

- (business to business B2B). B2B

line ()

(Forex). - on-line

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.1.1 ARPANet.
1969 , , , ,

Project. - TCP/IP. 1.2

TCP,
UDP

IP,
ICMP,
RIP
DNS,
ARP
FTP,
TELNET

1.3
() WWW
WWW, W3 Web),

TCP/IP
- World Wide Web (

WWW
).

, , WWW.

WWW

E - mail
, E - mail.

UseNet UseNet

UseNet

20 000

FTP FTP

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(
). Gopher Gopher

World Wide Web.

Telnet

Gopher Telnet

: IP

DNS - IP - IP -
: 48.32.253.1

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Ethernet -

10 Mbps.

Fast Ethernet

100 Mbps.

Ethernet,

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A horizontal row of four vintage computer systems from the late 1980s or early 1990s. From left to right: a desktop tower with a CRT monitor on top; a desktop tower with a built-in CRT monitor; a desktop tower with a CRT monitor on top; and a desktop tower with a CRT monitor on top.



BNC,

.2

30

185

2.2

Кольцо **Полносвязная**

Иерархия

Звезда-Иерархия

The diagram illustrates a complex network structure. It features a horizontal red line segment with five black circular nodes attached to its right end. A red arrow points from the left towards this structure. Below the red line, there are several other black circular nodes of varying sizes, some connected by thin red lines, forming a more scattered and complex arrangement.

. 3

Ethernet,

Token Ring FDDI.

ATC

()

3. 3.1 TCP/IP 'TCP/IP' ().
TCP IP.
FTP TCP/IP - , UDP, ARP, ICMP, TELNET,
internet, internet.
,

internet,
TCP/IP

IP.

