

DANTE MailFLOW Service

Third Quarterly Report 1995

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The Project Team's Activities

1.1 Help Desk Activities

The change of the service provider for EuropaNET lead to a flurry of activities also in the MailFLOW service. SWITCH and INCIP dropped their EuropaNET X.25 connectivity. Due to missing operational usage CLNS based connectivity has been removed too. RFC1006 is supported by almost all products in use within MailFLOW with the only exception of MRX from DEC used on the GARR RELAY-MTAs. In order to still be able to perform connectivity tests on EuropaNet X.25, SWITCH got an account on one of the GARR RELAY-MTAs. The connectivity matrix in chapter A.3 has been updated according to the most recent routing documents.

The Luxemburg network RESTENA has shut down its RELAY-MTA and has removed all routing documents. There is no X.400 connectivity with RESTENA anymore. They also removed all address mapping entries. No problems whatsoever have been reported to the Project Team concerning this change. Since the RED network did the same change during the second quarter, there has been some experience at the Project Team on how to handle such a significant routing change. Removing the mapping is a more complex problem since users cannot reply anymore to old messages in their X.400 mailboxes.

There were major changes in X.400 connectivity in Denmark too. A less radical approach than for Luxemburg has been chosen, which needed more careful planning. Out of 3 RELAY-MTAs only one remains to keep X.400 connectivity for the domains O=mainz; P=minerva; A=dk400; C=DK and O=tdr; P=minerva; A=dk400; C=DK. The mapping rules have been changed, but old X.400 addresses are still supported.

UNINETT in Norway added a second RELAY-MTA without the slightest problem. Due to the excellent preparation of the routing documents by the system manager in charge and, due to the automatic configuration with the MailFLOW tool, this RELAY-MTA has been hooked up to the mesh of RELAY-MTAs within a few working days only and with limited manual intervention, if at all. The current procedures require a test of the new RELAY-MTA by the Project Team which reduces significantly the interactions needed during the setup. This needs some trust of the service participants in the Project Team, but compared to the bilateral agreements and tests needed by the PTTs to connect their ADMDs it is much more efficient.

There is slow progress in the X.400(88) connectivity. Although the configuration tool does support this, there are only a few service participants who invest some time to change the configuration and monitor closely if everything works well. A new connection has been set up between the RELAY-MTAs of HUNGARNET and SWITCH. A bug in the TCP/IP implementation (!) has been detected while transferring large messages. The bug on the HUNGARNET RELAY- MTA has been fixed.

1.2 Meeting Participation

The Project Team attended the TERENA Working Group on Mail and Messaging meeting, Stockholm, Sunday July 16th 1995. Topics covered multi-media, e-mail using MIME and X.400(88), connectivity, security and e-mail related EU telematics programs. MailFLOW is involved in setting up a X.400(88) backbone.

Two Project Team members attended the 33rd IETF, July 17-21, Stockholm. There is no direct involvement of MailFLOW. The MIXER working group updates the specification for X.400 to Internet mail gateways. The RECEIPT working group enhances Internet mail with receipt notifications similar to the X.400 functionality. Both efforts will lead to updated software on the gateways used within the MailFLOW Service.

The MailFLOW managers will meet together with the EEMA ICE and the TERENA WG-MSG working group at Utrecht, October 23-25.

One Project Team member will attend the 34th IETF, December 4-8, Dallas, USA.

The first MailFLOW managers meeting 1996 is again planned to be co-located with the EEMA Mime-week, taking place at Munich, February 26-29, 1996.

Annex A Statistics

The layout of this section remains more or less the same for each quartely report. Highlighting has been used to indicate changing figures in plain text paragraphs.

A.1 Help Desk

Queries to the MailFLOW Project Team are primarily handled by Marcel Parodi and Bernard Stern. Additional SWITCH staff members working as postmasters for SWITCHmail act as backup.

Country	Number of Queries			
	Q4/94	Q1/95	Q2/95	Q3/95
Austria	4	1	0	1
Belgium	3	1	0	3
Canada	0	1	0	0
China	0	1	0	0
Croatia	0	0	1	0
Denmark	0	2	1	1
Finland	1	0	0	0
France	6	11	1	1
Germany	4	3	2	2
Greece	0	0	2	0
Korea	1	0	0	0
Hungary	1	2	0	5
India	1	0	0	0
Ireland	0	0	0	1
Italy	5	2	0	4
Lithuania	1	0	0	0
Luxemburg	1	0	0	2
Norway	0	0	2	1
Poland	2	0	2	0
Portugal	0	0	0	0
Slowenia	0	0	0	6
South Africa	0	0	0	0
Spain	1	2	2	2
Sweden	1	3	1	0
Switzerland	1	1	1	2
The Netherlands	5	1	1	0
Tunisia	0	0	0	0
United Kingdom	9	2	2	5
United States	0	0	2	0
Total	47	33	20	36

During the third quarter of 1995 the Project Team handled **36 queries**. They were registered in a trouble ticket system. The above list indicates the originating country of the query. Please note that a large number of queries do not mean a lot of trouble in that country. It often means that the MHS managers, who closely monitor the performance of the network, are able to report problems earlier than the responsible managers in the remote network.

