

Xetra® Release 3.1

Front End Installation Guide

Table of Contents

1	Introduction	10
1.1	Purpose of this Guide	10
1.2	Organization of this Guide	11
1.3	Overview Xetra® Release 3.1	13
1.4	Overview of the Xetra® Front End and Xetra® Back End	13
1.4.1	Hybrid platform support	14
1.5	Overview of Xetra® WBAG software for MISS and WS	15
1.5.1	Standard Configuration	15
1.5.2	VALUES API	16
1.5.3	Client/Server Concept	17
1.6	Overview of Multi Member Support	18
1.6.1	Prerequisites	18
1.6.2	Configuring a Basic Multi Member Front End Environment	18
1.6.2.1	Overview of the sample scenario	19
1.6.2.2	Sample configuration	19
1.6.2.3	Overview of the sample scenario	20
1.6.2.4	Other scenarios	22
1.7	Overview of Extended Multimember MISS Support	22
1.7.1	Introduction	22
1.7.1.1	Overview	22
1.7.1.2	Prerequisites	22
1.7.2	Configuring a Extended Multi Member Front End Environment	22
1.8	Service Provider Support	25
1.8.1	Report Node Assignment	25
1.8.2	Subscription of third party private broadcast streams	25
1.9	Contents of Installation Kit	26
1.10	Other Xetra® Guides available to Members	26
1.11	Conventions Used in this Guide	26
1.12	General Directory Structure for Xetra® WBAG Software	27
1.13	Planning the Installation	28
1.14	Assumptions used in this Guide	28
2	Installing Xetra® WBAG Software for MISS on AIX	29
2.1	Getting Started	29
2.1.1	Overview	29
2.1.2	Software Requirements	29
2.1.3	Planning the Installation	29
2.2	Installing MISS	31

2.2.1	Step 1 - Login as Root	31
2.2.2	Step 2 - Access the Installation Source	31
2.2.3	Step 3 - Start the Installation Procedure	31
2.2.4	Step 4 - Interrupting the Installation	32
2.2.5	Step 5 - Pre-Installation Verification	32
2.2.6	Step 6 - Accept License Agreement	34
2.2.7	Step 7 - Create an example Xetra [®] WBAG Trader Account	35
2.2.8	Step 8 - Create xwbagft Group	37
2.2.9	Step 9 - Create Xetra [®] FTP Account	37
2.2.10	Step 10 - Input MISS Information	38
2.2.11	Step 11 - Reuse of existing Configuration	39
2.2.12	Step 12 - WAN TCP Host name	40
2.2.13	Step 13 - Input MISS Group-ID for Xetra [®]	41
2.2.14	Step 14 - Input Member-ID for Xetra_WBAG	41
2.2.15	Step 15 - Broadcast Subscription List	41
2.2.16	Step 16 - Subscribe For Another Member	43
2.2.17	Step 17 - Input Xetra [®] WBAG Member List	44
2.2.18	Step 18 - Installation	45
2.3	Verifying the Installation of Xetra WBAG Software for MISS	46
2.3.1	Step 1 - Start MISS	46
2.3.2	Step 2 - Check MISS System Status	48
2.3.2.1	Login to Xetra [®]	50
2.3.2.2	Xetra WBAG Back End Login Window	50
2.3.2.3	Sample Xetra [®] Application Screens	51
2.3.3	Step 3 - Verify Connections of WS to MISS	52
2.4	Frequently Asked Questions (FAQ)	53
2.5	Environment Variables	53
2.6	Directory Structure for MISS on AIX	54
2.7	Adding new Users and Workstations	55
2.7.1	Adding new Xetra [®] WBAG Users to the System	55
2.8	Removing Xetra[®] WBAG software from the System	56
3	Installing Xetra[®] WBAG Software for WS on AIX	57
3.1	Getting Started	57
3.1.1	Overview	57
3.1.2	Software Requirements	57
3.1.3	Planning the installation	58
3.2	Installing WS	58
3.2.1	Step 1 - Login as Root	58
3.2.2	Step 2 - Access to the Installation Source	59
3.2.3	Step 3 - Start the Installation Procedure	60
3.2.4	Step 4 - Interrupting the Installation	60

3.2.5	Step 5 - Pre-Installation Verification	60
3.2.6	Step 6 - Accept License Agreement	62
3.2.7	Step 7 - Create an example Xetra® WBAG Trader Account	63
3.2.8	Step 8 - Copy Configuration Files from the MISS	65
3.2.9	Step 9 - Installation	65
3.3	Verifying the Installation of Xetra® WBAG Software for WS	66
3.3.1	Step 1 - Start MISS and WS GATE Front End Software	66
3.3.2	Step 2 - Start Xetra® WBAG Application on the Workstation	66
3.3.2.1	Login to Xetra®	67
3.3.2.2	Xetra® WBAG Back End Login Window	68
3.3.2.3	Sample Xetra® WBAG Application Screens	68
3.4	Frequently Asked Questions (FAQ)	70
3.5	Environment Variables	70
3.6	Directory Structure for WS on AIX	71
3.7	Adding New Users and Workstations	71
3.7.1	Adding New Xetra® WBAG Users to the System	71
3.8	Removing Xetra_WBAG Software from the System	72
4	Installing Xetra® WBAG Software for MISS on Sun Solaris	73
4.1	Getting Started	73
4.1.1	Overview	73
4.1.2	Software Requirements	73
4.1.3	Planning the Installation	73
4.2	Installing MISS	75
4.2.1	Step 1 - Login as Root	75
4.2.2	Step 2 - Access the Installation Source	75
4.2.3	Step 3 - Start the Installation Procedure	75
4.2.4	Step 4 - Interrupting the Installation	76
4.2.5	Step 5 - Accept License Agreement	77
4.2.6	Step 6 - Check that Common Desktop Environment is installed	78
4.2.7	Step 7 - Confirm Installation	78
4.2.8	Step 8 - Create an example Xetra® WBAG Trader Account	79
4.2.9	Step 9 - Create xwbagft Group	80
4.2.10	Step 10 - Create Xetra_WBAG FTP Account	81
4.2.11	Step 11 - Input MISS Information	82
4.2.12	Step 12 - WAN TCP Host name	84
4.2.13	Step 13 - Input MISS Group-ID for Xetra®	84
4.2.14	Step 14 - Input Member-ID for Xetra® WBAG	85
4.2.15	Step 15 - Broadcast Subscription List	85
4.2.16	Step 16 - Subscribe For Another Member	86
4.2.17	Step 17 - Input Xetra® WBAG Member List	87
4.2.18	Step 18 - Confirm Configuration	88

4.2.19	Step 19 - Confirm Permissions	89
4.2.20	Step 20 - Installation	90
4.3	Verifying the Installation of Xetra® Software for MISS	94
4.3.1	Step 1 - Start MISS	94
4.3.2	Step 2 - Check MISS System Status	96
4.3.2.1	Login to Xetra® WBAG	98
4.3.2.2	Xetra WBAG Back End Login Window	98
4.3.2.3	Sample Xetra® WBAG Application Screens	99
4.3.3	Step 3 - Verify Connections of WS to MISS	100
4.4	Frequently Asked Questions (FAQ)	101
4.5	Environment Variables	101
4.6	Directory Structure for MISS on Sun	102
4.7	Adding new Users and Workstations	103
4.7.1	Adding new Xetra® WBAG Users to the System	103
4.8	Removing Xetra® WBAG Software from the System	104
5	Installing Xetra® WBAG Software for WS on Sun Solaris	105
5.1	Getting Started	105
5.1.1	Overview	105
5.1.2	Software Requirements	105
5.1.3	Planning the installation	106
5.2	Installing WS	107
5.2.1	Step 1 - Login as Root	107
5.2.2	Step 2 - Access to the Installation Source	107
5.2.3	Step 3 - Start the Installation Procedure	108
5.2.4	Step 4 - Interrupting the Installation	109
5.2.5	Step 5 - Accept License Agreement	109
5.2.6	Step 6 - Check that Common Desktop Environment is installed	110
5.2.7	Step 7 - Confirm Installation	110
5.2.8	Step 8 - Create an example Xetra® WBAG Trader Account	111
5.2.9	Step 9 - Copy Configuration Files from the MISS	112
5.2.10	Step 10 - Confirm Configuration	112
5.2.11	Step 11 - Confirm Permissions	114
5.2.12	Step 12 - Installation	115
5.3	Verifying the Installation of Xetra® WBAG Software for WS	119
5.3.1	Step 1 - Start MISS and WS GATE Front End Software	119
5.3.2	Step 2 - Start Xetra® WBAG Application on the Workstation	119
5.3.2.1	Login to Xetra® WBAG	119
5.3.2.2	Xetra® WBAG Back End Login Window	120
5.3.2.3	Sample Xetra® WBAG Application Screens	120
5.4	Frequently Asked Questions (FAQ)	122
5.5	Environment Variables	122

5.6	Directory Structure for WS on Sun	123
5.7	Adding New Users and Workstations	123
5.7.1	Adding New Xetra® WBAG Users to the System	123
5.8	Removing Xetra® WBAG Software from the System	124
6	Installing Xetra® WBAG Software for MISS on NT	125
6.1	Getting Started	125
6.1.1	Overview	125
6.1.2	Software Requirements	125
6.1.3	Network Requirements	125
6.1.4	Planning the Installation	126
6.2	Installing MISS	127
6.2.1	Step 1 - Logon as Administrator and Start the xetrawbagr31.EXE program	127
6.2.1.1	From the Control Panel	127
6.2.1.2	From the Command Prompt	127
6.2.1.3	From the Start Menu	128
6.2.1.4	From the Windows Explorer	128
6.2.2	Step 2 - Access the Installation Source	128
6.2.3	Step 3 - Welcome Window	130
6.2.4	Step 4 - Accept License Agreement	131
6.2.5	Step 5 - Select Installation mode	132
6.2.6	Step 6 - Specify whether this is the first MISS in the MISS group	133
6.2.7	Step 7 - Enter the WAN name of the MISS	135
6.2.8	Step 8 - Enter Home Path of FTP Server	136
6.2.9	Step 9 - Enter Member ID	137
6.2.10	Step 10 - Choose to allow for additional members	138
6.2.11	Step 11 - Enter Member Ids to generate the XetraMemberList entries	139
6.2.12	Step 12 - Enter Broadcast Subscription Details	140
6.2.13	Step 13 - Select Program Folders	142
6.2.14	Step 14 - Confirm Settings	143
6.2.15	Step 15 - Exit Setup Program	145
6.2.16	Step 16 - Once the Installation is complete	146
6.3	Creating the User Group and Users on NT	147
6.3.1	Creating the "xwbagft" group	147
6.3.2	Create New Global Group "xwbagft"	148
6.3.3	Set rights for Group xwbagft	149
6.3.4	Creating the xwbagtrd user	151
6.3.5	Creating the xnetXX User	153
6.4	Verifying the Installation of Xetra® WBAG Software for MISS	155
6.4.1	Step 1 - Start MISS	155
6.4.2	Step 2 - Check MISS System Status	156
6.4.3	Step 3 - Verify the MISS as a stand-alone system	158

