

# **T7 Disaster Recovery Concept 2021**

**Interface Configuration Details** 

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#### 1 Introduction

This document provides an overview of Deutsche Börse's disaster recovery concept for the T7 trading system. It contains the required technical background information as well as functional features and limitations to enable participants to continue trading in a DR situation.

Please note: Chapter 2 and 3 describe the general set up of <u>real DR scenarios</u> whereas chapter 5 focuses on the <u>DR test exercise</u>, describing which interfaces and functionalities are in scope of the disaster recovery test exercise and which are not.

Participation in the T7 disaster recovery test exercise is not only strongly recommended by Deutsche Börse but it is also seen as an essential part of the industry's disaster recovery readiness.

Therefore, Deutsche Börse kindly requests all Trading Participants to take part in the T7 disaster recovery test.

For an overall description of T7 network options, please refer to the document "N7 Network Access Guide", also available on the Eurex and Xetra website:

www.eurex.com -> Tech -> T7 Trading architecture -> Release 9.0 -> Network Access

<u>www.xetra.com</u> -> Technology -> T7 Trading architecture -> System documentation -> Release 9.0 -> Network Access

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# 2 Disaster recovery scenarios

### 2.1 Status quo

The following drawing describes the different connection possibilities to the primary data centre.

Three types of customer installations have to be considered:

- Customer installations inside the primary data centre (co-location)
- Customer installations connecting to the Frankfurt Access Point (customers in Germany)
- Customer installations connecting to remote Access Points (London, Chicago, etc.)

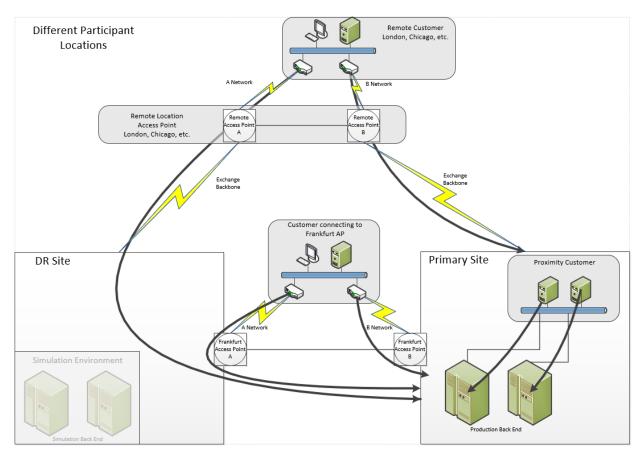


Figure 1: All three types of customer installations and their redundant connectivity to the T7 production back ends.

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#### 2.2 DR scenario 1 - Total loss of primary data centre

Figure 2 displays the result of a DR scenario that renders the whole facility of the primary data centre inaccessible.

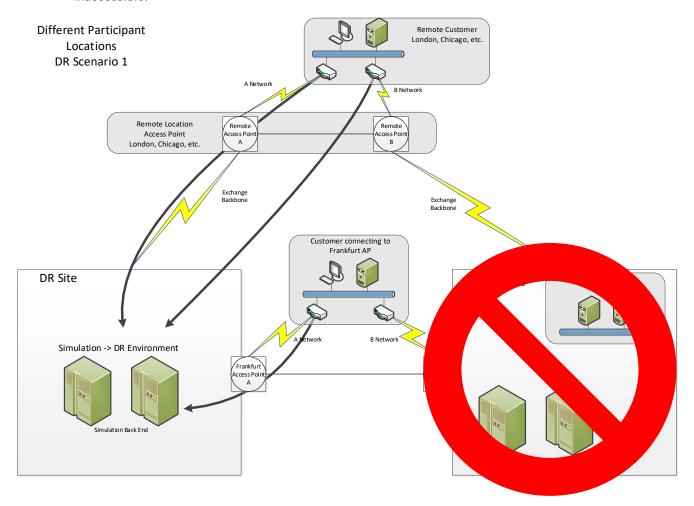


Figure 2: Disaster recovery scenario 1

In such a scenario, customer installations connecting to remote access points (i.e. London, Chicago, etc.) will continue to use both leased lines connecting them to the local access point. The local access point continues to use backbone lines to Frankfurt which are terminating in the DR data centre.

Customer installations connecting to the Frankfurt access point will be able to continue to use a single leased line connecting to the access point half located in the DR data centre.

Customer installations within the primary data centre are considered to be non-functional in this DR scenario.

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#### 2.3 DR scenario 2 - Partial loss of primary data centre, co-location still accessible

Figure 3 displays the result of a DR scenario that renders the T7 back end of the primary data centre (FR2) inaccessible. The co-location facility is still accessible. Co-location customers are still able to access the DR data centre.

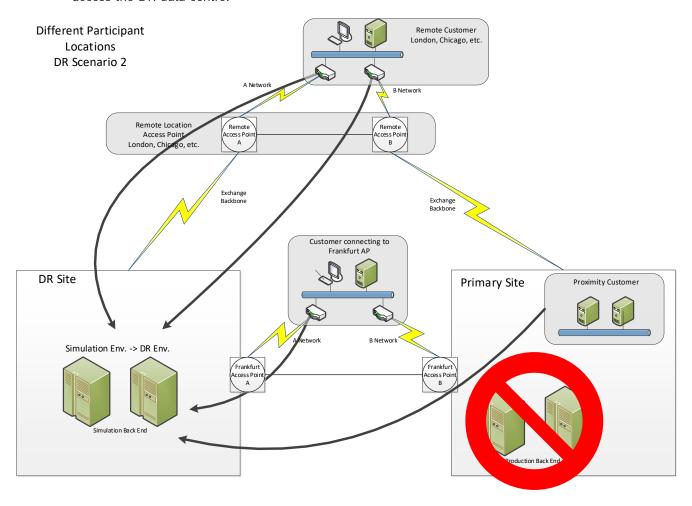


Figure 3: Disaster recovery scenario 2

In such a scenario, only the T7 back end located in the primary data centre will be considered to be non-functional.

