Responsabilidade de provedores na conexão à Internet

Notas para discussão

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Responsabilidade de provedores na conexão à Internet

Notas para discussão

Problema: DDoS com spoofing e amplificação.

Diversos atores sob diferentes autoridades:

- **spam e outros mecanismos de injeção de software clandestino**
- **botnets e motherships**
- **spoofing**
- **exploração de serviços abertos (especialmente DNS recursivo)**
- **reação ao ataque: difícil, complexa e requer coordenação.**

sob a responsabilidade de provedores de serviços!

Mas os provedores seguem as boas práticas para evitar, mitigar e resolver esses problemas?

geralmente **NÃO!**

Anatomia do DDoS com amplificação

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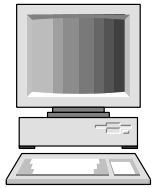

computador pessoal

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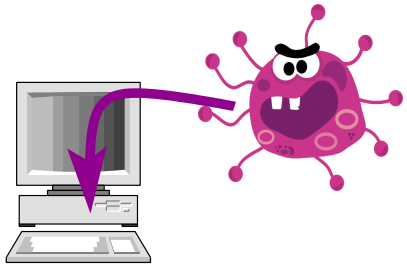

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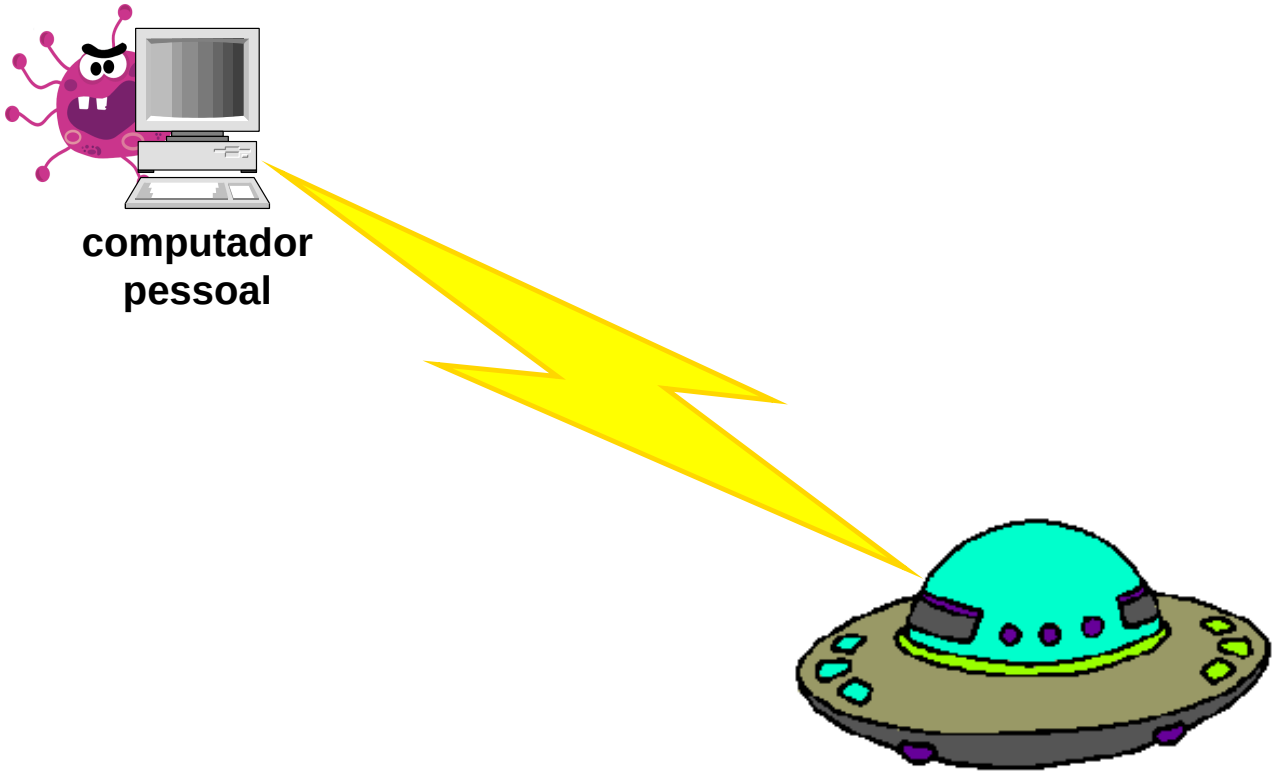

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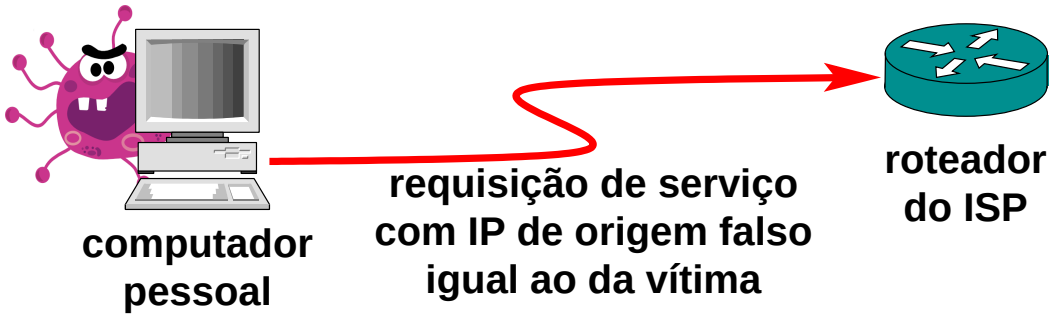

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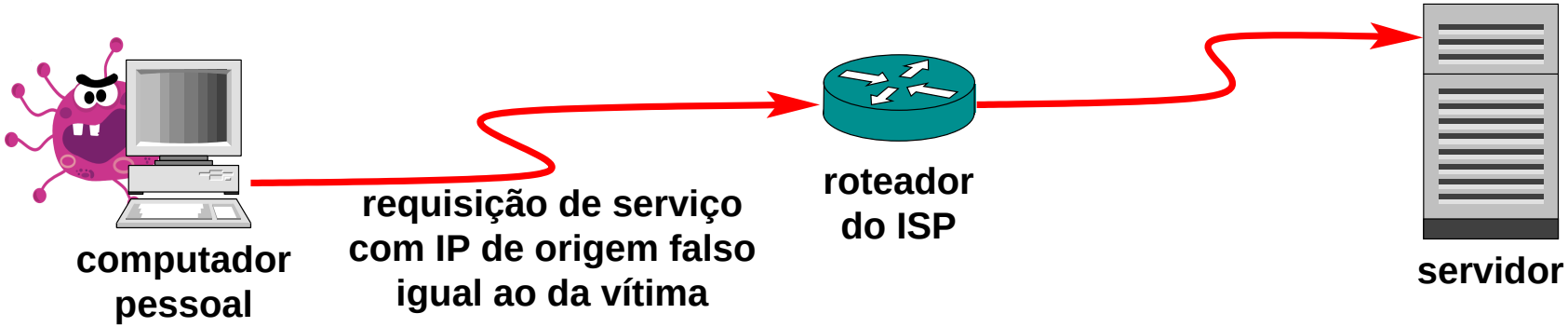

