

Старт в DevOps: системное администрирование для начинающих

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Skillbox

Завершение знакомства с компьютерными сетями

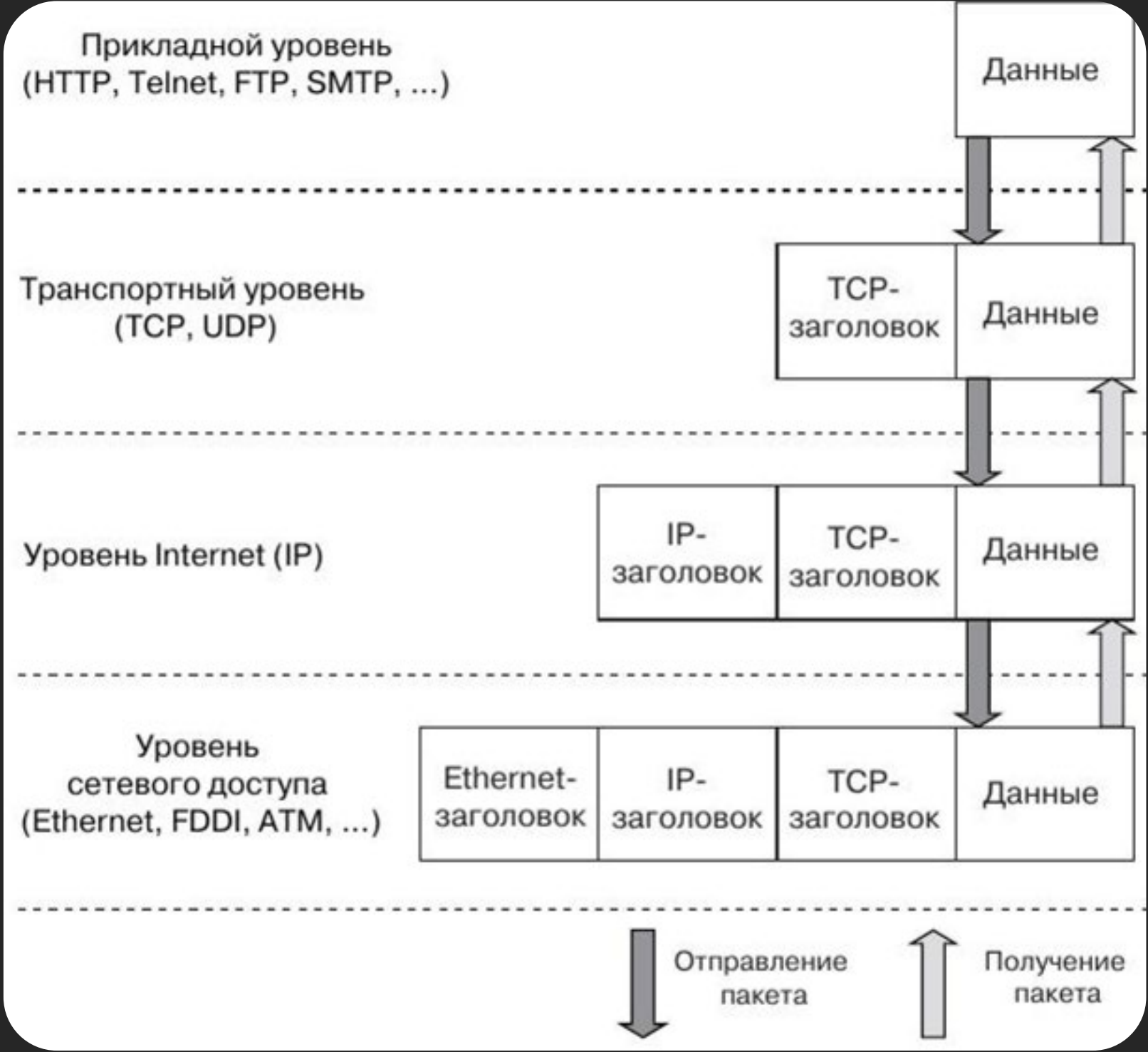
Разбор домашнего задания

