

**THE
IXC ConnectGate Gateway**

System User's Guide

Version 1.4



Lymeware Corporation
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Preface

Readership

This manual is intended for anyone required to install, configure, and maintain the IXCCGate system. Knowledge of system administration and the specific target operating system and platform is assumed and required.

It is also expected that the reader will have detailed knowledge of Microsoft NT, Red Hat 6.2, SQL, XML, Microsoft SQL-Server, and the backend Ordering System. The IXCCGate system was developed using Microsoft Visual Basic, Perl, Java, and shell scripts, and knowledge of these tools would be very useful.

Scope of this Guide

This manual describes IXC ConnectGate product installation, configuration, operation and management.

Manual Revision History

Version 1.1	June 1999
Version 1.2	December 2000
Version 1.3	September 2001
Version 1.4	January 2002

Support Questions and Bug Reporting

Several e-mail addresses are available for customer support, technical support and sales questions or to report a potential bug in the software or documentation. If your product was purchased from Lymeware, please use the following addresses:

Service@lymeware.com for all account related inquires and issues, including those relating to licenses. If customers are unsure which address to use then they should send to this address. This address is monitored daily, and all messages will be responded to. This address also has the alias CustomerService@lymeware.com

Support@lymeware.com for all technical inquires and problem reports, including documentation issues from customers with support contracts. Customers should include relevant contact details, including company name and phone number, in initial message to speed processing. Messages that are continuations of an existing problem report should include the problem report ID in the subject line. Customers without support contracts with Lymeware Corporation should not use this address, but should contact their distributor directly. This address is monitored daily, and all messages will be responded to.

Sales@lymeware.com for all sales related inquires and similar communication. This address is monitored daily, and all messages will be responded to.

Bugs@lymeware.com for bug reports and documentation problems.

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Bug reports on software releases are always welcome. These may be sent by any means, but e-mail to the bug reporting address listed above is preferred. Please send proposed fixes and successful workarounds with the report if possible. Additional useful information would include IAgent software version, hardware description, operating system version and patches, screen dumps, relevant sections of logs and configuration files, and failed messages files. Any reports will be acknowledged, but further action is not guaranteed. Any changes resulting from bug reports may be included in future releases.

Support for products purchased from our distributors:

For all products purchased from our distributors, all questions (with the notable exception of bug reports) should be sent directly to the distributor. If your distributor does not offer a service contract then one may be obtained from Lymeware Corporation. Please send all such inquiries to Sales@lymeware.com.

Introduction

Why IXC ConnectGate?

In today's competitive telecommunications environment local service companies (usually CLECs) need a simple and straightforward way to order and maintain long distance service from IXCs for their customers. Each IXC seems to have a different PIC record layout and each supports different actions – all making for a very confusing situation for the CLEC who needs to communicate with one or more IXC.

And each IXC has one or more methods of transmission, each of which needs different skills to configure, test and place into a production ordering environment.

What is IXC ConnectGate?

IXC ConnectGate was designed to meet this challenge and provide a single unified interface to one or more IXC ordering systems, regardless of specific IXC record format or transmission requirements. IXC ConnectGate uses XML technology to simplify record formats and supports several transmission requirements, including:

- FTP,
- NDM/Direct Connect (by Sterling Commerce),
- E-mail, and
- SCP (secure copy, via SSH).

Document Structure

This design document consists of a system overview chapter, chapters relating to specific parts of the IXCCGate system or subsystems and troubleshooting chapters. The IXCCGate subsystems described in detail are:

1. The Global Crossing Long Distance Ordering subsystem,
2. The ILEC SubCIC Long Distance Ordering subsystem,
3. The IXCCGate process monitor and NT service, and
4. The IXCCGate XML Message monitor.

Other required components of the IXCCGate system are provided with their own documentation and include:

- The TIB/Rendezvous 6.6 middleware from Tibco,

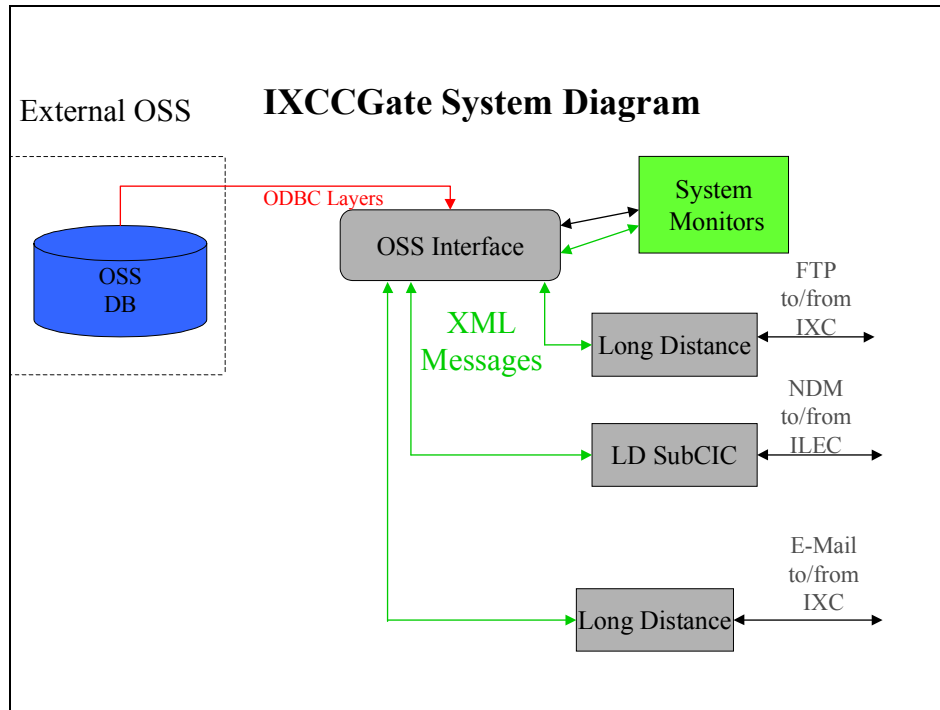
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- The Active Perl 618 Interpreter from ActiveState,
- The Microsoft NT Resource Kit from Microsoft,
- The Microsoft SQL-Server 7.0 from Microsoft, and
- The Java 2 v1.3.1 Runtime package from Sun Microsystems
- ConnectDirect package from Sterling Commerce

IXCCGate System Overview

IXCCGate Data Flow and Data Format Support

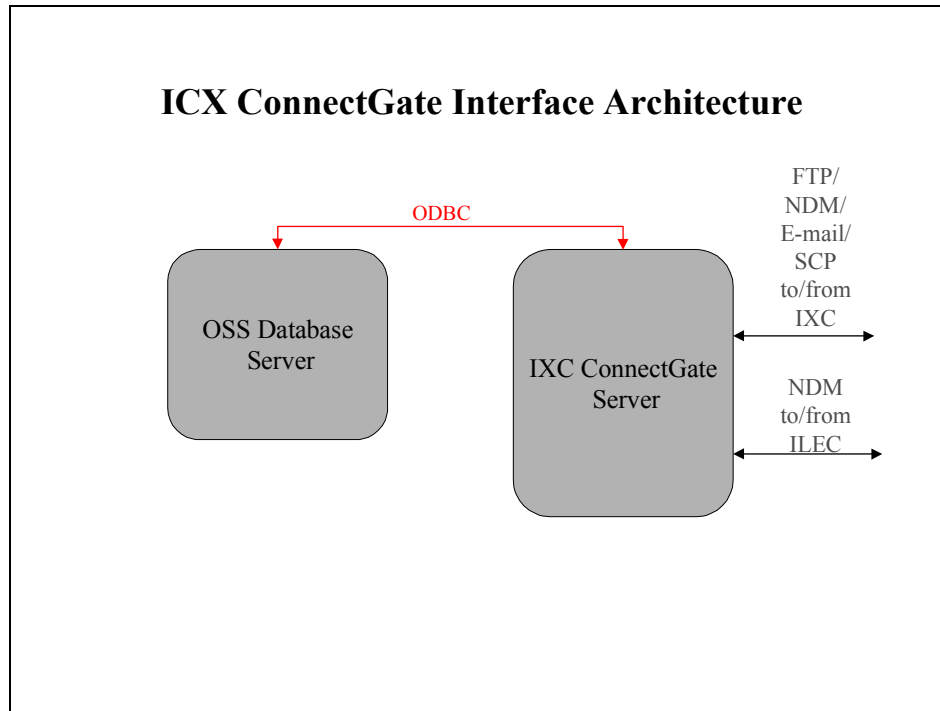
IXCCGate is designed to simplify and centralize all long distance telecommunications ordering functions in a “smart” gateway, responsible for message format and protocol translation from/to a common XML inward interface. The IXCCGate product supports a generic OSS ODBC interface.



Data flow and major processes of the IXCCGate gateway system

System Architecture

The IXCCGate system currently runs on a single platform, with multiple distributed processes divided between transport data types.