Customer installations connecting to remote access points (i.e. London, Chicago, etc.) will continue to use both leased lines connecting them to the local access point. The local access point continues to use backbone lines to Frankfurt which are terminating in the DR data centre.

Customer installations connecting to the Frankfurt access point will be able to continue to use a single leased line connecting to the access point half located in the DR data centre.

Co-location customers will be able to continue to use their existing connection to the access point half located in the DR data centre.

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#### 3 General considerations

In a disaster recovery scenario, the T7 infrastructure regularly used for T7 simulation will be re-used to serve as T7 disaster recovery production infrastructure.

The switch of the back ends and the transfer of reference data will not be instantaneous but is expected to take up to two hours.

While most T7 interfaces will be available in the disaster recovery scenario, several conceptual differences to regular production exist and have to be accounted for.

#### 3.1 Functional

- Order books will be empty after switch to the DR environment.
- IDs (MatchStepID, EventID etc.) are reset and start from "1" again. Timestamps must be used to detect duplicate IDs.
- OrderIDs are based on timestamps, no further action required.
- Trades of the current business day will not be transferred to T7 DR System but can still be inquired from the respective Clearing systems.
- T7 DR system will start with an empty trade data base. All Trades reported in DR will start from 1 again. Timestamps must be used to detect duplicate trade IDs in the clearing systems.
- Intraday defined strategies will not be transferred to the T7 DR system.
- Number of partitions in DR is lower than in Production and therefore the product assignment to partitions will differ
- A new reference data file (RDF) will be produced during DR start up and will be published by the DR back end (as well as further intraday updates) onto the Common Report Engine into the respective production directory.

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#### 3.2 Configuration for DR

#### 3.2.1 Same as Production

- User IDs, ETI and FIX sessions will be used from production.
- All TCP and UDP Ports will be the same as for normal production.
- GUI Java WebStart Server will be the same as for normal production.
- Existing FIX Gateway implementation: A Side Subnet will be the same as for normal production.
- Stream-A multicast groups will be the same as for normal production for the following T7 broadcast interfaces:
  - Market Data Interface (MDI)
  - Enhanced Market Data Interface (EMDI)
  - Extended Market Data Service (EMDS)
  - o Market Signals (MS) derivatives market only
  - Reference Data Interface (RDI)
- Stream-A Rendezvous Point (RP) will be the same as for normal production.
- Stream-A Technical Heartbeat will be the same as for normal production.
- CRE A-Side Subnet will be the same as for normal production.

#### 3.2.2 Differ from Production

- ETI Trading Gateway and Partition Specific Gateway Subnets will differ from regular production.
- New FIX LF Gateway<sup>1</sup> Subnets will differ from regular production
- GUI Landing Pages and (Crypto) Proxy Servers will differ from regular production.
- Stream-A multicast groups for Enhanced Order Book Interface (EOBI) will differ from regular production.
- Source IP addresses will differ from regular production for the following T7 broadcast interfaces:
  - Market Data Interface (MDI)
  - Enhanced Market Data Interface (EMDI)
  - Enhanced Order Book Interface (EOBI)
  - Extended Market Data Service (EMDS)
  - Market Signals (MS) derivatives market only
  - o Reference Data Interface (RDI)

<sup>1</sup> The new FIX LF interface will be integrated closer into the T7 architecture by providing similar underlying infrastructure and functional/technical characteristics as the existing ETI interface, e.g. backward compatibility. The new FIX LF interface will initially be offered in parallel to the existing FIX Gateway interface and will, after individual transition periods, ultimately replace the existing FIX Gateway interface.

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#### 3.2.2.1 Enhanced Order Book Interface (EOBI)

Deutsche Börse offers the possibility to receive EOBI data in case of a Disaster Recovery scenario.

Customers connecting via leased line, who have access to the regular "A" multicast streams, will be able to receive EOBI data using dedicated EOBI multicast addresses (see <a href="chapter 4">chapter 4</a> for network details). Please make sure that your internal firewall settings are adjusted accordingly.

#### 3.3 Return to Production

After the DR scenario has been resolved, Deutsche Börse will communicate the procedure for reestablishing the connection to the production environment with adequate notification time.

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## 4 Disaster recovery network details

Due to the nature of the distributed T7 architecture, different interfaces will be configured in varying ways.

T7 interfaces whose production infrastructure is solely located in the primary data centre will switch to the simulation infrastructure and need to be accessed via simulation network addresses (i.e. ETI gateways).

Other T7 interfaces whose production infrastructure is distributed across both data centres will be able to continue to use the existing/remaining production infrastructure in the DR data centre (i.e. FIX gateways, multicast addresses).

On the following pages, you can find all available T7 interface connection details in a disaster recovery scenario.

#### 4.1 Ping test

Due to the previously described concept, all needed IP addresses (except EOBI multicast address range, see <a href="chapter 3.2.2.1">chapter 3.2.2.1</a>) are already in use either in T7 production environment or T7 simulation environment and accessible at any time. Because of that set-up it is not necessary to offer a dedicated ping test prior to the disaster recovery test exercise.

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# 4.2 T7 network details derivatives markets

#### 4.2.1 Eurex T7

The following tables summarize all available interface connection details in a disaster recovery scenario for T7 Eurex.

Interface	Connection option	URL / IP addresses	IP subnets	Ports	Protocol
g	Internet	http://webgui.eurexchange.com/emergency		80 / 443	TCP/IP
GUI Landing Page	Lanced English	http://webgui.vpn.eurexchange.com/emergency		80 / 443	TCP/IP
GU	Leased line	http://webgui.vpn.eurexchange.com/emergency/fqdn.html		80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.190	-	80 / 443	TCP/IP
Ja Web	Leased line	193.29.93.173	193.29.93.160/28	80 / 443	TCP/IP
GUI (Crypto) Proxies	Internet	193.29.90.235	193.29.90.224/27	80	TCP/IP
	memet	193.29.90.236	193.29.90.224/27	60	101711
G	Leased line - side A	193.29.89.225	193.29.89.224/28	80 / 8089	TCP/IP
9	Leased line - side B	193.29.95.225	193.29.95.224/28	00 / 0009	TCF/IF
	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
6	PS trading GW - Partition 1 PS trading GW - Partition 2 PS trading GW - Partition 3	193.29.89.129 (active) 193.29.89.130 (active) 193.29.89.154 (active)	193.29.89.161 (stand-by) 193.29.89.162 (stand-by) 193.29.89.187 (stand-by)	19043	TCP/IP
	LF trading gateways	193.29.89.65 193.29.89.66	193.29.89.97 193.29.89.98	19006	TCP/IP
FIX Gateway (old)	Connection option	IP addresses	IP subnets	Ports	Protocol
Gate	Leased line - side A	90.150.253.31	90.150.253.0 / 24	Individually assigned	TCP/IP
FIX	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.89.65	193.29.89.97	19024	TCP/IP
ast ces	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	193.29.91.252/32	-		
d ï	Technical heartbeat Service A only	-	59086	5	