A.2 File Server

A file server is operated by SWITCH, reachable via FTP, e-mail or TELNET. The procedures for the service and all relevant information for the operation are archived.

The server contains **496 files** with about **10 Mbytes** of data of which about 1 MByte is operational data needed for the configuration of the WEPs and gateways. **19'860 files** (27'723 2Q95) have been retrieved from the file server with a total amount of **246 MBytes** (224 MB 2Q95). On average each file has been retrieved **40 times**.

73 files (92 files 2Q95) have been updated **manually** during the third quarter of 1995.

A.3 Routing Co-ordination

The Project Team maintains a collection of **157 routing documents**. The syntax is checked with a tool and the content is checked for correctness by testing the connections with the operational X.400 system of SWITCH. Correct documents only get archived on the server and published via separate distribution list.

Please refer to Appendix B for a complete list of the routable domains within the MailFLOW relaying service. Currently **225 routes** are registered. On **185 routes X.400 is the preferred** communication protocol.

The complexity of the routing can be seen while studying the table on the next page. Each network participating in the DANTE MailFLOW Service is listed together with the number of Well known Entry Points which form the backbone of the X.400 network. There are two important points to note:

* There are networks without their own WEP.

* Some WEPs can't connect to each other since they do not share a common network, for example CRN in China to ESNET in US, or HUNGARNET in Hungary to GARR in Italy.

A procedure has been worked out in RARE WG-MSG and IETF X400-OPS which enables mail routing between all participants in the service. The procedure and document formats are described in RFC1465. It enables all participants to exchange mail using third party WEPs with appropriate network connectivity. Where more than one common network exists, managers can define their preferred network.

Almost all systems in the service running PP/ISODE use a tool written by Felix Kugler, SWITCH, which generates directly usable routing tables out of the routing documents which follow RFC1465.

Country	Network	WEP	Network connectivity		
			Internet	Public X.25	EuropaNET X.25
Austria	aconet	1	x	x	
Belgium	belnet	1	x	x	
China	crn	2		x	
Croatia	carnet	0			
Denmark	denet	0			
Denmark	dknet	1	x	x	x
Denmark	minerva	0			

Finland	fuNET	1	x	x	
France	red	0			
Germany	dfn	1	x	x	x
Greece	ariadne	1	x	x	x
Hungary	hungarnet	1	x		
India	ernet	1	x		
Ireland	incip	1	x	x	
Italy	garr	2		x	x
Lithuania	litnet	0			
Luxemburg	restena	0			
Norway	uninett	3	x	x	
Poland	NASK	1	x		
Portugal	inesc	3	x	x	x
Slovenia	arnes	1	x	x	
Spain	iris	2	x	x	x
Sweden	sunet	2	x	x	
Switzerland	switch	2	x	x	
The Netherlands	surfnet	2	x	x	x
Tunisia	irsinet	1		x	
United Kingdom	janet	1	x	x	x
United States	esnet	2	x		
United States	xnren	1	x		

Legend:

WEP Well known Entry Point
Internet connection with TP0/RFC1006/TCP/IP to the Internet
Public X.25 connection with TP0/X.25 to the public X.25 service
Europanet X.25 connection with TP0/X.25 to Europanet

A.4 Mapping Tables

A tool developed during the COSINE-MHS service is used to automatically handle mapping table updates sent in by validated mapping table managers. During the reported period **21 valid updates** (2nd Quarter 1995: 45) and **11 invalid updates** (2nd Quarter 1995: 10) have been received. After reception of a valid update a new international mapping table is created and archived on the file server for retrieval. The tables are also actively distributed once every month according to an agreed schedule. All four tables together contain **5'808 mapping rules** (2nd Quarter 1995: 4'885).

Correct mapping tables and correct function of the tools is of major concern for the Project Team. Errors can lead to lots of routing and addressing problems immediately perceived by end users.

The Project Team handles problems if there are conflicting rules. This has not been necessary during the reported period. Since the address of the Project Team is included in the two Internet RFCs defining gateway behaviour and operation, two organisations approached the Project Team to understand the mapping registry procedures and to get the tables.

