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Abstract:

Deliverable D5.4 lists and briefly describes the communities identified as potential users for the applications listed in Deliverable D5.1 for the activities 5.1 “Real-time video-conferencing and media streaming” and 5.2 “On-line games”. This Deliverable complements Deliverable D5.2 that describes the users communities for the applications of activities A5.3 and A5.4.

This first version of the Deliverable is limited to describing the profiles of the users communities or initial thoughts about potential user communities for the different applications. Subsequent versions will identify specific users either within the personnel of different 6NET partners, from the National Research Networks or from universities or other bodies interested in exercising the 6NET applications.

Keywords:

IPv6, applications, multimedia, video-conferencing, media streaming, online gaming

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1 Introduction

This Deliverable lists and briefly describes the communities identified as potential users for the applications listed in Deliverable D5.1 for the activities A5.1 “Real-time video-conferencing and media streaming” and A5.2 “Online gaming”.

This first version of the Deliverable just describes the profiles of the users communities for the different applications. Subsequent versions will identify specific users either within the personnel of different 6NET partners, from the National Research Networks or from universities or other bodies interested in exercising the 6NET applications.

For each application, a brief functional overview is provided followed by the description of the user community. Additionally, the classification of the application is mentioned. The following classes are defined:

- A: Part of Core Set now
- B: Will be added to Core Set later
- C: Limited use
- NO: Not part of the Core Set

Following discussions, it has been agreed to drop the applications ‘Isabel’ and ‘Quadapt’. Therefore, these applications are part of Deliverable D5.1 but not listed here. With ‘VOCAL’ and ‘MCast6’ two new applications have been identified, which were not part of the original version of D5.1.

2 Activity 5.1 “Real-time video-conferencing and media streaming”

2.1 Streaming applications - Audio and Video: Storage and Retrieval

2.1.1 Video over IP – VIP

Overview of the application

VIP provides an “integrated chain” solution for video-over-IP services, offering full-screen, high-quality video (MPEG2 or TV quality) that is fully scaleable over the Internet. This solution will cover the entire chain from video production to delivery of video over the Internet.

Classification: NO

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.2 Video distribution - MPEG4IP

Overview of the application

MPEG4IP provides facilities for streaming from stored and live sources, based on the Darwin Streaming Server environment for video distribution, and the UCL common library. It is constructed out of a number open source encoding and streaming tools capable of serving multiple media formats.

Classification: B

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.3 Music distribution - TUR on IPv6

Overview of the application

This application provides streaming of MP3 and (in the future) other formats. The system is available over IPv4 (see <http://www.turmusic.no/>). The site is named "Trondheim Underground Radio" (TUR).

Classification: A/B

User community

TUR already has a local user community using the IPv4 service. The application will be advertised to the population of 6NET-connected users. The service is already available and running in the 6NET network.

2.1.4 Multimedia Conference Recorder – MMCR

Overview of the application

The Multicast Multimedia Conference Recorder is a java based system capable of robust distributed recording of multicast multimedia data. This is achieved by deploying multiple recorders and then collating the data from these nodes to form a single lossless recording. The system also provides for playback of the recordings.

Classification: NO

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.5 VideoLAN

Overview of the application

VideoLAN is an open source project that provides unicast and multicast media streams from a variety of media sources. See: <http://www.videolan.org/> for details. VideoLAN can source from a hard drive, a DVD player, a satellite TV card or an MPEG2 compression card and can create streams with data rates of up to 9Mbit/s for DVD, less for MPEG-1.

Classification: A

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.6 Multicast Radio

Overview of the application

CRadio is an MP3 jukebox, developed at Southampton University, which supports IPv6. The application performs Web-based MP3 track selection and queuing with multicast operation. The Server can re-reference the location of MP3 files via HTTP.

Classification: NO

User community

UoS has a local student radio station that they propose to use as the source of the CRadio traffic. The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.7 Unified messaging system - 6UMS

Overview of the application

An IPv6-enabled unified messaging system (6UMS) which allows peer-to-peer communication between users using a variety of media. The system includes messaging using text, audio, images and video. It also includes location awareness, user context/preferences, and intrusiveness consideration.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.8 Kasenna Mediabase XMP streaming server

Overview of the application

Kasenna MediaBase XMP is a system for the management, distribution and streaming of video and audio files encoded as MPEG-1, MPEG-2 and MPEG-4 video, or MP3 audio. The system supports various MPEG encoders that can act as sources for live streams, and are redistributed by MediaBase XMP as either multicast streams, unicast streams or both. Stored files can be scheduled for multicast distribution, or made available on-demand. Each file can have metadata associated with it, and it is possible to create multi-format files and to define clips and sequences from the files. MediaBase XMP also includes a content distribution module, for use with several servers, but it is not the intention to set up more than a single server.

Classification: NO

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests.

2.1.9 FreeAMP

Overview of the application

FreeAMP is an extensible, cross-platform audio player. It features an optimized version of the GPLed Xing MPEG decoder, which makes it one of the fastest and best sounding players available. There are patches available for IPv6 operation.