Table 1: Eurex T7 network details in DR scenario, part 1/2

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	Description	Multicast groups Service A	Ports		
	20000	224.0.50.64-65	US-allowed products	US-restricted products	
M	Multicast groups	224.0.50.67-74 224.0.29.72-76	59000	59032	
	Source networks	193.29.89.192/28	-		
			Ports		
	Description	Multicast groups Service A	US-allowed products	US-restricted products	
EMDI	Multicast groups	224.0.50.2-9 224.0.50.12-63 224.0.29.2-55	Snapshot: 59000 Incremental: 59001	Snapshot: 59032 Incremental: 59033	
	Source networks	193.29.89.0/27	-		
			Dowle		
	Description	Multicast groups Service A	US-allowed products	US-restricted products	
EOBI	Multicast groups <sup>1</sup>	224.0.169.32-63 224.0.169.144-159 224.0.172.128-191	Snapshot: 59000 Incremental: 59001	Snapshot: 59032 Incremental: 59033	
	Source networks	193.29.89.0/27	-		
	<sup>1</sup> Multicast address range of EC	OBI is dedicated to Disaster Recovery	Environment only (no re-use of product	ion address range)	
nals	Description	Multicast groups Service A	US-allowed products	US-restricted products	
	Reference Data	224.0.114.1	59000	-	
Market Signals	Eurex IOC liquidity Indicator for Options	224.0.114.128	59001	59033	
$\Xi$	Risk Alerts	224.0.114.134	59001	59033	
	Source networks	193.29.89.0/27	-		
			Ports		
vice	Description	Multicast groups Service A	US-allowed products	US-restricted products	
ta Sei	Ticker Feed	224.0.50.75			
Extended Market Data Service (EMDS)	Settlement prices	224.0.50.77	59000 Replay: 59001	59032 Replay: 59033	
i Mar (Er	Intraday open interest data	224.0.50.78			
endec	Eurex T7 trades	224.0.50.79	Replay: 59001	Replay: 59033	
Ä	Source networks	193.29.89.192/28	-		
	Description	Mutlicast groups service A	Ports		
RDI	Multicast groups	224.0.50.0	Snapshot: 59	9098	
<u>~</u>	Multicast groups	224.0.50.1	Incremental: 5	59099	
	Source networks	193.29.89.192/28	-		
t				Ports	
Common Report Engine	Connection option	Gateway IP address	IP subnets	Public Particip.	
mon Re	Internet	193.29.90.132	-	2221 2222	
F ₩					

Table 2: Eurex T7 network details in DR scenario, part 2/2

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#### 4.2.2 EEX T7

The following tables summarize all available interface connection details in a disaster recovery scenario for the European Energy Exchange (EEX).

Interface	Connection option	URL / IP addresses		Ports	Protocol
ding	Internet	http://webgui.eurexchange.com/emer	rgency/eex	80 / 443	TCP/IP
GUI Landing Page	Leased line	http://webgui.vpn.eurexchange.com/	emergency/eex	80 / 443	TCP/IP
D Leased lille		http://webgui.vpn.eurexchange.com/emergency/eex/fqdn.html		80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.190	-	80 / 443	TCP/IP
Ja, Web\$	Leased line	193.29.93.173	193.29.93.160/28	80 / 443	TCP/IP
တ္သ		193.29.90.235	100 00 00 00 4/07		T00//0
GUI (Crypto)Proxies	Internet 193.29.90.224/27 193.29.90.236	80	TCP/IP		
GUI rypto)P	Leased line - side A	193.29.89.225	193.29.89.224/28	00 / 0000	TOD/ID
2)	Leased line - side B	193.29.95.225	193.29.95.224/28	80 / 8089	TCP/IP
_	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
<b>.</b>	LF trading gateways	193.29.89.65 193.29.89.66	193.29.89.97 193.29.89.98	19006	TCP/IP
× way d)	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.150.253.31	90.150.253.0 / 24	Individually assigned	TCP/IP
FIX	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.89.65	193.29.89.97	19024	TCP/IP
dcast	Description	Rendezvous points	Ports		
T7 broadcast interfaces	Rendezvous points Service A only	193.29.91.252/32			
All T,	Technical heartbeat Service A only	-	59086		

Table 3: EEX T7 network details in DR scenario, part 1/2

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	Description	Multipost groups Comics A	Ports	
	Description	Multicast groups Service A	US-allowed products	US-restricted products
M	Multicast groups	224.0.50.66	59000	59032
	Source networks	193.29.89.192/28	-	-
	Description	Multicast groups Service A	US-allowed products	US-restricted products
EMDI	Multicast groups	224.0.50.10 224.0.50.11	Snapshot: 59000 Incremental: 59001	Snapshot: 59032 Incremental: 59033
	Source networks	193.29.89.0/27	-	
	Description	Mutlicast groups service A	Ports	
	· ·		. 5.135	
	Multicast groups	224.0.29.0	Snapshot: 5	9098
RDI				
RDI	Multicast groups	224.0.29.0	Snapshot: 59	
RDI	Multicast groups  Multicast groups	224.0.29.0 224.0.29.1	Snapshot: 59	59099
	Multicast groups  Multicast groups	224.0.29.0 224.0.29.1	Snapshot: 59	
Common Report Engine	Multicast groups  Multicast groups  Source networks	224.0.29.0 224.0.29.1 193.29.89.192/28	Snapshot: 59 Incremental: 9 -	59099 Ports