Annex B Routeable Domains through MailFLOW

C	ADMD	PRMD	O	OU1	Relaying network
AT	ADA	ACGATE			at.aconet
AT	ADA	ACONET			at.aconet
AT	ADA	ARCS			at.aconet
AT	ADA	JOANNEUM			at.aconet
AT	ADA	TU-GRAZ			at.aconet
AT	ADA	TU-WIEN			at.aconet
AT	ADA	UNI-GRAZ			at.aconet
AT	UMI-AT	ACGATE			at.aconet
BE	0	KBR			be.belnet
BE	RTT	ALCATEL-BELL			be.belnet
BE	RTT	ALCATEL-ETB			be.belnet
BE	RTT	BBL-TEST			be.belnet
BE	RTT	BELSPO			be.belnet
BE	RTT	CEC			be.belnet
BE	RTT	CENCLCBEL			be.belnet
BE	RTT	COMTECH			be.belnet
BE	RTT	EFTA-SURV-AUTH			be.belnet
BE	RTT	EUREKA			be.belnet
BE	RTT	EWOS			be.belnet
BE	RTT	IIHE			be.belnet

BE	RTT	JRC		be.belnet
BE	RTT	RMA-BRUSSELS		be.belnet
BE	RTT	SAITRH		be.belnet
CH	400NET	ABB	CHCRC	ch.switch
CH	400NET	ALCATEL		ch.switch
CH	400NET	CERBERUS		ch.switch
CH	400NET	ECMA		ch.switch
CH	400NET	FIRMENICH		ch.switch
CH	400NET	HICOM		ch.switch
CH	400NET	ILO		ch.switch
CH	400NET	LANDIS+GYR		ch.switch
CH	400NET	LANDISGYR		ch.switch
CH	400NET	NESTRD	NESTECCH	ch.switch
CH	400NET	OSILABMAIL		ch.switch
CH	400NET	PLUSNET		ch.switch
CH	400NET	RAIL	RAIL	ch.switch
CH	400NET	RAIL	SBB	ch.switch
CH	400NET	RS		ch.switch
CH	400NET	SANDOZ		ch.switch
CH	400NET	SWISSLIFE		ch.switch
CH	400NET	SWITCH		ch.switch
CH	400NET	SWX		ch.switch
CH	400NET	UBS		ch.switch
CH	400NET	XMIT		ch.switch
CH	400NET	ZELCOM		ch.switch

CH	ARCOM	ABB	CHCRC	ch.switch
CH	ARCOM	ALCATEL		ch.switch
CH	ARCOM	CERBERUS		ch.switch
CH	ARCOM	ECMA		ch.switch
CH	ARCOM	FIRMENICH		ch.switch
CH	ARCOM	HICOM		ch.switch
CH	ARCOM	ILO		ch.switch
CH	ARCOM	LANDIS+GYR		ch.switch
CH	ARCOM	NESTRD	NESTECCH	ch.switch
CH	ARCOM	OSILABMAIL		ch.switch
CH	ARCOM	PLUSNET		ch.switch
CH	ARCOM	RS		ch.switch

C	ADMD	PRMD	O	OU1	Relaying network
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CH	ARCOM	SANDOZ		ch.switch
CH	ARCOM	SOFFEX		ch.switch
CH	ARCOM	SWISSLIFE		ch.switch
CH	ARCOM	SWITCH		ch.switch
CH	ARCOM	UBS		ch.switch
CH	ARCOM	XMIT		ch.switch
CH	ARCOM	ZELCOM		ch.switch
CH	SWITCHGATE			ch.switch
CH	UMI-CH	ACGATE		at.aconet

DE	BUND400			de.dfn
DE	D400-GW			de.dfn
DE	D400			de.dfn
DE	DBP			de.dfn
DK	DK400	MINERVA	MAINZ	dk.dknet
DK	DK400	MINERVA	TDR	dk.dknet
DK	DK400	NATIVE		dk.dknet
ES		IRIS		es.iris
ES	0	ALCANET		es.iris
ES	0	BITNET		es.iris
ES	0	DATA-GENERAL		es.iris
ES	0	INTERNET		es.iris
ES	0	UUCP		es.iris
ES	MENSATEX	ERITEL		es.iris
ES	MENSATEX	IBERDROLA		es.iris
ES	MENSATEX	IBERMATICA		es.iris
ES	MENSATEX	INISEL		es.iris
ES	MENSATEX	IRIS		es.iris
ES	MENSATEX	JRC		es.iris
ES	MENSATEX	MAP		es.iris
ES	MENSATEX	MOP		es.iris
ES	MENSATEX	SITECAL		es.iris
ES	MENSATEX	Y-NET		es.iris
FI	FUMAIL			fi.fumail
FI	MAILNET	DANTE	MAILFLOW	ch.switch