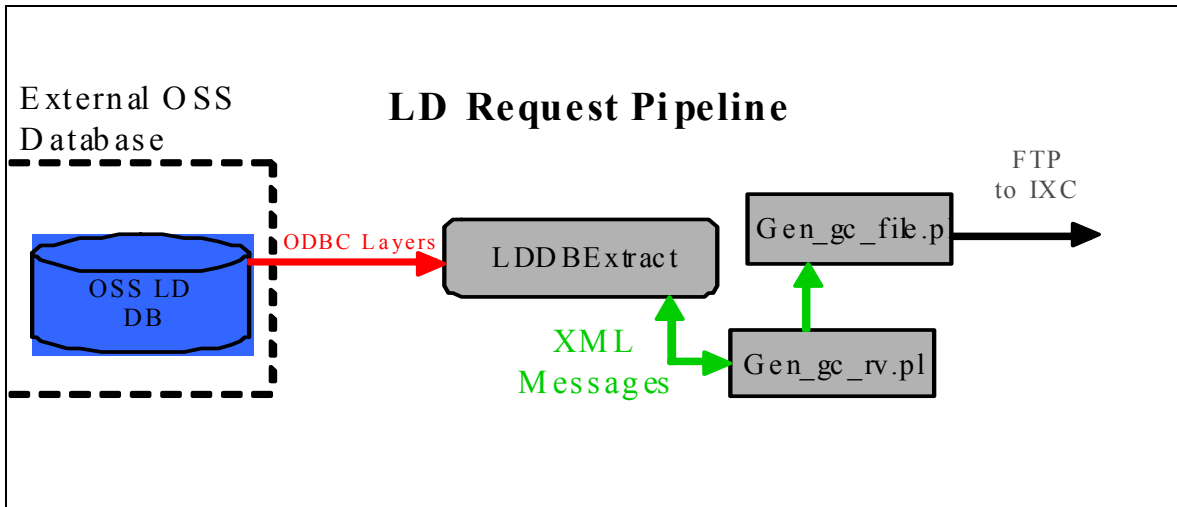


IXCCGate Interface Architecture

The IXC ConnectGate Server is responsible for database integration (polling and update), SQL to/from IXCCGate XML conversion, and IXCCGate XML to/from native format (PIC) record conversion. Additional processing also supports automatic batch delivery and receipt of PIC records to both the IXC (Global Crossing) and ILEC. All inter-process communications is through the TIB/Rendezvous middleware. All transactions between IXC ConnectGate and the OSS Database Server are SQL/ODBC. All processes which comprise the IXC ConnectGate product are managed and monitored by a single NT Service, automatically started on boot. This service restarts failed processes and runs batch processes at scheduled times.

Process Pipelines

Each of the IXCCGate subsystems can be envisioned as process “pipelines”, which pipe and modify data in either an outbound (request) or inbound (response) direction. A detailed example of the LD request pipeline is displayed below.



Pipeline data may be inspected at all of the process junction points shown above. Log files for all processing are located at C:\ixccg\Log and consist of timestamped text records. These files may be inspected with either Notepad or Wordpad (Microsoft Word is not recommended due to the size of these file). An example of a Global Crossing Request log file is displayed below.

```

Sending the following records:
Reading detail seq number of 000003
Reading seq number of 000017
    000000.det
    000001.det
    000002.det
shadow.ucommand.com FTP server (Version wu-2.6.0(1) Fri Jun 23 09:17:44 EDT
2000) ready.
Logging in as cnuunc (password *****)...User cnuunc logged in.
Opening BINARY mode data connection for ORCNUX01.017.
Transfer complete.
stored ORCNUX01.017 on shadow.ucommand.com
to Global Crossing at shadow.ucommand.com via ftp
  
```

An example of a Global Crossing Response log file is displayed below.

```

Reading seq number of 648
shadow.ucommand.com FTP server (Version wu-2.6.0(1) Fri Jun 23 09:17:44 EDT
2000) ready.
Logging in as cnuunc (password *****)...User cnuunc logged in.
retrieved CNUOB648.EXE from shadow.ucommand.com
DONE polling
PKSFX (R) FAST! Self Extract Utility Version 2.49 08-01-96
Copr. 1989-1996 PKWARE Inc. All Rights Reserved. Registered Version
PKSFX Reg. U.S. Pat. and Tm. Off.

Searching EXE: CNUOB648.EXE
Inflating: OBCNUX01.648
header=[0001 0107130648CNU ALN ]
sequenceNumber = 0648
  
```

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62-01 = Change ANI record as shown on the detail record. (A D in position 31 means the WTN has been physically removed from the wholesale customer account).

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62-01 = Change ANI record as shown on the detail record. (A D in position 31 means the WTN has been physically removed from the wholesale customer account).

61-01 = Change Customer Record as shown on the detail record.

62-09 = Change Calling Card record as shown on the detail record.

62-09 = Change Calling Card record as shown on the detail record.

trailer=[9901 0107130648CNU ALN] 0000021

recordCount = 0000016

actual recordCount = 16

IXC (Global Crossing) Long Distance (LD) Service

There are two major processing pipelines for the long distance (LD) interface, outbound (request, or to the LD provider) and inbound (response, or from the LD provider). Note that not all inbound messages are the direct result of outbound messages. Other messages, such as alerts, local change notifications and others will be received as unprompted inbound messages.

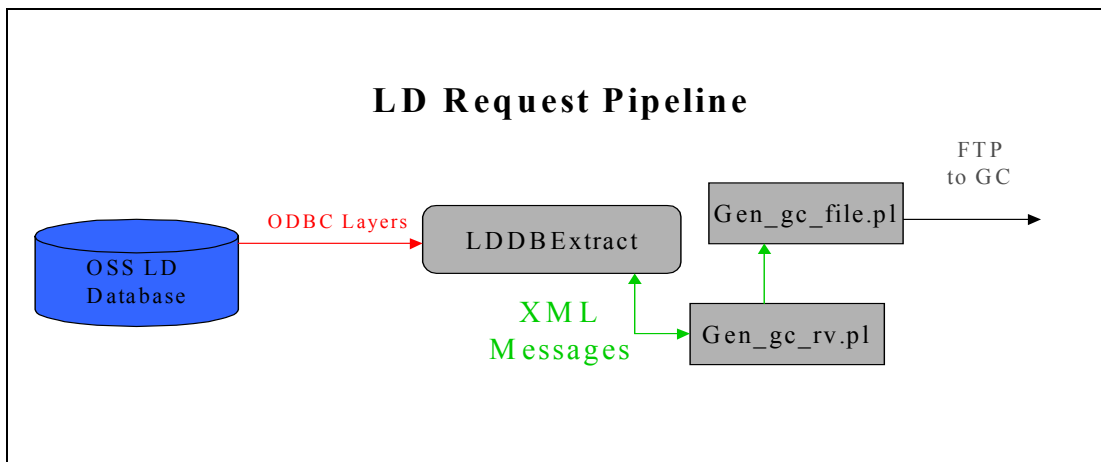
Several thousand times a day (every 3 seconds or so) the LDDBExtract process reads the OSS LD database and extracts all pending LD orders, converts the orders into XML (as described in the ld_gc.dtd file) and sends the XML via Tibco to the gen_gc_rv process. This process “stages” each received XML message as a single detail file (NNNNNNN.det).

A second processing stream is time driven and currently runs once an hour (between the hours of 8am and 4pm) and starts the gen_gc_file process. This process reads in all the current detail files and builds a single LD request file. It then sends this file, via FTP to the Global Crossing machine.

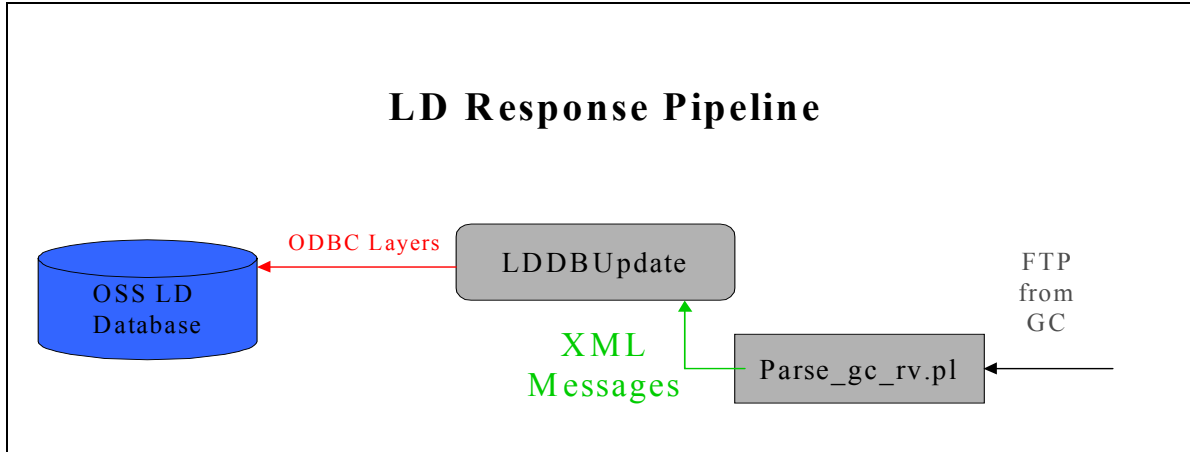
Once a day, the parse_gc_rv process will access the Global Crossing machine and pick up all available response files and process them. Processing consists of uncompressing each file then parsing each file for applicable detail records. Note: not all response detail records are supported or processed. Each supported detail response record is converted into XML (as described in the ld_gc.dtd file) and sent via Tibco to the LDDBUpdate process. This process is responsible for updated the matching LD record in the OSS LD database.