6.4.4	Step 4 - Set up Workstations	158
6.5	Frequently Asked Questions (FAQ)	158
6.6	Directory Structure for MISS on NT	159
6.7	Expanding the System	160
6.7.1	Adding New Users	160
6.7.2	Adding New Workstations	160
6.7.2.1	Modify the configuration files	160
6.7.2.2	Install WS Software	161
6.8	Removing Xetra® WBAG Software from the System	161
7	Installing Xetra® WBAG Software for WS on NT	163
7.1	Getting Started	163
7.1.1	Overview	163
7.1.2	Software Requirements	163
7.1.3	Network Requirements	163
7.1.4	Planning the Installation	165
7.2	Installing WS	166
7.2.1	Step 1 - Logon as Administrator and Start the XetraWBAGR31.EXE program	166
7.2.1.1	From the Control Panel	166
7.2.1.2	From the Command Prompt	166
7.2.1.3	From the Start Menu	166
7.2.1.4	From the Windows Explorer	167
7.2.2	Step 2 - Access the Installation Source	167
7.2.3	Step 3 - Welcome Window	168
7.2.4	Step 4 - Accept License Agreement	169
7.2.5	Step 5 - Select Installation mode	170
7.2.6	Step 6 - Select Program Folders	172
7.2.7	Step 7 - Confirm Settings	173
7.2.8	Step 8 - Exit Setup Program	175
7.2.9	Step 9 - Once the Installation is complete	176
7.2.9.1	Login to Xetra®	177
7.2.9.2	Xetra® WBAG Back End Login Window	178
7.2.9.3	Sample Xetra® WBAG Application Windows	178
7.3	Frequently Asked Questions (FAQ)	180
7.4	Directory Structure for WS on NT	180
7.5	Expanding the System	181
7.5.1	Adding New Users	181
7.5.2	Adding New Workstations	181
7.5.2.1	Modify the configuration files	181
7.6	Removing Xetra® WBAG Software from the System	182
8	Appendix A - Xetra® WBAG Installation Work Sheet	183
8.1	Introduction	183

8.2	Filling in the Work Sheet	183
8.3	Sections	184
8.3.1	Section A - Hardware Configuration Details	184
8.3.2	Section B- Configuration Information Supplied by the Exchange	184
8.3.3	Section C- MISS Configuration Details	184
8.3.4	Section D- Workstation Configuration Details.	184
8.3.5	Machine-specific Details for AIX	185
8.3.5.1	Host Name	185
8.3.5.2	Host Id	185
8.3.5.3	Broadcast Address	185
8.3.6	Machine-specific Details for SUN	186
8.3.6.1	Host Name	186
8.3.6.2	Host Id	186
8.3.6.3	Broadcast Address	186
8.3.7	Machine-specific Details for NT	187
8.3.7.1	Host Name	187
8.3.7.2	Host Id	187
8.3.7.3	Broadcast Address	187
8.4	Work Sheets	188
9	Appendix B - Remote Workstation - Installation Guide	190
9.1	Scope	190
9.2	Prerequisites	190
9.2.1	Description Of Settings	191
9.2.1.1	Broadcast Bridge Subscription File	191
9.2.1.2	SendInterval	192
9.2.1.3	XetraInsideMarketFilter	193
9.2.1.4	AutoStart - BB_FORWARDER	193
9.2.1.5	BB_RECEIVER	193
9.3	Examples for Settings	194
9.3.1	Forwarder configmbr.ini File	194
9.3.2	Remote WS configmbr.ini File	195
9.3.3	configmbr.ini File For All WS In The Remote LAN	195
10	Appendix C - Front End Profile Conversion Tool	196
10.1	Introduction	196
10.2	Using the Tool	196
10.2.1	Usage	196
10.2.2	Conversion Plan	197
11	Appendix D	198
11.1	Allocation of TCP Ports for Xetra®	198
12	Appendix E – Exchange Specific Information	199
12.1	Environment Numbers	199
12.1.1	Deutsche Börse AG	199

12.1.2	Wiener Börse AG	199
13	Appendix F Exchange Specific Information	200
13.1	Configuration Files	200
13.1.1	Deutsche Börse AG	200
13.1.2	Wiener Börse AG	200
13.1.3	Eurex AG	201
13.2	Display System Status	201
13.2.1	Deutsche Börse AG	201
13.2.2	Wiener Börse AG	202
13.2.3	EUREX AG	202

1 Introduction

1.1 Purpose of this Guide

Welcome to Xetra® WBAG software - Release 3.1 This guide is aimed at the Exchange Member's Systems Administrator to enable him/her to use the accompanying Xetra® WBAG software Installation Kit to install and verify Release 3.1 of the Xetra® WBAG software packages for MISS (*Member Integration System Server*) and WS (*WorkStation*), including the Xetra® trading application (Xetra® Trader) and the VALUES API (Virtual Access Link Using Exchange Services Application Programmable Interface), on all supported platforms:

- IBM RS/6000 AIX, operating system version 4.3.1
- Sun Solaris, operating system version 2.6
- Microsoft Windows NT (Intel), operating system version 4.0

This guide provides detailed information on the Xetra® WBAG software Installation Kit including a step-by-step walk through the instruction for the necessary planning, installation and verification procedures.

1.2 Organization of this Guide

This guide contains the following chapters, which are separated by tabbed dividers:

- **Chapter 1 - Introduction (this chapter)**

An introduction to Release 3.1 of the Xetra[®] WBAG software package for MISS and WS together with a description of the accompanying Installation Kit and general information (which is not platform-specific) to enable an installation to be planned.

- **Chapter 2 - Installing Xetra[®] WBAG software for MISS on the IBM RS/6000 AIX platform**

Detailed platform-specific instructions on the installation and verification of Release 3.1 Xetra[®] WBAG software for MISS on the IBM RS/6000 AIX version 4.3.1 platform.

- **Chapter 3 - Installing Xetra[®] WBAG software for WS on the IBM RS/6000 AIX platform**

Detailed platform-specific instructions on the installation and verification of Release 3.1 Xetra[®] WBAG software for WS on the IBM RS/6000 AIX version 4.3.1 platform.

- **Chapter 4 - Installing Xetra[®] WBAG software for MISS on the Sun Solaris platform**

Detailed platform-specific instructions on the installation and verification of Release 3.1 Xetra[®] WBAG software for MISS on the Sun Solaris version 2.6 platform.

- **Chapter 5 - Installing Xetra[®] WBAG software for WS on the Sun Solaris platform**

Detailed platform-specific instructions the installation and verification of Release 3.1 Xetra[®] WBAG software for WS on the Sun Solaris version 2.6 platform.

- **Chapter 6 - Installing Xetra[®] WBAG software for MISS on the Windows NT (Intel) platform**

Detailed platform-specific instructions on the installation and verification of Release 3.1 Xetra[®] WBAG software for MISS on the Windows NT (Intel) version 4.0 platform.

- **Chapter 7 - Installing Xetra[®] WBAG software for WS on the Windows NT (Intel) platform**

Detailed platform-specific instructions on the installation and verification of Release 3.1 Xetra[®] WBAG software for WS on the Windows NT (Intel) version 4.0 platform.

- **Appendixes**

Reference material to assist during the installation.

- A Xetra® Release 3.1 Installation Work Sheet
- B Remote Workstation Installation Guide
- C Front End Profile Conversion Tool
- D TCP Port Allocation for Xetra®
- E Exchange Specific Information

1.3 Overview Xetra® Release 3.1

For a detailed description of the functionality and the new features of Xetra® Trader see *the Trading System User Guide*, chapter 2.

For a detailed description of the operation of the Xetra® Front End and the new technical features introduced in Xetra® Release 3.1 see the *Front End Operations Guide - Xetra®*.

Xetra® is an electronic trading system designed to support the order driven trading of stocks, bonds and other securities. The system addresses the most important requirements for the development of the German market, i.e.:

- Concentration of liquidity for the spot market in one central order book per security,
- Increase of market transparency and price determination transparency in the security market,
- Maintenance of fairness via trading platform providing equal, decentralized access,
- Generation of additional liquidity in less liquid securities.

The trading system implements the following technical features:

- Client-Server architecture with central back ends and the respective MISS and WS on the member site.
- VALUES API (Virtual Access Link Using Exchange Service Application Programming Interface) as an open interface for third party applications and Exchange applications. Exchange application refers to any application provided by the Exchange which delivers services to an end user application. The VALUES API is backward compatible to Xetra® Release 3.0.
- Graphical User Interface (GUI).

1.4 Overview of the Xetra® Front End and Xetra® Back End

The Xetra® system provides functions for trading, trading support, and security functions.

Xetra® is a distributed system based on the client/server principle, wherein part of the functionality is provided remotely on the Exchange Member's computer (Xetra® Front End) and the rest is processed centrally on the Xetra® Back End on the Exchange's computer system. The Exchange Members can in turn also be set up on the client/server principle using MISS (Server) and WS (Client). Through the use of a programmable interface (VALUES API) the Xetra® Front End becomes an open system to which Exchange Member's applications can be linked. See chapter 1.5.3. for more information about the client/server concept.

The Exchange Member Installation (Xetra® Front End) consists of two Exchange Member Servers (MISS) and additional Workstations (WS) as required.

1.4.1 Hybrid platform support

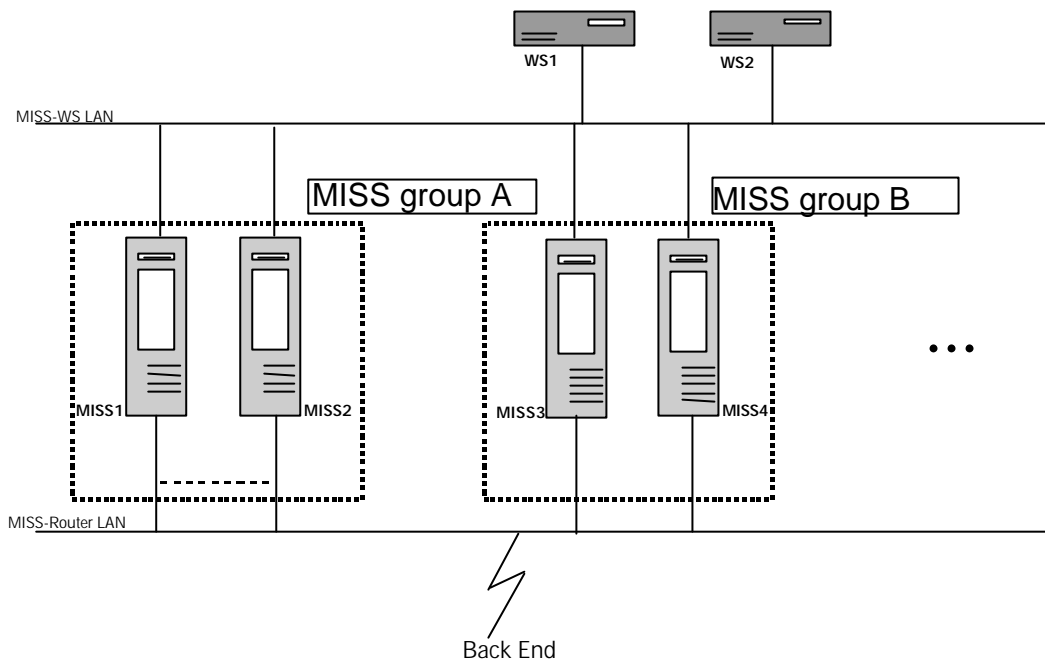
Different combinations of MISS platforms and workstations are possible for the Xetra[®] front end configuration. Two heterogeneous configurations in addition to the homogeneous ones are supported. To this end, the servers can either be based on SUN Solaris or IBM RS/6000 with AIX and can be combined with trader workstations (clients) on the basis of Windows NT 4.0 (Intel).

