
System Administrators Manual

Bartrack for Windows 1.1



Copyright Prevas AB 2008

This manual was produced by Prevas AB
KS001b02/en v7

Prevas AB
Box 1909
SE-651 19 Karlstad

Phone: +46 54 147400
Fax: +46 54 147499

Contents

INTRODUCTION	7
About This Manual	7
Which Version.....	7
The Intended Audience.....	7
Scope of the Manual.....	7
Conventions.....	8
About Bartrack	8
What Does It Do?.....	8
System overview.....	9
SECURITY	11
Accessing Bartrack	11
Users	11
Files	11
Web Client.....	11
Database	12
Monitoring and Reliability	12
SERVER	17
Specifications	17
Licence handling	17
How it Works.....	17
Licence Expiration.....	17
Prolonging the Licence.....	17
Queues	17
MSMQ Queues.....	17
Environment variables	18
Variables.....	18
Files and Structures	19
Internal Interfaces	19
To Web client (RMI).....	19
External Interfaces	19

To PRIM (SFQ Primgate Utility)	19
Microsoft Message Queue (MSMQ)	21
To External Systems (MSMQ)	22
From External Systems (MSMQ)	23
To a Financial System	23
Overview	23
Interface Description	23
Files and Directories	23
Handling of Order Files	23
File delivery	24
Messages from Order System	24
Error logging	25
Tracy	25
Installation	25
Receiving data	25
Preparing data	25
Tracyrec.exe	26
Bartrack Tracy Service	26
WEB SERVER	37
Specifications.....	37
Distributing Bartrack Using the Web.....	37
How It Works	37
File Structure and Files	38
EXTERNAL PROGRAMS	43
Label Design Software.....	43
WEB CLIENT	44
Specifications.....	44
Adding a Web Client to the System	44
Parameters and Variables.....	45
Files and File Structure	45
Internal Interfaces	46
To a Barcode Reader	46
DATABASE.....	48
Backup and Restore.....	48
Operation	48
Creating an empty database	49
Map	52

Tables	56
Views	62
Customer Terminology	62
List all terminology definitions in Bartrack.....	63
Add a terminology definition	63
Change a terminology definition	63
Delete a terminology definition from Bartrack.....	63
LOGGING	65
Alarms	65
Server	65
Web user	65
MAINTENANCE	66
Database	66
Files	66
Configuration files	66
Services	67
Environment variables	67
USERS	69
Identifiers	69
Adding a Web User	69
Resources.....	69
System Users	69
STARTING, STOPPING AND UPGRADING	71
Starting Bartrack	71
Stopping Bartrack	71
Upgrading Bartrack	72
TROUBLESHOOTING	73
Web	73
GLOSSARY OF TERMS	76

INDEXES	77
LISTS	79
List of pictures	79
List of tables	79

Introduction

About This Manual

Which Version

This manual covers the 1.1 release of the Bartrack for Windows system. If you do not know which version you have, do the following:

1. Start Bartrack.
2. Choose the menu item **About/About Bartrack**.
3. A display box shows which version of Bartrack that is installed.
4. Click the button **OK**.

The Intended Audience

This manual is written for a reader with prior knowledge of Windows and the database application (like Oracle). Some of the commands shown in this manual might be unsafe to execute. If you have the slightest hesitation or feel insecure; don't.

A faulty command or wrong parameters might stop Bartrack from functioning.

Scope of the Manual

This manual does not cover:

1. Normal non-Bartrack system administrator tasks.
2. Usage of the Bartrack program. See the User's Guide - KS001B11 for information on using Bartrack.
3. Non-standard error conditions, in which case you should contact the Prevas Support (according to your support agreement).

You can reach the helpdesk by phone:

Tel: +46 54 147444

Depending on your support agreement with Prevas, this service is open 24 hours a day, seven days a week.

You can also send an e-mail to support.sfc@prevas.se

Conventions

In order to keep the manual as easy to read as possible, the following conventions are used:

A request to choose a menu or menu item is written like this:
Choose the menu item **System/About**.