Pipeline Processing Flow

A detailed example of the LD request pipeline is displayed below.



The mirror LD response pipeline is displayed below.



Pipeline operation can be inspected at several points during monitoring and troubleshooting. These points include:

- a. XML/Tibco message transfer between the LDDDBExtract process and the gen_gc_rv process, using the XML Monitor,
- b. XML/Tibco message transfer between the Parse_gc_rv.pl process and the LDDDBUpdate process, using the XML Monitor,
- c. Manual inspection of Raw conversion log files (generated by message traffic from and to Global Crossing), and
- d. Post traffic inspection of raw input and output data files (exchanged from and to Global Crossing).

ILEC SubCIC Long Distance (LD) Service

There are two major processing pipelines for the ILEC SubCIC long distance (LD) interface, outbound (request, or to the SubCIC LD provider) and inbound (response, or from the SubCIC LD provider). Note that not all inbound messages are the direct result of outbound messages. Other messages, such as alerts, local change notifications and others will be received as inbound messages.

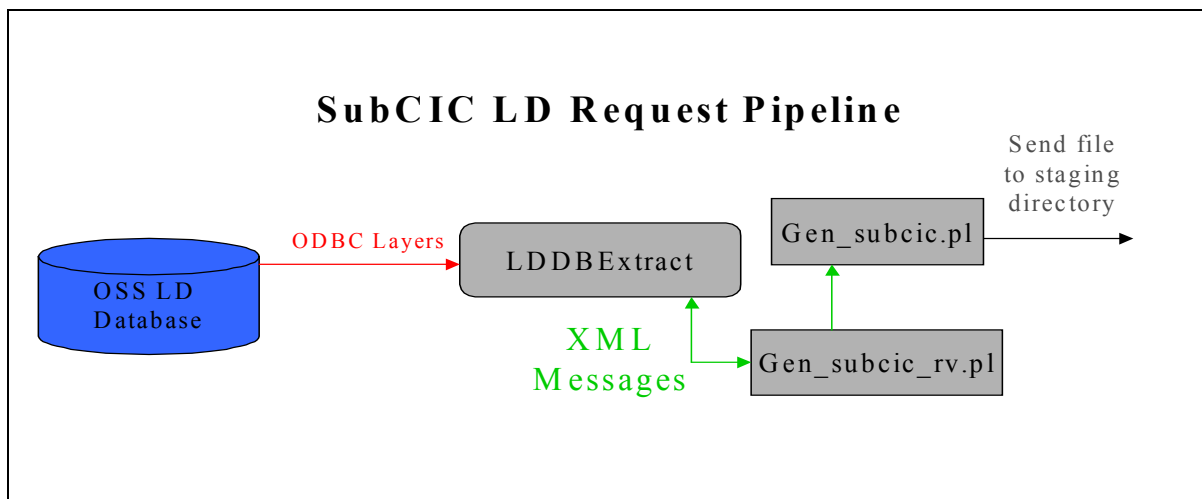
Several thousand times a day (every 3 seconds or so) the LDDBExtract process reads the OSS LD database and extracts all pending SubCIC LD orders, converts the orders into XML (as described in the ld_subcic.dtd file) and sends the XML via Tibco to the gen_subcic_rv process. This process “stages” each received XML message as a single detail file (nnnnn.det).

A second processing stream is time driven and currently runs once a minute and starts the gen_subcic process. This process reads in all the current detail files and builds a single SubCIC LD request file. It then moves this file to a system directory, for automatic transfer via NDM.

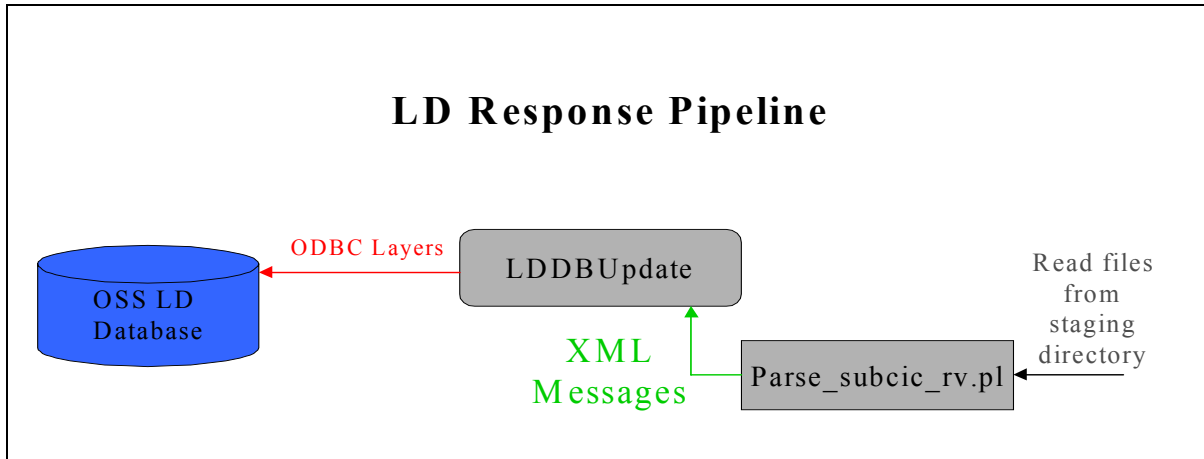
Also once a day, the parse_subcic_rv process will pick up all pending SubCIC response files (which will be automatically downloaded via NDM) and process them. Processing consists of parsing each file for applicable detail records. Note, not all response detail records are supported or processed. Each supported detail response record is then converted into XML (as described in the ld_subcic.dtd file) and sent via Tibco to the LDDBUpdate process. This process is responsible for updated the matching LD record in the OSS LD database.

Pipeline Processing Flow

A detailed example of the SubCIC LD request pipeline is displayed below.



The mirror SubCIC LD response pipeline is displayed below.



Pipeline operation may be inspected at several points during monitoring and troubleshooting. These points include:

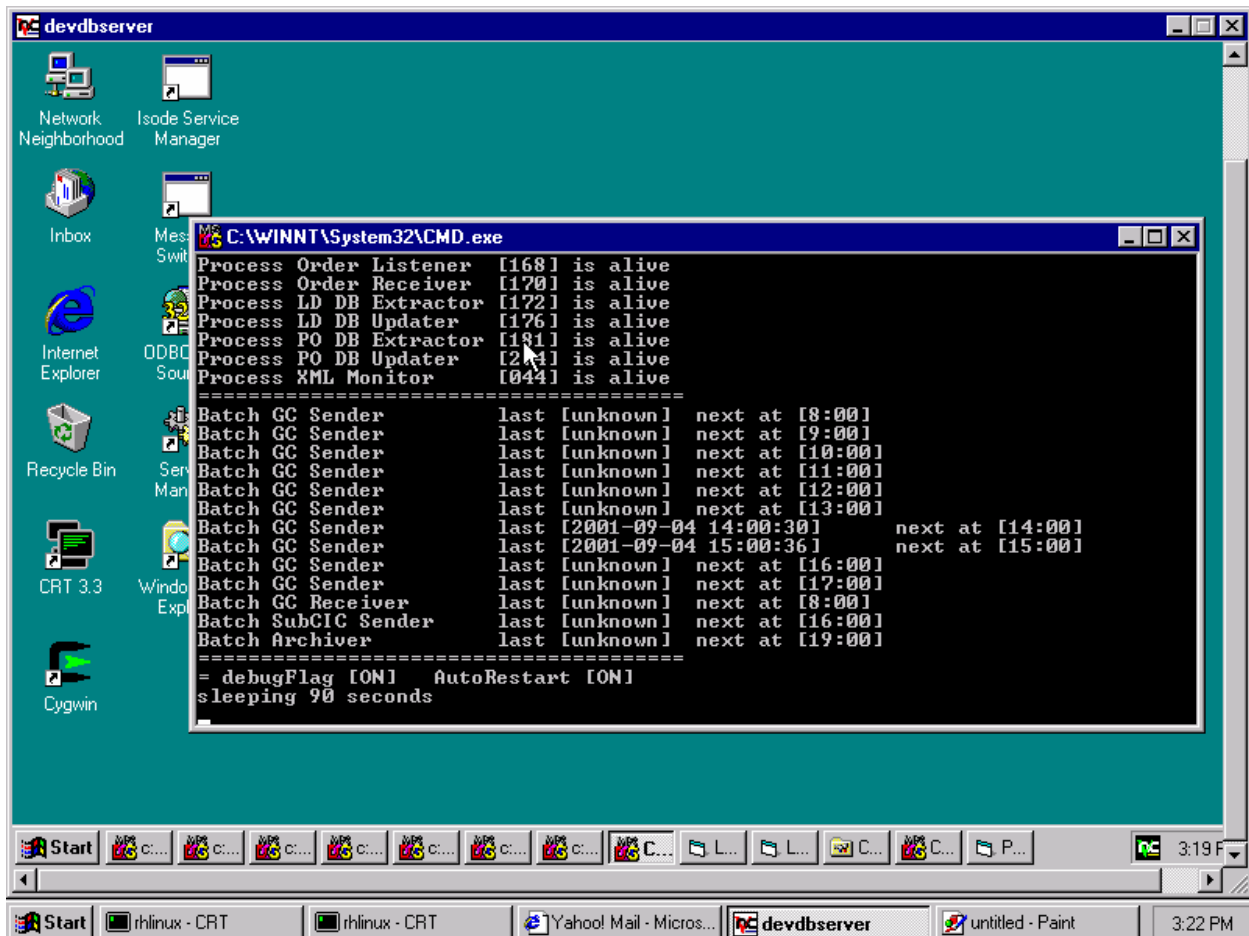
- a. XML/Tibco message transfer between the LDDDBExtract process and the gen_subcic_rv process, using the XML Monitor,
- b. XML/Tibco message transfer between the Parse_subcic process and the LDDDBUpdate process, using the XML Monitor,
- c. Manual inspection of Raw conversion log files (generated by message traffic from and to the ILEC), and
- d. Post traffic inspection of raw input and output data files (exchanged from and to the ILEC).