Server Platform	IBM AIX RS/6000	Client Platform	IBM AIX RS/6000	Microsoft Windows NT (Intel)	Sun Solaris
	Microsoft Windows NT (Intel)	IBM AIX RS/6000	✓	✓	
	Sun Solaris	Microsoft Windows NT (Intel)		✓	
		Sun Solaris		✓	✓

- Support of homogeneous client/server combinations of
 - IBM RS/6000 AIX
 - Microsoft Windows NT (Intel)
 - Sun Solaris
- Also: NT-Clients on IBM RS/6000 AIX and SUN Solaris servers ("heterogeneous" configuration)
- Suggested operating system versions on client and server

1.5 Overview of Xetra® WBAG software for MISS and WS

1.5.1 Standard Configuration



Standard Configuration

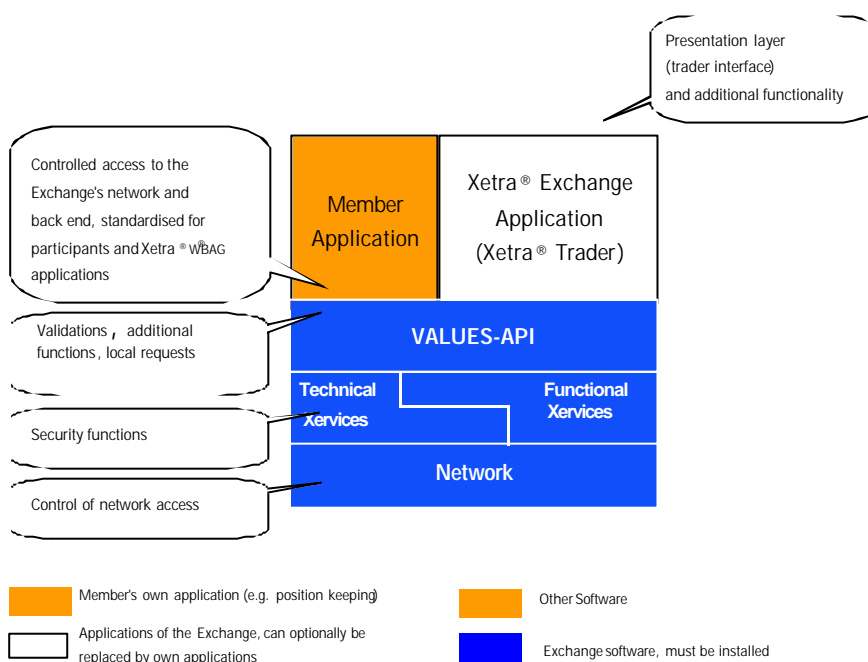
Depending on the number and location of Workstations the Exchange Member's Front End can be configured with multiple MISSes and Workstations.

With GATE Release 1.1 it is mandatory to install two MISSes (both building one MISS Group). In the event of failure of one MISS, the other MISS is switched to automatically. A member can have several MISS groups in different LAN segments.

For a more technical description of load balancing see the *Front End Operations Guide – Xetra®*.

1.5.2 VALUES API

The Xetra[®] Front End Application consists of GATE and Xetra[®] WBAG software and the Xetra[®] Exchange Application (Xetra[®] Trader). The Exchange software is installed on the MISS and provides functional and technical services as well as the interfaces "upward" and "downward".



The connection of the architecture software "upward" is defined by a uniform interface (VALUES-API). This can be used to connect the Xetra[®] Exchange Application or member applications (e.g.: host interfaces, tools for position keeping and risk management).

The Xetra[®] Exchange Application provides a graphical user interface (Xetra[®] Trader¹) which members can supplement or even replace with proprietary applications. Member applications can be connected directly to the VALUES-API if they run on the supported platforms. Applications on other platforms can be connected to the VALUES-API via custom-made interface adapters (host interfaces).

C and C++ are supported as programming languages for the VALUES-API. For each release, detailed information on the programming, functions and parameters of the VALUES-API interface can be found in the documents *VALUES-API Planning Version*, *VALUES-API Programming Version* and *VALUES-API Final Version*.

¹ Xetra[®] Trader is the graphical user interface of the Xetra[®] Exchange Application

1.5.3 Client/Server Concept

The MISS runs as server for additional workstations with Xetra[®] Trader software. The Exchange software GATE controls the communication between the MISS and the workstations.

The software structure on the MISS and client is completely modular:

- Back End specific Subsystem Part: E.g. VALUES-API and BESS Functional Xervices,
- GATE Part: The Technical Xervices
see *Front End Installation Guide GATE*

The software components delivered by the Exchange must be installed on a mandatory basis, see chapter 2 to 7 for how to install Xetra[®] WBAG.

The back end specific subsystem is delivered by the Exchange and is necessary for accessing the respective back end.

The Exchange provides a trading application as a standard Exchange Application (Xetra[®] Trader) on the basis of the VALUES-API. Individual member applications can also be developed by the members or by third-party service providers. MISS and client (workstation) communicate via Technical Xervices components (LAN Communications) which are installed on the MISS and the workstation, see *Front End Installation Guide GATE*.

The utilisation of further workstations for participating in Xetra[®] WBAG is not mandatory as the scope of the MISS software already includes a graphical user interface. The layout of the workstation's software elements is similar to that of the existing software on the MISS with the some exceptions, e.g. the Security Manager software is not available on the workstation.

1.6 Overview of Multi Member Support

Basic Multi Member Support (BMMS) provides the following functionality:

- Ability for two or more member (high availability) MISS groups owned by different members to share common network components as the LAN, WAN, Routers etc. Each MISS group is able to subscribe to broadcast streams and have failover mechanisms on its own. In addition, it is possible that public broadcast is subscribed only by one of the MISS groups participating in the BMMS environment, but can be delivered to all MISS/WS connected to the common LAN segment.
- Ability to assign as the report MISS node for a member a MISS node owned by a different member.
- Ability to authorize a member to subscribe to private broadcast streams of a different one, independent of any clearing relationships between the two members.

1.6.1 Prerequisites

The installation instructions presented in this document are intended for operations personnel having a good understanding of the GATE and Xetra[®] environment.

The *Basic Multi Member Support* assumes GATE Release 1.1 software and Xetra[®] Release 3.1 software is installed correctly.

Understanding of the *Front End Operations Guide GATE* and *Front End Operations Guide – Xetra[®]* is recommended, since it provides detailed information on how to set-up and configure the Front End architecture.

1.6.2 Configuring a Basic Multi Member Front End Environment

The starting point for setting up the *Basic Multi Member Front End* is a correctly configured GATE Release 1.1 software and Xetra[®] WBAG Release 3.1 software; especially a set of valid configuration files (*configsys.ini*, *configmbr.ini* and *XETRAWBAGmbr.ini*). Invalid configuration entries may lead to a loss of broadcast streams and/or failover capability.

The following table depicts the configuration file entries which are used for *Basic Multi Member Front End*:

Section in XETRA_WBAGmbr.ini	Entry
XETRA_WBAG_BROADCAST_SERVER	MissGroupld
XETRA_WBAG_BROADCAST_SERVER	Memberld

Table 1.1: Entries related to *Basic Multi Member Support*

In addition to these configuration file entries, the broadcast subscription list (*sublist.dat*) needs to be modified to subscribe to the appropriate broadcast streams.

1.6.2.1 Overview of the sample scenario

Rules for Multi Member MISS Support

To determine the settings for the configuration file entries, the following rules apply:

1. All MISSes and Workstations belonging to the same MISS group must have the same settings for *MissGroupId* and *MemberId*.
2. All MISSes from whom broadcast streams (public and/or private) should be received must be included in the *[RepublisherInLan]* section.
3. Only the subscription list (*sublist.dat*) of the MISS group subscribing to the public broadcast stream should include a subscription entry for the public broadcast.

1.6.2.2 Sample configuration

The next paragraphs illustrate the configuration file settings and subscription lists for a (high availability) Multi Member installation with a MISS group owned by member CDEFR and a MISS group owned by member XYZFR.

The settings for the configuration file entries are presented in tables with the following structure:

- **System** lists the type of machines to which the changes apply; i.e.; MISS, WS, MISS/WS.
- **Entry** lists the configuration file entry with the appropriate value.
- **Rule** refers to the list of rules (see above)
- **Comment** provides additional information where applicable.

1.6.2.3 Overview of the sample scenario

This scenario provides the public broadcast stream via *MISS group A* to all member systems within the same LAN, independent of their membership, while the private broadcast streams are provided via the dedicated (member owned) *MISS groups*.

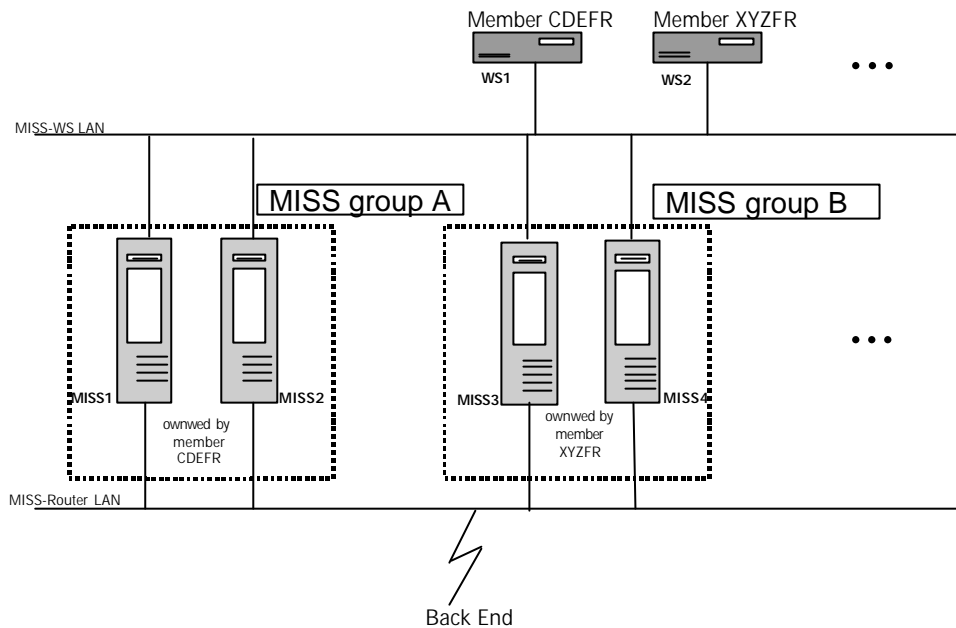


Figure 1.1: Basic Multi Member MISS

Configuration entries for member CDEFR

System	Entry	Rule	Comment
MISS/WS	[XETRA_WBAG_BROADCAST_SERVER] section MissGroupId = A	1	(XETRA_WBAGmbr.ini)
MISS/WS	[XETRA_WBAG_BROADCAST_SERVER] section MemberId = CDEFR	1	(XETRA_WBAGmbr.ini)
MISS/WS	[RepublisherInLan] section MISS1, MISS2,	2	Public broadcast stream is provided via the own <i>MISS group A</i> . (configmbr.ini)

Table 1.2: Configuration entries for member CDEFR

Subscription list for member CDEFR

Member CDEFR subscribes to the public broadcast stream.

A sample *sublist.dat* could contain the following entries:

```
CDEFRA
CDEFRB
CDEFRD
CDEFRE
CDEFRX
(subscribes to public broadcast stream)
```

Configuration entries for member XYZFR

System	Entry	Rule	Comment
MISS/WS	[XETRA_WBAG_BROADCAST_SERVER] section MissGroupId = B	1	(XETRA_WBAGmbr.ini)
MISS/WS	[XETRA_WBAG_BROADCAST_SERVER] section MemberId = XYZFR	1	(XETRA_WBAGmbr.ini)
MISS/WS	[RepublisherInLan] section MISS1, MISS2, MISS3, MISS4	2	Public broadcast is provided via <i>MISS group A</i> while private broadcasts are received via <i>MISS group B</i> . (configmbr.ini)

Table 1.3: Configuration entries for member XYZFR

Subscription list for member XYZFR

Member XYZFR subscribes to the own private broadcast streams but receives the public broadcasts via MISS group A, thus rule 3 must be applied.

A sample *sublist.dat* could contain the following entries:

```
XYZFRA
XYZFRB
XYZFRD
XYZFRE
```

1.6.2.4 Other scenarios

Basic Multi Member Support can be configured for normal availability configurations or mixtures of normal and high availability configurations. It is still possible that instead of a member, a service provider's MISS group subscribes, in addition to the member's private streams, to the public broadcast stream and delivers it to all members participating the BMMS environment. In this case this member's MISS group has to be configured like the member CDEFR in the example above and the member's private streams have to be added in the broadcast subscription list (*sublist.dat*).

No sample configuration files and subscription lists for these setups are included in this document. However, determining the correct settings for other scenarios is a straight forward process by simply applying the rules presented in beginning of this chapter.