, . 3.2 IP IP IP ,
TCP/IP. IP , ,
: “ , , (IP-).
IP ”. IP IP

(handshaking) - , .

```

( , TCP ),
, IP, - , . .
IP - , ,
, : . ( , Ethernet-
) IP ; . IP : . ,
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) ; . IP - ,
- , ,
(forwarding) “ ” ; . ,
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Diagram illustrating the structure of an IP datagram and its fragmentation.

The top part shows an IP datagram structure:

- Version (4 bits): 4
- IHL (4 bits): 5
- Type of Service (TOS) (3 bits): 3
- Total Length (16 bits): 16
- Identification (16 bits): 16
- Flags (3 bits): 3
- Fragment Offset (13 bits): 13
- Time-to-Live (TTL) (8 bits): 8
- Protocol (8 bits): 8
- Header (20 bytes): 20 bytes
- Data (variable): Variable length

The bottom part illustrates fragmentation:

- Source Host (Host A):** An IP datagram is sent to a destination host (Host B) via a router.
- Router 1:** Strips off the IP header and adds its own header.
- Router 2:** Strips off the previous header and adds its own header.
- Destination Host (Host B):** Strips off the last header and reassembles the data.

Labels in the diagram:

- ICMP:** Internet Control Message Protocol
- IP:** Internet Protocol
- Ethernet:** A type of local area network (LAN) protocol.
- TCP:** Transmission Control Protocol
- RTP:** Real-Time Transport Protocol
- Internet:** The global network of interconnected computer networks.
- TCP:** Transmission Control Protocol
- RTP (Real-Time Transport Protocol):** Real-Time Transport Protocol

