

O2 Czech Republic a.s.	Technical specification external	TE000013
Validity date:	21.09.2018	Version: 03.00
Expiration date:		Page 1 z 5
Security classification:	SEC-C0 (Veřejné)	



TE000013

QoS at ADSL/ADSL2+/VDSL2

Scope:

The document describes the mechanism of QoS at ADSL/ADSL2+/VDSL2 port of a networking device. The original version is English.

Applicability:

This specification is a valid document issued by the company O2 Czech Republic a.s.

Process:

Zajištění služby - broadband a hlasové služby

Document Garant		Process Owner		Approbator	
Kudrna Bernard		Hauer David			
<i>Date</i>	<i>Signature</i>	<i>Date</i>	<i>Signature</i>	<i>Date</i>	<i>Signature</i>

TABLE OF CONTENT:

1	INITIAL PROVISIONS	3
1.1	SCOPE	3
1.2	VALIDITY AND OBLIGATION	3
1.3	DOCUMENT HISTORY	3
1.4	DEFINITIONS	3
1.5	ABBREVIATIONS	3
1.6	REFERENCE	4
1.6.1	Related internal documents	4
1.6.2	Related external documents	4
2	IP QOS IN UPSTREAM DIRECTION - PRIORITY SCHEDULING	4
2.1	STRICT PRIORITY	4
2.2	PRIORITY MAPPING	4
2.3	CLASSIFICATION AND DSCP MARKING	5
2.4	VOIP SPEECH CHANNEL DSCP MARKING	5
2.5	VOIP SIGNALLING CHANNEL DSCP MARKING	5
3	CONCLUSIVE STATEMENTS AND/OR TEMPORARY MEASURES (THE LAST BUT ONE OR THE LAST NUMBERED CHAPTER)	5
4	ANNEXES	5

1 Initial provisions

1.1 Scope

The purpose of the document is to describe mechanism of QoS at ADSL/ADSL2+/VDSL2 port of a networking device. The original version of this document is English.

1.2 Validity and obligation

This document is a valid recommendation of the company O2 Czech Republic a.s. specially for supplier and producer end equipment. This document shall be read in context with next internal and supporting document, listed in part 1.6 for understanding featured parameters and functionalities and actual network settings shall be taken into account.

1.3 Document history

Example:

Ver.	Date	Title	Note
1.	05/2008	QoS at ADSL	New document
2.	04/2012	QoS at ADSL	Revision
3.	08/2012	QoS at ADSL/ADSL2+/VDSL2	Revision
4.	09/2018	QoS at ADSL/ADSL2+/VDSL2	Revision

1.4 Definitions

- not used -

1.5 Abbreviations

ADSL	Asymmetrical Digital Subscriber Line
ADSL2+	Asymmetrical Digital Subscriber Line - extends the capability - ITU G.992.5
VDSL	Very High Speed Digital Subscriber Line Line – ITU-T G.993.1
VDSL2	Very High Speed Digital Subscriber Line - ITU-T G.993.2
DiffServ	Differentiated Services
IETF	Internet Engineering Task Force
IP	Internet Protocol
QoS	Quality of Service
TCP/IP	Transmission Control Protocol/Internet Protocol
RTP	Real Time Protocol
UDR	User Datagram Protocol
VoG	Voice Gateway
VoIP	Voice over IP

1.6 Reference

1.6.1 Related internal documents

TR000015 - ADSL2+ Universal Customer Splitter - (int. publ. O2 Czech Republic a.s.)

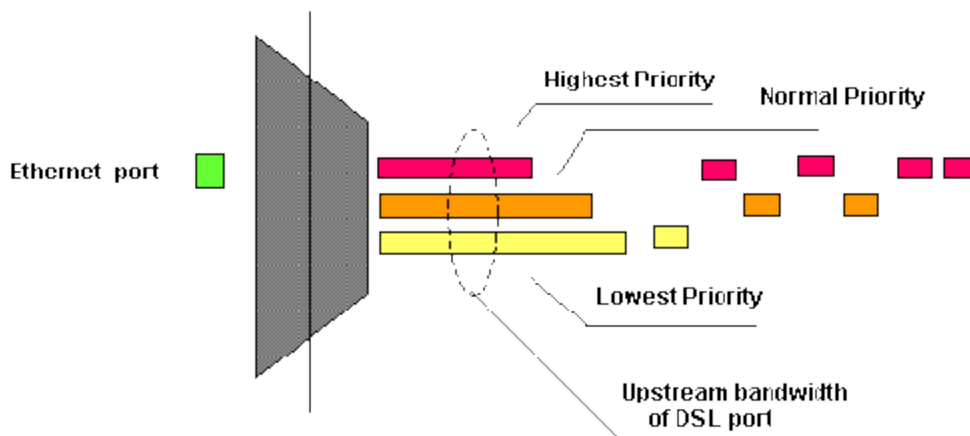
1.6.2 Related external documents

IETF RFC 791	Internet Protocol
IETF RFC 1878	Variable Length Subnet Table for Ipv4
IETF RFC 2474	Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers
IETF RFC 2475	An Architecture for Differentiated Services
IETF RFC 2597	Assured Forwarding PHB Group
IETF RFC 3140	Per Hop Behaviour Identification Codes
IETF RFC 3246	An Expedited Forwarding PHB
IETF RFC 4594	Configuration Guidelines for DiffServ Service Classes

2 IP QoS in Upstream Direction - Priority Scheduling

2.1 Strict priority

Strict priority is recommended for queuing of the scheduling mechanism at ADSL/ADSL2+/VDSL2 port of a networking device. Scheduler is servicing the Highest Priority queue. After servicing of IP packet, the scheduler re-scans IP packet to be sent starting from the Highest Priority queue.



2.2 Priority mapping

VoIP speech channel should be sent through the Highest Priority queue, VoIP signalling channel should be serviced with Normal Priority queue. Remaining the Lowest Priority queue should be used for non-priority traffic.

2.3 Classification and DSCP Marking

Network traffic entering QoS domain is subjected to priority classification and conditioning. Traffic may be classified to differentiate priority by many different parameters, such as source address, destination address, source port, destination port etc.

2.4 VoIP speech Channel DSCP marking

IP traffic that is bearing IP/UDP/RTP VoIP speech channel should be marked with EF DSCP pattern to assure correct processing within DiffServ domain. Binary code of EF DSCP is 10111. It is recommended to mark IP packet at Voice Gateway.

2.5 VoIP signalling Channel DSCP marking

IP traffic that is bearing VoIP SIP signalling channel should be marked with CS3 DSCP pattern to assure correct processing within DiffServ domain. Binary code of the EF is 011000. It is recommended to mark IP packet at Voice Gateway.

3 Conclusive statements and/or temporary measures (the last but one or the last numbered chapter)

- not used -

4 Annexes

- not used -

Published as technical standard by O2 Czech Republic a.s.

Draft by: Ing. Bernard Kudrna

Approved by: David Hauer