Classification: A/B

User community

All the people who want to play with MP3 audio streams. The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.1.10 MCast6

Overview of the application

MCast6 is an IPv6 enabled application for multicast media streaming. The MCast6 uses multicast transmission but unicast also is incorporated. IPv6 and IPv4 addressing types are both available seamlessly, which means that the user will receive a single tool to operate in both infrastructures. MCast6 can broadcast multimedia data according to programs created earlier by the application administrator or transmission can be demanded by privileged users. Incorporated well-known video/audio standards allow to use it with streaming applications already existing on the market. For instance, multimedia data could be sent by IP/TV Cisco server and received by the MCast6 client or inversely.

Classification: B

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2 Streaming applications - Audio and Video: Conversational

2.2.1 Robust Audio Tool – RAT

Overview of the application

The Robust Audio Tool (RAT) is an open-source audio conferencing and streaming application that allows users to participate in audio conferences over the Internet. RAT requires no special features for point-to-point communication, just a network connection and a soundcard. For multiparty conferencing, RAT uses IP multicast and therefore all participants must reside on a multicast-capable network. RAT is based on IETF standards, using Realtime Transport Protocol (RTP) [RFC1889] above UDP/IP as its transport protocol, and conforming to the RTP profile for audio and videoconference with minimal control.

Classification: A

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2.2 Video Conference Tool – VIC

Overview of the application

VIC is an open-source video conferencing and streaming application that allows users to participate in videoconferences over the Internet. VIC requires no special features for receiving video from a session. To send video to a session a video capture device is required, which supports the platform specific capture

libraries which include; Video4linux, Video for Windows, and Sunvideo. VIC is based on IETF standards, using RTP above UDP/IP as its transport protocol, and conforming to the RTP profile for audio and videoconference with minimal control.

Classification: A

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2.3 Network Text Editor - NTE

Overview of the application

NTE is an open-source shared text editor. The collaborative text editing can be between two participants directly, or between a group of participants on a common multicast group.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2.4 Whiteboard - WBD

Overview of the application

WBD is an open-source shared whiteboard compatible with the LBL whiteboard, WB. The collaborative whiteboard activities can be between two participants directly, or between a group of participants on a common multicast group. WBD provides a shared canvas that may be edited by a number of users at the same time. WBD provides facilities for drawing various shapes, and text, in a variety of different colours. External postscript files may also be imported into WBD for collaborative annotation.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2.5 Bonephone – SIP client

Overview of the application

Bonephone is a SIP based Internet phone that acts as a SIP user agent. Bonephone is capable of sending and receiving SIP messages. It provides the user with a GUI to enable him to start, answer or terminate calls as well as maintain a phonebook with SIP addresses of possible callees and allows the user to establish and maintain parallel calls whereas it displays the status of the different calls. It integrates the RAT media engine, which interfaces with the system audio device and allows the user to send and receive packetised audio.

Classification: B

User community

Currently the SIP-based VoIP application Bonephone is primarily targeted at research purposes. Therefore the user community is initially limited to internal use and usage by WP5 partners for performing joint testing and measurements. Later on, as an application with 'Core Set' status, it is also intended to be used within the 6NET community for generic VoIP communication purposes.

2.2.6 VOCAL – SIP system and client

Overview of the application

The Vovida Open Communication Application Library (VOCAL) is an open source project targeted at facilitating the adoption of VoIP in the marketplace. VOCAL provides the development community with software and tools needed to build new and exciting VoIP features, applications and services. The software in VOCAL includes a SIP based Redirect Server, Feature Server, Provisioning Server and Marshal Proxy. The system also includes two SIP user agents. The SIP user agents have been ported for use with IPv6 and are undergoing testing. This is based on the stable development branch of the VOCAL.

Classification: B

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

VOCAL can be used, in conjunction with instance(s) of the TZI SIP gateway, for 6NET project voice calls, and for calls with Euro6IX partners also.

UoS is also using VOCAL for its local WLAN IPv4/IPv6 users (a growing community using a WLAN network in the Southampton area called SOWN: the Southampton Wireless Network).

2.2.7 OpenH323

Overview of the application

The OpenH323 project is developing an open source H.323 protocol implementation, which contains both clients and server, and can be used for H.323 videoconferencing. The clients that are available include: a command line H.323 videoconference application and a GUI H.323 videoconference application. The servers that are available include: a H.323 MCU (Multipoint Control Unit), a H.323 Gatekeeper and a H.323 to PSTN Gateway.

Classification: C

User community

It is intended to use the OpenH323 platform in order to realize H.323 videoconferencing over the CTI local IPv6 network. It is also intended to use it for virtual meetings with other Greek 6NET partners over the Greek IPv6 backbone network, (namely GRNET and its subcontractors University of Thessaloniki and National Technical University of Athens), who work on the porting of GnomeMeeting, an OpenH323-based videoconferencing application. The OpenH323 platform can be made available to all 6NET partners for use over the backbone of the European 6NET IPv6 network, and to the OpenH323 user community.