1.7 Overview of Extended Multimember MISS Support

1.7.1 Introduction

1.7.1.1 Overview

The *Extended Multi Member Support* (EMMS) offers the following functionality in addition to the *Basic Multi Member Support* (BMMS):

- Ability for one (high availability) MISS group shared by different members for full Xetra® Release 3.1 functionality.

1.7.1.2 Prerequisites

The installation instructions presented in this document are intended for operations personnel having a good understanding of GATE and Xetra® WBAG environment.

The *Extended Multi Member Support* assumes Xetra® WBAG Release 3.1 software is installed correctly.

1.7.2 Configuring a Extended Multi Member Front End Environment

Configuration for the *Extended Multi Member Front End* is controlled by *entries* in the member configuration file (*XETRA_WBAGmbr.ini*).

The starting point for setting up the *Basic Multi Member Front End* is a correctly configured Front End environment; especially a set of valid configuration files (*configsys.ini*, *configmbr.ini* and *XETRA_WBAGmbr.ini*). Invalid configuration entries may lead to a loss of broadcast streams and/or failover capability.

The following table depicts the configuration file entries which are used for *Extended Multi Member Front End*:

Section	Entry
[XETRA_WBAG_BROADCAST_SERVER]	MissGroupId (XETRA_WBAGmbr.ini)
[XETRA_WBAG_BROADCAST_SERVER]	MemberId (XETRA_WBAGmbr.ini)
[RepublisherInLan]	Unnamed entries. (Comma delimited list of MISS device IDs) (configmbr.ini)
[XETRA_WBAG.Member]	Unnamed entries. (Comma delimited list all member IDs entitled to trade on that MISS) (XETRA_WBAGmbr.ini)

Table 1.4: Entries related to *Extended Multi Member Support*

In addition to these configuration file entries, the broadcast subscription list (*sublist.dat*), needs to be modified to subscribe to the appropriate broadcast streams for all members entitled to trade on that MISS.

To determine the settings for the configuration file entries, the same rules as for the Basic Multi Member MISS are valid.

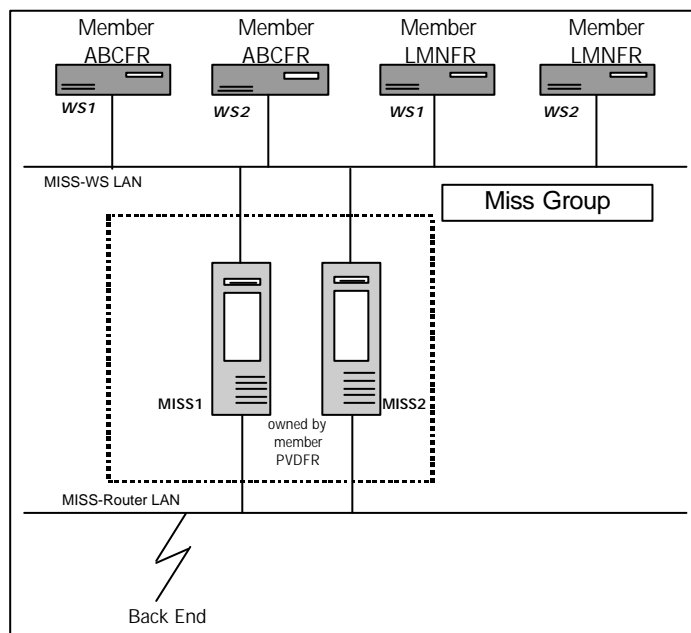


Figure 1.2: Extended Multi Member MISS

Configuration entries for service provider PVDFR

System	Entry	Rule	Comment
MISS/WS	[XETRA_WBAG_BROADCAST_SERVER] section MissGroupId = A	1	(XETRA_WBAGmbr.ini)
MISS/WS	[XETRA_WBAG_BROADCAST_SERVER] section MemberId = ABCFR	1	(XETRA_WBAGmbr.ini)
MISS/WS	[RepublisherInLan] section MISS1, MISS2,	2	(configmbr.ini)
MISS	[XETRA.Member] section ABCFR LMNFR		(XETRA_WBAGmbr.ini)

Table 1.5: Configuration entries for Multi Member MISS Groups

Subscription list for service provider PVDFR

Service provider PVDFR subscribes to the public broadcast stream.

A sample *sublist.dat* could contain the following entries:

```
;subscribe to public broadcast stream.  
For public broadcast the member ID used in the subscription list is not relevant  
ABCFRA  
ABCFRB  
ABCFRD  
ABCFRE  
  
LMNFRA  
LMNFRB  
LMNFRD  
LMNFRE  
PVDFRX
```


1.8 Service Provider Support

1.8.1 Report Node Assignment

The two report nodes for a member, that are the MISS nodes where all reports of a member are downloaded during the Xetra[®] batch processing, are assigned by the Exchange on the Xetra[®] Back End after a respective request of the member.

Normally, the report node of a member is one of the MISSes owned by that member. It is possible to assign as report node for a member a node owned by a different member (or a service provider). Especially, it is possible to assign as report node for more than one member the same physical MISS node.

Reports are delivered on the MISS in the *reports* subdirectories of the *transferdir* (refer also to Directory Structure on MISS in *Front End Operations Guide GATE*), so that reports owned by different members are put into different subdirectories. It is in the responsibility of the MISS system administrator to prohibit unauthorized access to these files.

1.8.2 Subscription of third party private broadcast streams

Normally, a member is only authorized to subscribe to all his private broadcast streams. In addition to that, and depending on existing clearing relationships, clearing members are authorized to subscribe to the recoverable private trade confirmations stream of their non clearing member.

It is possible to authorize a member or service provider to subscribe to one or more private broadcast streams of a different member. This authorization is done by the Exchange on the Xetra[®] WBAG Back End after a respective request. In order to receive these streams, the authorized member has to add them in his MISS subscription list (sublist.dat).

1.9 Contents of Installation Kit

The Installation Kit for the Xetra[®] WBAG software package for MISS and WS contains all components required to install Xetra[®] WBAG MISS and/or Xetra[®] WBAG WS on the

- Sun Solaris,
- IBM RS/6000 AIX, and
- Windows NT (Intel)

platforms.

In particular the Xetra[®] WBAG Installation Kit - Release 3.1 contains the following material:

- Software Xetra[®] WBAG Release 3.1
- The installation/configuration scripts for both MISS and WS on all supported platforms are delivered via FTP the Installation Notes will give additional information.

1.10 Other Xetra[®] Guides available to Members

The Exchange has published the following additional guides

- *Front End Operations Guide GATE.*
- *Front End Operations Guide - Xetra[®].*
- *Front End Installation Guide GATE.*
- *Xetra[®] Trading System User Guide.*
- *Member Front End Development Guide*

1.11 Conventions Used in this Guide

The following typographic conventions are used in this guide.

Keyboard Input

<ENTER>

Press the Enter or Return Key on the keyboard.

<Ctrl+C>

Press and hold the CTRL Key on the keyboard then press the C Key

Screen Display



This shows the screen display for non-Windows applications.

The description of windows from window based applications shows a snapshot of the described window.


Keyboard Input



Type what is here exactly as shown [RETURN]

Mouse Input



- Click or Double Click means pressing the left mouse button (on a right hand mouse) once or twice.
- [RIGHT] Click or [RIGHT] Double Click means pressing the right mouse button (on a right hand mouse) once or twice.
- Example: Click on  or press [ESC] to cancel.

Getting Attention



This paragraph is highlighted for special attention!

Examples



This is an **example** of an example as presented in the text.

1.12 General Directory Structure for Xetra® WBAG Software

The general directory structure is created on the system by the Xetra® WBAG software Installation Script. The *Front End Operations Guide Xetra®* contains a detailed description of this directory structure. The directory structure e.g. for a MISS on Sun is listed in chapter 4.7 or for a WS on Sun is listed in chapter 5.7.

1.13 Planning the Installation

It is recommended to read the chapter one before starting an installation. It contains valuable general information on the Xetra[®] WBAG software package. The next step is to decide whether to install the Xetra[®] software package on a MISS or on a WS. Please turn to the appropriate chapter of the guide for detailed platform-specific instructions on how to plan, install and verify the Xetra[®] software installation.

1.14 Assumptions used in this Guide

In the preparation of this guide the following assumptions have been made:

The Exchange Member has a systems administrator available to perform the installation, who is fully familiar with the operating system and network software to be used.

The appropriate version of the operating system has already been correctly installed on the Exchange Member's machine.

The Exchange Member's machine is configured in accordance with the Exchange "Sizing Guidelines" and the "Release Notes".

2**Installing Xetra® WBAG Software for MISS on AIX****2.1 Getting Started**

Before starting the installation of Xetra WBAG software for MISS on the AIX platform, it is strongly recommended to read this chapter and also chapter One – Introduction.

2.1.1 Overview

Installation is performed using the standard AIX *installp* command which is part of the IBM RS/6000 AIX Base Operating System (BOS) Runtime, see 2.2.3 Step 3 - Start the Installation Procedure.

Before attempting to perform the installation, please check that the hardware and software are configured in line with the Exchange “Sizing Guidelines” and the “Release Notes”.

2.1.2 Software Requirements

The following operating system should already be correctly installed on the system:

AIX 4.3.1 and patches.



Note: If the correct version of the operating system is not installed, the installation procedure will be terminated and the system rolled back to its previous state!

In addition a window manager such as **CDE (Common Desktop Environment)** should also be already installed on the machine. If CDE is not installed a warning message is given but the installation proceeds.

**Important!**

The Xetra® WBAG software for one MISS can only be installed if the GATE Front End Software is installed on the MISS. The procedure for installing GATE Front End Software for a MISS is covered in chapter 2 in *the Front End Installation Guide GATE - Installing GATE Front End Software for MISS on AIX*.

2.1.3 Planning the Installation

To perform a successful installation of Xetra® WBAG software on the machine, replies to various prompts from the installation procedure are to be given. These mostly cover general configuration parameters, network addresses etc. To assist, the Exchange provides a work sheet - see Appendix A - Xetra® Installation Work Sheet at the back of this binder. Filling in this work sheet has several goals

- It conveniently summarizes all the information needed to complete a successful installation.

- It documents the system.
- It can be helpful to have at hand when talking to the Technical Help Desk Xetra® in the event of any problems.

2.2 Installing MISS

If the above procedures have been followed, the MISS installation procedure can be started.



Important!

The mandatory configuration for the Xetra® WBAG software is two MISSes for high availability and 1 to n workstations. Install the primary and secondary MISS **before** starting to install the WS software. It is not allowed to use Xetra® Trader on a MISS. The procedure for installing WS software is covered in chapter 3 – Installing Xetra® WBAG software for WS on AIX.



Important!

Before starting to install Xetra® Front End Software, login as **root** user, otherwise the installation will not be successful.

2.2.1 Step 1 - Login as Root

At the login prompt:



```
su - root<ENTER>
```

At the password prompt:



Type password for root

2.2.2 Step 2 - Access the Installation Source

All necessary files for the installation are received automatically in the path /usr/lpp/gate/transferdir/releaseXX/AIX/ (XX = 68 for production, XX = 69 for simulation). The first step in preparing for the new installation is to save the newly received Installation Kit files. This directory location should be easily accessible from all MISSes and workstations.

2.2.3 Step 3 - Start the Installation Procedure

Change to the installation directory, where the files received via FTP are copied to. Type the following command:



sh ./instxetra_wbagr31.aix<ENTER> (...31s.aix = simulation, ...31.aix = production)

The installation program will now ask for specific information to configure the system and then continue to create the necessary directory structure on the machine and copy all the necessary binary, configuration, and library files to the disk.