Table 4: EEX T7 network details in DR scenario, part 2/2

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# 4.3 T7 network details cash markets

#### 4.3.1 Xetra T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Xetra T7 (XETR).

Interface	Connection option	URL / IP addresses		Ports	Protocol
Interrace	Connection option	URL / IP addresses		Ports	Protocol
ding	Internet	http://webgui.xetra.com/emergency		80 / 443	TCP/IP
GUI Landing Page	Leased line	http://webgui.vpn.xetra.com/emergen	<u>cy</u>	80 / 443	TCP/IP
GU	Leaseu IIIIe	http://webgui.vpn.xetra.com/emergen	cy/fqdn.html	80 / 443	TCP/IP
Java ebSta	Internet	193.29.90.189	-	80 / 443	TCP/IP
	Leased line	193.29.93.174	-	80 / 443	TCP/IP
xies	lata and	193.29.90.233	102.00.00.004/07	80	TOD/ID
GUI (Crypto)Proxies	Internet	193.29.90.234	193.29.90.224/27	80	TCP/IP
(Cryp	Leased line - side A	193.29.94.225	193.29.94.224/29	90 / 9090	TCP/IP
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	80 / 8089	TOF/IF
	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
E	PS trading GW - Partition 30 PS trading GW - Partition 31	193.29.94.129 (active) 193.29.94.130 (active)	193.29.94.161 (stand-by) 193.29.94.162 (stand-by)	19043 19043	TCP/IP TCP/IP
	LF trading gateways	193.29.94.65	193.29.94.97	19006	TCP/IP
FIX teway old)	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
XI.	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
st	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252	-		
A bro inte	Technical heartbeat Service A only	-	59086	5	

Table 5: Xetra T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
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	Description	Multicast groups Service A	Ports		
M	Multicast groups	224.0.161.16 - 22	59000		
	Source networks	193.29.94.192/28	-		
	Description	Multicast groups Service A	Ports		
EMDI	Multicast groups	224.0.160.0 - 63	Snapshot: 59 Incremental: 5		
	Source networks	193.29.94.0/27	-		
_	Description	Multicast groups Service A	Ports		
EOBI	Multicast groups <sup>1</sup>	224.0.173.128-191	Snapshot: 59000 Incremental: 59001		
	Source networks			on address range)	
S S	Description	Multicast groups Service A	Ports	on address lange,	
arket	Description	Multicast groups Service A	59000		
₩ ±	All Trade Prices (ATP)	224.0.161.64	39000		
G G	All Trade Frices (ATF)	22 1.0.101.0 1	Replay: 590	001	
tended I	Ticker feed	224.0.161.31	Replay: 590 59000	001	
Extended Market Data Service (EMDS)	,			001	
Extended I Data Service	Ticker feed Source networks	224.0.161.31 193.29.94.192/28		001	
Extended   Data Service	Ticker feed	224.0.161.31	59000 - Ports		
Extended I Data Service	Ticker feed Source networks	224.0.161.31 193.29.94.192/28	59000	9098	
	Ticker feed Source networks  Description	224.0.161.31 193.29.94.192/28 Mutlicast groups service A	59000  Ports  Snapshot: 59	9098	
RDI	Ticker feed Source networks  Description  Multicast groups Source networks	224.0.161.31 193.29.94.192/28 Mutlicast groups service A 224.0.161.0 193.29.94.192/28	59000  Ports Snapshot: 59 Incremental: 5	9098 39099	
RDI	Ticker feed Source networks  Description  Multicast groups	224.0.161.31 193.29.94.192/28 Mutlicast groups service A 224.0.161.0	59000  Ports  Snapshot: 59	9098	Particip.
	Ticker feed Source networks  Description  Multicast groups Source networks	224.0.161.31 193.29.94.192/28 Mutlicast groups service A 224.0.161.0 193.29.94.192/28	59000  Ports Snapshot: 59 Incremental: 5	9098 9099 Ports	

Table 6: Xetra T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
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#### 4.3.2 Börse Frankfurt T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Börse Frankfurt T7 (XFRA).

Interface	Connection option	URL / IP addresses		Ports	Protocol
ing	Internet	http://webgui.xetra.com/emergenc	y/xfra	80 / 443	TCP/IP
GUI Landing Page	Lanced Bas	http://webgui.vpn.xetra.com/emer	http://webgui.vpn.xetra.com/emergency/xfra		TCP/IP
Leased line		http://webgui.vpn.xetra.com/emergency/xfra/fqdn.html		80 / 443	TCP/IP
va Start	Internet	193.29.90.189	-	80 / 443	TCP/IP
Java WebStart	Leased line	193.29.93.174	-	80 / 443	TCP/IP
xies		193.29.90.253	100 00 00 00 1/07	00	T00//D
o)Pro	Internet	193.29.90.254	193.29.90.224/27	82	TCP/IP
GUI (Crypto)Proxies	Leased line - side A	193.29.94.227	193.29.94.224/29	00 / 0001	TOD/ID
GUI	Leased line - side B	193.29.94.235	193.29.94.232/29	82 / 8091	TCP/IP
Б	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	LF trading gateways	193.29.94.66	193.29.94.98	16006	TCP/IP
ay	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.196	90.152.253.0/24	Individually assigned	TCP/IP
FIX	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.94.66	193.29.94.98	16024	TCP/IP
ast es	Description	Rendezvous points		Ports	
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252		-	
brd	Technical heartbeat Service A only	-		56086	