2.2.8 GnomeMeeting

Overview of the application

GnomeMeeting is an open source H323 application for Linux based on the OpenH323 platform. It supports H.245 Tunnelling, Fast Start, auto-answering of incoming calls, and inter-works with Gatekeepers using H.235 authentication. It provides the H.261 video codec, and a number of audio codecs.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2.9 High-quality Audio Tools - HAT

Overview of the application

The High Quality Audio Tool (HAT) provides for sending and receiving MP3 audio over Realtime Transport protocol (RTP) on IPv6. HAT uses the MP3 encoder, LAME to encode the MP3, which is taken packetised and sent out on RTP. For playback HAT retrieves the MP3 payload from the RTP packets and uses mpg123 to decode the MP3 stream.

Classification: NO

User community

HAT has been tested from Korea to a number of sites including UCL. The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.2.10 Digital Video Transport System - DVTS

Overview of the application

DVTS (Digital Video Transport System) is an application for sending and receiving DV (Digital Video) streams in RTP over IPv4 and IPv6. IEEE1394 (Firewire) cables are used for connecting DV devices. However, the length of a single IEEE1394 cables cannot be longer than 4.5 meters. Using DVTS, DV data can be sent anywhere using the Internet.

Classification: C

User community

DVTS has been tested from Japan to a number of sites including UCL and USA. The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

UoS has established contacts in Internet2 with whom DVTS tests can be run. These will begin in early 2003 on the transatlantic IPv6 native (dual-stack) links.

2.3 Streaming applications - Audio and Video: Session

2.3.1 Multicast streaming tools - MUST

Overview of the application

Web-interface for simplified MBONE access using unicast or multicast connections. The toolkit is composed of two parts:

- multicast enabled listener application that monitors MBONE announcements and stores session info
- a cgi script for serving MBONE announcements over a web page to multicast or unicast enabled clients

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.3.2 Secure Conference Store - SCS

Overview of the application

The UCL Secure Conference Store is a web-based system for secured creation, storage and access to conference information.

Classification: A

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.3.3 SDP Parser Applet – SPAR

Overview of the application

SPAR is a java applet that takes Session Description Protocol (SDP) as input, and starts the required media tools with the correct command line arguments, according to the content of the SDP message. It is used in conjunction with the Secure Conference Store.

Classification: A

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.3.4 Session Directory Tool – SDR

Overview of the application

SDR is a session directory tool designed to allow the advertisement and joining of multicast conferences on the Mbone. It was originally modelled on sd written by Van Jacobson at LBNL, but implements a later version of the session description protocol than sd.

Classification: NO

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

2.3.5 RTP Quality Matrix - RQM

Overview of the application

The Real-time Transport Protocol, RTP, provides Quality of Service feedback with reception reports sent alongside the media stream. If the media is sent via IP multicast it is possible for a third party to snoop on these reception reports, displaying reception quality for all members of a group. The RQM application performs such snooping.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users. The tool may be used as a add-on tool for RTP based audio/video conferences in the 6NET.

3 A5.2 “Online gaming”

3.1.1 Quake

Overview of the application

A First Person Shooter action game from id Software, whose game engine has been made publicly available. The game player has to steer his character through a virtual world full of dangers and secrets and to fight his way to find and destroy Quake. When playing in multiplayer mode, the different players steer their characters through the same virtual world. They can play in teams or against each other.

Classification: C

User community

Quake will be used mainly by students having a native IPv6 connection. GARR has already organised a Quake tournament with Italian students as user community (<http://www6.caspur.it/quakev6/index-en.html>). Further tournaments with an extended user community are under consideration.

3.1.2 Experimental Gaming Platform - EGP

Overview of the application

Development of a prototypical gaming platform for demonstrating IPv6 features using online games. The gaming platform will focus on the networking aspects of gaming only (not on the graphics, etc.). We aim to have at least two simple games with different network requirements using the platform. The games may be open-source games that are modified to use the platform.

Classification: C

User community

The EGP will be used for research purposes. We are not intending to use this platform in a “field trial” or to have a larger user community for it. The user community is therefore limited to SONY internal use and usage by selected WP5 partners for performing joint testing and measurements.

3.1.3 XPilot

Overview of the application

Network based game developed at the University of Tromso. The server will be reachable natively from both IPv4 and IPv6 hosts. Local network discovery will be done gracefully through IPv6 multicast.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users. Students having native IPv6 connection to 6NET are a target user community for this application.

3.1.4 MUD gaming environment

Overview of the application

A text-based multi-player gaming environment, combat oriented. The server can be hosted on any host, e.g. on a home network with ADSL. The main MUD model is client server, but the “server” is not restricted to non-NAT locations when IPv6 is used.

Classification: C

User community

The first user community for this application comprises the WP5 partners, mainly for testing the application. The application owner will perform the initial tests. Additionally, the application will be advertised to the population of 6NET-connected users.

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