The Xetra® programs will be installed in the following subdirectory

***/usr/lpp/gate/baseYY/XETRA_WBAGxx/... (YY=90 production, yy=91 simulation)
(xx=68 for production, xx=69 for simulation,)***

2.2.4 Step 4 - Interrupting the Installation



During the Installation procedure typing <Ctrl+C> may be pressed at any time to quit. However if the Installation is interrupted in this way, rerun the ***installp*** program. Normally ***installp*** first cleans up the system automatically before the new installation starts. But depending on the procedure when the system has been stopped, it may be necessary to rerun ***installp*** with the option ***-C*** to force a clean up:



Installp Xetra_WBAGR31 or
installp -C Xetra_WBAGR31

2.2.5 Step 5 - Pre-Installation Verification



```
# ./instxetra_wbagr31.aix
+-----+
                Pre-installation Verification...
+-----+
Verifying selections...done
Verifying requisites...done
Results...

SUCCESSES
-----

Filesets listed in this section passed pre-installation verification
and will be installed.
```


Selected Filesets

Xetra_WBAGR31 3.1.0.0

XETRA_WBAG Software (Version...

<< End of Success Section >>

FILESET STATISTICS

1 Selected to be installed, of which:

1 Passed pre-installation verification

1 Total to be installed

+-----+

Installing Software...

+-----+

installp: APPLYING software for:

Xetra_WBAGR31 3.1.0.0

2.2.6 Step 6 - Accept License Agreement



```
*****
```

```
© Copyright 1999 Deutsche Börse AG, Frankfurt, Germany
```

```
All Rights Reserved.
```

```
This software is furnished under license and may be used and copied only in  
accordance with the terms of this license and with the inclusion of the above  
copyright notice. This software or any other copies thereof may not be provided  
or otherwise made available to any other person. No title to, or ownership of,  
the software is hereby transferred.
```

```
The information in this software is subject to change without notice and should  
not be construed as a commitment by Deutsche Boerse AG.
```

```
Deutsche Boerse AG assumes no responsibility for the use or reliability of its  
software on equipment which is not certified by Deutsche Boerse AG.
```

```
*****
```

```
. . . . . << End of copyright notice for Xetra_WBAG >>. . . . .
```

```
=====
```

```
Press <ENTER> to accept copyright and proceed with  
installation or press <Ctrl><C> to abort installation  
[ ]
```

```
You are about to begin installation of the Xetra - Front End.  
The installation procedure will guide you through the  
following steps:
```

1. Enter information about the environment in which the Xetra_WBAG Front End will be running.
2. A summary of all the information you have provided will be displayed for your confirmation.
3. After your confirmation, the actual installation of the XETRA_WBAG Front End will take place.

Pressing <Ctrl><C> at any time will abort the installation procedure.

Press <ENTER> to proceed with the installation or
press <Ctrl><C> to abort installation
[]



Press <ENTER> to accept the license agreement or <Ctrl+C> to quit.

During the installation, the system will prompt to input the necessary configuration parameters, which should be written on the Installation Work Sheet.

2.2.7 Step 7 - Create an example Xetra® WBAG Trader Account

Xetra® WBAG also sets up a new user account for testing purposes (default XetraTrd). The installation procedure checks for the existence of this user and creates it if it does not already exist. Use this also if a different account name has to be entered.



User and group section.

=====

Enter the user name of the XETRA_WBAG trader on this system.

[XWBAGTrd]



Press <ENTER> to accept the default or type another name or <Ctrl+C> to quit.



Enter the user id for the trader account „XWBAGTrd“

[2211]:



Press <ENTER> to accept the default or type new User-ID and press <ENTER> to assign or <Ctrl+C> to quit.



Enter password for user XWBAGTrd (at least 5 characters long)!

Changing password for "XWBAGTrd"

XWBAGTrd's New password:



Type new password (minimum 5 characters alphanumeric case-sensitive) and <ENTER> or <Ctrl+C> to quit.



enter the new password again:



Retype password (minimum 5 characters alphanumeric) and <ENTER> or <Ctrl+C> to quit.

2.2.8 Step 8 - Create xwbagft Group

Xetra® requires a special group for the FTP user. The XWBAG FTP user (xnet68 or xnet69) must belong to this group. The installation procedure checks for the existence of this group and creates it if it does not already exist.



```
MISS configuration selected!

Creating file transfer group

=====

Enter group-ID for group „xwbagft“

[806]

Group XWBAGft entry added !
```



Press <ENTER> to accept the default or type group-ID and <ENTER> to assign or q to quit.

2.2.9 Step 9 - Create Xetra® FTP Account

The name of the FTP User for reports and file transfers from the Exchange is fixed as follows:

- Xnet68 for production or xnet69 for simulation

The password for this user is provided by the Exchange in a sealed envelope. A space has been provided on the Xetra® Installation Worksheet see Appendix A.



```
Enter the user id for the file transfer account „xnet68“

[2268]:
```



Press <ENTER> to accept the default or type user-ID and <ENTER> to assign or <Ctrl+C> to quit.



```
User created - please set password for xnet68!  
The password was provided to you by the Deutsche Boerse AG!  
Changing password for „xnet68“  
Xnet68's new password:
```



Type new password from the sealed envelope provided by Deutsche Börse and <ENTER> or <Ctrl+C> to quit.



```
Enter the new password again:
```



Retype password and <ENTER> or <Ctrl+C> to quit.

2.2.10 Step 10 - Input MISS Information



```
Is this the primary MISS Installation for XETRA_WBAG ?  
  
1 primary  
2 alternate  
  
Enter selection (default: primary) [?,??,q]: 1
```



Press <ENTER> to use the default, type <2> for alternate MISS or <Ctrl+C> to quit.

The primary MISS is the first MISS that is installed while the alternate MISS is a further MISS.



Note: If <2> is entered to install an alternate MISS, the system will need to copy the following files from the primary MISS:

- member configuration file
/usr/lpp/gate/baseXX/XETRA_WBAGYY/cfg/XETRA_WBAGmbr.ini
- the broadcast subscription file */usr/lpp/gate/baseXX/XETRA_WBAGYY/data/sublist.dat*
(YY = 68 for production, YY= 69 for simulation)
(XX=90 for production and XX=91 for simulation)

Before starting the installation copy these files into a temporary directory on the alternate MISS.

If installing the primary MISS for the first time the system will skip to chapter 2.2.12 Step 12 – .

2.2.11 Step 11 - Reuse of existing Configuration

If installing a alternate MISS, the system will prompt for the path of configuration files.



```
Please enter the fully qualified name of the copied "XETRA_WBAGmbr.ini" - File:
The file should be a copy of the "XETRA_WBAGmbr.ini"-File from the primary MISS.
File:      /tmp/XETRA_WBAGmbr.ini
```



Type the full path/filename of XETRA_WBAGmbr.ini which was copied from the primary MISS.



```
Please enter the fully qualified name of the copied "sublist.dat" -File:
The file should be a copy of the "sublist.dat"-File from the primary MISS.
File:      /tmp/sublist.dat
```



Type the full path/filename of the sublist.dat file.



The installation of the XETRA_WBAG Front End will now be performed based on the information you have provided.

Working, please wait...

The script continues in case of reusing parts of an existing configuration with Step 18 – Installation.

2.2.12 Step 12 – WAN TCP Host name



Please enter the WAN-TCP-hostname for your following MISSES (as configured in GATE):

=====

```
ehslansv01 (LAN-Name)      3014 (Device-ID)      80863b61 (hostid)   => WAN-Name:
ehskitsv01
```



Type the WAN-TCP Host name or <Ctrl+C> to quit.



We recommend that the length of the WAN-TCP Host name is less than 32 characters.

This is only repeated if more than one MISS has been configured in the GATE installation:



Please enter the WAN-TCP-hostname for your following MISSES (as configured in GATE):

=====

```
ehslansv02 (LAN-Name)      3015 (Device-ID)    c0a832eb (hostid)   => WAN-Name:
ehskitsv02
```



Type the WAN-TCP Host name or <Ctrl+C> to quit.



We recommend that the length of the WAN-TCP Host name is less than 32 characters.

2.2.13 Step 13 - Input MISS Group-ID for Xetra®



```
Please enter the XETRA_WBAG MISS Group ID this MISS will belong to.
```

```
[ ] A
```



Type the MISS Group-ID that this MISS will belong to. This MISS Group-ID must be unique for the MISS-Group of the member.

2.2.14 Step 14 - Input Member-ID for Xetra_WBAG



```
Please enter the 5-character Member-Id for the XETRA_WBAG Back End System. (default: XXXXX)
```

```
[ ] ?ABCFR
```



Enter the 5-character Xetra_WBAG Member-ID or <Ctrl+C> to quit.

2.2.15 Step 15 - Broadcast Subscription List

In addition to public broadcasts, which are sent by default to every Member, Members can subscribe to the following private recoverable broadcasts in the following categories:

Private Recoverable broadcasts for member ABCFR

Broadcast Stream	Entry in sublist.dat
Trade Confirmation	ABCFRA
Order Confirmation	ABCFRB
Quote Confirmation	ABCFRD
Quote Request	ABCFRE

These subscriptions are controlled by a file in the /opt/baseXX/XETRA_WBAGYY/data/ subdirectory (YY = 68 for production, YY= 69 for simulation) (XX=90 for production and XX=91 for simulation) named sublist.dat which contains a record per the Member-ID and the selected private recoverable broadcasts. Multiple Member-IDs may be stored in this table. It is possible to receive private recoverable broadcasts from other members for which the WBAG has authorized a special relationship.

The format of the file is as follows:

ABCFRn (where 'ABCFR' is the Member-ID and 'n' is the ID of the private recoverable broadcast category).

For more details of these broadcasts please see also the *Front End Operations Guide - Xetra®*.



```
Enter broadcast information
=====

Select MemberID
-----

<s> Select MemberID
<e> End
Enter Selection [e] s
```



Type <s> in order to add broadcast information or <e> to continue with Step 17 - Input Xetra® WBAG Member List.



```
Enter the Member ID to configure broadcasts
[ABCFR] ABCFR
```



Enter a Member-ID or <Ctrl+C> to quit.



```
Select Broadcast Entries for ABCFR
-----

Recoverable
<l> Trade Confirmation (no)
```

```
<2> Order Confirmation      (no)
<3> Quote Confirmation     (no)
<4> Quote Request          (no)

<e> End / Select another MemberID

Enter a number for your selection: [e] 1
```



To toggle an entry type its number or type <e> or just <RETURN> (<e> is default) to accept list and continue

2.2.16 Step 16– Subscribe For Another Member

In order for subscribing to an additional Member



```
Enter broadcast information
=====

Select MemberID
-----

<s> Select MemberID
<e> End

Enter Selection [e] s
```



Type <s> in order to add broadcast information or <e> to continue with Step 17 - Input Xetra® WBAG Member List.



```
Enter the Member ID to configure broadcasts
[ABCFR]
```



Enter a 5-character Xetra WBAG Member-ID or <Ctrl+C> to quit. If a Member was entered Step 15 - Broadcast Subscription List is executed again for this Member.

2.2.17 Step 17 - Input Xetra® WBAG Member List

If the extended Multimember MISS Support is used, additional Member-IDs can be added as in Step 14 - Input Member-ID for Xetra_WBAG described. The question below asks for additional members who can login via the MISS, which is set up.



```
Enter Xetra_WBAG member list
=====

Do you want to allow additional members to login?
[n] y
```



Press <ENTER> to skip to the next step, <y> if an additional member should be entered.



```
Current member list:
-----
ABCFR

Enter a Member ID (or <q> to quit)!
[q] q
```



Enter a 5-character Xetra WBAG Member-ID or <Ctrl+C> to quit.

2.2.18 Step 18 – Installation



```
Installation of the XETRA_WBAG Front End will now be performed based on the
information you have provided.
```

```
Working, please wait...
```

```
Finished processing all filesets. (Total time: 4 mins 41 secs).
```

```
+-----+
Summaries:
+-----+
```

```
Installation Summary
-----
```

Name	Level	Part	Event	Result
Xetra_WBAGR31	3.1.0.0	USR	APPLY	SUCCESS

```
#
```

The installation procedure has now performed the following activities:

- creation of Xetra® WBAG File Transfer group (“xwbagft”)
- creation of Xetra® WBAG File Transfer administrator account (“xnet68”)
- creation of Xetra® WBAG Trader account
- adding GATE administrator and Xetra® WBAG trader accounts to Xetra WBAG File Transfer group
- creation of xnetXX (68 for production, 69 for simulation) FTP account
- creation of XETRA_WBAGmbr.ini configuration file
- copy all files to installation directories
- creation of icons for desktop actions
- change owner of installed files to GATE administrator group
- copy libraries to /usr/lib

If all the actions are completed successfully, the installation of the Xetra® WBAG software Release 3.1 is now finished.