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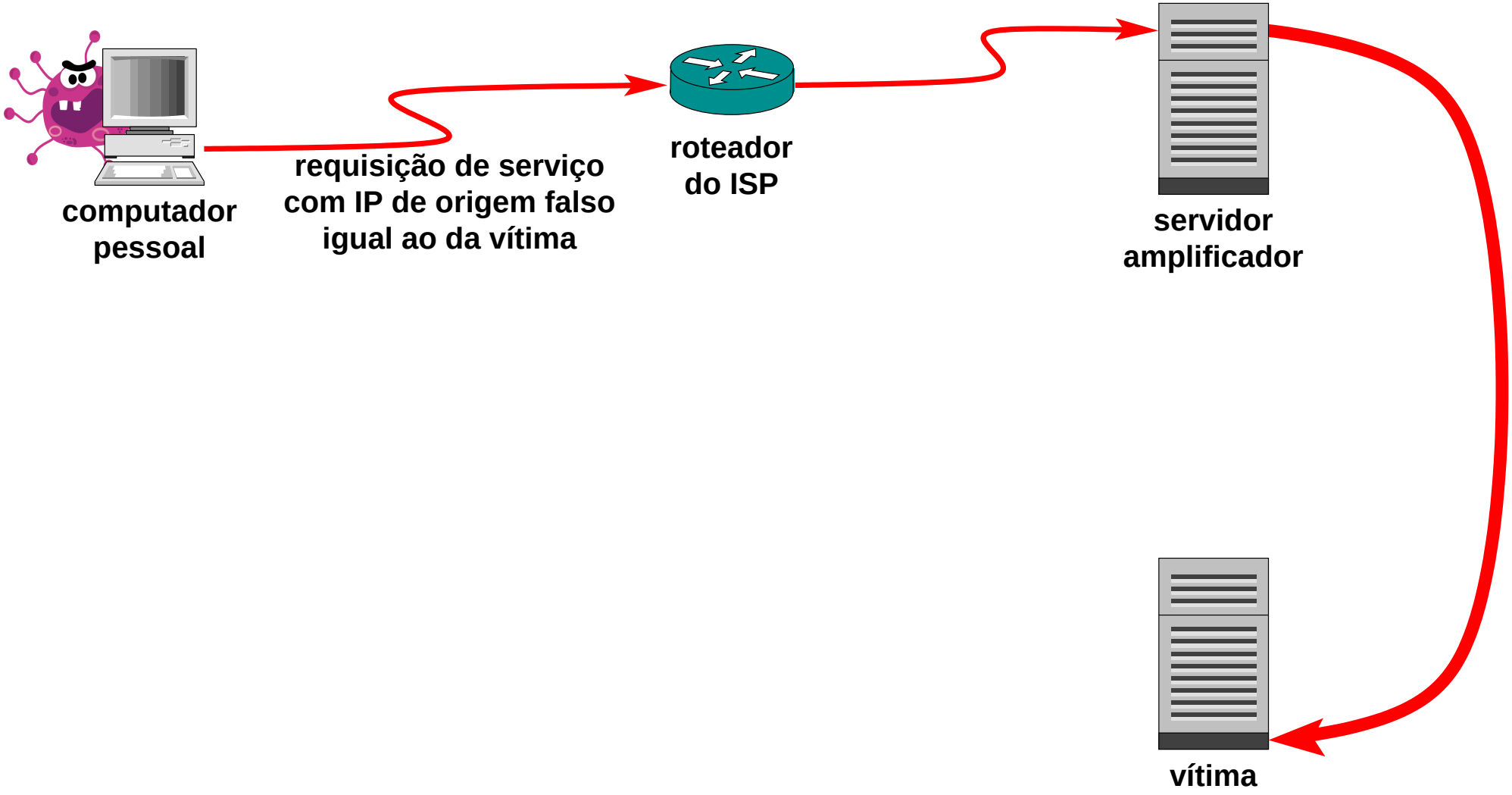

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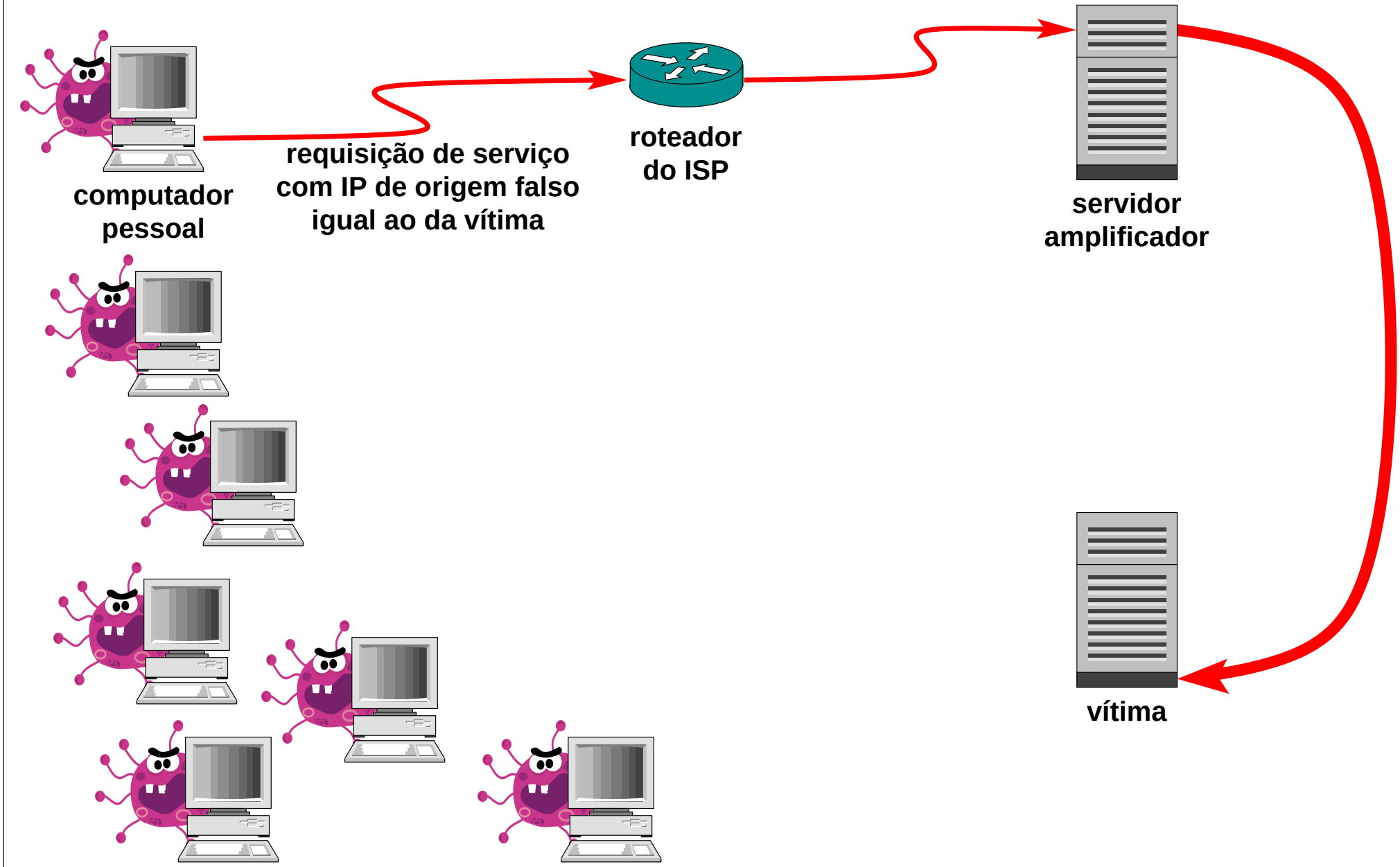

