IP   QoS

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IP
. *"converged networking"*   IP
ISDN   IP   ,
.

Converged network(   )   Quality of Service (QoS)
, QoS   .   QoS
.   QoS   IP
.

1.   QoS   :   (Bandwidth),   (End-to-End   Delay), (Jitter),   (Packet Loss)

QoS   ,   ,   ,
.

1)   Kilo bits per second(Kbps)   Mega bits per second(Mbps)
.

2)   (End-to-end delay)
.

3)   .

4)   .

IP   ,   ,
.

.   , 1%   ,
.

( )   .
.

ITU   G.114   150ms   .
200ms   .   20ms   50 ms
.   100ms   ,
300ms   .
,   .

2. QoS

QoS

Provisioning, Queuing, Classifying .

1) Network Provisioning( )

, 10Mbps 100Mbps,
. WAN T1 E1
.
Rich media communications Rich
Media Communication .
, 100Mbps switched
Ethernet ,
.

768Kbps x 2 .
Kbps , QoS
.
20% . 768Kbps
, 920 kbps
WAN T1
.
,
75% .
.

768Kbps 128Kbps
384Kbps .

2) Queuing(;)

QoS (Buffering)
.
.
.

.
(queue;)
. (queues)
.
,
(Classify) .
,
.

.

.

Queuing

.

.

QoS

.

QoS

.

3) Classifying(   )

Queuing   .

Resource
Reservation Protocol (RSVP), IP precedence, Differentiated Services (DiffServ), and Multi-Protocol Label
Switching (MPLS)   .

( )   TCP
.   UDP
.

<u>RSVP</u>

RSVP   (flow-based)   QoS
.   .
,   ,
.

RSVP   , PC   ,
RSVP   QoS
.

<u>**IP** Precedence and DiffServ</u>

IP precedence(   )   DiffServ   QoS   .
.

IP   DiffServ
.

IP   ,   9 ~ 11   IP   3
8   0   7
.

IP   .
,   .

DiffServ   9   16

. DiffServ   64   IP
.

IP   DiffServ
.   ,   DiffServ   QoS
.

<u>Multi-Protocol Laver Switching (MPLS)</u>

IP
.

.
.   ,
IP   DiffServ   QoS
.

MPLS   QoS

.   MPLS   OSI   layer   2(link/switching   )
layer   3(   )   .

.

IP

.

DiffServ   9~16   "TOS"   8   (15,   16)
6   64   .   http://www.qosforum.com/docs/fag

MPLS   www.qosforum.com

MPLS   QoS   IP-based   network   .   MPLS
,   MPLS

MPLS   .

Packet Shaping

IP   DiffServ   .
IP   DiffServ

.
Packet
Shaping   .   Packet   Shaping

.
Packet   shaper   IP   DiffServ
.

3.

QoS   .
QoS   Queuing   (   )
.

"   "