FI	MAILNET	DANTE		gb.janet
FI	MAILNET	ISODE		gb.janet
GB		BNR		gb.janet
GB		LEVEL-7 LTD		gb.janet
GB		NEXOR		gb.janet
GB		NORTEL		gb.janet
GB		UK.AC		gb.janet
GB		UK.BL		gb.janet
GB	0	CRN:EW2309360		gb.janet
GB	0	HMG CCTA		gb.janet
GB	0	HMG DFE		gb.janet
GB	0	JANET	MAIL-RELAY	gb.janet
GB	ATTMAIL	ECMWF		gb.janet
GB	ATTMAIL	NEXOR		gb.janet
GB	CWMAIL	HMG HOME OFFICE	FEPD	gb.janet
GB	CWMAIL	HMG HOME OFFICE	RPU	gb.janet
GB	CWMAIL	NEXOR		gb.janet
GB	GOLD 400	HMG DTI		gb.janet
GB	GOLD 400	LEVEL-7 LTD		gb.janet
GB	GOLD 400	NET-TEL		gb.janet
GB	GOLD 400	UK.AC		gb.janet
GB	GOLD 400	Y-NET		gb.janet
GB	MARK400	NEXOR		gb.janet
GB	OSPMAIL	EUDRA		gb.janet
GB	TMAILUK	UK.AC		gb.janet

GR		ABC			gr.ariadne
GR		ARIADNE-T			gr.ariadne

C	ADMD	PRMD	O	OU1	Relaying network
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GR		CTINET			gr.ariadne
GR		DATAPLEX			gr.ariadne
GR		GSRT			gr.ariadne
GR		HITEC			gr.ariadne
GR		INTRANET			gr.ariadne
GR		PANTEION			gr.ariadne
GR		SUNMED			gr.ariadne
GR		ZENON			gr.ariadne
GR	0	NTUA			gr.ariadne
GR	0	Y-NET			gr.ariadne
HR	CRO400	CARNET	ETF	X400	hr.carnet
HR	CRO400	CARNET	IRB	X400	hr.carnet
HR	CRO400	CARNET	SRCE	X400	hr.carnet
HU	0	HUNGARNET			hu.hungarnet
IE	EIRMAIL400	EUROKOM			ie.incip
IE	EIRMAIL400	NRN			ie.incip
IE	EUNET	IEUNET	IEUNET		ie.incip
IN		ERNET			in.ernet
IT	GARR				it.garr

IT	MASTER400	ESA		it.garr
IT	MASTER400	SSGRR		it.garr
IT	MASTER400	Y-NET		it.garr
IT	MASTER400		ASSOCIATI	it.garr
IT	MASTER400		DLC	it.garr
IT	MASTER400		ROME	it.garr
IT	MASTER400		TELEO	it.garr
KR	X400-GW	AC		kr.konkuk
LT	LITPAK	LITNET		lt.litnet
NL	400NET	SURF		nl.surfnet
NL	400NET	Y-NET		nl.surfnet
NL	SWITCHGATE			ch.switch
NO		UNINETT		no.uninett
NO				no.uninett
NO	UNINETT			no.uninett
PL	NASK400	GDA		pl.nask
PL	NASK400	GLIWICE		pl.nask
PL	NASK400	INTERNET		pl.nask
PL	NASK400	KATOWICE		pl.nask
PL	NASK400	KRAKOW		pl.nask
PL	NASK400	LODZ		pl.nask
PL	NASK400	LUBLIN		pl.nask
PL	NASK400	POZNAN		pl.nask
PL	NASK400	SZCZECIN		pl.nask
PL	NASK400	TORUN		pl.nask

PL	NASK400	WAW		pl.nask
PL	NASK400	WROC		pl.nask
PT		INESCA		pt.rccn
PT		INESCB		pt.rccn
PT		INESCC		pt.rccn
PT		INESCN		pt.rccn
PT		INESC		pt.rccn
PT		UMINHO		pt.rccn
SE		SUNET		se.sunet
SE	SUNET			se.sunet
SI	MAIL			si.arnes
TN	PTT	IRSIT		tn.irsinet
US		ANL		us.esnet
US		COS		us.xnren
US		ESNET		us.esnet
US		XNREN		us.xnren
US	ATTMAIL	CDC		us.xnren

C	ADMD	PRMD	O	OU1	Relaying network

US	ATTMAIL	GOV+USDOE.G02			us.esnet
US	ATTMAIL	USDOE			us.esnet
US	INFONET	IUCNHQ	IUCNCH		ch.switch
US	INFONET	WWF	MISWP		ch.switch

US MCI HUGHES

us.xnren

US TELEMAIL

ARC

us.xnren