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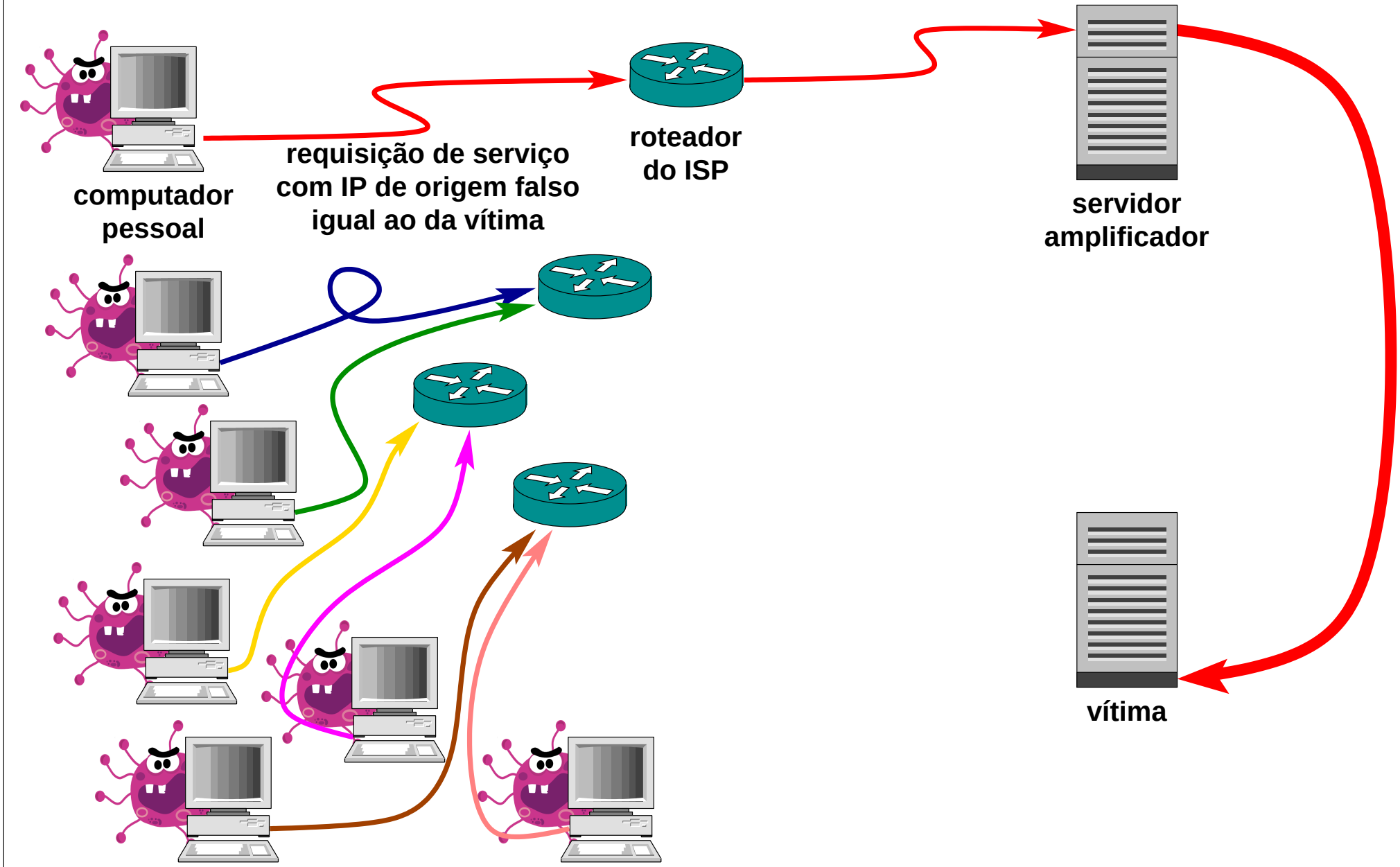