IXCCGate System Monitoring NT Service

The IXCCGate system components are managed and monitored by the IXCCGate System Monitor, which is installed and run as an NT Service. This Monitor provides the following features:

- Auto-starts at system boot,
- Starts all “long-running” processes for IXCCGate,
- Starts all timed or batch processes, which are scheduled for periodic processing,
- Monitors (and restarts) any long running processes which fail,
- Logs all processes starts and re-starts to a system log file, and finally
- Displays the status of all “log-running” and batch processes to the NT desktop.

Below is an example of the IXCCGate System Monitor display.



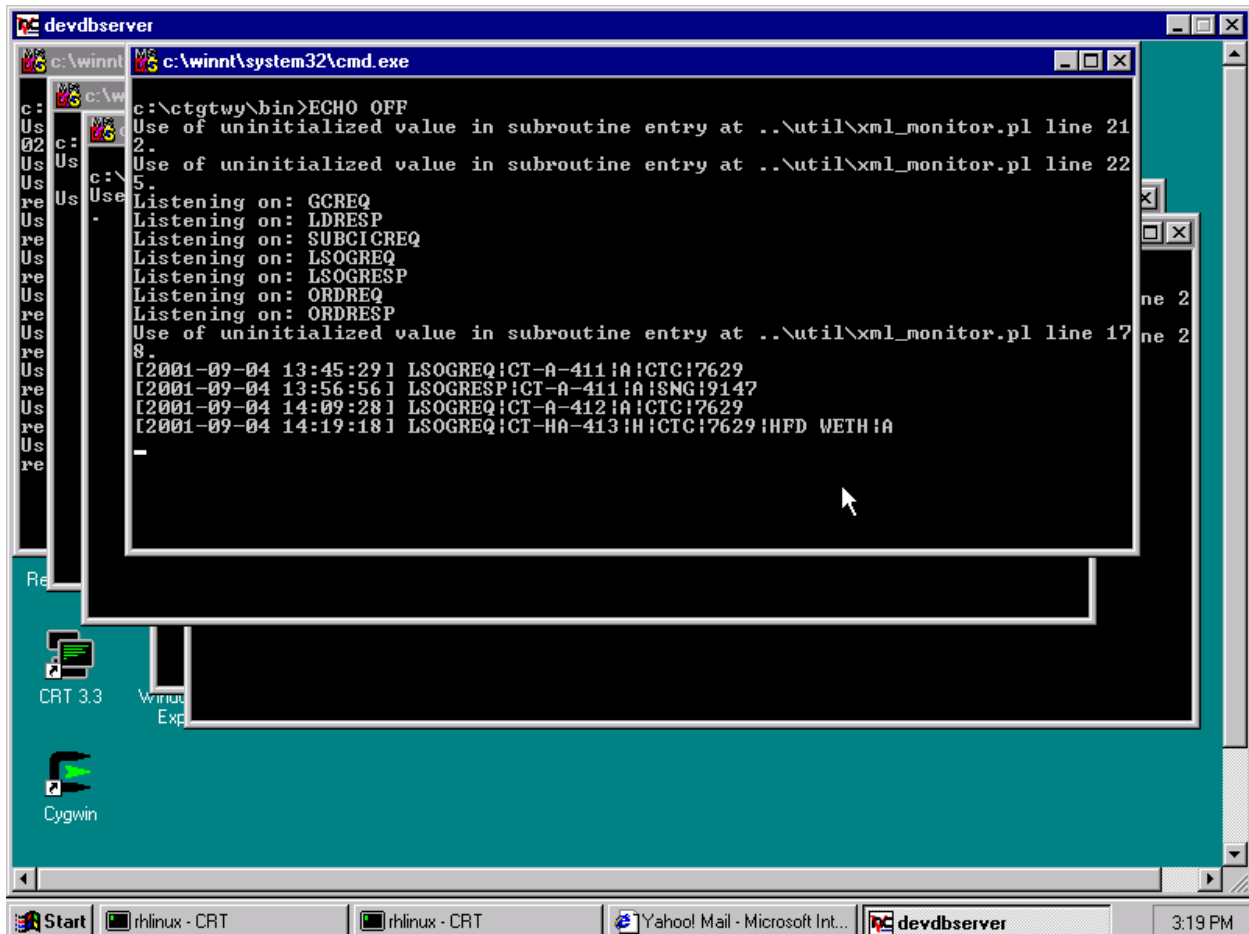
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The display lists all Processes (“long-running”) with their process ID and status. If the status is anything but alive, then the Monitor will restart the process and appropriate messages will be displayed during restart. All Batch processes are listed with their last running time (if known) and the next scheduled run time.

XML Message Monitor

The IXCCGate messaging layer, which is composed of Tibco middleware and XML data formats, is monitored by the XML message monitor. This tool is non-invasive and “sniffs” the Tibco middleware layer, catching any Tibco messages sent on all the subject names the tool is configured to listen to. Each subject name also contains a list of XML elements to display, so different XML message type will display different data on the monitor. The monitor also saves all traffic information in a log file, with each message comprising a single log entry.

Below is an example of the XML Message Monitor display.



```

c:\winnt\system32\cmd.exe
c:\ctgtwy\bin>ECHO OFF
Use of uninitialized value in subroutine entry at ..\util\xml_monitor.pl line 21.
Use of uninitialized value in subroutine entry at ..\util\xml_monitor.pl line 22.
Use of uninitialized value in subroutine entry at ..\util\xml_monitor.pl line 25.
Listening on: GCREQ
Listening on: LDRESP
Listening on: SUBCICREQ
Listening on: LSOGREQ
Listening on: LSOGRESP
Listening on: ORDREQ
Listening on: ORDRESP
Use of uninitialized value in subroutine entry at ..\util\xml_monitor.pl line 178.
[2001-09-04 13:45:29] LSOGREQ!CT-A-411!A!CTC!7629
[2001-09-04 13:56:56] LSOGRESP!CT-A-411!A!SNG!9147
[2001-09-04 14:09:28] LSOGREQ!CT-A-412!A!CTC!7629
[2001-09-04 14:19:18] LSOGREQ!CT-HA-413!H!CTC!7629!HFD WETH!A
  
```

The display lists messages in the form of: timestamp, Tibco message subject name, and then specific XML fields of interest.

This monitor is started automatically by the IXCCGate System Monitor but is not required for IXCCGate to operate correctly.

IXC ConnectGate Log and Audit Information

Log Archiver

The IXCCGate system generates detailed logs for each inbound and outbound transaction. These detail logs are stored in C:\Ixccg\Archive by the Archiver process. Archives are gzipped up and date stamped for later examination.

IXC ConnectGate Logs

Several of the IXC ConnectGate processes log transaction and audit data to text-based log files. These include:

```
gcsend.log – generated by run_gc_sender.bat
gcresp.log – generated by run_gc_receiver.bat
gcreq.log – generated by start_gc_listener.bat
subcicsend.log – generated by run_subcic_sender.bat
subcicresp.log – generated by run_subcic_receiver.bat
subcicreq.log – generated by start_subcic_listener.bat
archiver.log – generated by run_archiver.bat
xmlmon.log – generated by xml_monitor.pl
```

Product Installation

Pre-Installation

Prior to IXC ConnectGate installation, the following products must be installed:

- The TIB/Rendezvous 6.6 middleware from Tibco Software (www.tibco.com),
- The Active Perl 618 Interpreter from ActiveState (www.activestate.com),
- The Microsoft NT Resource Kit from Microsoft,
- The Java 2 v1.3.1 Runtime package from Sun Microsystems (java.sun.com), and
- (Optionally) ConnectDirect from Sterling Commerce (www.stercomm.com)

Installation

The IXC ConnectGate system is delivered in an encrypted Zip file and may be opened using pkzip, winzip, or netzip. The Zip file should be unpacked in a new directory (C:\Ixccg\), using folder information.