A request to click an on-screen button is written like this:
Click the button **Product structure**.

A sequence of instructions to be carried out in order is written like this:

1. This is step 1
2. This is step 2
3. Etc.

A single instruction to be performed is written like this:

- This is a single action

A list of items is written like this:

- This is an item
- This is another item
- etc.

About Bartrack

What Does It Do?

Bartrack is a traceability system for individuals produced in factories specialized in electronics manufacturing. The purpose of using Bartrack is to:

- Create serial numbers for the individuals
- Keep track of the assembled parts of an individual
- Print out barcode labels
- Keep master traceability systems updated
- Monitor the product structure

Every produced individual with traceability demands is assigned a serial number by Bartrack. To this unique number, assorted information about the individual is connected, for example product number, structure information, manufacturing week.

When an individual is ready to leave the factory, its information in Bartrack is deleted. But since Bartrack is one of the sources of traceability information, it first sends the information to the master traceability database, such as Tracy.

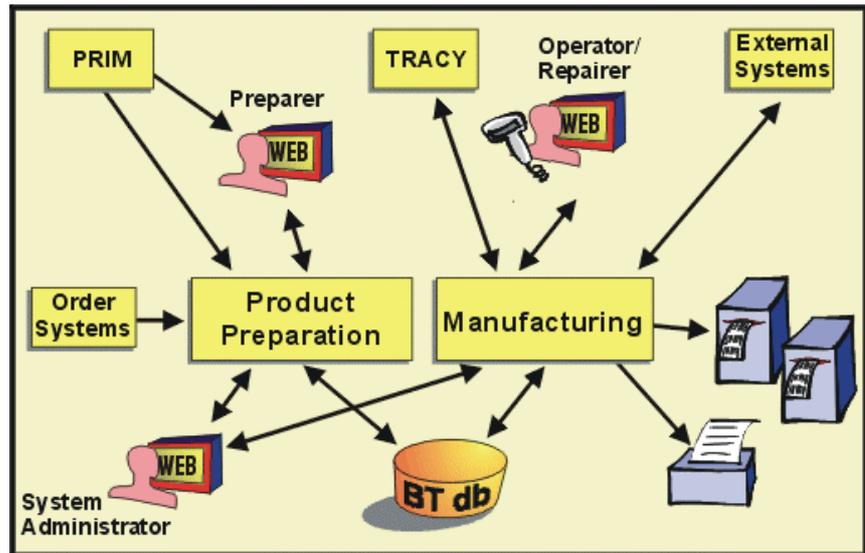
System overview

The Bartrack system consists mainly of two units:

- The Prepare/Administration unit
- The Manufacturing unit

Both of these units have access to the Bartrack database.

The communication between Bartrack and other systems all go through these two units, except for the direct access the System Administrator has to the database.



A system overview

There are four main user categories that use Bartrack:

- Operator
- Repairer
- Preparer
- System Administrator

They put in information, request tasks and read output information.

In addition to the real users, there are a number of virtual users, for example the Tracy interface or the PRIM interface.

Security

Accessing Bartrack

There are a number of safety devices against unauthorised access to Bartrack. The details are discussed in separate sections of this manual, since they belong to different parts of the Bartrack system.

This is a schematic view of the access paths to Bartrack:

Access path to Bartrack for web client

Web		Bartrack	
Client	Intranet	User Administration	User Profile
The web browser containing the Bartrack web application must be reachable	The Bartrack server must be reachable	The user must exist as a user in Bartrack and know the password	The user must have the privilege to the Bartrack functions

Users

It is recommended that all users in Bartrack should have unique user-IDs and no collective logins should be allowed. This will make it possible to track each user's doings in Bartrack, as well as having different privileges for different users.

Users start the Bartrack client by clicking the desktop Bartrack icon. Alternatively, users start their browser and click on the link to Bartrack. Then they will have to log onto Bartrack. The Bartrack user-ID is used to determine which privilege profile to use.