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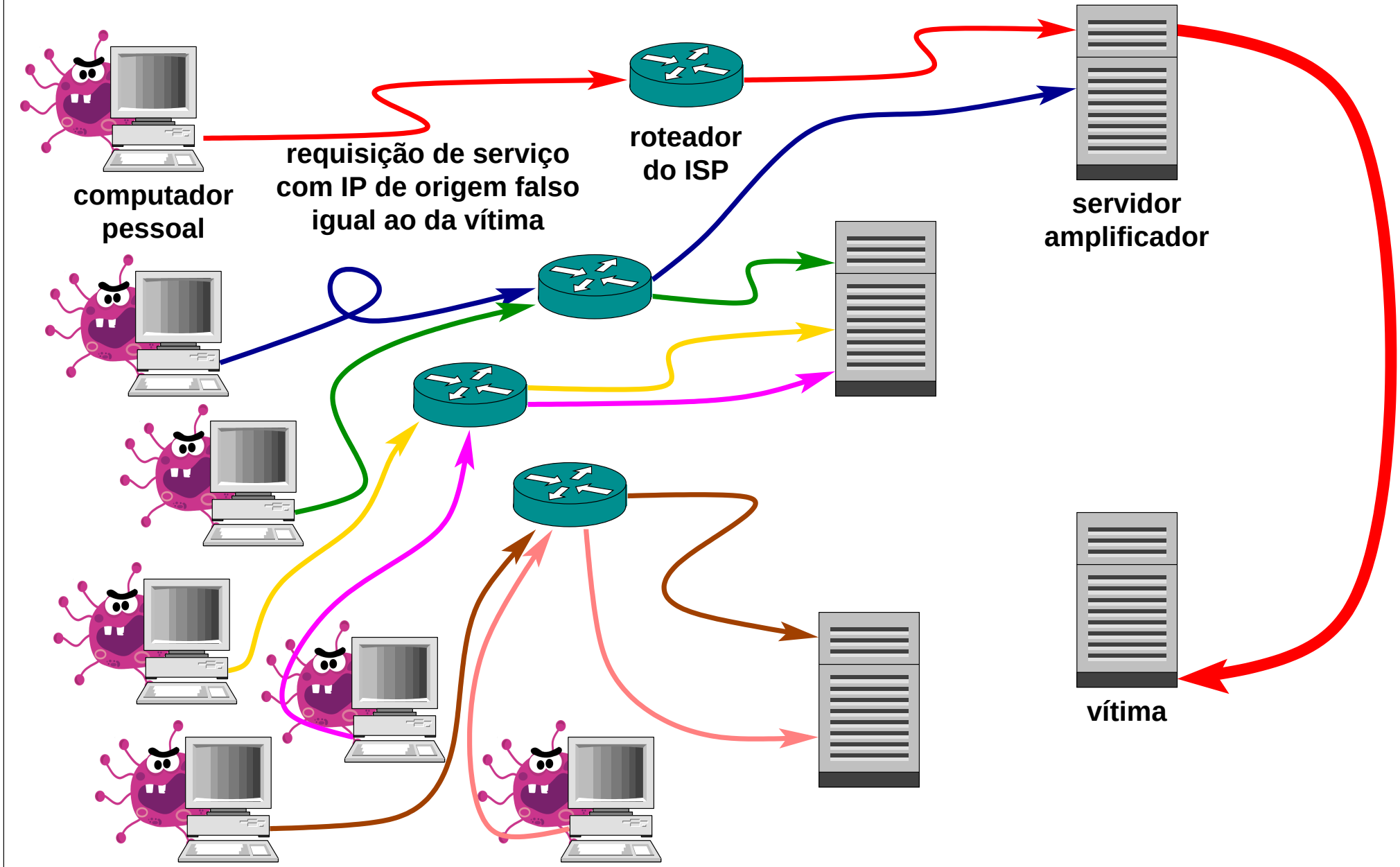

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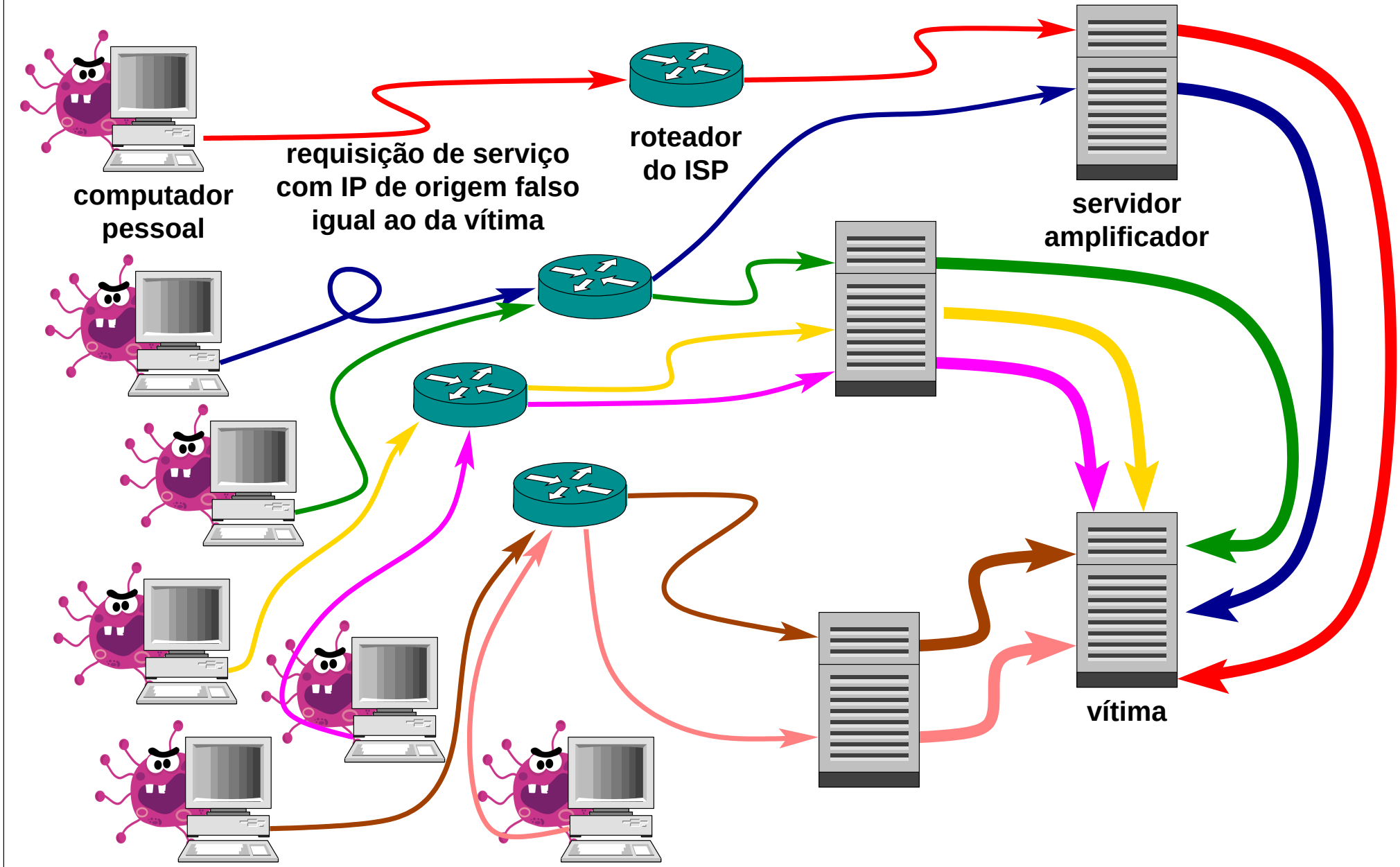