The complete IXC ConnectGate directory structure has the following:

```
C:\Ixccg\archive  
C:\Ixccg\bin  
C:\Ixccg\data  
C:\Ixccg\log  
C:\Ixccg\perllib  
C:\Ixccg\util
```

Pass code information will be supplied via your Lymeware contact or distributor.

Post-Installation

The final post-setup step is to install the start_ixccg_master.bat as a service. The sc.exe utility in the Microsoft NT 4.0 Resource Kit is required to install the bat file as a service and start at boot. See sc.doc in the Resource Kit for more details.

When finished the NT server must be rebooted and an IXC ConnectGate Process Monitor screen will be displayed on reboot

IXC ConnectGate Operations and Administration

IXC ConnectGate System Startup

The IXC ConnectGate system is automatically started at boot time (by the IXC ConnectGate service). This service starts all IXC pipeline processes (both batch and long-running or daemon - as defined in the `start_ixccg.pl` script). A relevant portion (for both batch and long-running) is shown below.

```
my @ixccg_production_daemon_process_list = (
# contains all IXCCG production daemon process information =====
#
# A few dumb notes on winNT CMD.exe:
# /C string - will run string and terminate when process does
# /K string - will run string and not terminate when process does
#
# name, path2exe, command line, path, pid, processObj
["GC Listener","c:\\winnt\\system32\\cmd.exe", "cmd /C
start_gc_listener.bat", "c:\\ixccg\\bin\\", 0,0],
["SubCIC Listener","c:\\winnt\\system32\\cmd.exe", "cmd /C
start_subcic_listener.bat", "c:\\ixccg\\bin\\", 0,0],
["LD DB Extractor","c:\\ixccg\\bin\\LDDBExtract.exe", "LDDBExtract.exe",
"c:\\ixccg\\bin\\", 0,0],
["LD DB Updater","c:\\ixccg\\bin\\LDDBUpdate.exe", "LDDBUpdate.exe",
"c:\\ixccg\\bin\\", 0,0],
["XML Monitor","c:\\winnt\\system32\\cmd.exe", "cmd /C
start_xml_monitor.bat", "c:\\ixccg\\bin\\", 0,0]
);
```

```
my @ixccg_scheduled_process_list = (
# contains all IXCCG scheduled (batch) process information =====
# name, path2exe, command line, path, days, time, pid, processObj
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "8:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "9:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "10:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "11:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "12:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "13:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "14:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "15:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "16:00", 0,0,"unknown"],
["GC Sender ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_sender.bat",
"c:\\ixccg\\bin\\", 12345, "17:00", 0,0,"unknown"],
```

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```
["GC Receiver","c:\\winnt\\system32\\cmd.exe", "cmd /C run_gc_receiver.bat",  
"c:\\ixccg\\bin\\", 12345, "8:00", 0,0,"unknown"],  
["SubCIC Sender","c:\\winnt\\system32\\cmd.exe", "cmd /C  
run_subcic_sender.bat", "c:\\ixccg\\bin\\", 12345, "16:00", 0,0,"unknown"],  
["SubCIC Receiver","c:\\winnt\\system32\\cmd.exe", "cmd /C  
run_subcic_receiver.bat", "c:\\ixccg\\bin\\", 12345, "8:00", 0,0],  
["Archiver      ", "c:\\winnt\\system32\\cmd.exe", "cmd /C run_archiver.bat",  
"c:\\ixccg\\bin\\", 12345, "19:00", 0,0,"unknown"]  
);
```

IXC ConnectGate System Shutdown

The IXC ConnectGate system is halted when the Windows NT Server is halted with a **Start->ShutDown->ShutDown The Computer->Yes** menu command. The IXC ConnectGate service will cleanly shutdown all running IXC ConnectGate processes (which are being monitored) then will gracefully exit the service.

We have encountered problems with SQL-Server connections which refuse to exit cleanly and may cause (harmless) “connection broken” errors to appear in pop-up dialogs.

No other method of process removal is suggested or supported at this time.

Appendix A: IXCCGate System Specific DTDs

These Document Type Definitions (DTDs) are used to define specific XML messages shared between cooperating processes and services within the IXCCGate system. The list below is complete for the current version of the IXCCGate system.

DTD Usage Table

XML Transaction Type	Specific DTD	Process Writes XML	Process Reads XML
GC LD Request	GC LD DTD	LD Database Poll	GC LD Send
GC LD Response	GC LD DTD	GC LD Receive	LD Database Update
SubCIC Request	ILEC SubCIC DTD	LD Database Poll	SubCIC LD Send
SubCIC Response	ILEC SubCIC DTD	SubCIC LD Receive	LD Database Update

Appendix B: IXCCGate System Message Formats

Global Crossing Long Distance Interface Message Formats

This data has been extracted from the Global Crossing Long Distance Interface DTD

The following Ordering transactions are supported (TC-SI):

New Account or Add ANI Request (LD_NEW_ANI)	(01-01),
New Account or Add Calling Code Request (LD_NEW_CC)	(01-02),
New Account or Add 800 Request (LD_NEW_800_04)	(01-04),
New Account or Add 800 Request (LD_NEW_800_05)	(01-05),
Add ANI to Master Account Request (LD_ADD_ANI)	(01-06),
Activate new PIN Request (LD_NEW_PIN)	(01-07),
Global Crossing Local Change Response (LD_CHG_CUST)	(61-01),
Global Crossing Local Change Response (LD_CHG_ANI)	(62-01),
Global Crossing Local Change Response (LD_CHG_CC)	(62-02),
Global Crossing Local Change Response (LD_CHG_800)	(62-03),
Global Crossing Local Change Response (LD_CHG_CCARD)	(62-09),
Global Crossing ERROR Response (LD_ERROR)	(63-XX),
Global Crossing GOOD Response (LD_GOOD)	(64-XX),
Maintain ANI Record Request (LD_EDIT_ANI)	(71-01),
Maintain Calling Code Record Request (LD_EDIT_CC)	(71-02),
Maintain 800 Record Request (LD_EDIT_800)	(71-03),
Maintain PIN Record Request (LD_EDIT_PIN)	(71-07),
Maintain Customer Record Request (LD_EDIT_CUST)	(72-01), and
Global Crossing Account Snapshot Response (LD_SNAP)	(80-XX),

Define all Global Crossing Ordering transactions =====

Any Global Crossing Order Request transaction (ALL) =====

```
<!ELEMENT LD_GC.request.transaction (LD_GC.header,
  (LD_GC.request.detail | LD_NEW_ANI.request.detail |
  LD_NEW_CC.request.detail | LD_NEW_800_04.request.detail |
  LD_NEW_800_05.request.detail | LD_ADD_ANI.request.detail |
  LD_NEW_PIN.request.detail | LD_EDIT_ANI.request.detail |
  LD_EDIT_CC.request.detail | LD_EDIT_800.request.detail |
  LD_EDIT_PIN.request.detail | LD_EDIT_CUST.request.detail)+,
  LD_GC.trailer)>
```

Global Crossing Order transaction Header record =====

```
<!ELEMENT LD_GC.header (gc:Header, gc:base_header, gc:HFiller03)>
```

Global Crossing Order transaction Trailer record =====

```
<!ELEMENT LD_GC.trailer (gc:Trailer, gc:base_header, gc:TFiller03,
  gc:GTRecordCount, gc:TFiller04)>
```

Any Global Crossing Order Request transaction (detail) =====

```
<!ELEMENT LD_GC.request.detail (tran.header, gc:TransactionCode,
  gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,
  gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource,
  gc:NumCallingCodes, gc:WlsBillingCycle, gc:Date,
  gc:CustomerType, gc:NetworkServCode, gc:Filler01,
  gc:CustomerNumber, gc:Filler02, gc:WTNINTCalling,
  gc:OrigTCSICode, gc:GC800Termination, gc:GC800Translation,
```


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```
gc:BTNNPAProcAs, gc:WTNNPAProcAs, gc:PICType, gc:Filler03,  
gc:CusSecFlag, gc:BTCustomerName, gc:VoiceMailPO,  
gc:VoiceMailBoxNum, gc:CashGuardAmt, gc:CashGuardType,  
gc:CashGuardDur, gc:BTAddress1, gc:BTAddress2,  
gc:AccountCodeIndex, gc:Filler04, gc:WholesaleUse,  
gc:LanguageInd, gc:BTCity, gc:BTState, gc:FeatureSet,  
gc:NumberGenerate, gc:Filler06, gc:BTZip, gc:Filler07,  
gc:GCBillingCycle, gc:GCCustNum, gc:PIN, gc:PINPots,  
gc:PINStatus, gc:InfoDigitScreening, gc:InfoDigitIndex,  
gc:Filler08, gc:CCCCNum, gc:CCCCStatus, gc:ADACCCodeWTN,  
gc:ACCCCodePkg, gc:ADACCCodeCC, gc:WTNCCStatusDate,  
gc:CustStatusDate, gc:WTNCCLastDate, gc:ToLEC,  
gc:Association, gc:Package, gc:Product, gc:Option,  
gc:N800InServDate, gc:N800TransRespOrg, gc:N800NPABlkStatus,  
gc:N800LOAIssueDate, gc:N800LOACnclDate, gc:N800LOACnclCode,  
gc:N800DirAsstStatus, gc:N800DirAsstDate, gc:Filler09,  
gc:SubCIC, gc:Filler10, gc:N800CurrentRespOrg,  
gc:MultiCarrier, gc:TransDate, gc:LocalServiceProvider,  
gc:TransTime, gc:Filler11)>
```