RTP

RTCP (Real-time Transport Control Protocol),
RTP, RTCP

RTP. RTCP

RTP (

UDP),

. RTCP

RTCP-

2

RTCP

RTCP.

RTCP

5 . RFC-1889

RTCP-

RTCP

5%

RTP RTP—

RTP-

RTP

TCP

. TCP

TCP

— LJDP

— RTP (Real-time Transport Protocol),

. 3.4

RTCP (Real-Time Transport Control
Protocol)

RTCP

RTP

RTP (User Data - UDP)

RTCP-
. RTCP : ; ;

RTCP-
). RTCP-

RTCP-
5
.3.5 . UDP , UDP RTCP ; 5% ,

UDP : (source port),
 (destination port), (length) UDP (checksum)
 UDP). ,
 . UDP ;

UDP .
UDP Internet Name Server, Trivial File

7 6 5 4 3 2 1 0 7 6 5 4 3 2 1 0 7 6 5 4 3 2 1 0 7 6 5 4 3 2 1 0

0
4
8

76543210

Internet Name Server, Trivial File

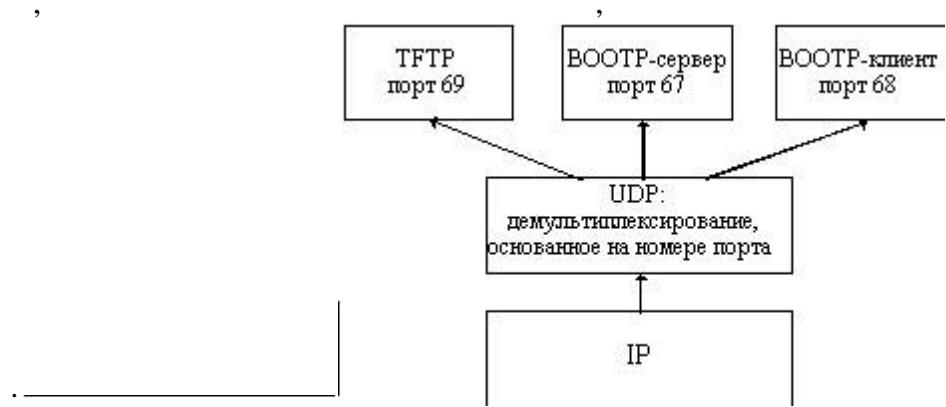
Transfer, SNMP.

RFC-1700.

UDP UDP :
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UDP

, UDP



TCP.

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TCP,

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UDP

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TCP

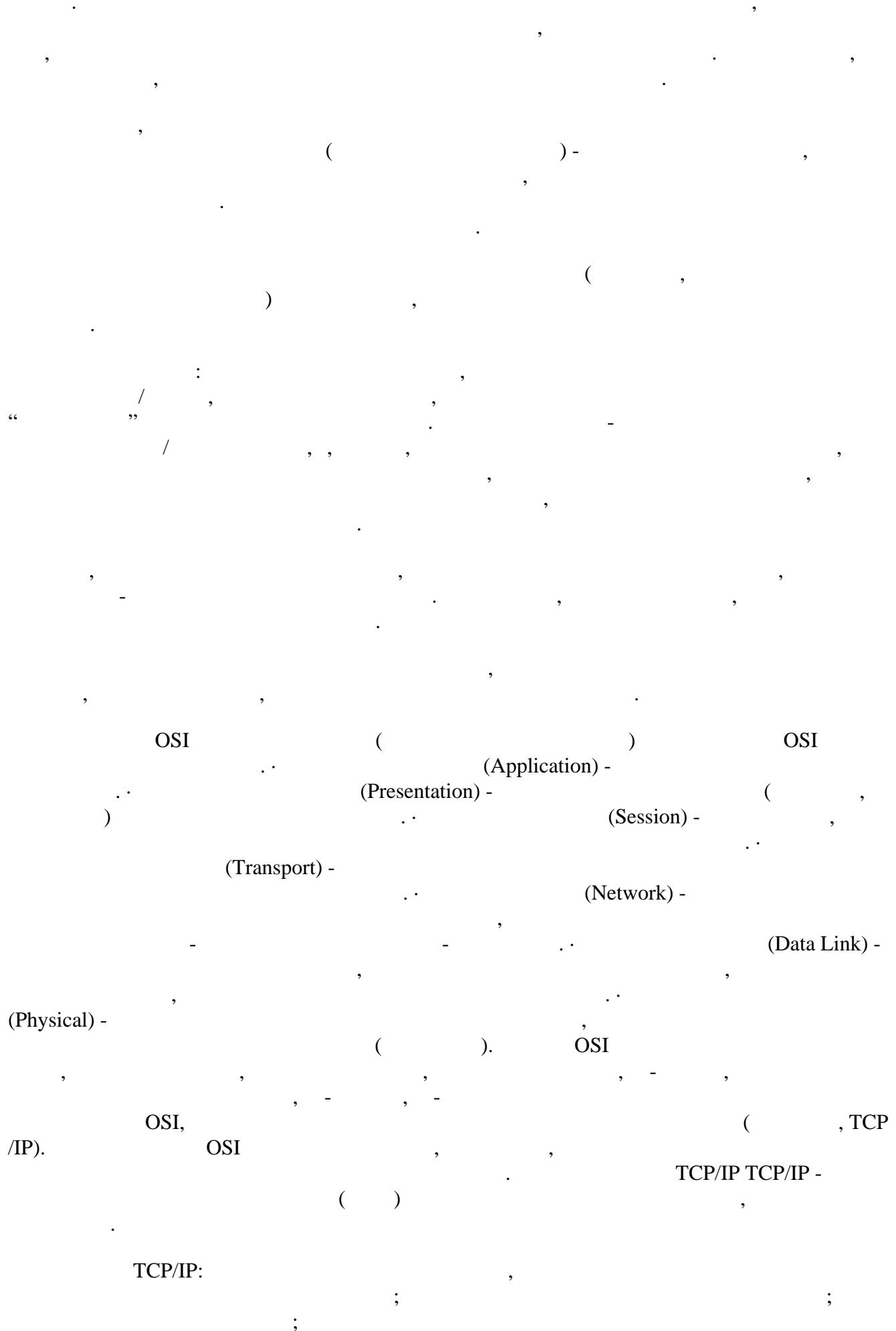
UDP.

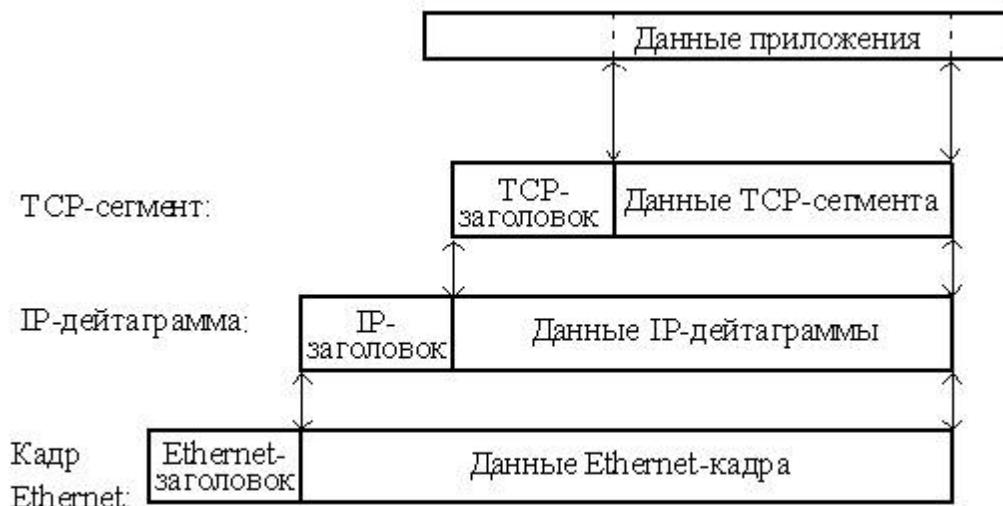
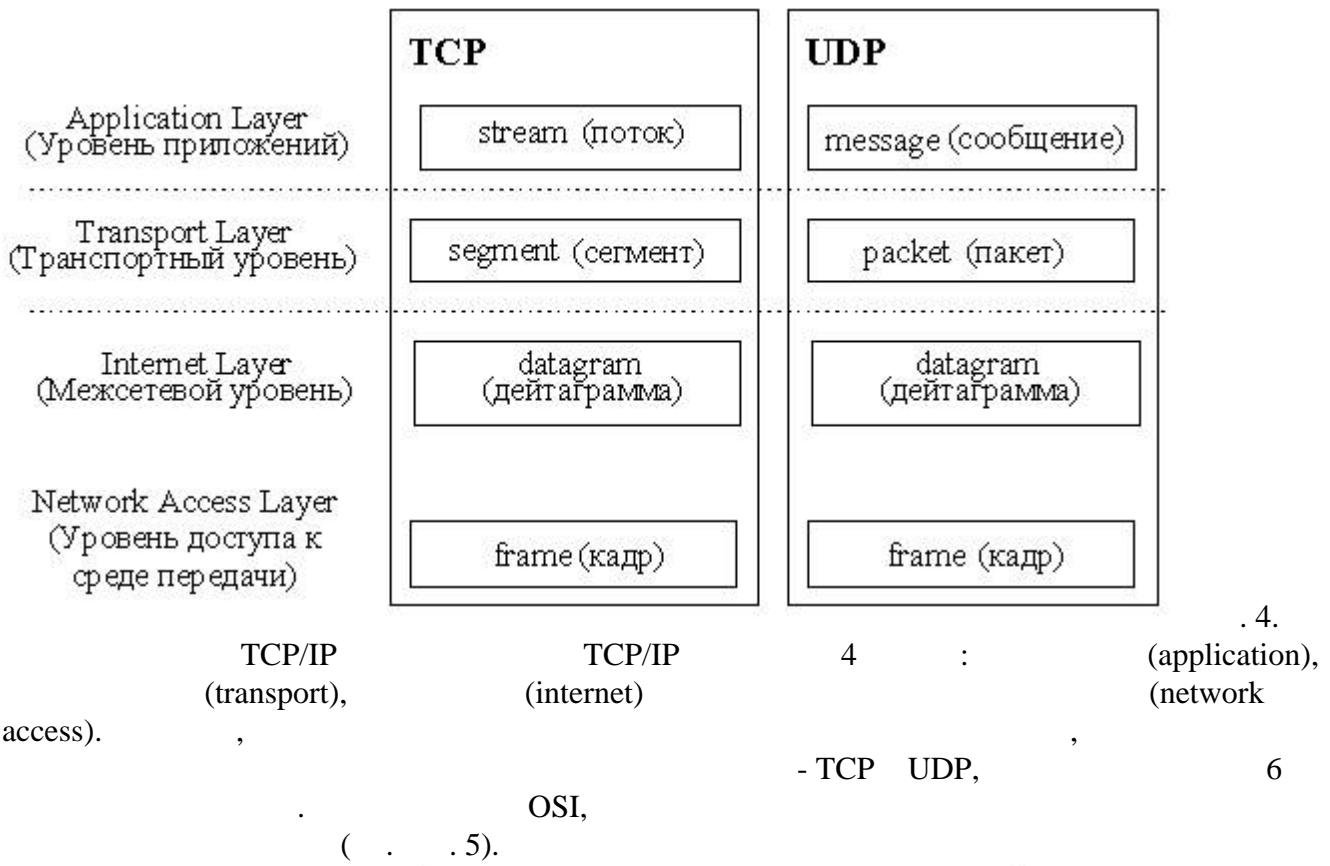
UDP

3.6
Reference Model,

OSI

OSI (Open System Interconnect
)
()





. 5.
TCP/IP OSI TCP/IP



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OSI TCP/IP

, “IP-”, “TCP”. , ,
TCP/IP,
OSI; , , .

(WWW-), telnet, ftp, HTTP- .
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() (end-to-end delivery service)

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(, .). , , ; ;