2.3 Verifying the Installation of Xetra WBAG Software for MISS

To verify the correct installation of Xetra® WBAG Front End Software for MISS on the machine, perform the following steps:



Important!

Please note that after completing the local installation procedure, testing and verifying the system cannot be performed before the **USIM (Security Interface Manager)** library has been received via FTP. This library is delivered via FTP by Deutsche Börse AG.

To enable this to be received without problems, AIX users should first login to the FTP account **xnet68** for production or **xnet69** for simulation, and if prompted change the passwords using the same passwords used during account creation and supplied by WBAG.

If this is not done, the file transfer will fail and it is not possible to login to the Xetra® Front End to verify the system.

2.3.1 Step 1 - Start MISS

Logon as gateadm and start the MISS on the server by typing the following at the Command Prompt Window:



Note:

Do not use the root user to start the architecture otherwise the gateadm can not restart the GATE Front End software.



Important!

Please note that the GATE Front End Software must be running on the MISS before starting Xetra®, hence refer to the *Front End Installation Guide GATE* for the GATE Front End Software.



su - gateadm

>cd /usr/lpp/gate/baseXX/bin (XX=90 for production and XX=91 for simulation)

>./Xmenu.pl

Select then in the main menu

1. Start/Stop of Communications Architecture

in the Start/Stop menu select

1. Startup Communication Architecture (Start-of-day)

2.3.2 Step 2 - Check MISS System Status

To verify the actual system status start the Xmenu script and select

4. Display system status

In the „Display system status“ menu select

1. Display of processes

The following screen should appear

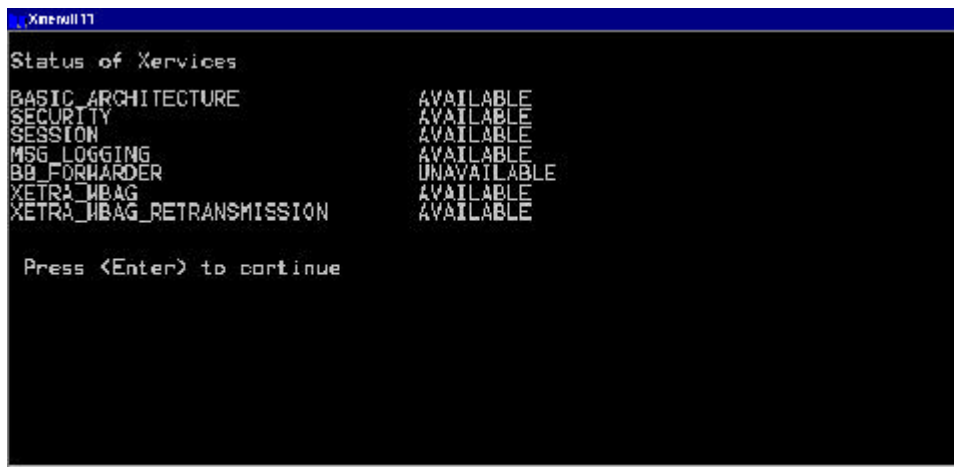
```
Status of processes
BASIC_ARCHITECTURE
  AVAILABILITY_MANAGER      STARTED
  BROADCAST_RECEIVER        STARTED
  BROADCAST_REPUBLISHER     STARTED
  LAN_TRANSPORT_SERVER      STARTED
SECURITY
  SECURITY_MANAGER           STARTED
SESSION
  LAN_TRANSPORT_CLIENT      STARTED
  SESSION_MANAGER           STARTED
MSG_LOGGING
  MSG_LOG_SERVER            STARTED
BB_FORWARDER
  BB_FORWARDER              DOWN
XETRA_WBAG
  XETRA_WBAG_WAN_TRANSPORT_MANAGER  STARTED
  XETRA_WBAG_APPLICATION_MANAGER    STARTED
  XETRA_WBAG_BROADCAST_SERVER       STARTED
  XETRA_WBAG_BROADCAST_RETRANSMITTER STARTED
XETRA_WBAG_RETRANSMISSION
  XETRA_WBAG_BROADCAST_RETRANSMITTER STARTED
  XETRA_WBAG_BROADCAST_SERVER       STARTED
```

System Status

In the „Display system status“ menu select

2. Display of Xervices

The following screen should appear



```
Xservices11
Status of Xervices
BASIC_ARCHITECTURE      AVAILABLE
SECURITY                 AVAILABLE
SESSION                 AVAILABLE
MSG_LOGGING             AVAILABLE
BB_FORWARDER            UNAVAILABLE
XETRA_WBAG              AVAILABLE
XETRA_WBAG_RETRANSMISSION AVAILABLE

Press <Enter> to continue
```

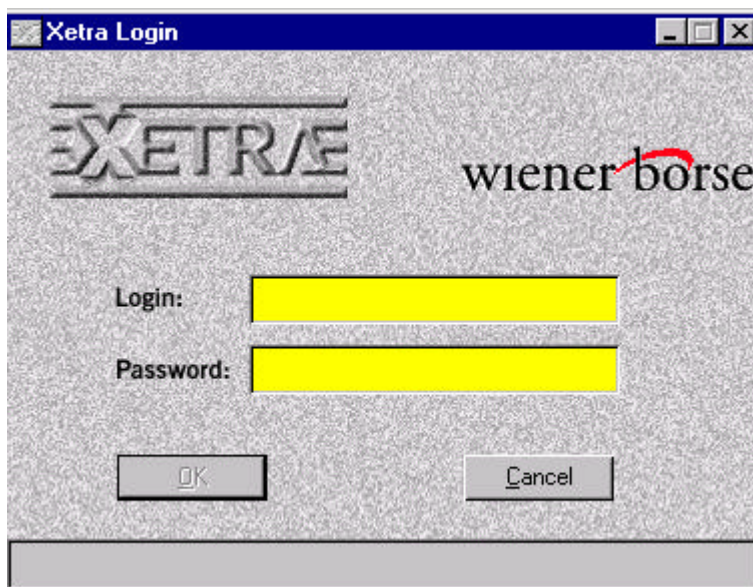
Service Status

It is also possible to examine the *exception log* file at any time. This file is located in directory *../logs/exceptions/active*.

2.3.2.1 Login to Xetra®

Open the Application Manager and choose the folder Gate_Simulation or Gate_Production. By clicking the StartXetra_WBAG_ApplicationR31or StartXetra_WBAG_ApplicationR31SIM icon the Xetra® Trader application is started.

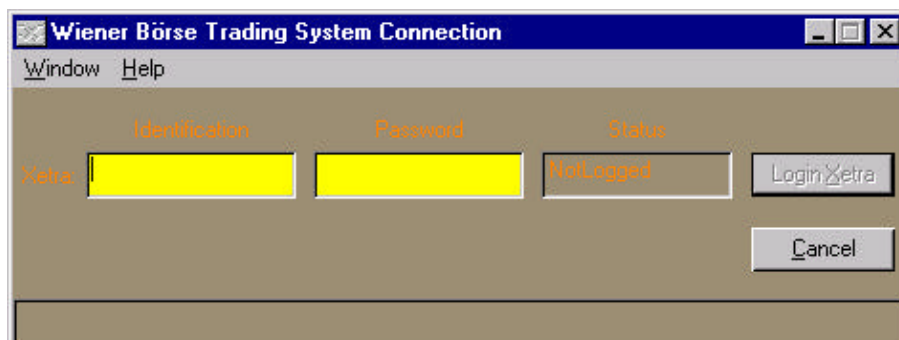
All snapshots below are taken in the development environment of Xetra® and show therefore the abbreviation "DEV" in the window header. In the production environment this is not shown.



This login will be validated directly on the corresponding MISS.

Now login to the Xetra® WBAG Back End.

2.3.2.2 Xetra WBAG Back End Login Window



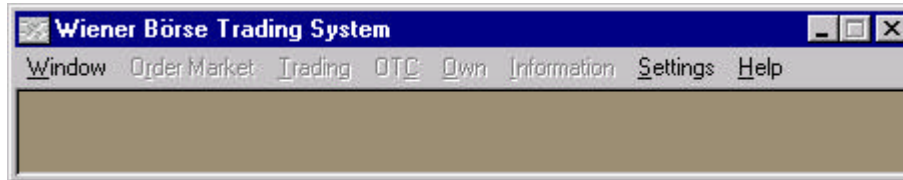
For verification please login to the Xetra WBAG Back End.

Enter the Xetra® WBAGMember-ID (5 characters) together with the Trader-ID (6-character) and the password.

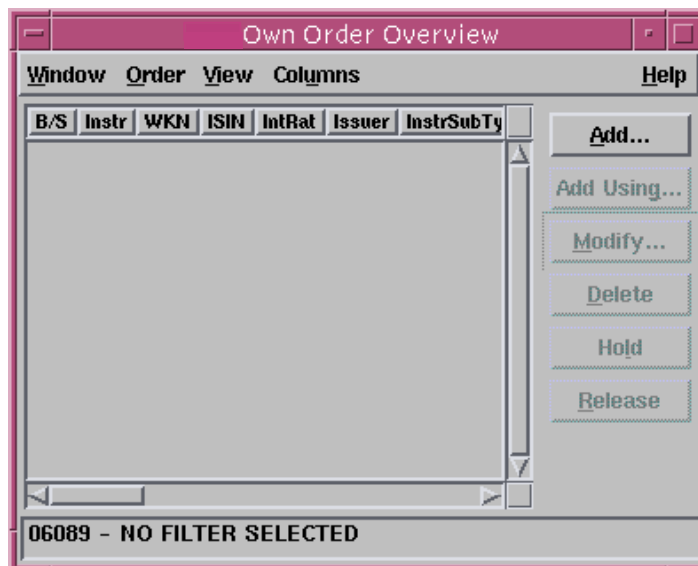
2.3.2.3 Sample Xetra® Application Screens

If logged into the application, the following are a sample of windows that can be opened:

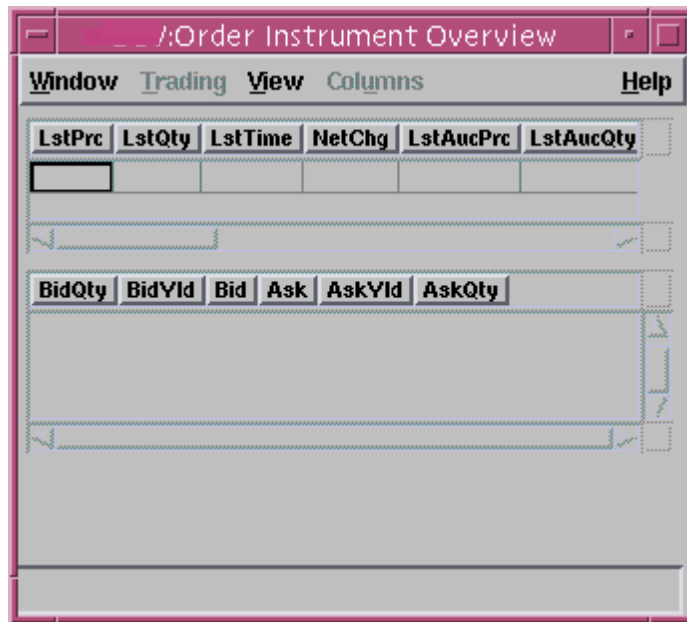
Xetra® Main Menu (opened automatically)



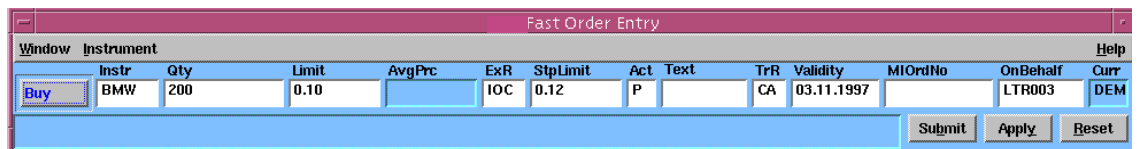
Own Order Overview Window (menu "Own", menu item "Own Orders...")