New ANI Global Crossing Order Request transaction (detail) =

```
<!ELEMENT LD_NEW_ANI.request.detail (tran.header, gc:TransactionCode,  
gc:StatusIndicator, gc:BTN, gc:WTN, gc:WTN800Status,  
gc:AccountStatus, gc:NumCallingCodes, gc:WlsBillingCycle,  
gc:Date, gc:CustomerNumber, gc:PICType, gc:CusSecFlag*,  
gc:BTCustomerName, gc:BTAddress1, gc:BTAddress2,  
gc:WholesaleUse*, gc:BTCity, gc:BTState, gc:BTZip,  
gc:ADACCCodeWTN*, gc:ADACCCodeCC*, gc:SubCIC)>
```

New Calling Code Global Crossing Order Request transaction (detail)

```
<!ELEMENT LD_NEW_CC.request.detail (tran.header, gc:TransactionCode,  
gc:StatusIndicator, gc:BTN, gc:AccountStatus,  
gc:NumCallingCodes, gc:Date, gc:CustomerType,  
gc:NetworkServCode*, gc:CustomerNumber, gc:CusSecFlag,  
gc:BTCustomerName, gc:BTAddress1, gc:BTAddress2,  
gc:AccountCodeIndex, gc:WholesaleUse, gc:BTCity,  
gc:BTState, gc:BTZip, gc:ADACCCodeCC)>
```

New 800 04 Global Crossing Order Request transaction (detail)

```
<!ELEMENT LD_NEW_800_04.request.detail (tran.header,  
gc:TransactionCode, gc:StatusIndicator, gc:BTN, gc:WTN*,  
gc:WTN800Status, gc:AccountStatus, gc:Date, gc:CustomerType,  
gc:CustomerNumber, gc:GC800Termination*, gc:GC800Translation*,  
gc:BTCustomerName, gc:BTAddress1, gc:BTAddress2,  
gc:WholesaleUse, gc:BTCity, gc:BTState, gc:BTZip,  
gc:InfoDigitScreening*, gc:InfoDigitIndex*)>
```

New 800 05 Global Crossing Order Request transaction (detail)

```
<!ELEMENT LD_NEW_800_05.request.detail (tran.header,  
gc:TransactionCode, gc:StatusIndicator, gc:BTN, gc:WTN,  
gc:WTN800Status, gc:AccountStatus, gc:Date, gc:CustomerType,  
gc:CustomerNumber, gc:GC800Termination*, gc:GC800Translation*,  
gc:BTCustomerName, gc:BTAddress1, gc:BTAddress2,  
gc:WholesaleUse, gc:BTCity, gc:BTState, gc:BTZip,  
gc:InfoDigitScreening*, gc:InfoDigitIndex*,  
gc:N800TransRespOrg*, gc:N800CurrentRespOrg*, gc:MultiCarrier*)>
```

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Add ANI to Master Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_ADD_ANI.request.detail (gc:TransactionCode,  
    gc:StatusIndicator, gc:BTN, gc:WTN, gc:WTN800Status, gc:Date,  
    gc:WTNINTCalling*, gc:PICType*, gc:WholesaleUse*,  
    gc:ADACCCodeWTN*, gc:ADACCCodeCC, gc:WTNCCStatusDate,  
    gc:CustStatusDate, gc:WTNCCLastDate, gc:SubCIC*)>
```

NEW PIN Crossing Order Request transaction (detail) =====

```
<!ELEMENT LD_NEW_PIN.request.detail (tran.header, gc:TransactionCode,  
    gc:StatusIndicator, gc:WTN, gc:Date, gc:WholesaleUse*,  
    gc:PIN, gc:PINPots, gc:PINStatus)>
```

Edit ANI Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_EDIT_ANI.request.detail (gc:TransactionCode,  
    gc:StatusIndicator, gc:BTN, gc:WTN, gc:WTN800Status,  
    gc:AccountStatus, gc:TermSource*, gc:Date, gc:CustomerType*,  
    gc:CustomerNumber*, gc:WTNINTCalling*, gc:PICType*,  
    gc:BTCustomerName*, gc:BTAddress1*, gc:BTAddress2*,  
    gc:WholesaleUse*, gc:BTCity*, gc:BTState*, gc:BTZip*,  
    gc:ADACCCodeWTN*, gc:SubCIC*)>
```

Edit Calling Codes Global Crossing Order Request transaction (detail)

```
<!ELEMENT LD_EDIT_CC.request.detail (tran.header, gc:TransactionCode,  
    gc:StatusIndicator, gc:AccountStatus, gc:TermSource*,  
    gc:Date, gc:NetworkServCode*, gc:CusSecFlag*,  
    gc:WholesaleUse*, gc:CCCCNum, gc:CCCCStatus,  
    gc:ADACCCodeCC*)>
```

Edit 800 Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_EDIT_800.request.detail (gc:TransactionCode,  
    gc:StatusIndicator, gc:BTN, gc:WTN, gc:WTN800Status,  
    gc:AccountStatus, gc:TermSource*, gc:Date, gc:CustomerNumber,  
    gc:GC800Termination*, gc:GC800Translation*, gc:WholesaleUse*,  
    gc:InfoDigitScreening*, gc:InfoDigitIndex*)>
```

Edit PIN Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_EDIT_PIN.request.detail (gc:TransactionCode,  
    gc:StatusIndicator, gc:WTN, gc:Date, gc:WholesaleUse*,  
    gc:PIN, gc:PINPots, gc:PINStatus, gc:ADACCCodeWTN*,  
    gc:ADACCCodeCC*)>
```

Edit Customer Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_EDIT_CUST.request.detail (gc:TransactionCode,  
    gc:StatusIndicator, gc:BTN, gc:AccountStatus, gc:TermSource*,  
    gc:Date, gc:CustomerNumber, gc:BTCustomerName, gc:BTAddress1,  
    gc:BTAddress2, gc:WholesaleUse*, gc:BTCity, gc:BTState,  
    gc:BTZip)>
```

Any Global Crossing Order Response transaction (ALL) =====

```
<!ELEMENT LD_GC.response.transaction (LD_GC.header,  
    (LD_GC.response.detail | LD_CHG_CUST.response.detail |  
    LD_CHG_ANI.response.detail | LD_CHG_CC.response.detail |  
    LD_CHG_800.response.detail | LD_CHG_CCARD.response.detail |  
    LD_ERROR.response.detail | LD_GOOD.response.detail |
```

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```
LD_SNAP.response.detail)+, LD_GC.trailer)>
```

Any Global Crossing Order Response transaction (detail) =====

```
<!ELEMENT LD_GC.response.detail (gc:TransactionCode,  
  gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,  
  gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource,  
  gc:NumCallingCodes, gc:WlsBillingCycle, gc:Date,  
  gc:CustomerType, gc:NetworkServCode, gc:CustomerNumber,  
  gc:WTNINTCalling, gc:OrigTCSICode, gc:GC800Termination,  
  gc:GC800Translation, gc:BTNNPAProcAs, gc:WTNNPAProcAs,  
  gc:PICType, gc:CusSecFlag, gc:BTCustomerName,  
  gc:VoiceMailPO, gc:VoiceMailBoxNum, gc:CashGuardAmt,  
  gc:CashGuardType, gc:CashGuardDur, gc:BTAddress1,  
  gc:BTAddress2, gc:AccountCodeIndex, gc:WholesaleUse,  
  gc:LanguageInd, gc:BTCity, gc:BTState, gc:FeatureSet,  
  gc:NumberGenerate, gc:OldWTN, gc:BTZip, gc:GCBillingCycle,  
  gc:GCCustNum, gc:PIN, gc:PINPots, gc:PINStatus,  
  gc:InfoDigitScreening, gc:InfoDigitIndex, gc:CCCCNum,  
  gc:CCCCStatus, gc:ADACCCodeWTN, gc:ACCCCodePkg,  
  gc:ADACCCodeCC, gc:WTNCCStatusDate, gc:CustStatusDate,  
  gc:WTNCCLastDate, gc:ToLEC, gc:Association, gc:Package,  
  gc:Product, gc:Option, gc:N800InServDate,  
  gc:N800TransRespOrg, gc:N800NPABlkStatus,  
  gc:N800LOAIssueDate, gc:N800LOACnclDate,  
  gc:N800LOACnclCode, gc:N800DirAsstStatus,  
  gc:N800DirAsstDate, gc:SubCIC, gc:N800CurrentRespOrg,  
  gc:MultiCarrier, gc:TransDate, gc:LocalServiceProvider,  
  gc:TransTime)>
```