: UDP TCP. TCP (Transmission Control Protocol -) - :
(,) ()

TCP
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TCP-
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(IP). TCP. UDP UDP (User Datagram Protocol,) (IP). UDP
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NFS). , , , (- , UDP-
, UDP-

32- UDP- :

0	7	15	23	31
Source Port	Destination Port			
Length	Checksum			

IP

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IP. IP IP IP ; IP. ICMP,
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IP- (IP-
194.84.124.4 maria.vvsu.ru).
DNS (Domain Name Service).
“ ” DNS “ ” TCP/IP-
IP-
IP ICMP 2 . (MAC-
: IP- Ethernet- Ethernet). ARP;
IP-
(), TCP/IP
(SAP, Service Access Point) - , (IP);
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, (. .). . TCP/IP

IP, IP- ,
, MAC- , IP ATM, IP IPX, IP X.25
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Business - B2B) (Business-to-Customer - B2C).²

(web-?), web-?

web-, web-

Web- (,),

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- 39%, \$6,98 87%,
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 BizRate, 2002 . , 26%, 44%.
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 \$35,87 .
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 2002 . (\$39,3 .) Jupiter MMX .
 , , Forrester Research , eMarketer , GartnerG2 IDC ,

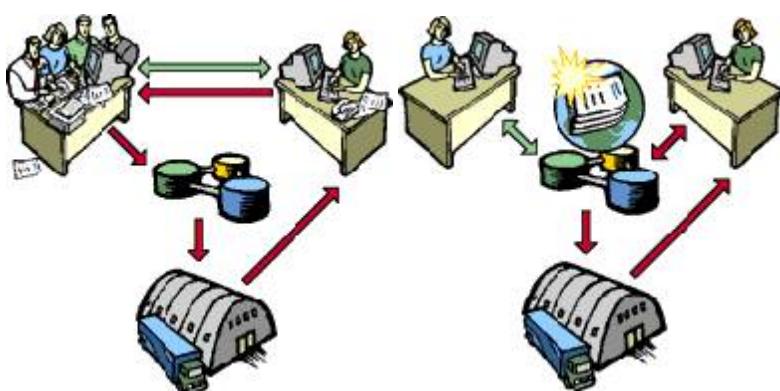
\$74,0 ., \$75,0 ., \$91,9 . \$116,8

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Web-

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on-line