Order Instrument Overview Window (menu "Order Market", menu item "Order Instrument Overview")



Fast Order Entry Window (opened automatically)



For Details see Xetra® Trading System User Guide.

2.3.3 Step 3 - Verify Connections of WS to MISS

If the MISS works OK as a stand-alone system, proceed to install WS software

See chapter 3 - Installing Xetra® WBAG Front End Software for WS on AIX.

2.4 Frequently Asked Questions (FAQ)

On the *Internet* pages of the Exchange (www.wbag.at) product specific information to frequently asked questions can be found. In order to access this information, switch to the product specific page and choose "Members only". After you log in, you can access the *Frequently Asked Questions* on the *Services* page.

Otherwise please call the Technical Help Desk line on:

+49 (0)69 2101 1740

2.5 Environment Variables

The following environment variables are created during the installation. They are set during startup of the terminal window, e.g. by clicking on an icon.

Environment Variable	Description
LIBPATH	System environment variable, points to VALUES API modules
PATH	System environment variable, points to the executables

2.6 Directory Structure for MISS on AIX

The directory structure is /usr/lpp/gate/baseXX/... (XX=90 for production and XX=91 for simulation)

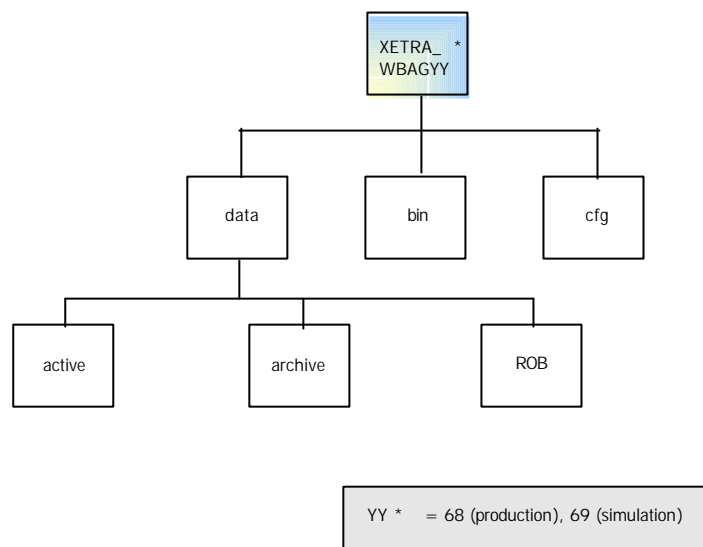


Figure: Xetra® Front End Directory Structure

2.7 Adding new Users and Workstations

2.7.1 Adding new Xetra® WBAG Users to the System

All new users must be set up as part of the *gatetrd* group.

Example: To create a new Xetra® WBAG user, proceed as follows

Login as root



```
mkuserID=userID pgroup=gatetrd home=/home/username shell=/usr/bin/ksh gecos="Description" username
```

(where userID is a unique numeric integer from 100 to 65535
and username is 5-8 characters alphanumeric)

Chose a password for the new user.



Important!

Login to Technical Xervices requires a password or user name more than five characters in length.



```
passwd username
```



```
Please enter new password
```



Type the password (minimum 5 characters alphanumeric).



```
Reenter new password
```



Retype the password (minimum 5 characters alphanumeric) to confirm it.

The new user is now created

Now copy the user profiles and set the ownership and group for the new user as follows:

```
cp /home/XWBAGTrd/.profile /home/username
```

```
chown username /home/username/.profile
```

```
chgrp gatetrd /home/username/.profile
```

2.8 Removing Xetra® WBAG software from the System

To remove the Xetra® WBAG Front End Software from the system use the ***installp*** command with the ***-u*** switch (uninstall) as follows - This will delete all files created during the installation:



```
installp -u Xetra_WBAGR31
```

All files in the directories created by the ***installp*** command will be deleted.



Note: Using the ***installp*** command no group or user will be deleted. The XETRA_WBAGmbr.ini and sublist.dat files are saved within the /tmp/deinst_xetra.WBAGR31:<timestamp>/ directory.

The Setup has now completed all its tasks. However, before using the system, there are still some administrative tasks to be performed manually.

3 Installing Xetra® WBAG Software for WS on AIX

3.1 Getting Started



Before starting the installation of the Xetra® WBAG software for WS on the AIX platform, it is strongly recommended that this chapter and also chapter One - Introduction is read.

3.1.1 Overview

Installation is performed using the standard AIX *installp* command which is part of the IBM RS/6000 AIX Base Operating System (BOS) Runtime, see 3.2.3 Step 3 - Start the Installation Procedure.

Before attempting to perform the installation, please check that the hardware and software are configured in line with the Exchange "Sizing Guidelines" and the "Release Notes".

3.1.2 Software Requirements

The following operating system should already be correctly installed on the system:

AIX 4.3.1 and patches.

In addition a window manager such as *CDE (Common Desktop Environment)* should also be already installed on the machine



Note: If the correct version of the operating system is not installed, the installation procedure will be terminated and the system rolled back to its previous state!

If CDE is not installed a warning message is given but the installation proceeds



Important!

The Xetra® WBAG software for one WS can only be installed if the GATE Front End Software is installed on the WS. The procedure for installing GATE Front End Software for a WS is covered in chapter 3 in the *Front End Installation Guide GATE - Installing GATE Front End Software for WS on AIX*.

3.1.3 Planning the installation

To perform a successful installation of Xetra® WBAG Front End Software on the machine, replies to various prompts from the installation procedure are to be given. These mostly cover general configuration parameters, network addresses etc. To assist, the Exchange provides a work sheet - see Appendix A – Xetra® WBAG Installation Work Sheet at the back of this binder. Filling in this work sheet has several goals

- It conveniently summarizes all the information needed to complete a successful installation.
- It documents the system.
- It can be helpful to have at hand when talking to the Technical Help Desk Xetra® WBAG in the event of any problems.

3.2 Installing WS

If the above procedures have been followed, the WS installation procedure can be started.



Important!

The minimum configuration for the Xetra® WBAG Front End Software is one MISS as a stand-alone system. If also installing WS software on WSs install **first** the MISS software on the Server. Also if installing an secondary MISS for high availability configurations, install the secondary MISS **before** starting to install the WS software. The procedure for installing MISS software is covered in chapter 2 - Installing Xetra® WBAG software for MISS on AIX.



Important!

Before starting to install Xetra® WBAG software

- login as **root** otherwise the installation will not be successful.
- backup the system.

3.2.1 Step 1 - Login as Root

At the login prompt:

su - root<ENTER>



At the password prompt:



Type password for root

3.2.2 Step 2 - Access to the Installation Source

On the WS mount the directory where the files from FTP for the installation are copied to.

3.2.3 Step 3 - Start the Installation Procedure

The *instxetrawbagr31.aix* installation file is contained in the /AIX subdirectory, where the files received via FTP are copied to. Start after changing to the directory the installation procedure by typing the following command:



sh ./instxetra_wbagr31.aix<ENTER>(…31.aix for production, …31s.aix for simulation)

The install program will now ask for specific information to configure the system and then continue to create the necessary directory structure on the machine and copy all the necessary binary, configuration, and library files to the disk.



The Xetra® programs will be installed in the following subdirectory

/usr/lpp/gate/baseYY/XETRA_WBAGxx/…(YY=90 for production, YY=91 for simulation)

(xx=68 for production, xx=69 for simulation)

3.2.4 Step 4 - Interrupting the Installation



During the Installation procedure typing <Ctrl+C> may be pressed at any time to quit. However if the Installation is interrupted in this way, rerun the *installp* program. Normally *installp* first cleans up the system automatically before the new installation starts. But depending on the procedure when the system has been stopped, it may be necessary to rerun *installp* with the option *-C* to force a clean up:



Installp Xetra_WBAGR31 or

Installp -C Xetra_WBAGR31

3.2.5 Step 5 - Pre-Installation Verification



```
# ./instxetra_wbagr31s.aix
+-----+
                Pre-installation Verification...
+-----+
Verifying selections...done
Verifying requisites...done
```

Results...

SUCSESSES

Filesets listed in this section passed pre-installation verification
and will be installed.

Selected Filesets

Xetra_WBAGR31 3.1.0.0 # XETRA_WBAG Software (Version...

<< End of Success Section >>

FILESET STATISTICS

- 1 Selected to be installed, of which:
 - 1 Passed pre-installation verification

- 1 Total to be installed

+-----+

Installing Software...

+-----+

installp: APPLYING software for:

Xetra_WBAGR31 3.1.0.0

3.2.6 Step 6 - Accept License Agreement



```
*****
```

```
© Copyright 1999 Deutsche Boerse AG, Frankfurt, Germany
```

```
All Rights Reserved.
```

```
This software is furnished under license and may be used and copied only in  
accordance with the terms of this license and with the inclusion of the above  
copyright notice. This software or any other copies thereof may not be provided  
or otherwise made available to any other person. No title to, or ownership of,  
the software is hereby transferred.
```

```
The information in this software is subject to change without notice and should  
not be construed as a commitment by Deutsche Boerse AG.
```

```
Deutsche Boerse AG assumes no responsibility for the use or reliability of its  
software on equipment which is not certified by Deutsche Boerse AG.
```

```
*****
```

```
. . . . . << End of copyright notice for XETRA_WBAG >>. . . . .
```

```
=====
```

```
Press <ENTER> to accept copyright and proceed with  
installation or press <Ctrl><C> to abort installation  
[ ]
```

```
You are about to begin installation of the Xetra_WBAG - Front End.
```

```
The installation procedure will guide you through the  
following steps:
```

1. Enter information about the environment in which the

Xetra_WBAG Front End will be running.

2. A summary of all the information you have provided will be displayed for your confirmation.

3. After your confirmation, the actual installation of the Xetra_WBAG Front End will take place.

Pressing <Ctrl><C> at any time will abort the installation procedure.

Press <ENTER> to proceed with the Installation or press <Ctrl><C> to abort installation

[]



Press <ENTER> to accept the license agreement or <Ctrl+C> to quit.

During the installation, the system will prompt to input the necessary configuration parameters, which should be written on the Installation Work Sheet.

3.2.7 Step 7 - Create an example Xetra® WBAG Trader Account

Xetra® also sets up a new user account for testing purposes (default XWBAGTrd). The installation procedure checks for the existence of this user and creates it if it does not already exist. Use this also if a different account name has to be entered.



User and group section.

=====

Enter the user name of the XETRA WBAG trader on this system.

[XWBAGTrd]



Press <ENTER> to accept the default, enter another name or <Ctrl+C> to quit.



Enter the user-ID for the trader account "XWBAGTrd"

[2211]



Press <ENTER> to accept the default or type new UserID and press <ENTER> or <Ctrl+C> to quit.



Enter password for user XWBAGTrd (at least 5 characters long)!

Changing password for "XWBAGTrd"

XWBAGTrd's New password:



Type new password (minimum 5 characters alphanumeric case-sensitive) and press <ENTER> or <Ctrl+C> to quit.



Re-enter new password:



Retype password (minimum 5 characters alphanumeric) and press <ENTER> or <Ctrl+C> to quit.

3.2.8 Step 8 - Copy Configuration Files from the MISS



To install the Front End Software on a workstation a copy of the configuration file from the MISS is necessary.