Change Customer Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_CHG_CUST.response.detail (gc:TransactionCode,  
  gc:StatusIndicator, gc:CarrierIDCode, gc:ProcessID,  
  gc:AccountStatus, gc:TermSource*, gc:Date, gc:CustomerType,  
  gc:CustomerNumber, gc:BTCustomerName, gc:BTAddress1,  
  gc:BTAddress2, gc:BTCity, gc:BTState, gc:BTZip,  
  gc:GCBillingCycle, gc:GCCustNum, gc:TransDate, gc:TransTime)>
```

Change ANI Global Crossing Order Response transaction (detail) =====

```
<!ELEMENT LD_CHG_ANI.response.detail (gc:TransactionCode,  
  gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,  
  gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource*,  
  gc:Date, gc:CustomerType, gc:CustomerNumber, gc:WTNINTCalling,  
  gc:BTCustomerName, gc:BTAddress1, gc:BTAddress2, gc:BTCity,  
  gc:BTState, gc:BTZip, gc:GCBillingCycle, gc:GCCustNum,  
  gc:ADACCCodeWTN*, gc:TransDate, gc:TransTime)>
```

Change Calling Code Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_CHG_CC.response.detail (gc:TransactionCode,  
  gc:StatusIndicator, gc:CarrierIDCode, gc:ProcessID,  
  gc:AccountStatus, gc:TermSource*, gc:Date, gc:CustomerType,  
  gc:NetworkServCode, gc:CustomerNumber, gc:BTCustomerName,  
  gc:BTAddress1, gc:BTAddress2, gc:BTCity, gc:BTState, gc:BTZip,  
  gc:GCBillingCycle, gc:GCCustNum, gc:CCCCNum, gc:CCCCStatus,
```

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```
gc:ADACCCodeCC*, gc:TransDate, gc:TransTime)>
```

Change 800 Global Crossing Order Response transaction (detail) =====

```
<!ELEMENT LD_CHG_800.response.detail (gc:TransactionCode,  
gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,  
gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource*,  
gc:Date, gc:CustomerType, gc:CustomerNumber,  
gc:GC800Termination*, gc:GC800Translation*, gc:BTCustomerName,  
gc:BTAddress1, gc:BTAddress2, gc:BTCity, gc:BTState, gc:BTZip,  
gc:GCBillingCycle, gc:GCCustNum, gc:InfoDigitScreening*,  
gc:InfoDigitIndex*, gc:N800InServDate*, gc:N800TransRespOrg*,  
gc:N800NPABlkStatus*, gc:N800LOAIssueDate*,  
gc:N800LOACnclDate*, gc:N800LOACnclCode*,  
gc:N800DirAsstStatus*, gc:N800DirAsstDate*, gc:TransDate,  
gc:TransTime)>
```

Change Calling Card Global Crossing Order Response transaction (detail)

```
<!ELEMENT LD_CHG_CCARD.response.detail (gc:TransactionCode,  
gc:StatusIndicator, gc:CarrierIDCode, gc:BTN*, gc:ProcessID,  
gc:WTN, gc:Date, gc:CusSecFlag*, gc:BTCustomerName*,  
gc:VoiceMailPO*, gc:VoiceMailBoxNum*, gc:CashGuardAmt*,  
gc:CashGuardType*, gc:CashGuardDur*, gc:BTAddress1*,  
gc:BTAddress2*, gc:BTCity*, gc:BTState*, gc:FeatureSet,  
gc:BTZip*, gc:GCBillingCycle, gc:CCCCNum, gc:CCCCStatus,  
gc:ADACCCodeWTN*, gc:ADACCCodeCC*, gc:TransDate,  
gc:TransTime)>
```

LD_ERROR Global Crossing Order Response transaction (detail) =====

```
<!ELEMENT LD_ERROR.response.detail (response_string, gc:TransactionCode,  
gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,  
gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource,  
gc:WlsBillingCycle, gc:Date, gc:CustomerType,  
gc:NetworkServCode, gc:CustomerNumber, gc:WTNINTCalling,  
gc:GC800Termination, gc:GC800Translation, gc:CusSecFlag,  
gc:BTCustomerName, gc:VoiceMailPO, gc:VoiceMailBoxNum,  
gc:CashGuardAmt, gc:CashGuardType, gc:CashGuardDur,  
gc:BTAddress1, gc:BTAddress2, gc:AccountCodeIndex,  
gc:BTCity, gc:BTState, gc:FeatureSet, gc:WholesaleUse, gc:BTZip,  
gc:GCBillingCycle, gc:GCCustNum, gc:InfoDigitScreening,  
gc:InfoDigitIndex, gc:CCCCNum, gc:CCCCStatus,  
gc:ADACCCodeWTN, gc:ACCCodePkg, gc:ADACCCodeCC,  
gc:N800InServDate, gc:N800TransRespOrg, gc:N800NPABlkStatus,  
gc:N800LOAIssueDate, gc:N800LOACnclDate, gc:N800LOACnclCode,  
gc:N800DirAsstStatus, gc:N800DirAsstDate, gc:TransDate,  
gc:TransTime)>
```

LD_GOOD Global Crossing Order Response transaction (detail) =====

```
<!ELEMENT LD_GOOD.response.detail (response_string, gc:TransactionCode,  
gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,  
gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource,  
gc:WlsBillingCycle, gc:Date, gc:CustomerType,  
gc:NetworkServCode, gc:CustomerNumber, gc:WTNINTCalling,
```

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```
gc:GC800Termination, gc:GC800Translation, gc:CusSecFlag,  
gc:BTCustomerName, gc:VoiceMailPO, gc:VoiceMailBoxNum,  
gc:CashGuardAmt, gc:CashGuardType, gc:CashGuardDur,  
gc:BTAddress1, gc:BTAddress2, gc:AccountCodeIndex, gc:BTCity,  
gc:BTState, gc:FeatureSet, gc:WholesaleUse, gc:BTZip,  
gc:GCBillingCycle, gc:GCCustNum, gc:InfoDigitScreening,  
gc:InfoDigitIndex, gc:CCCCNum, gc:CCCCStatus, gc:ADACCCodeWTN,  
gc:ACCCodePkg, gc:ADACCCodeCC, gc:N800InServDate,  
gc:N800TransRespOrg, gc:N800NPABlkStatus,  
gc:N800LOAIssueDate, gc:N800LOACnclDate, gc:N800LOACnclCode,  
gc:N800DirAsstStatus, gc:N800DirAsstDate, gc:TransDate,  
gc:TransTime)>
```

LD_SNAP Global Crossing Order Response transaction (detail) =====

```
<!ELEMENT LD_SNAP.response.detail (gc:TransactionCode,  
gc:StatusIndicator, gc:CarrierIDCode, gc:BTN, gc:ProcessID,  
gc:WTN, gc:WTN800Status, gc:AccountStatus, gc:TermSource,  
gc:NumCallingCodes, gc:WlsBillingCycle, gc:Date,  
gc:CustomerType, gc:NetworkServCode, gc:CustomerNumber,  
gc:WTNINTCalling, gc:OrigTCSICode, gc:GC800Termination,  
gc:GC800Translation, gc:BTNNPAProcAs, gc:WTNNPAProcAs,  
gc:PICType, gc:CusSecFlag, gc:BTCustomerName,  
gc:VoiceMailPO, gc:VoiceMailBoxNum, gc:CashGuardAmt,  
gc:CashGuardType, gc:CashGuardDur, gc:BTAddress1,  
gc:BTAddress2, gc:AccountCodeIndex, gc:WholesaleUse,  
gc:LanguageInd, gc:BTCity, gc:BTState, gc:FeatureSet,  
gc:NumberGenerate, gc:OldWTN, gc:BTZip, gc:GCBillingCycle,  
gc:GCCustNum, gc:PIN, gc:PINPots, gc:PINStatus,  
gc:InfoDigitScreening, gc:InfoDigitIndex, gc:CCCCNum,  
gc:CCCCStatus, gc:ADACCCodeWTN, gc:ACCCodePkg,  
gc:ADACCCodeCC, gc:WTNCCStatusDate, gc:CustStatusDate,  
gc:WTNCCLastDate, gc:ToLEC, gc:Association, gc:Package,  
gc:Product, gc:Option, gc:N800InServDate,  
gc:N800TransRespOrg, gc:N800NPABlkStatus,  
gc:N800LOAIssueDate, gc:N800LOACnclDate,  
gc:N800LOACnclCode, gc:N800DirAsstStatus,  
gc:N800DirAsstDate, gc:SubCIC, gc:N800CurrentRespOrg,  
gc:MultiCarrier, gc:TransDate, gc:LocalServiceProvider,  
gc:TransTime)>
```