Every access to the Bartrack database is controlled by the Windows server and database. Bartrack uses different privilege profiles to allow different menu entries for each user.

Since every user accesses Bartrack from their own username, it is easy to control access and processing.

Files

Web Client

Most common, and highly recommended, is to use the Java Web Start application to run the web client. Doing it this way will make the client

execution not being dependent on an internet browser continuously being connected.

For the web interface to function, when running it by using an internet browser, the `java.policy` file must contain the path to the `prevas.policy` file found at the Bartrack web server. This path is needed for the Java Run-time Environment (JRE) to be able to verify that the Bartrack web client files are authentic. This authentication is handled in a simpler way when using Java Web Start, meaning that no action has to be taken at installation time.

Bartrack, run from an internet browser, relies on a special file, `java.policy`, that must be copied from the web server the first time a user tries to start Bartrack. The file contains the security settings for the Java client, which enables Bartrack to access the client's disk. This file is needed for the barcode interface.

To set this path, you will have to execute the `PolicyInstaller.html` found in the Bartrack directory of the web server. It is usually run from a link in the Bartrack start page, but may also be run directly.

The `PolicyInstaller.html` contains a site specific URL of the Bartrack website, created when installing Bartrack, where a file called `prevas.key` is located. The `prevas.policy` and the `prevas.key` files in cooperation will ensure that only approved code will be executed on the client. When using the link, all installation will be performed in the background by using values already defined in the `PolicyInstaller.html` file, located in the web server's `Apps` directory.

If the user hasn't copied the file before, it must be done before Bartrack can function. This is done by clicking on a link which will prompt the user for a name and a location of the file. The file should always be copied to the user's own directory, and should always be called `java.policy`.

Note: This file will grant all Bartrack web applications read/write access to the client's local disks. No other web applications will be granted read/write access.

Note: Also note that the work with the defining of files mentioned above will not be necessary if the Java Web Start application is to be used for running the Bartrack client.

Database

The database used by Bartrack is an Oracle 9i database, or higher version, from Oracle.

Monitoring and Reliability

Bartrack uses the Prevas Bartrack WatchDog to keep Bartrack up at any cost. The program is a Windows service, which starts and monitors the java-server processes that handle the Bartrack clients that connect to the Bartrack server with RMI. It handles the `rmiregistry` process and the main java dispatcher process, but not all client specific java processes which are spawned and by the main java dispatcher process.

The prerequisite for the installation of the Bartrack WatchDog on the target computer of the installation are the following:

- .NET Framework version 2.0 has to be installed

The Bartrack WatchDog can be configured to monitor one or several processes, or applications. Basically it monitors the Bartrack Java Server and RMI. How often this is done can be configured, but by default the processes are monitored every other second. If there is no response, the process will be re-started.

The following Bartrack processes/applications are monitored by Prevas Bartrack WatchDog:

- RMI A process for connecting the Bartrack client and server.
- BartrackJavaServer A process handling the Bartrack java server

Should any of the processes above die or fail, the Bartrack WatchDog will start them again, ensuring that the vital processes for Bartrack are alive. Any process restarted by the Bartrack WatchDog is logged in the Event Viewer.

Configuration settings for Bartrack WatchDog

The Bartrack WatchDog uses two configuration files. The first one is for its' own start-up purpose and contains just its' own name and which configuration file to look for.

Bartrack WatchDog service settings

Setting	Value	Explanation
DisplayName	Prevas Bartrack WatchDog	The name of the Bartrack WatchDog to be displayed in the Service Manager.
ConfigFile	BartrackWatchDogService.config	The name of the configuration file for the Bartrack WatchDog service. Must be located in the application directory or in the System32 directory.

There are also several configuration settings that are used by the Bartrack WatchDog during operation. The `BartrackWatchDogService.config` file contains the settings for the application. In this file it's possible to specify which processes to start and watch, how to start them (parameters, environment variables etc), in which order to start them and any dependencies between them (this is if process A is restarted, then process B must be restarted). This file is installed in the application directory.