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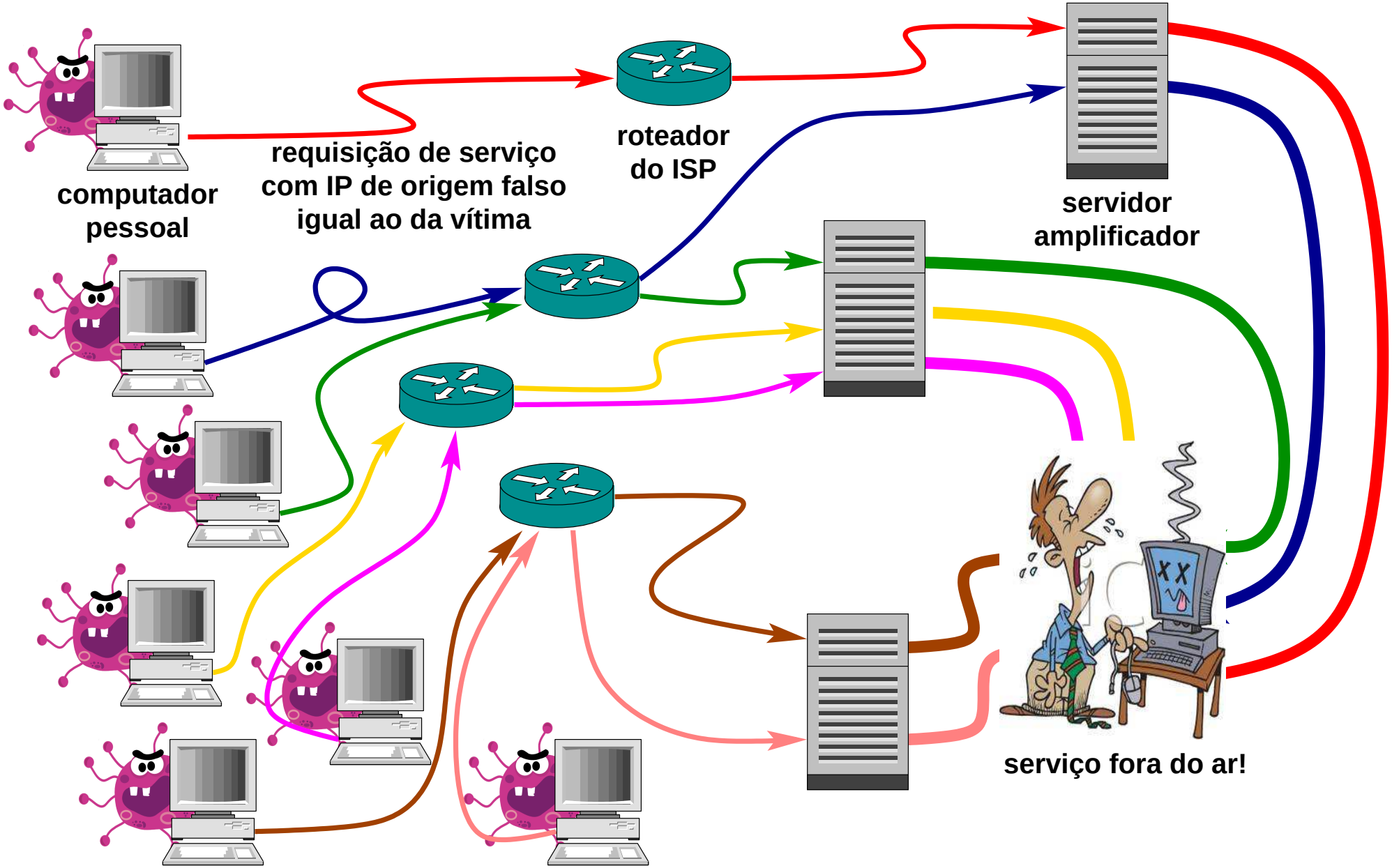
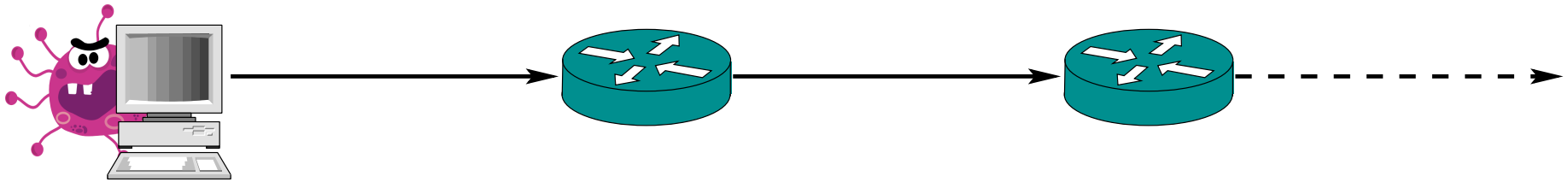


É aqui que entra a RFC−2827, ou BCP−38

Filtragem de INGRESSO (no roteador)



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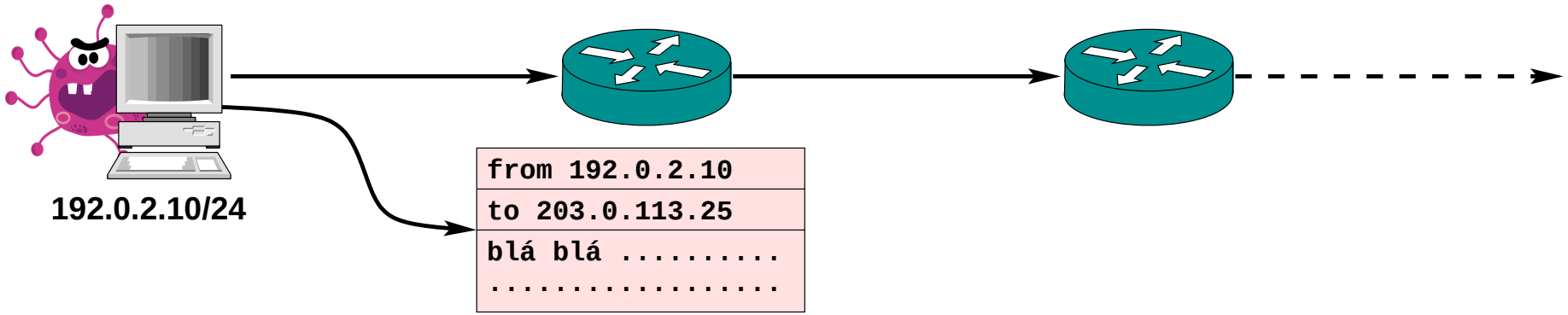