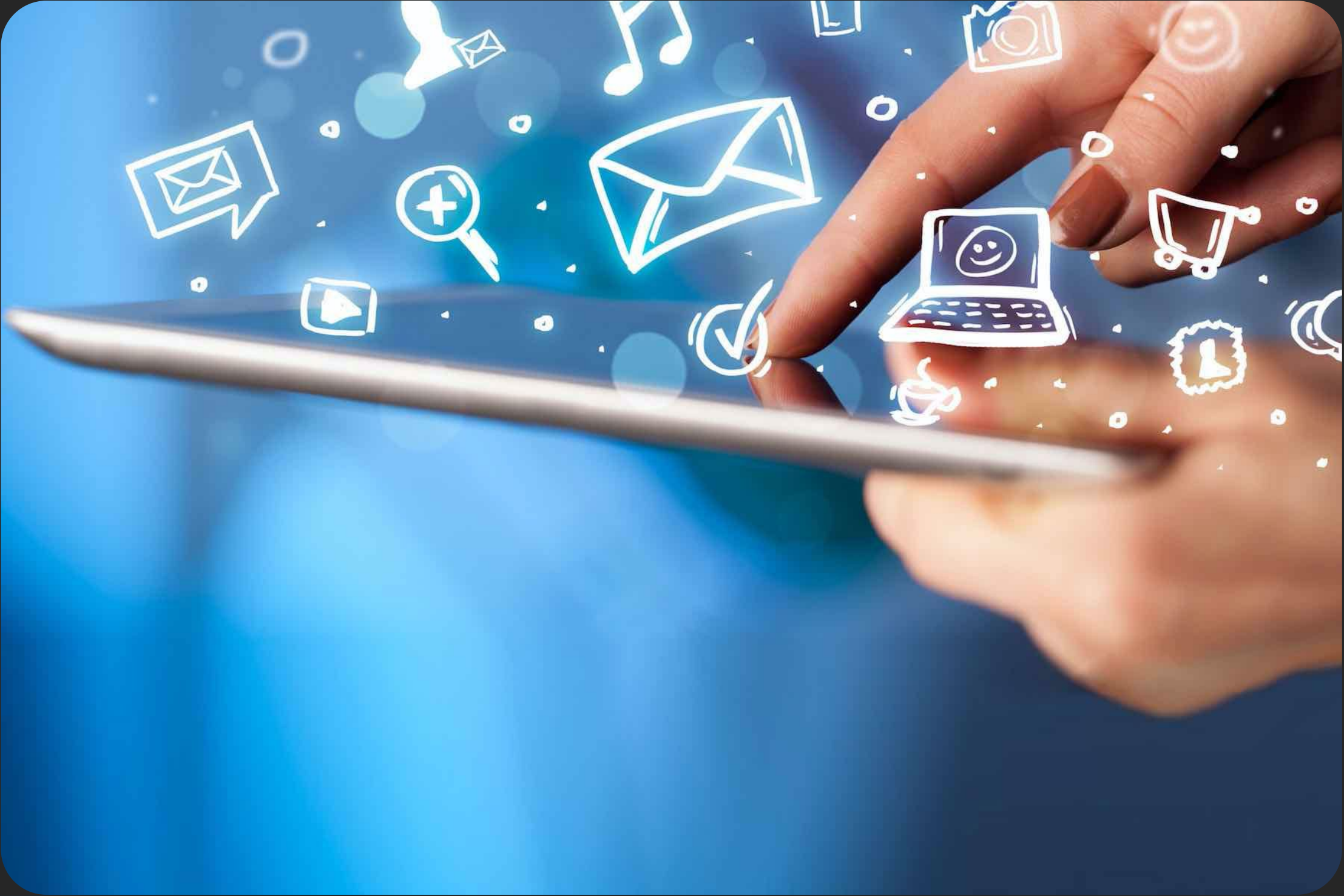
Прикладной уровень модели ТСП/ІР

Уровни TCP/IP

- Прикладной уровень (Application Layer)
- Транспортный уровень (Transport Layer)
- Сетевой уровень (Internet Layer)
- Канальный уровень (Network Access Layer)