Table of configuration settings for Bartrack WatchDog

Setting	Default value	Explanation
Common \ SleepSecondsBetweenStartups	2	The number of seconds to sleep between each start of a new process.
Common \ NumberOfRestartTries	10	The number of times the service will try to restart when a process is unexpectedly stopped.
Application \...		Repeated value. For each XML node a process is started with the value in the node.
Application \ ApplicationId	RMI	A unique identification in this configuration file of the application/process to be started.
Application \ FileName	RmiRegistry.exe	The name of the executable file to be started.
Application \ WorkingDir	...\Bartrack_011\Apps	The directory where the application/process is started.
Application \ Arguments		Any arguments needed to be used when starting the executable file.
Application \ EnvironmentVariables	Classpath=.\Bartrack.jar	Specific environment variables needed for the application/process. This will not overwrite any existing environment variables.

		Syntax: key=value, key2=value2, etc.
Application \ LogOutput	True	Specifies if standard output data from the executable shall be redirected to the Event Viewer.
Application \ LogError	True	Specifies if standard error data from the executable shall be redirected to the Event Viewer.
Application \ LogSourceName	RMI	The name of the application/process to be used when logging errors and other output.
Application \ RestartThisAppsWhenImRestarting	BartrackJavaServer	One or more application ids of the applications/processes to be restarted when the current is (unexpectedly) restarted. Syntax: AppId1,AppId2, etc.
Error_eventlog \ EventSource	Prevas Bartrack WatchDog	The event source for logging errors. (Only the main service, not the individual supervised applications!)
Trace_eventlog \ EventSource	Prevas Bartrack WatchDog Trace	The event source for logging traceability information. (Only the main service, not the individual supervised applications")

Adding processes to Bartrack WatchDog

To add processes that are to be surveyed, you have to edit the **BartrackWatchDogService.config** configuration file, located on the Bartrack server.

A new **<Application>** block has to be added with values set to the various parameter tags.

Example:

```

<Application>
    <ApplicationId>RMI</ApplicationId>
    <FileName>rmiregistry.exe</FileName>
    <WorkingDir>C:\Inetpub\wwwroot\Bartrack_011\Apps
</WorkingDir>
    <Arguments></Arguments>
    <EnvironmentVariables>classpath=.\Bartrack.jar</
EnvironmentVariables>
    <LogOutput>TRUE</LogOutput>
    <LogError>TRUE</LogError>
    <LogSourceName>RMI</LogSourceName>
    <RestartThisAppsWhenImRestarting>BartrackJavaSer
ver</RestartThisAppsWhenImRestarting>
</Application>

```

After a new process is inserted into the configuration file, the Bartrack WatchDog service must be restarted. To stop and start Bartrack WatchDog, see next sections.

Starting Bartrack WatchDog

The Bartrack WatchDog is started by using the Windows Service Manager. In the Service Manager click the row for Prevas Bartrack WatchDog and then click the Start button in the toolbar.

Another way to start the service is a mouse right-click on the row and then select the menu option **Start**, or using the menu **Action/Start**.

Stopping Bartrack WatchDog

To stop the Bartrack WatchDog application, run the Windows Service Manager and click the row for Prevas Bartrack WatchDog. Then click the Stop button in the tool bar.

Another way to stop the service is a mouse right-click on the row and then select the menu option **Stop**, or using the menu **Action/Stop**.

Removing processes from Bartrack WatchDog

To remove processes that are not to be surveyed any more, you have to delete the process from the **BartrackWatchDogService.config** configuration file.

This is done manually by deleting the **<Application>** block where the process is described.

After a process is removed from the configuration file, the Bartrack WatchDog service must be restarted. To stop and start the Bartrack WatchDog service, see previous sections.