ILEC SubCIC Long Distance Interface Message Formats

This data has been extracted from the ILEC SubCIC Long Distance Interface DTD

The following Ordering transactions are supported	(TC-SI):
ILEC SubCIC Request (SUBCIC.request.detail)	(01-01?),
ILEC SubCIC Response (SUBCIC.response.detail)	(83-01?),
ILEC SubCIC ERROR Response (SUBCIC_ERROR)	(63-XX?),
ILEC SubCIC GOOD Response (SUBCIC_GOOD)	(64-XX?),

Define all ILEC SubCIC Ordering transactions =====

Any ILEC SubCIC Order Request transaction (ALL) =====

```
<!ELEMENT SUBCIC.request.transaction (SUBCIC.header,  
    SUBCIC.request.detail+, SUBCIC.trailer)>
```

ILEC SubCIC Order transaction Header record =====

```
<!ELEMENT SUBCIC.header (subcic:Header, subcic:StatusIndicator,  
    subcic:Filler01, subcic:CreateDate, subcic:SequenceNo,  
    subcic:IlecCode, subcic:ACNA, subcic:Field01,  
    subcic:HFiller03)>
```

ILEC SubCIC Order transaction Trailer record =====

```
<!ELEMENT SUBCIC.trailer (subcic:Trailer, subcic:StatusIndicator,  
    subcic:Filler01, subcic:CreateDate, subcic:SequenceNo,  
    subcic:IlecCode, subcic:ACNA, subcic:Field01,  
    subcic:TFiller11, subcic:GTRRecordCount, subcic:TFiller12)>
```

Any ILEC SubCIC Order Request transaction (detail) =====

```
<!ELEMENT SUBCIC.request.detail (tran.header, subcic:TransactionCode,  
    subcic:TransactionCode, subcic:StatusIndicator,  
    subcic:CarrierIDCode, subcic:BTN, subcic:CustomerCode,  
    subcic:WTN, subcic:HuntGroup, subcic:Terminal, subcic:Date,  
    subcic:CustomerType, subcic:Filler03, subcic:BillName,  
    subcic:BillAddress, subcic:BillCityStateZip, subcic:Filler04,  
    subcic:ICReference, subcic:ICOrder, subcic:Filler05,  
    subcic:OrigTCSICode, subcic:Filler06, subcic:Jurisdiction,  
    subcic:Filler07, subcic:PICChangeInd, subcic:Filler08, subcic:DueDate,  
    subcic:Filler09, subcic:CICBackUp, subcic:Filler10)>
```

Any ILEC SubCIC Order Response transaction (ALL) =====

```
<!ELEMENT SUBCIC.response.transaction (SUBCIC.header,  
    (SUBCIC.response.detail | SUBCIC_ERROR.response.detail |  
    SUBCIC_GOOD.response.detail)+, SUBCIC.trailer)>
```

Any ILEC SubCIC Order Response transaction (detail) =====

```
<!ELEMENT SUBCIC.response.detail (gc:TransactionCode,  
    subcic:TransactionCode, subcic:StatusIndicator,  
    subcic:CarrierIDCode, subcic:BTN, subcic:CustomerCode,  
    subcic:WTN, subcic:HuntGroup, subcic:Terminal, subcic:Date,  
    subcic:CustomerType, subcic:Filler03, subcic:BillName,  
    subcic:BillAddress, subcic:BillCityStateZip, subcic:Filler04,  
    subcic:ICReference, subcic:ICOrder, subcic:Filler05,
```

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```
subcic:OrigTCSICode, subcic:Filler06, subcic:Jurisdiction,  
subcic:Filler07, subcic:PICChangeInd, subcic:Filler08, subcic:DueDate,  
subcic:Filler09, subcic:CICBackUp, subcic:Filler10)>
```

SUBCIC_ERROR ILEC SubCIC Order Response transaction (detail) =====

```
<!ELEMENT SUBCIC_ERROR.response.detail (response_string,  
subcic:TransactionCode,  
subcic:TransactionCode, subcic:StatusIndicator,  
subcic:CarrierIDCode, subcic:BTN, subcic:CustomerCode,  
subcic:WTN, subcic:HuntGroup, subcic:Terminal, subcic:Date,  
subcic:CustomerType, subcic:Filler03, subcic:BillName,  
subcic:BillAddress, subcic:BillCityStateZip, subcic:Filler04,  
subcic:ICReference, subcic:ICOrder, subcic:Filler05,  
subcic:OrigTCSICode, subcic:Filler06, subcic:Jurisdiction,  
subcic:Filler07, subcic:PICChangeInd, subcic:Filler08, subcic:DueDate,  
subcic:Filler09, subcic:CICBackUp, subcic:Filler10)>
```

SUBCIC_GOOD ILEC SubCIC Order Response transaction (detail) =====

```
<!ELEMENT SUBCIC_GOOD.response.detail (response_string,  
subcic:TransactionCode,  
subcic:TransactionCode, subcic:StatusIndicator,  
subcic:CarrierIDCode, subcic:BTN, subcic:CustomerCode,  
subcic:WTN, subcic:HuntGroup, subcic:Terminal, subcic:Date,  
subcic:CustomerType, subcic:Filler03, subcic:BillName,  
subcic:BillAddress, subcic:BillCityStateZip, subcic:Filler04,  
subcic:ICReference, subcic:ICOrder, subcic:Filler05,  
subcic:OrigTCSICode, subcic:Filler06, subcic:Jurisdiction,  
subcic:Filler07, subcic:PICChangeInd, subcic:Filler08, subcic:DueDate,  
subcic:Filler09, subcic:CICBackUp, subcic:Filler10)>
```

Appendix C: OSS Database Details

Specific SQL and OSS LD database table contents and information is proprietary and is available under non-disclosure agreement with Lymeware Corporation.

Please contact Mr. Carl Fox (cfox@lymeware.com) for more information.

Appendix D: Glossary

ANSI - American National Standards Institute.

ATIS - Alliance for Telecommunications Industry Solutions.

CLEC – Competitive Local Exchange Carrier.

ECIC – The Electronic Communications Implementation Committee of TCIF.

Electronic Data Interchange (EDI) – an international business to business data interchange format as specified by ANSI X.12 standards.

ILEC – Incumbent Local Exchange Carrier.

IXC – Inter eXchange Carrier, or long distance provider.

ITU-T - International Telecommunications Union - Telecommunications standardization sector.

OSS – Operational Support System. In the Telecommunications Industry the OSS is the sum of all in-house provisioning and billing systems and databases.

RBOC – Regional Bell (system) Operating Company. The pieces of AT&T created to provide Local telephone service. Often referred to as the “Baby Bells”.

TCIF - Telecommunications Industry Forum.

URL – Universal Resource Locator, typically a web browser address or location value.

XML – eXtensible Markup Language, a data format which provides a simple method of exchange for complex data.

Appendix E: How To Get Help

This chapter explains how to contact Lymeware Product Support if you need assistance with your IXC ConnectGate product.

Scope of Support Services

Lymeware Product Support can provide assistance and information for the following:

- Installing the IXC ConnectGate product
- IXC ConnectGate product questions
- Software revisions and upgrades
- Implementing a specific feature
- How to use the IXC ConnectGate product
- The status of your support call
- Requests for product enhancement

Unfortunately, we cannot assist you with problems involving the following, but we may be able to suggest a next step or another vendor to call:

- Your hardware
- Your operating system or other system software
- Your application or user-written programs
- Software not developed by Lymeware Corporation
- Scripts written by Lymeware consultants, service partners, or other third parties.

Try this first

Before you call Lymeware Product Support, use your software manuals (including this manual) to locate the section that documents the program or feature where you are having problems. The documentation may explain the software's behavior or give you insight to help you solve the problem.

Contact Lymeware Product Support

Two e-mail addresses are available for IXC ConnectGate product support or to report a potential bug in the software or documentation. Please use the following addresses:

Support@lymeware.com for all technical inquires and problem reports, including documentation issues from customers with support contracts. Customers should include relevant contact details, including company name and phone number, in initial message to speed processing. Messages that are continuations of an existing problem report should include the problem report ID in the subject line. Customers without support contracts with Lymeware Corporation should not use this address, but should contact their distributor directly.

Bugs@lymeware.com for bug reports and documentation problems.

Bug reports on software releases are always welcome. These may be sent by any means, but e-mail to the bug reporting address listed above is preferred. Please send proposed fixes and successful workarounds with the report if possible. Additional useful information would include IAgent software version, hardware description, operating system version and patches, screen dumps, relevant sections of logs and configuration files, and failed messages files. Any reports will be acknowledged, but further action is not guaranteed. Any changes resulting from bug reports may be included in future releases.

Appendix F: Additional Component Documentation

TIB/Rendezvous 6.6 middle-ware from Tibco,
Active Perl 618 Interpreter from ActiveState,
Microsoft Visual Basic 6.0 Compiler from Microsoft,
Microsoft NT 4.0 Resource Kit from Microsoft,
Microsoft MS-SQL Server 7.0 from Microsoft,
Java 2 v1.3.1 Runtime package from Sun Microsystems,
ConnectDirect communications package from Sterling Commerce

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