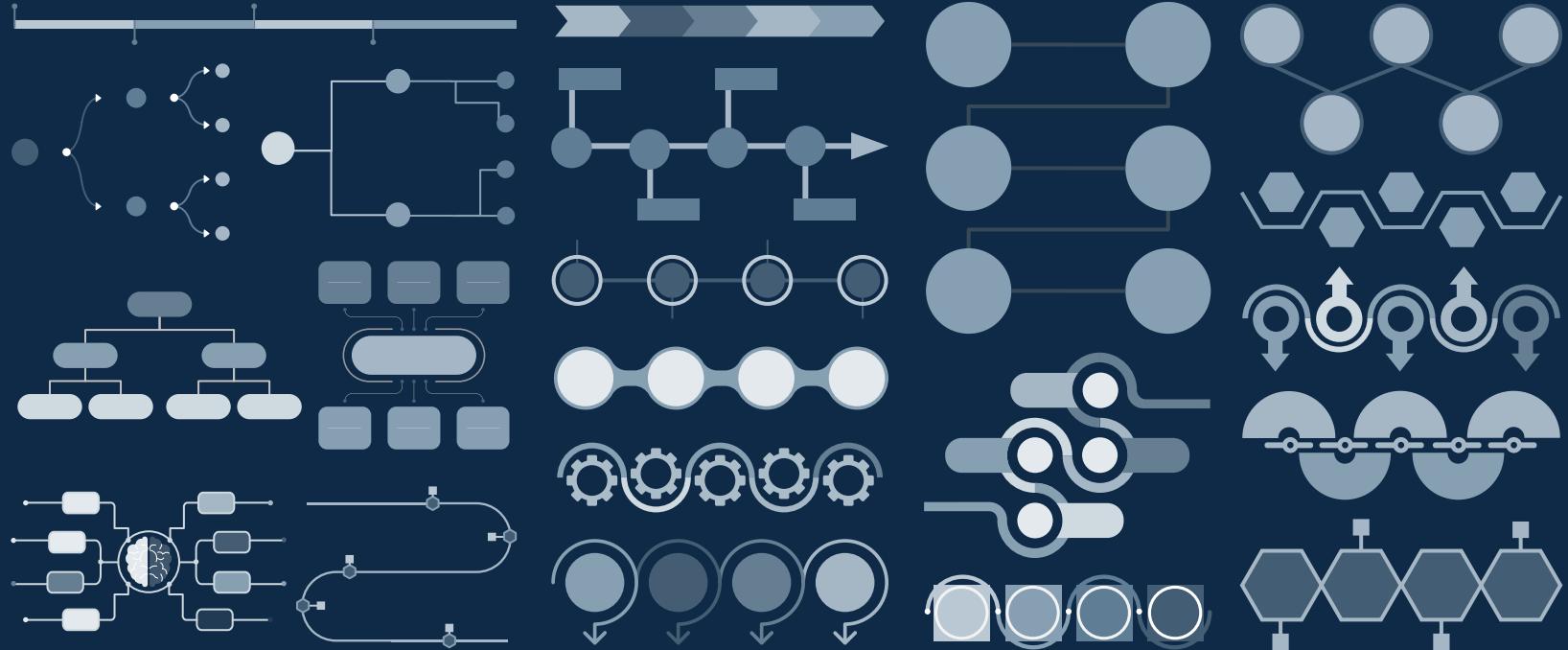
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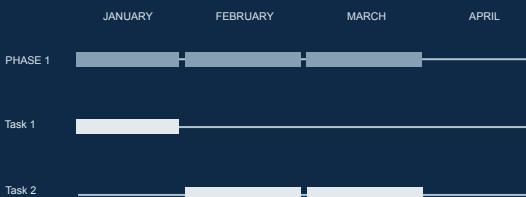
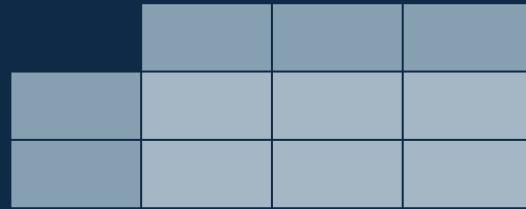
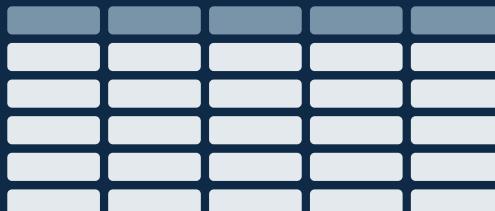
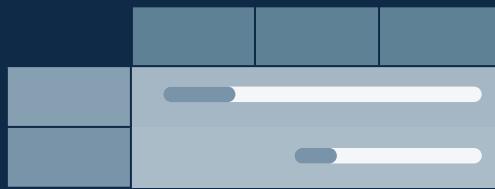
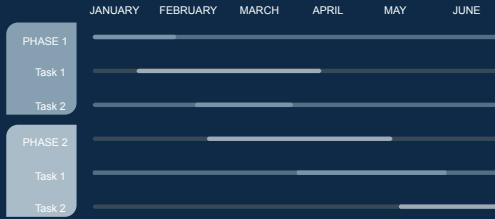
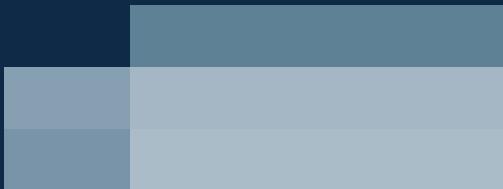
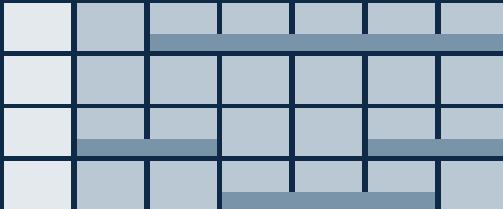
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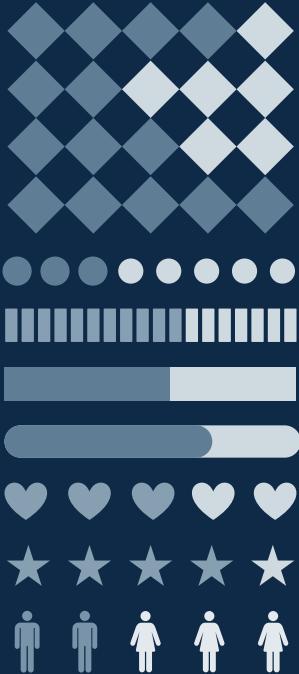
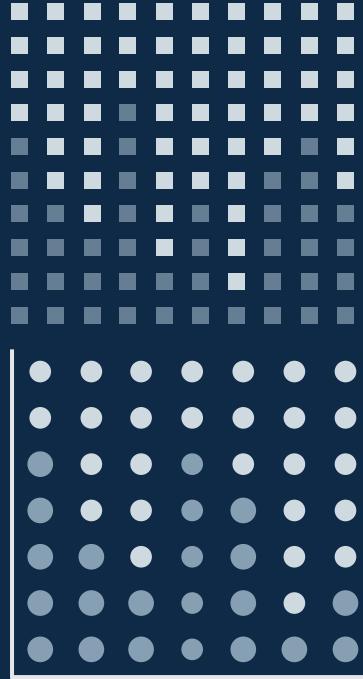












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