Logging

Information and errors from the watchdog service and its' supervised applications are logged to the event log application. The event log is displayed in the Windows Event Viewer. To view details about any entry, just double-click the current row.

Server

Specifications

For a full specification, read the “Target environment specification (TES)”, document number KS001F17.

The TES document contains the minimum hardware and software specifications required in order to run Bartrack.

Licence handling

How it Works

Bartrack uses a built in Licence Management Utility. Each time a Bartrack client requests access to the Bartrack program on the server, Bartrack verifies that the registered licence is still valid. If so, the clients are allowed to run.

Licence Expiration

When the remaining time to the licence's expiration date is less than 30 days, each user of Bartrack will receive a notification about this fact when they log on. After the notification is shown, Bartrack operates in the normal way.

When the expiration date is reached, no user can log on to the Bartrack system, and an error message is shown.

Prolonging the Licence

Copy a Licence.txt file to the Apps folder to enter the new licence into the system.

A new licence can be obtained by contacting Prevas (see page 7 for address and telephone number).

Queues

MSMQ Queues

There are some site specific queues used by Bartrack. Each queue handles a certain kind of information used by SFT (Shop Floor Transaction) and BarApix (Bartrack Application Programming Interface)

Example:

SFTREQCRT_QUEUE_TO_ATTACH	The queue for individual creation.
SFTREQIDINFO_QUEUE_TO_ATTACH	The queue for individuals' information.
SFTREQSTRINFO_QUEUE_TO_ATTACH	The queue for individual structure.
SFTREQPRO_QUEUE_TO_ATTACH	The queue for individuals product information
SFTREQSHIP_QUEUE_TO_ATTACH	The queue for individual shipment.
SFTREQUPD_QUEUE_TO_ATTACH	The queue for individual update

Set permission to Full control for everyone for each queue.

When running Bartrack for more than one site on the same server, the queues has to be set up uniquely for each site.

Environment variables

Variables

A couple of environment variables have to be set up for the Bartrack server to work correctly:

- **JAVA_HOME** Points out the JRE directory
- **Path** Points to the bin directory of the JRE installation

Files and Structures

Bartrack is set up to be distributed over a number of physical disks, or on one single disk. Every directory has its own name, giving direct access to it, regardless of its physical location.

It is recommended to have a set-up with four disks, as a minimum.

Example:

- Disk 1: Data dictionary files, control file, redo log
- Disk 2: Database software, archived redo logs, backup
- Disk 3: Indexes, control file, redo log
- Disk 4: Data, control files, redo log

Note: This is solely an example. Another disk setup may be more suitable at your site.

Bartrack is installed in its own directory named **BARTRACK**. This directory in its turn contains directories named after that particular release's version. Under the version 011 (for example) all the specific Bartrack files and directories related to the Bartrack 1.1 release are located. The current Bartrack release is defined during start-up.

Internal Interfaces

To Web client (RMI)

The Bartrack web interface is programmed in Java and distributed via TCP/IP and normal web technology. The technique used to handle the clients is called RMI (Remote Method Invocation).

Set-up RMI for Bartrack

No special steps are required on RMI's set-up.

Set-up Bartrack for RMI

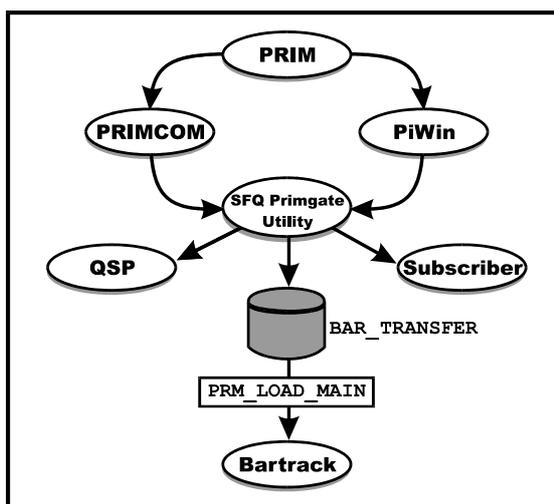
No special steps are required on Bartrack's set-up.