Member configuration file

/usr/lpp/gate/base90/XETRA_WBAG68/cfg/XETRA_WBAGmbr.ini

/...(YY=90 for production, YY=91 for simulation)

(68 for production, 69 for simulation)

Before starting the installation copy this file into a temporary directory on the workstation.



```
Please enter the fully qualified name of the copied "XETRA_WBAGmbr.ini"-File:
The file should be a copy of the "XETRA_WBAGmbr.ini"-File from the primary MISS.
File: /tmp/XETRA_WBAGmbr.ini
```



Type the full path and file name of the XETRA_WBAGmbr.ini file copied from the primary MISS.

3.2.9 Step 9 - Installation



```
Installation of the XETRA_WBAG Front End will now be performed based on the
information you have provided.
```

```
Working, please wait...
```

```
Usage: chown -fhR {username|uid}[:{groupname|gid}] file ...
```

```
Finished processing all filesets. (Total time: 1 mins 9 secs).
```

```
+-----+
Summaries:
+-----+
```

```
Installation Summary
```

```
-----
Name                               Level           Part           Event          Result
-----
```

```
Xetra_WBAGR31          3.1.0.0          USR          APPLY          SUCCESS
#
```

The installation procedure has now performed the following activities:

- creation of Xetra® WBAGTrader account
- adding GATE administrator and GATE trader accounts to Xetra® WBAG File Transfer group
- creation of XETRA_WBAGmbr.ini configuration file
- copy all files to installation directories
- creation of icons for desktop actions
- change owner of installed files to GATE trader Group
- copy libraries to /usr/lib

If all the actions are completed successfully, the installation of the Xetra® WBAG Front End Software Release 3.1 is now finished.

3.3 Verifying the Installation of Xetra® WBAG Software for WS

To verify the correct installation of Xetra® WBAG Front End Software for WS on the machine, perform the following steps:

3.3.1 Step 1 - Start MISS and WS GATE Front End Software



Important!

Please note that the GATE Front End Software must be running on the MISS and WS before starting Xetra®, hence refer to the *Front End Installation Guide GATE* for the GATE Front End Software.

3.3.2 Step 2 - Start Xetra® WBAG Application on the Workstation



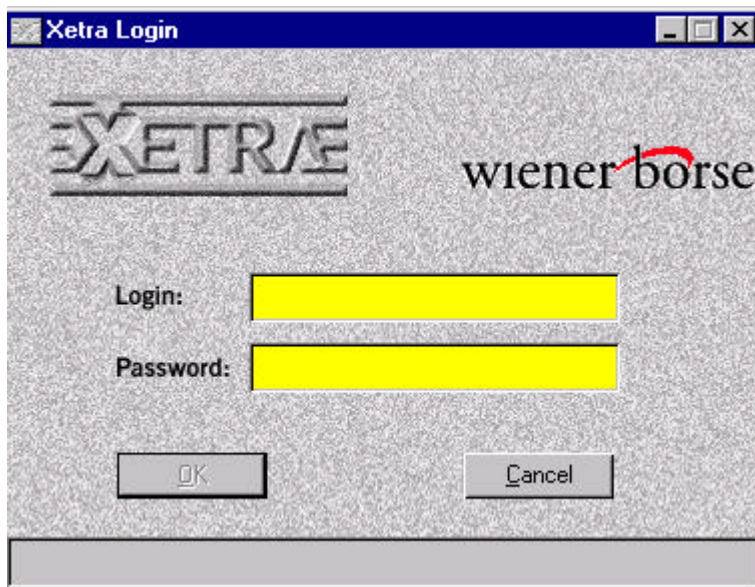
Click on StartXetra_WBAG_ApplicationR31 or StartXetra_WBAG_ApplicationR31SIM icon

The Xetra_WBAG Login Window should be displayed.

All snapshots below are taken in the development environment of Xetra® and show therefore the abbreviation “DEV” in the window header. In the production environment this is not shown.

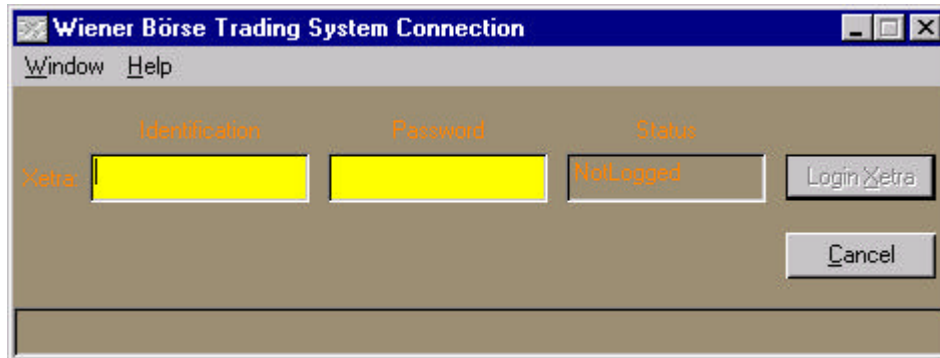
3.3.2.1 Login to Xetra®

This Login will be validated on the MISS, to which this WS will be connected.



Now login to the Xetra_WBAG Back End.

3.3.2.2 Xetra® WBAG Back End Login Window



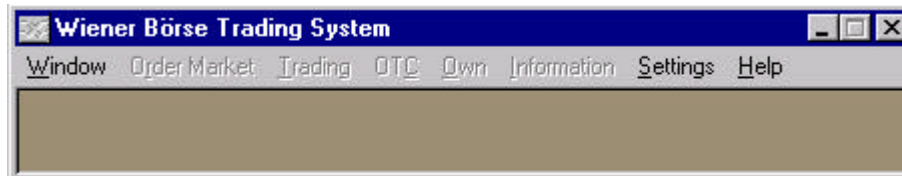
For verification please login to the Xetra® WBAG Back End.

Enter the Xetra® Member-ID (5 characters) together with the Trader-ID (6-character) and the password.

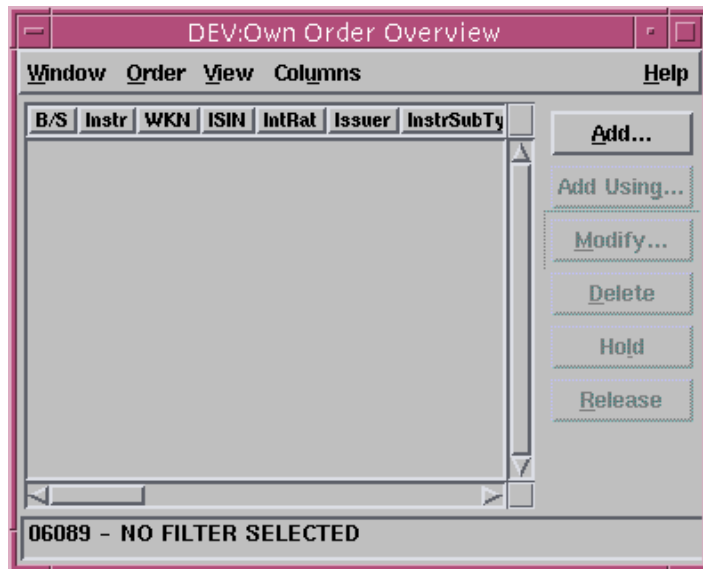
3.3.2.3 Sample Xetra® WBAG Application Screens

If logged into the application, the following are a sample of windows that can be opened:

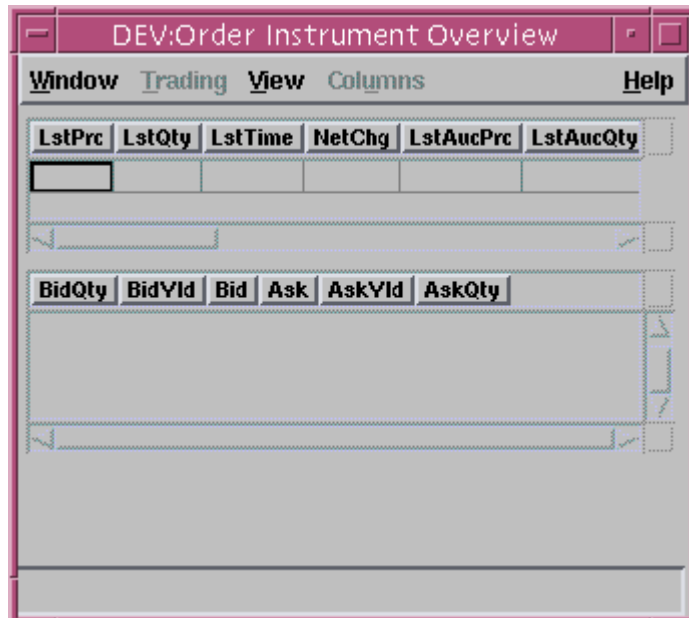
Xetra® WBAG Main Menu (opened automatically)



Own Order Overview Window (menu "Own", menu item "Own Orders...")



Order Instrument Overview Window (menu "Order Market", menu item "Order Instrument Overview")



Fast Order Entry Window (opened automatically)

Window	Instr	Qty	Limit	AvgPrc	ExR	StpLimit	Act	Text	TrR	Validity	MIOrdNo	OnBehalf	Curr
Buy	BMW	200	0.10		IOC	0.12	P		CA	03.11.1997		LTR003	DEM

Submit Apply Reset

For details see Xetra® Trading System User Guide.

3.4 Frequently Asked Questions (FAQ)

On the *Internet* pages of the Exchange (www.wbag.at) product specific information to frequently asked questions can be found. In order to access this information, switch to the product specific page and choose "Members only". After you log in, you can access the *Frequently Asked Questions* on the *Services* page.

Otherwise please call the Technical Help Desk line on:

+49 (0)69 2101 1740

3.5 Environment Variables

The following environment variables are created during the installation. They are set during startup of the terminal window, e.g. by clicking on an icon.

Environment Variable	Description
LIBPATH	System environment variable, points to VALUES API modules
PATH	System environment variable, points to the executables

3.6 Directory Structure for WS on AIX

The directory structure is /usr/lpp/gate/baseXX/... (XX=90 for production and XX=91 for simulation)

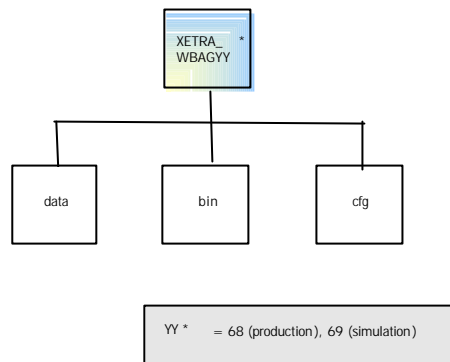


Figure: Xetra_WBAG Front End Directory Structure

3.7 Adding New Users and Workstations

3.7.1 Adding New Xetra® WBAG Users to the System

When adding a new Xetra® WBAG users to the AIX platform this should be done by the Systems Administrator. All new users must be set up as part of the **gatetrd** group.

Example: To create a new Xetra_WBAG user, proceed as follows

1. Login as root



```
mkuserID=userID pgroup=gatetrd home=/home/username shell=/usr/bin/ksh gecos="Description"  
username
```

(where userID is a unique numeric integer from 100 to 65535
and username is 5-8 characters alphanumeric)

2. Chose a password for the new user.



Important!

Login to Technical Xervices if the password or user name is less than five characters in length is not possible.



passwd username



Please enter new password



Type the password (minimum 5 characters alphanumeric).



Reenter new password



3. Retype the password (minimum 5 characters alphanumeric) to confirm it.

The new user is now created.

Now copy the user profiles and set the ownership and group for the new user as follows:

```
cp /home/XetraTrd/.profile /home/username
```

```
chown username /home/username/.profile
```

```
chgrp gatetrd /home/username/.profile
```

3.8 Removing Xetra_WBAG Software from the System

To remove the Xetra® WBAG software from the system use the *installp* command with the *-u* switch (uninstall) as follows - This will delete all files created during the installation:



```
installp -u Xetra-wbagR31
```

All files in the directories created by the *installp* command will be deleted.



Note: Using the *installp* command no group or user will be deleted. The XETRA_WBAGmbr.ini file is saved within the /var/XETRA_WBAG directory.