Table 7: Börse Frankfurt T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
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	Description	Multicast groups Service A	Ports		
MD	Multicast groups	224.0.161.40-47	56000		
	Source networks	193.29.94.192/28	-		
	Description	Multicast groups Service A	Ports		
EOBI	Multicast groups <sup>1</sup>	224.0.173.224-239	Snapshot: 56 Incremental: 5		
	Source networks	193.29.94.0/27	-		
	<sup>1</sup> Multicast address range of EC	DBI is dedicated to Disaster Recovery E	Environment only (no re-use of production address range)		
d ata ADS)	Description	Multicast groups Service A	Ports		
Extended Market Data Service (EMDS)	All Trade Prices (ATP)	224.0.161.72-75	56000 Replay: 560	001	
E Ma Servi	Source networks	193.29.94.192/28	-		
	Description	Mutlicast groups service A	Ports		
RDI	Multicast groups	224.0.161.9	Snapshot: 56 Incremental: 5		
	Source networks	193.29.94.192/28	-		
on gine	Connection option	Gateway IP address	IP subnets	Ports Public	Particip.
Common Report Engine	Internet	193.29.90.132	-	2221	2222
Rep	Leased line - side A	193.29.90.67	193.29.90.64/27	2221	2222

Table 8: Börse Frankfurt T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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#### 4.3.3 Vienna T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Vienna T7.

Interface	Connection option	URL / IP addresses		Ports	Protocol
ding	Internet	http://webgui.xetra.com/emergency/	http://webgui.xetra.com/emergency/xvie		TCP/IP
GUI Landing Page	Leased line	http://webgui.vpn.xetra.com/emerge	http://webgui.vpn.xetra.com/emergency/xvie		TCP/IP
GU	Leaseu IIIIe	http://webgui.vpn.xetra.com/emergency/xvie/fqdn.html		80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Ja Web	Leased line	193.29.93.174	-	80 / 443	TCP/IP
oxies	Internet	193.29.90.233	100 00 00 00 00	80	TCP/IP
ito) Pro	Internet	193.29.90.234	193.29.90.224/27	80	TCP/IP
GUI (Crypto) Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	80 / 8089	TCP/IP
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	807 8089	TCF/IF
=	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
vay	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
×I:	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
st	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252	-		
brd int	Technical heartbeat Service A only	-	59086	5	

Table 9: Vienna T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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	Description	Multicast groups Service A	Ports	
M	Multicast groups	224.0.161.32-36	59000	
	Source networks	193.29.94.192/28	-	
	Description	Multicast groups Service A	Ports	
EMDI	Multicast groups	224.0.160.64-73	Snapshot: 59000 Incremental: 59001	
	Source networks	193.29.94.0/27	-	
	Description	Multicast groups Service A	Ports	
EOBI	Multicast groups <sup>1</sup>	224.0.173.192-201	Snapshot: 59000 Incremental: 59001	
	Source networks	193.29.94.0/27	-	
	<sup>1</sup> Multicast address range of EC	BI is dedicated to Disaster Recovery E	nvironment only (no re-use of production address range)	
et IDS)	Description	Multicast groups Service A	Ports	
Extended Market Data Service (EMDS)	All Trade Prices (ATP)	224.0.161.68	59000 Replay: 59001	
Servi	Ticker feed	224.0.161.39	59000	
Ext	Source networks	193.29.94.192/28	-	
	Description	Mutlicast groups service A	Ports	
RDI	Multicast groups	224.0.161.1	Snapshot: 59098 Incremental: 59099	
	Source networks	193.29.94.192/28	<u>-</u>	

Table 10: Vienna T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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#### 4.3.4 Malta T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Malta T7.

Interface	Connection option	URL / IP addresses		Ports	Protocol
ling	Internet	http://webgui.xetra.com/emergency/xmal		80 / 443	TCP/IP
GUI Landing Page	Leased line	http://webgui.vpn.xetra.com/emerger	http://webgui.vpn.xetra.com/emergency/xmal		TCP/IP
GU	Leaseu IIIIe	http://webgui.vpn.xetra.com/emergency/xmal/fqdn.html		80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Ja Web	Leased line	193.29.93.174	-	80 / 443	TCP/IP
oxies	Internet	193.29.90.233	100 00 00 00 00	80	TCD/ID
to)Pro	internet	193.29.90.234	193.29.90.224/27	80	TCP/IP
GUI (Crypto)Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	80 / 8089	TCP/IP
gui	Leased line - side B	193.29.94.233	193.29.94.232/29	007 0003	101711
<b>E</b>	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
× way	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
FIX	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
ast ses	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252	-		
<u> </u>	Technical heartbeat Service A only	-	59086	5	

Table 11: Malta T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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	Description	Multicast groups Service A	Ports		
MDI	Multicast groups	224.0.161.50-51	59000		
	Source networks	193.29.94.192/28	-		
	Description	Multicast groups Service A	Ports		
EMDI	Multicast groups	224.0.160.114-115	Snapshot: 59 Incremental: 5		
	Source networks	193.29.94.0/27	-		
	Description	Multicast groups Service A	Ports		
EOBI	Multicast groups <sup>1</sup>	224.0.173.242-243	Snapshot: 59 Incremental: 5		
	Source networks	193.29.94.0/27	-		
	<sup>1</sup> Multicast address range of EC	BI is dedicated to Disaster Recovery E	Environment only (no re-use of production address range)		
ed ata ADS)	Description	Multicast groups Service A	Ports		
Extended Market Data Service (EMDS)	All Trade Prices (ATP)	224.0.161.77	59000 Replay: 590	001	
Ma Serv	Source networks	193.29.94.192/28	-		
	Description	Mutlicast groups service A	Ports		
RDI	Multicast groups	224.0.161.8	Snapshot: 59 Incremental: 5		
	Source networks	193.29.94.192/28	-		
				Dank	
on gine	Connection option	Gateway IP address	IP subnets	Ports Public	Particip.
Common Report Engine	Internet	193.29.90.132	-	2221	2222
Cc Repo	Leased line - side A	193.29.90.67	193.29.90.64/27		

Table 12: Malta T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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# 4.3.5 Bulgaria T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Bulgaria T7.