(digital cash),

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(, , 50%) - ,

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(www.magazin.ru
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3/4

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50%

25-45

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22-35

25-40

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PRIVATE

InterShop- 1100 300
www.intershop.ru

Arcadia.Ru 1617 10
www.arcadia.ru CD

Pregrad.Net 380 86
www.pregrad.net

XXL.Ru 1310 198
www.xxlr.u

Dostavka.Ru 2400 300
www.dostavka.ru

B2C-

(www.ozon.ru)

eHouse,

Dostavka.Ru 75%

25%

XXL.Ru

: DHL, PXPost,

Arcadia.Ru 70%

- 25%

5% -

7.2

(, UPS, DHL, TNT)

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2-3

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7.4 (retail)

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7.5
Web-

Web-

(marketshare).

marketshare

8.



PRIVATE 'TYPE=PICT;ALT='

15 - 20

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'TYPE=PICT;ALT='

CSP - Commerce Service Provider -

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web-

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web-

web-

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web- e-TopS Consulting (Web- '.ru)) 200
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: Russian Link Exchange (RLE) www.rle.ru ,
www.ir.ru , Reklama.ru , F2 (Flamingo v.2) www.f2.ru , RB2 rb2.design.ru , TX3 tx3.design.ru .

88 31.

www.ixbt.ru,

, e-mail-

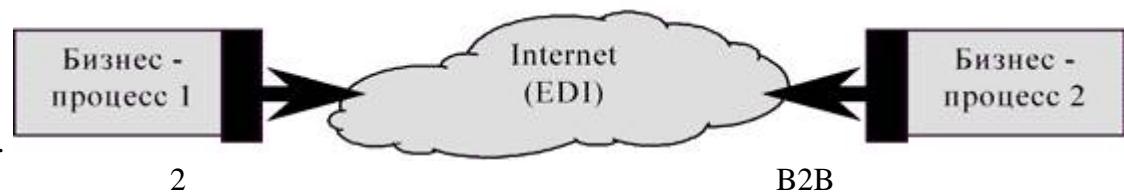
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.. 10.2

CTR (click through ratio,
2-3
, . 11.

2 : · - (Business-to-Business
- B2B, 8 9) · - (Business-to-Customer - B2C, 10), ,

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B2B -

EDI - Electronic Data Inter xchange.

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EDI, ()

INTERSHOP™ 4

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2 . Siemens Hewlett Packard INTERSHOP™ 4

INTERSHOP™ 4

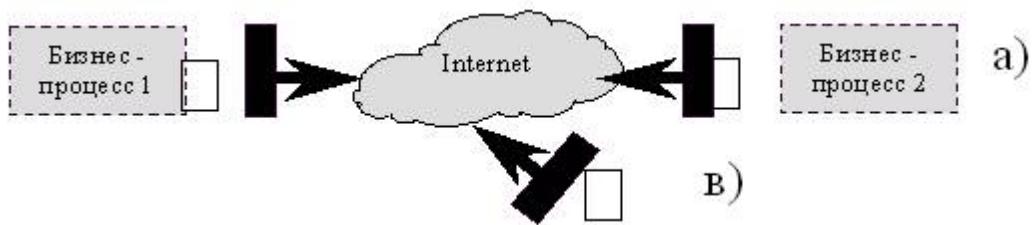
SAP R/3, EDI-

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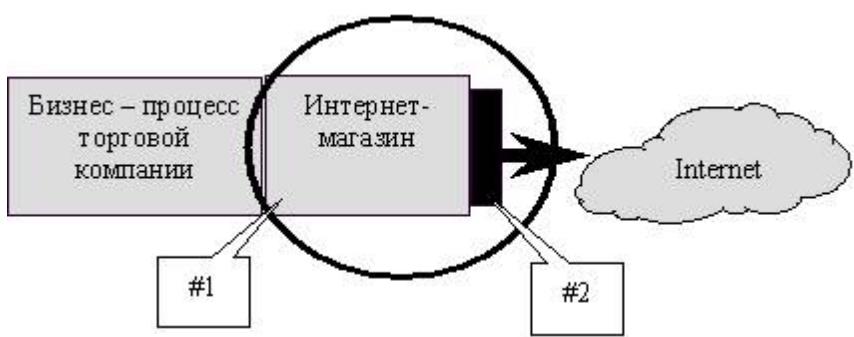
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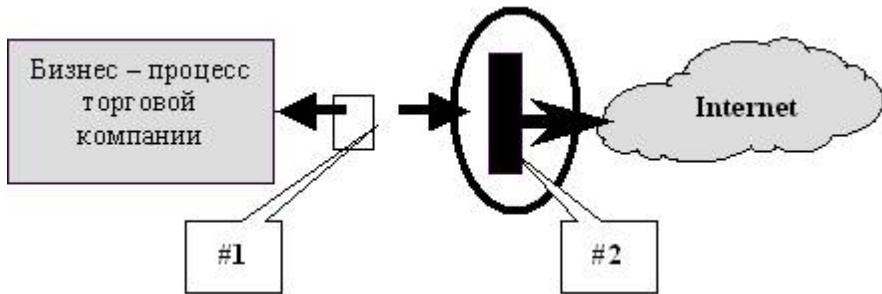
13.

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12. INTERSHOP4

Intershop4,

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INTERSHOP 4

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eTopS Consulting

:1 (http://www.ipassage.ru/rp_1.html)

INTERSHOP

web-

INTERSHOP - 4-

; web-

INTERSHOP;

web-

- Sybase Adaptive Server

11

INTERSHOP 4

Windows NT, Sun Solaris, Compaq

Tru64, Red Hat Linux, SGI IRIX.

INTERSHOP 4

300%

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, , eTopS Consulting,
INTERSHOP. Instant CyberPlat .

12.2
INTERSHOP web-

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INTERSHOP ,

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back-office , : 12.3