Прикладной уровень модели TCP/IP



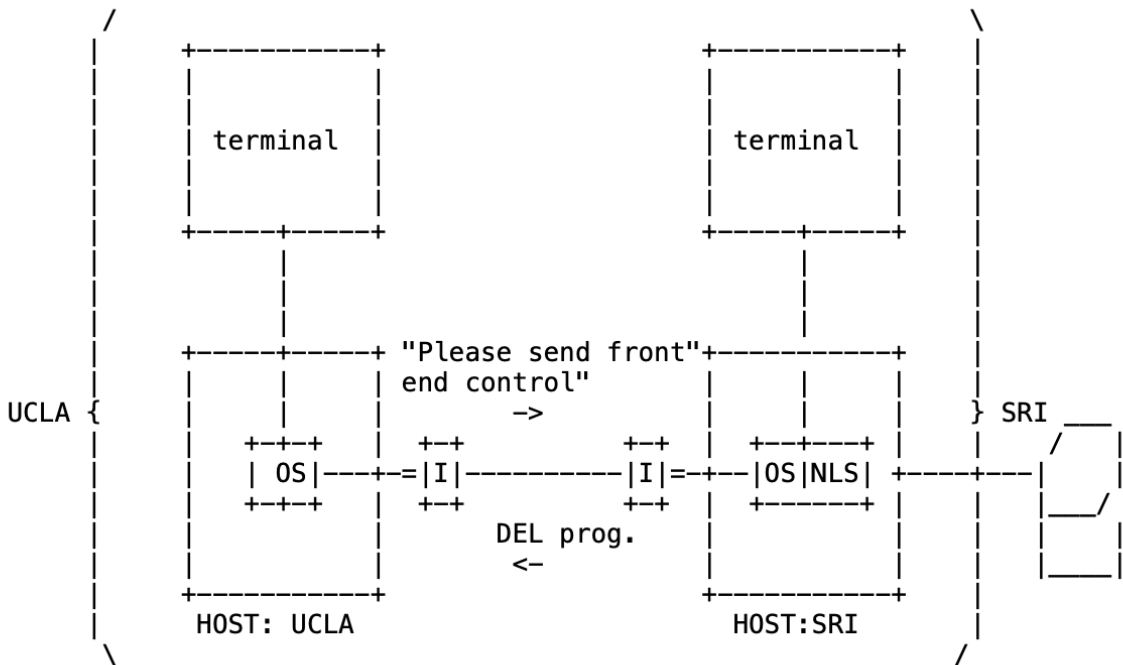


Первые протоколы прикладного уровня (RFC 1123)

- Telnet
- FTP, TFTP
- SMTP
- DNS
- BOOTP
- SNMP, CMOT

RFC 1

b. After Link Establishment and Log-in



The connection so established is a TTY-like connection in the pre-log-in state. This means the remote HOST operating system will initially treat the link as if a TTY had just called up. The remote HOST will generate the same echos, expect the same log-in sequence and look for the same interrupt characters.

High Volume Transmission

Teletypes acting as terminals have two special drawbacks when we consider the transmission of a large file. The first is that some characters are special interrupt characters. The second is that special buffering techniques are often employed, and these are appropriate only for low-speed character at time transmission.

We therefore define another class of connection to be used for the transmission of files or other large volumes of data. To initiate this class of link, user level programs at both ends of an established TTY-like link must request the establishment of a file-like connection parallel to the TTY-like link. Again the priority scheme comes into

play, for the higher priority HOST sends a message over link 0 while the lower priority HOST waits for it. The user level programs are, of course, not concerned with this. Selection of the free link is done by the higher priority HOST.

File-like links are distinguished by the fact that no searching for interrupt characters takes place and buffering techniques appropriate for the higher data rates takes place.

A Summary of Primitives

Each HOST operating systems must provide at least the following primitives to its users. This list knows not to be necessary but not sufficient.

- a) Initiate TTY-like connection with HOST x.
- b) Terminate connection.

The other primitive characteristic of the links is that there are always 32 of them, whether they are in use or not. This means that each IMP must maintain 18 tables, each with 32 entries, regardless of the actual traffic.

The objections to the link structure notwithstanding, the links are easily programmed within the IMPs and are probably a better alternative to more complex arrangements just because of their simplicity.

IMP Transmission and Error Checking

After receiving a message from a HOST, an IMP partitions the message into one or more packets. Packets are not more than 1010 bits long and are the unit of data transmission from IMP to IMP. A 24 bit cyclic checksum is computed by the transmission hardware and is appended to an outgoing packet. The checksum is recomputed by the receiving hardware and is checked against the transmitted checksum. Packets are reassembled into messages at the destination IMP.

Open Questions on the IMP Software

- 1. An 8 bit field is provided for link specification, but only 32 links are provided, why?
- 2. The HOST is supposed to be able to send messages to its IMP. How does it do this?
- 3. Can a HOST, as opposed to its IMP, control RFNMs?
- 4. Will the IMPs perform code conversion? How is it to be controlled?

II. Some Requirements Upon the Host-to-Host Software

Simple Use

Жизненный цикл стандарта (RFC 2026)

- Интернет-проект (Internet Draft)
- Предложенный стандарт (Proposed Standard)
- Проект стандарта (Draft Standard)
- Стандарт Интернета (Internet Standard)
- Исторический стандарт (Historic Standard)

Примеры протоколов прикладного уровня

- BGP
- DHCP
- DNS
- FTP
- HTTP
- HTTPS
- LDAP
- MQTT
- NTP/PTP
- SIP
- SMTP
- SNMP
- SSH
- XMPP