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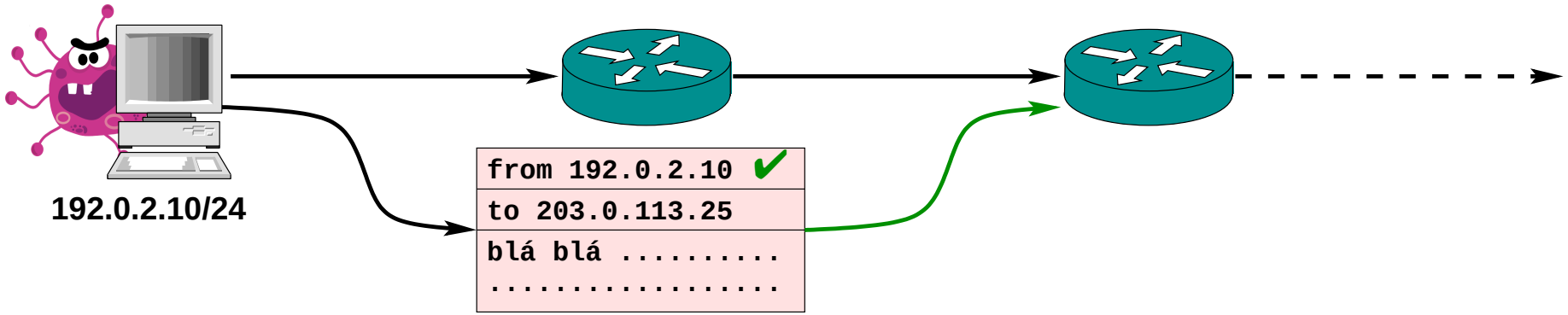

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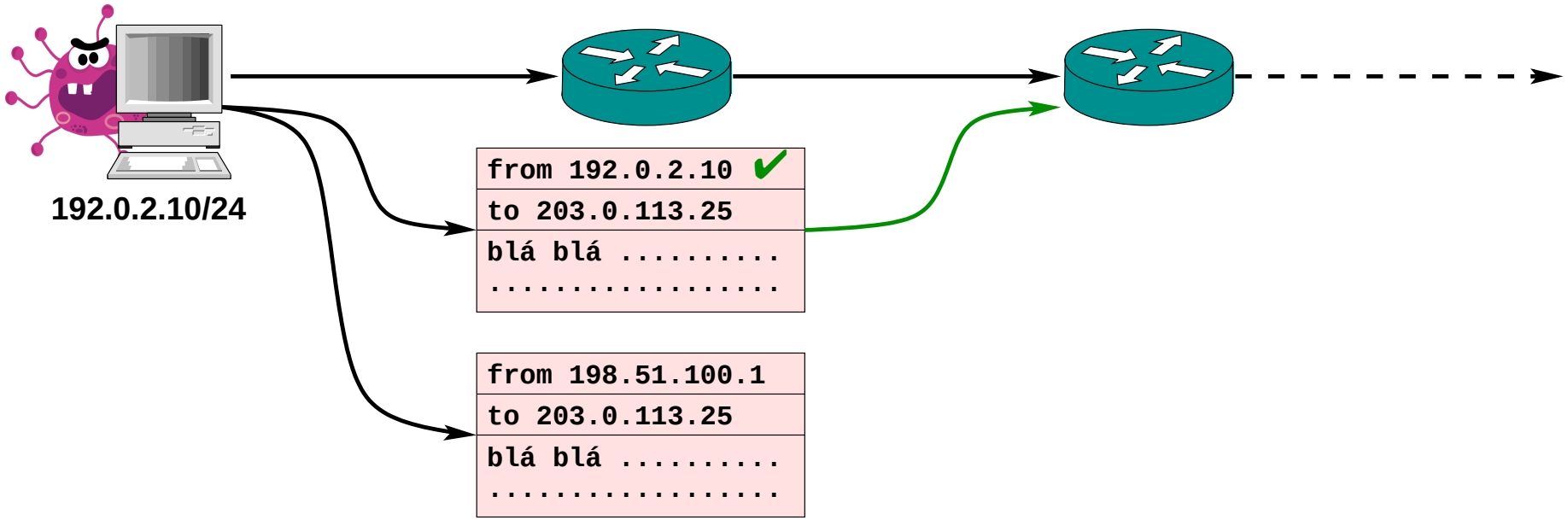

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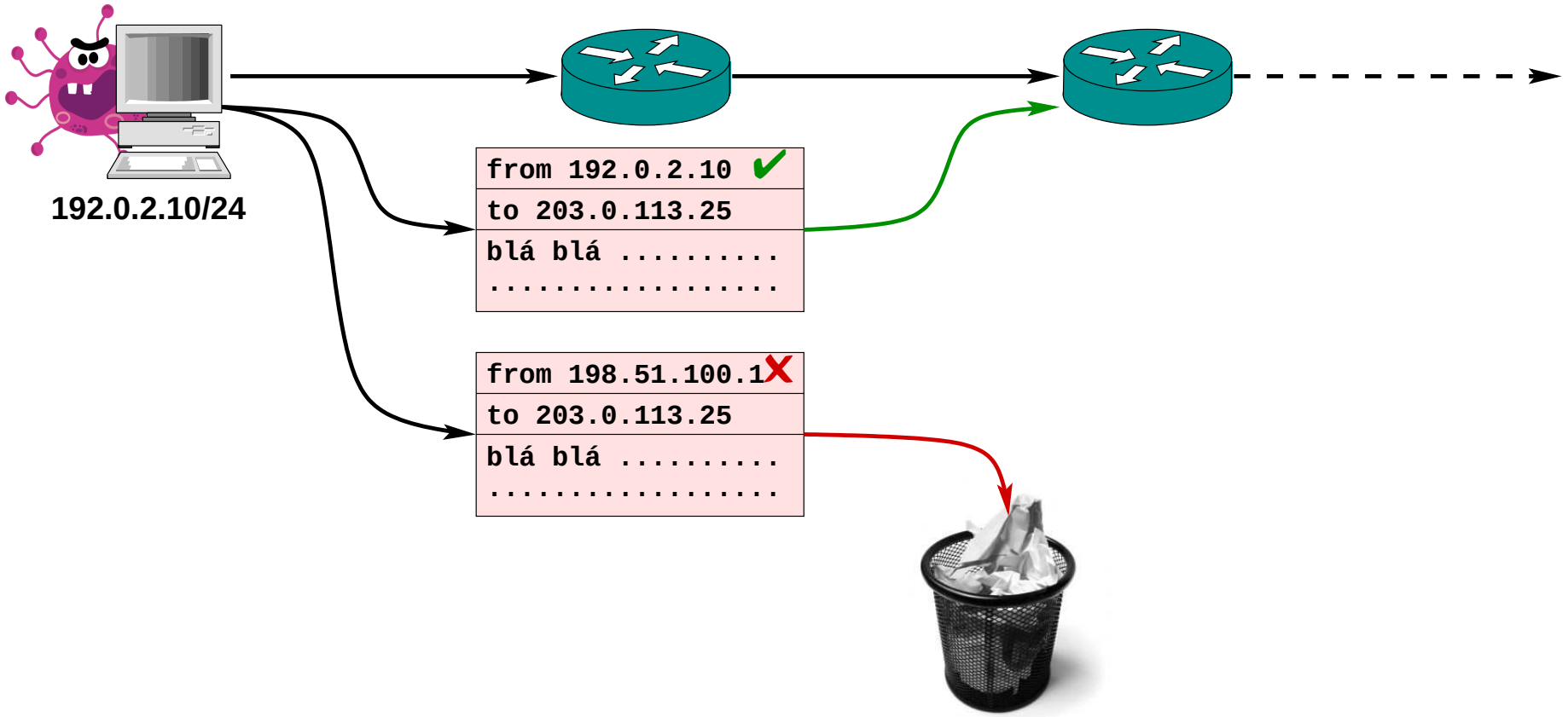