Interface	Connection option	URL / IP addresses		Ports	Protocol
age	Internet	http://webgui.xetra.com/emergency/xbul		80 / 443	TCP/IP
GUI Landingpage	Lanced Eng	http://webgui.vpn.xetra.com/emergency/xbul		80 / 443	TCP/IP
Leased line		http://webgui.vpn.xetra.com/emergency/xbul/fqdn.html		80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Jav	Leased line	193.29.93.174	-	80 / 443	TCP/IP
xies	latan at	193.29.90.233		00	TOD/ID
to) Pro	Internet	193.29.90.234	193.29.90.224/27	80	TCP/IP
GUI (Crypto) Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	00 / 0000	TCP/IP
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	80 / 8089	TGF/IF
E E	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
× ×	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
New FIX LF interface	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New L intel	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
+ (	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points	185.102.253.252			
Al brog inte	Service A only Technical heartbeat Service A only	-	59086	5	

Table 13: Bulgaria T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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	Description	Multicast groups Service A	Ports		
MD	Multicast groups	224.0.161.48	59000		
	Source networks	193.29.94.192/28	-		
	Description	Multicast groups Service A	Ports		
EMDI	Multicast groups	224.0.160.112-113	Snapshot: 59 Incremental: 5		
	Source networks	193.29.94.0/27	-		
	D	Multipart			
	Description	Multicast groups Service A	Ports		
EOBI	Multicast groups <sup>1</sup>	224.0.173.240-241	Snapshot: 59 Incremental: 5		
	Source networks	193.29.94.0/27	-		
	<sup>1</sup> Multicast address range of E0	OBI is dedicated to Disaster Recovery E	nvironment only (no re-use of producti	on address range)	
<u> </u>					
ket ADS	Description	Multicast groups Service A	Ports		
d Market ce (EMD§	Description  All Trade Prices (ATP)	Multicast groups Service A 224.0.161.76	Ports 59000 Replay: 590	001	
ended Market Service (EMDS			59000	001	
Extended Market Data Service (EMDS)	All Trade Prices (ATP)	224.0.161.76	59000 Replay: 590	001	
Extended Market Data Service (EMDS	All Trade Prices (ATP) Ticker feed	224.0.161.76 224.0.161.49	59000 Replay: 590	001	
Extended Market Data Service (EMDS	All Trade Prices (ATP) Ticker feed	224.0.161.76 224.0.161.49	59000 Replay: 590	001	
Extended Market Data Service (EMDS)	All Trade Prices (ATP)  Ticker feed  Source networks	224.0.161.76 224.0.161.49 193.29.94.192/28	59000 Replay: 590 59000	9098	
_	All Trade Prices (ATP) Ticker feed Source networks  Description	224.0.161.76 224.0.161.49 193.29.94.192/28  Mutlicast groups service A	59000 Replay: 590 59000 - Ports Snapshot: 59	9098	
RDI	All Trade Prices (ATP) Ticker feed Source networks  Description Multicast groups	224.0.161.76 224.0.161.49 193.29.94.192/28 Mutlicast groups service A 224.0.161.7	59000 Replay: 590 59000 - Ports Snapshot: 59	9098	
_	All Trade Prices (ATP) Ticker feed Source networks  Description Multicast groups Source networks	224.0.161.76 224.0.161.49 193.29.94.192/28  Mutlicast groups service A 224.0.161.7 193.29.94.192/28	59000 Replay: 590 59000  - Ports Snapshot: 59 Incremental: 59	9098 59099 Ports	Particip.

Table 14: Bulgaria T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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# 4.3.6 Budapest T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Budapest T7.

	scenario foi budapest	. , .			
Interface	Connection option	URL / IP addresses		Ports	Protocol
guil	Internet	http://webgui.xetra.com/emergency/	x <u>bud</u>	80 / 443	TCP/IP
GUI Landing Page	Leased line	http://webgui.vpn.xetra.com/emerge	ncy/xbud	80 / 443	TCP/IP
GUI	Leased line	http://webgui.vpn.xetra.com/emerge	ncy/xbud/fqdn.html	80 / 443	TCP/IP
Java ebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Java WebStart	Leased line	193.29.93.174	-	80 / 443	TCP/IP
xies	lata and	193.29.90.233	102.00.00.004/07	00	TOD/ID
to)Pro	Internet	193.29.90.234	193.29.90.224/27	80	TCP/IP
GUI (Crypto)Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	90 / 9090	T00#5
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	80 / 8089	TCP/IP
H	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
way	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
× ĕ	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	Gateway type	II autesses Stue A	ii autesses stue b	roits	riotocoi
Ne	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
ti S	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points	185.102.253.252	_		
Al brog	Service A only Technical heartbeat Service A only	-	59086	5	

Table 15: Budapest T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
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	Description	Multicast groups Service A	Ports
MD	Multicast groups	224.0.161.54-55	59000
	Source networks	193.29.94.192/28	-
	Description	Multicast groups Service A	Ports
EMDI	Multicast groups	224.0.160.120-123	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	Description	Multicast groups Service A	Ports
EOBI	Multicast groups <sup>1</sup>	224.0.173.248-251	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	<sup>1</sup> Multicast address range of EO	BI is dedicated to Disaster Recovery E	nvironment only (no re-use of production address range)
	Description	Mutlicast groups service A	Ports
RDI	Multicast groups	224.0.161.4	Snapshot: 59098 Incremental: 59099
	Source networks	193.29.94.192/28	-

Table 16: Budapest T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
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# 4.3.7 Ljubljana T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Ljubljana T7

	1				
Interface	Connection option	URL / IP addresses		Ports	Protocol
ding	Internet	http://webgui.xetra.com/emergency/xlju		80 / 443	TCP/IP
l Landing Page	Leased line	http://webgui.vpn.xetra.com/emergen	ncy/xlju	80 / 443	TCP/IP
GUI	Leased lille	http://webgui.vpn.xetra.com/emergen	ocy/xlju/fqdn.html	80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Jа Web	Leased line	193.29.93.174	-	80 / 443	TCP/IP
xies	lata and	193.29.90.233	102.00.00.004/07	00	TOP/ID
to)Pro	Internet	193.29.90.234	193.29.90.224/27	80	TCP/IP
GUI (Crypto)Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	00 / 0000	TODUD
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	80 / 8089	TCP/IP
Ш	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
FIX teway old)	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
FIX	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
ist es	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252	-		
brd int	Technical heartbeat Service A only	-	59086	5	