INTERSHOP 4, 120

' HTML, web-
(e-commerce.ru: ' ').
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INTERSHOP Store Design Wizard, 11- ,

100 ,

HTML- (, Microsoft FrontPage).

15.

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Internet
Open Market, First Virtual, CyberCash,
SET.
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Internet; ;
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SET . .
SET

Internet

SET. CyberCash,
Internet- ,
SET,

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. 15.2

, NetCheque, NetChex. NetCheque

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Netcash, CyberCoin).

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Cyber

Plat.

(VISA, Eurocard/MasterCard, Diners Club, JCB)

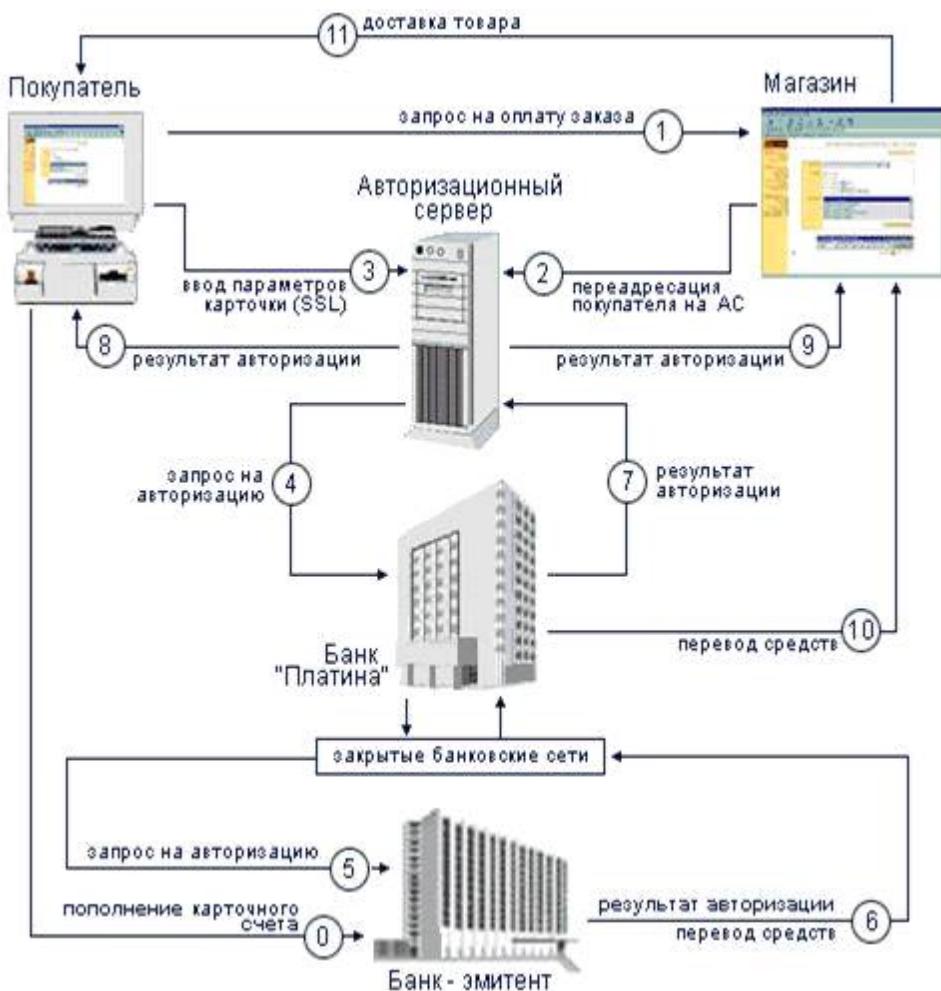
)

CyberPlat

.14):

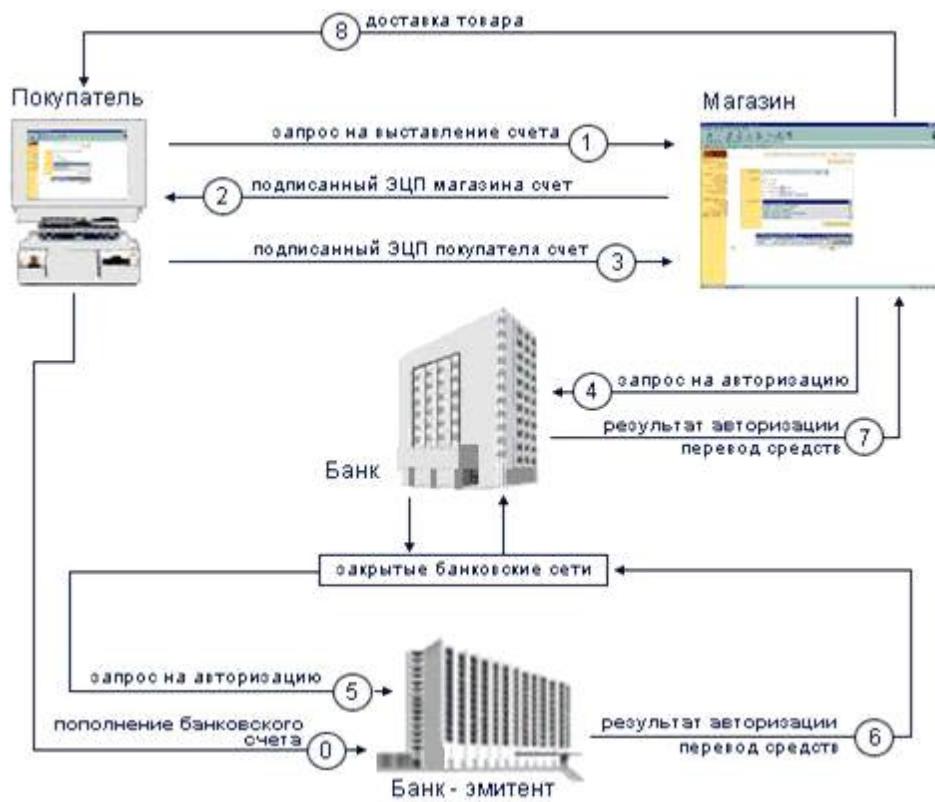
Web-

(SSL)



.14

CyberPlat



15

CyberPlat

Web- , :
; ; ;
Web- , :
Web- , , ,
Web- (SPYLOG).
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; (), Web- ,
Web- ,
Web- (. .).
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(t) (T), . t
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SpyLog. 2.1 Spylog
SpyLOG

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. 2.2
SpyLOG,

SpyLOG

Javascript;

proxy-

SpyLOG,

. 2.3

SpyLOG,

(), SpyLOG

(log-)
() IP- , DNS . Log-

SpyLOG

IP-

IP-

SpyLOG

.2.4

SpyLOG

'SpyLOG -

web-

SpyLOG -

SpyLOG

'SpyLOG -

SpyLOG

. SpyLOG

SpyLOG

SpyLOG

Web-

SpyLOG

PR-

CyberPlat. om

SpyLOG

220