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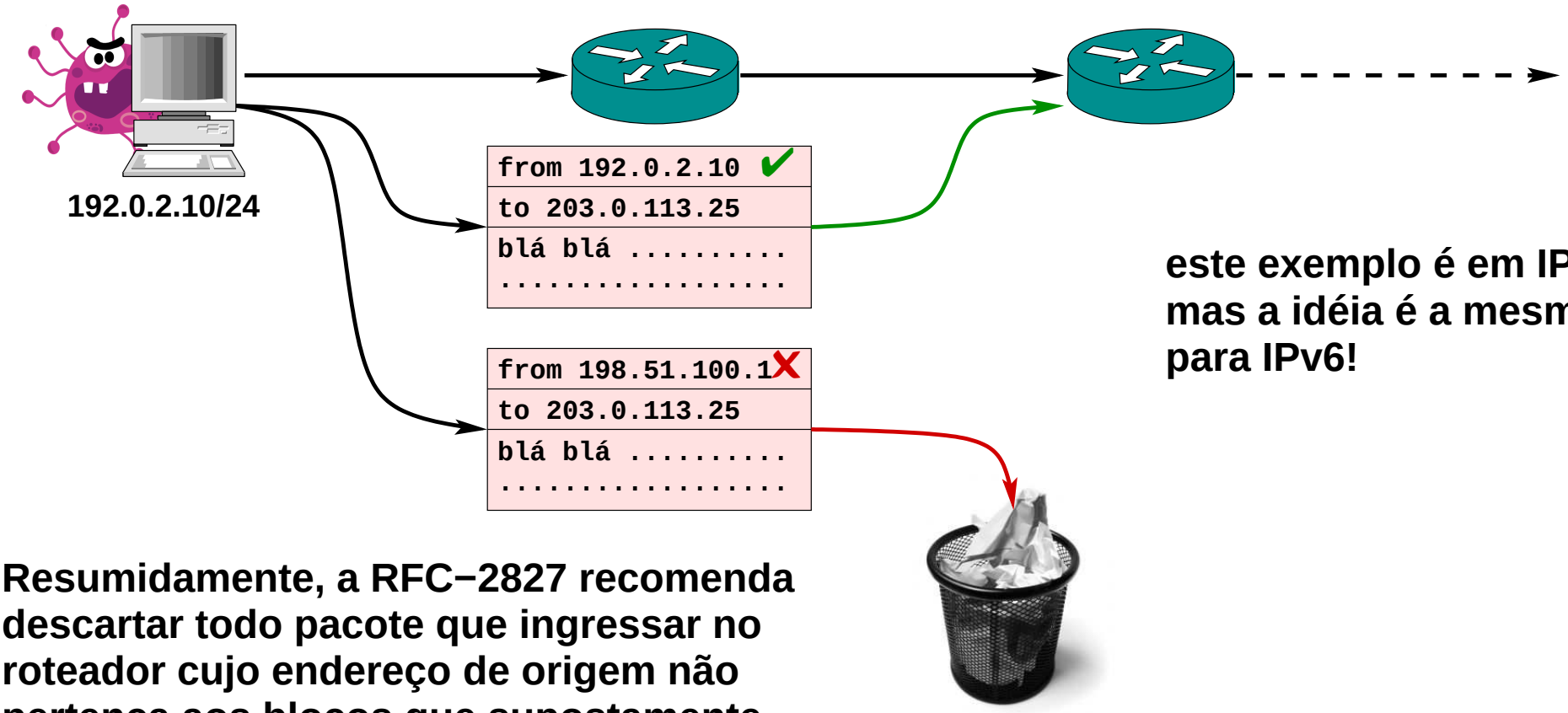

este exemplo é em IPv4, mas a idéia é a mesma para IPv6!

Resumidamente, a RFC−2827 recomenda descartar todo pacote que ingressar no roteador cujo endereço de origem não pertença aos blocos que supostamente estão naquela interface.

É a mais efetiva medida anti−spoofing.

É tão mais efetiva quanto mais perto do usuário final ela for aplicada.

Combinando com LOGs permite identificar qual a maquina que está abrigando o bot.

```
#!/bin/bash
#
#       produz regras de ingresso e egresso a partir da tabela de rotas
#
# termina se a interface tem rota default.
[ "$(ip route show dev $1 exact 0.0.0.0/0 table ${2:-main})" ] && {
        echo "$1 has a default route. No ingress/egress filters." >/dev/stderr
        exit 1
}

# cria duas cadeias, uma para cada direção.
ing=ingress-$1
egr=egress-$1
iptables -N $ing
iptables -N $egr

# para cada destino na tabela de rotas da interface cria duas regras
ip route show dev $1 table ${2:-main} | while read prefix garbage
do
        iptables -t filter -A $ing -s $prefix -j RETURN    # ingresso
        iptables -t filter -A $egr -s $prefix -j DROP      # egresso
done

# acrescenta os comportamentos padrão
iptables -t filter -A $ing -j DROP
iptables -t filter -A $egr -j RETURN

# pendura essas cadeias em FORWARD
iptables -t filter -A FORWARD -i $1 -j $ing
iptables -t filter -A FORWARD -o $1 -j $egr
```

E quando o caldo entorna?...