Table 17: Ljubljana T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
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	Description	Multicast groups Service A	Ports
MDI	Multicast groups	224.0.161.56-57	59000
	Source networks	193.29.94.192/28	-
	Description	Multicast groups Service A	Ports
EMDI	Multicast groups	224.0.160.124-125	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	Description	Multicast groups Service A	Ports
EOBI	Multicast groups <sup>1</sup>	224.0.173.252-253	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	<sup>1</sup> Multicast address range of EO	BI is dedicated to Disaster Recovery E	nvironment only (no re-use of production address range)
	Description	Mutlicast groups service A	Ports
RDI	Multicast groups	224.0.161.5	Snapshot: 59098 Incremental: 59099
	Source networks	193.29.94.192/28	-

Table 18: Ljubljana T7 network details in DR scenario, part 2/2

Gruppe Deutsche Börse	Deutsche Börse AG
T7 Disaster Recovery Concept 2021	Version 1.0
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# 4.3.8 Prague T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Prague T7.

Interface	Connection option	URL / IP addresses		Ports	Protocol
ing	Internet	Internet http://webgui.xetra.com/emergency/xprg		80 / 443	TCP/IP
GUI Landing Page		http://webgui.vpn.xetra.com/emerge	ncy/xprg	80 / 443	TCP/IP
GUI	Leased line	http://webgui.vpn.xetra.com/emerge	ncy/xprg/fqdn.html	80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Ja Web	Leased line	193.29.93.174	-	80 / 443	TCP/IP
oxies	Internet	193.29.90.233	193.29.90.224/27	80	TCP/IP
oto) Pro	memet	193.29.90.234	193.29.90.224/27	80	TOF/IF
GUI (Crypto) Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	80 / 8089	TCP/IP
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	80 / 8089	
E	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
FIX teway old)	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
× ë	Cataway type	IP adresses Side A	IP adresses Side B	Ports	Brotocol
New FIX LF interface	Gateway type	ir adresses Side A	IP adresses Side B	Ports	Protocol
Ne inte	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
s	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252	-		
A bro inte	Technical heartbeat Service A only	-	59086	õ	

Table 19: Prague T7 network details in DR scenario, part 1/2

Gruppe Deutsche Börse	Deutsche Börse AG
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	Description	Multicast groups Service A	Ports
MDI	Multicast groups	224.0.161.52-53	59000
	Source networks	193.29.94.192/28	-
	Description	Multicast groups Service A	Ports
EMDI	Multicast groups	224.0.160.116-119	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	Description	Multicast groups Service A	Ports
EOBI	Multicast groups <sup>1</sup>	224.0.173.244-247	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	<sup>1</sup> Multicast address range of EOBI is dedicated to Disaster Recovery Environment only (no re-use of production address range)		
RDI	Description	Mutlicast groups service A	Ports
	Multicast groups	224.0.161.3	Snapshot: 59098 Incremental: 59099
	Source networks	193.29.94.192/28	-

Table 20: Prague T7 network details in DR scenario, part 2/2

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# 4.3.9 Zagreb T7

The following tables summarize all available interface connection details in a disaster recovery scenario for Zagreb T7.

Interface	Connection option	URL / IP addresses		Ports	Protocol
ding	Internet	http://webgui.xetra.com/emergency/	xzag	80 / 443	TCP/IP
Internet  Leased line		http://webgui.vpn.xetra.com/emergency/xzag		80 / 443	TCP/IP
		http://webgui.vpn.xetra.com/emergency/xzag/fqdn.html		80 / 443	TCP/IP
Java WebStart	Internet	193.29.90.189	-	80 / 443	TCP/IP
Jа Web	Leased line	193.29.93.174	-	80 / 443	TCP/IP
oxies	Internet	193.29.90.233	193.29.90.224/27	80	TCD/ID
to) Pro	memet	193.29.90.234	193.29.90.224/27	60	TCP/IP
GUI (Crypto) Proxies	Leased line - side A	193.29.94.225	193.29.94.224/29	80 / 8089 TCP/II	TCP/IP
GUI	Leased line - side B	193.29.94.233	193.29.94.232/29	80 / 8089	TOF/IF
Б	Gateway type	IP subnets Side A	IP subnets Side B	Ports	Protocol
Ш	Trading gateways (LF only)	193.29.94.65	193.29.94.97	19006	TCP/IP
FIX teway old)	Connection option	IP addresses	IP subnets	Ports	Protocol
FIX Gateway (old)	Leased line - side A	90.152.253.41	90.152.253.0/24	Individually assigned	TCP/IP
× e	Gateway type	IP adresses Side A	IP adresses Side B	Ports	Protocol
New FIX LF interface	LF trading gateways	193.29.94.65	193.29.94.97	19024	TCP/IP
=				1502	
st 3S	Description	Rendezvous points	Ports		
All T7 broadcast interfaces	Rendezvous points Service A only	185.102.253.252	-		
brd	Technical heartbeat Service A only	-	59086	5	

Table 21: Zagreb T7 network details in DR scenario, part 1/2

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	Description	Multicast groups Service A	Ports
M	Multicast groups	224.0.161.58-59	59000
	Source networks	193.29.94.192/28	-
	Description	Multicast groups Service A	Ports
EMDI	Multicast groups	224.0.160.126-127	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	Description	Multicast groups Service A	Ports
EOBI	Multicast groups <sup>1</sup>	224.0.173.254-255	Snapshot: 59000 Incremental: 59001
	Source networks	193.29.94.0/27	-
	<sup>1</sup> Multicast address range of EOBI is dedicated to Disaster Recovery Environment only (no re-use of production address range)		nvironment only (no re-use of production address range)
	Description	Mutlicast groups service A	Ports
RDI	Multicast groups	224.0.161.6	Snapshot: 59098 Incremental: 59099
	Source networks	193.29.94.192/28	-

Table 22: Zagreb T7 network details in DR scenario, part 2/2

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#### 5 Disaster recovery test script

Deutsche Börse's disaster recovery test exercises will be performed typically twice a year on a weekend (usually Saturday).

These exercises will be conducted for the markets Eurex, Xetra and Börse Frankfurt. Please inquire with the respective partner exchange to find out whether and to what extent it participates.

During a DR test exercise, production reference data will be used, including User IDs, T7 GUI SSH keys and ETI sessions.

Trade date for the DR test exercise is DR test date -1 business day (e.g. DR test date: 17.04.2021 > trade date: 16.04.2021)

<u>Please note:</u> Changes done to these reference data will <u>not</u> be copied back to production after the test. It is not advised to perform any changes to this data during the test exercise. Any order book or trading information created during the DR test exercise will <u>not</u> be transferred back to production.

#### 5.1 Disaster recovery test scenario

The DR test scenario will simulate an outage of the regular T7 production system which is hosted in the primary data centre facility (FR2).

However, this DR test scenario will not simulate a complete data centre outage, which means that also co-location customers will be able to attend on the test.

In such a disaster recovery scenario, T7 infrastructure regularly used for T7 simulation will be used to serve as DR production infrastructure.

#### 5.2 Schedule of the disaster recovery test

Start DR test: 14:00h CE(S)T

End DR test: 16:00h CE(S)T

Start re-connection test: 17:00h CE(S)T

End re-connection test: 18:00h CE(S)T

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## 5.3 Success criteria for the disaster recovery test

The disaster recovery test exercise can be regarded as successful when

- a message "Connection Test #####<sup>2</sup> <hh:mm:ss>" appears with an increasing sequence number in the market news view (news board) of the T7 Trader GUI or the T7 Admin GUI <u>or</u> a successful session or trader login via ETI has been performed.
- MDI/EMDI/EOBI/RDI heartbeats have been received.

### 5.4 DR test exercise: Availability market data

During the disaster recovery test exercise, participants will be able to receive market data via the following interfaces (see <u>chapter 4</u> for network details):

- T7 Trader GUI
- T7 Market Data Service (MDI)
- T7 Enhanced Market Data Service (EMDI) not applicable for XFRA
- T7 Enhanced Order Book Interface (EOBI)

<u>Please note:</u> Unlike the other market data interfaces, EOBI will be accessible via dedicated multicast addresses. Please make sure that your internal firewall settings are adjusted accordingly (see <u>chapter 3.2.2.1</u> for details).

#### 5.5 DR test exercise: Availability reference data

During the disaster recovery test exercise, participants will be able to

- read reference data via Reference Data Interface (RDI) (see <u>chapter 4</u> for network details).
- receive the Reference Data File (RDF).

<u>Please note:</u> Unlike to a real DR situation, the RDF will <u>not</u> be transferred via Common Report Engine (CRE) but only provided by your Technical Key Account Manager via email on request.

<sup>&</sup>lt;sup>2</sup> Depends on the respective exchange (Eurex, Xetra, etc)

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#### 5.6 DR test exercise: Enhanced Transaction Interface (ETI)

During the disaster recovery test exercise, participants have to

- use productive ETI sessions
- use productive ETI session/trader logins

Participants will be able to

- receive newsboard messages
- access all instruments
- add orders/quotes
- modify orders/quotes
- delete orders/quotes
- match orders/quotes (not applicable for XFRA)

# 5.7 DR test exercise: New FIX LF interface (back office session)

During the disaster recovery test exercise, participants have to

- use productive FIX sessions
- use productive FIX session/trader logins

Participants will be able to

• receive trade confirmations

#### 5.8 DR test exercise: Trader/Admin/Clearer GUI

During the disaster recovery test exercise, participants have to

- use DR landing pages described in chapter 4
- use productive T7 GUI SSH keys
- Log in with productive user IDs

Participants will be able to

receive newsboard messages

Trader GUI only:

- receive price information
- access all instruments
- add orders
- modify orders

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- delete orders
- match orders (not applicable for XFRA)

#### 5.9 DR test exercise: Common Report Engine (CRE)

Participants will be able to access the Common Report Engine. However, neither reports will be generated during the disaster recovery test exercise nor RDF will be distributed to CRE in the cause of this test.

#### 5.10 Re-connection test

After the disaster recovery test exercise has been completed, the regular production environment will be made available from 17:00h CET until 18:00h CET for a re-connect test in order to allow participants to adapt their configurations.

The T7 production environment will be shutdown afterwards and will be re-started for the next business day on Sunday evening, at the usual time.

#### 5.11 Support

The Technical Key Account Managers will be available for supporting the disaster recovery test exercise via your individual VIP number from 14:00h CE(S)T until 18:00h CE(S)T.

#### 5.12 DR test exercise: Interfaces out of scope

The following T7 interfaces will <u>not</u> be available during the DR test exercise:

- Extended Market Data Service
- Market Signals (MS)
- Existing FIX Gateway interface implementation

Please note: The new FIX LF interface will be in scope

The Clearing systems C7 and CCP are not participating in the DR test exercise. No data generated during a DR test exercise is forwarded to any Clearing system.

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# 6 Change log

The change log describes on a higher level, what changed in the latest version of the document over older versions.

No	Chapter	Date	Change
1.0.0		27 Sept 2013	Initial version the Eurex Exchange's T7 Disaster Recovery Concept
2.0.0	All	25 July 2016	Added EOBI, EMDS and Eurex Market Signals
3.1.1	All	31 August 2017	Change to common document including T7 cash markets and EEX
4.0	All	29 August 2018	Adhere to T7 Release 6.1 (e.g. Partition Specific Gateway, etc), added Introduction
2019	All	15 August 2019	Adhere to T7 Release 7.1 (e.g. deletion of Connection GWs), added additional IP for Xetra Partition Specific Gateway, added EOBI addresses, added Partner Exchanges
2020-1.0	All	4 September 2020	Adhere to T7 Release 8.1, added EOBI chapter, added Vienna Partner Exchanges
2020-1.1	2, 4, 5	11 November 2020	Added network set up for Börse Frankfurt, updated DR scenarios, added DR test script
2021-1.0	3, 4, 5	18 February 2021	Added new LF FIX interface