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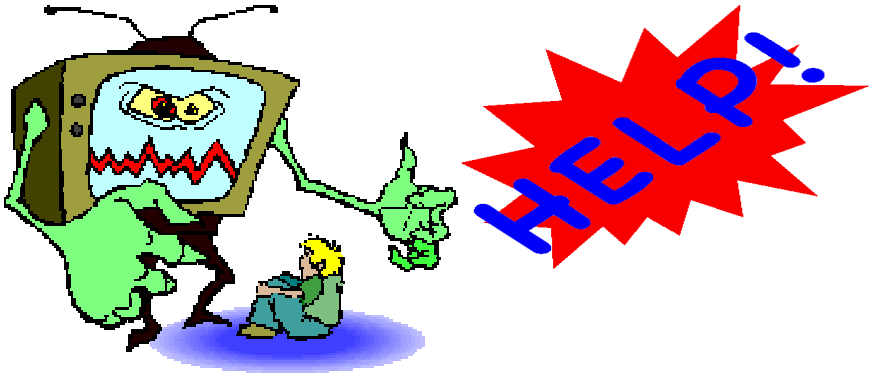

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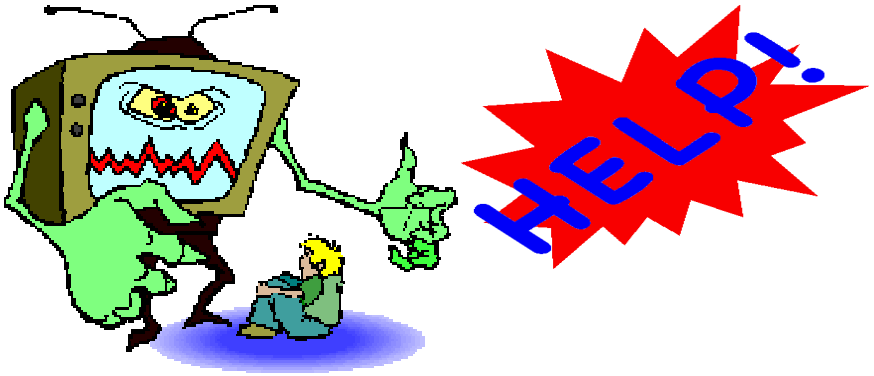

Você liga para o INOC-DBA

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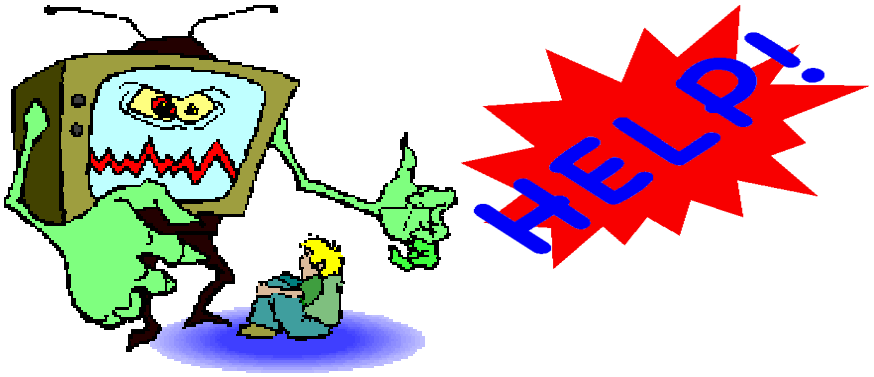

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Vou mandar um email para abuse@example.net:

```
mail from: <needing@urgent.help.now>
250 2.1.0 <needing@urgent.help.now>... Sender ok
rcpt to: <abuse@example.net>
553 5.1.8 <abuse@example.net> ... User unknown
```

RFC-2142

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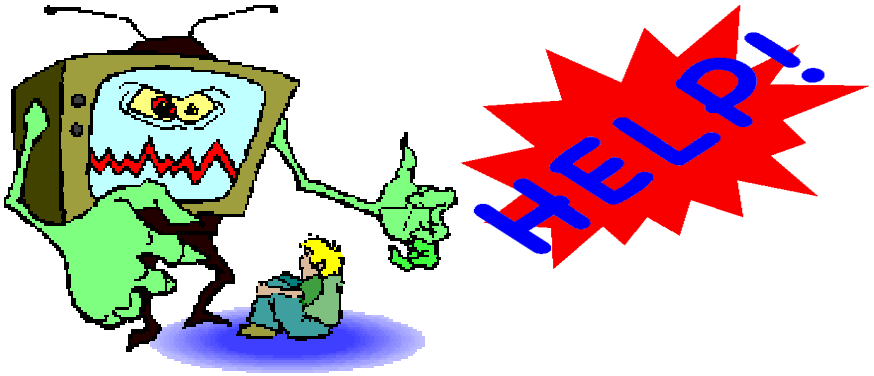

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RFC-2142

Vou procurar os endereços de contato no whois:

```
abuse-c:      MANE
...
nic-hdl-br:   MANE
person:       Ze Mane da Silva
e-mail:       no.longer.works.here@example.net
```

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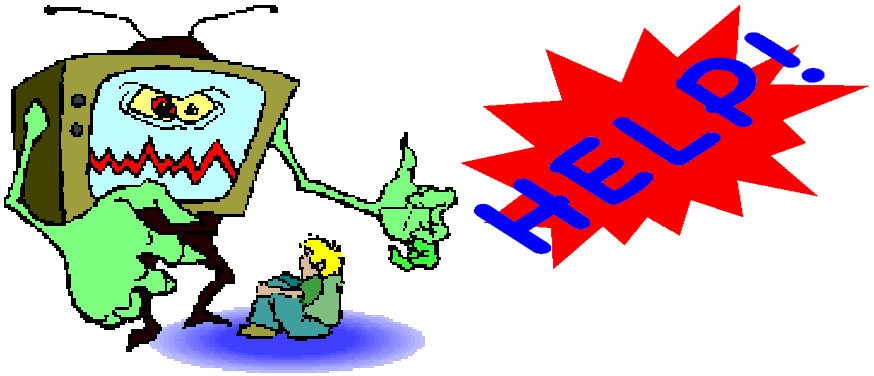

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.... precisa ter MUITA paciência .....

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Ideias?

Request For Comments

Read and

For

Comments

Read and Follow Comments

Read and Follow Carefully!