External Interfaces

To PRIM (SFQ Primgate Utility)

PRIM is a product register used at Ericsson.

The SFQ Primgate Utility (SPU) converts PRIM data files, ordered from PRIMCOM or PiWin, into a text file format suitable for database loading. SPU delivers these text files to any application that has been set up as a subscriber. In the process, SPU can apply filters. In order to receive any PRIM information, Bartrack requires SPU to be installed on one node in your network (may be the same node as Bartrack).



Picture of PRIM import sequence via SPU

For more information about SPU, see the “SFQ Primgate Utility Installation and User Guide”, 198 17-LZY 236 26 Uen.

Set-up SPU for Bartrack

SPU must be configured to deliver PRIM text files to Bartrack in the **BAR_TRANSFER** directory (see "File Structure and Files" on page 38). The deliverance of PRIM text files is handled by the **SPU_PRIM_SERVER.exe** service.

Set-up Bartrack for SPU

All PRIM text files transferred from SPU are delivered in the Bartrack **BAR_TRANSFER** directory. If SPU is installed on the Bartrack node, no further actions are required. If, however, SPU is installed on a remote node, that node must have write access to the **BAR_TRANSFER** directory. This may be accomplished either by proxy access or by granting world write access to the directory.

Operation

Bartrack queues the **PRIM_TRANSFER_MAIN** job onto the **BAR_TRANSFER** directories' **TRANSFER** subdirectory. Every fourth hour, Bartrack checks the **TRANSFER** subdirectory for new files from SPU. A new file is read into the Bartrack temporary product database. Should anything go wrong (for example, some data not being loaded into Bartrack) the whole offending file is copied to the **BAR_PRIMERR** directory. If the transfer is OK, the file will be copied to the **BAR_PRIMOK** directory. In any case, the **TRANSFER** directory is cleared of the read files.

The files stored in these three directories are normal ASCII text files, and thus they can be edited and read. If you edit an offending file (to clear out any problems) you can copy it back into the **BAR_TRANSFER** directory and its' **TRANSFER** subdirectory. From this directory it is read once again when the next **PRIM_TRANSFER_MAIN** job starts.

The Preparer then decides which products to transfer from the temporary product database to the live Bartrack product database for further preparation.

Microsoft Message Queue (MSMQ)

The MSMQ is used for three purposes;

- to communicate with test systems
- to allow for external systems to request information or actions from Bartrack

Communicating with test systems

Bartrack can receive individual statuses after test from a test system via MSMQ. While reading the MSMQ queue Bartrack updates the individuals test status in the Bartrack database.

External systems

Bartrack can be controlled by an external system or application. A message is then sent to Bartrack containing instructions on what Bartrack should do. Bartrack can reply back to the external system.

It is also possible to use the BarAPIx (Bartrack Application Programming Interface) to let other applications use Bartrack.

Set up MSMQ for Bartrack

Refer to the “Bartrack Installation Guide” (KS001F13) and the MSMQ manual for instructions on how to set up the MSMQ environment.

Set up Bartrack for MSMQ

Refer to the “Bartrack Installation Guide” (KS001F13) and the MSMQ manual for instructions on how to set up the MSMQ environment.

Queues for MSMQ

There are several queues that are used by MSMQ during operation. A set of queues are specific for the factory, while other are general for the Bartrack installation.

List of general MSMQs

No	Queue name	Description
1	SFTREQCRT_QUEUE_TO_ATTACH	This queue is for handling requests from SFT for individual creation.
2	SFTREQIDINFO_QUEUE_TO_ATTACH	This queue is for handling requests from SFT for individual information.
3	SFTREQPRO_QUEUE_TO_ATTACH	This queue is for handling requests from SFT for product information for an individual.
4	SFTREQSHIP_QUEUE_TO_ATTACH	This queue is for handling requests from SFT for individual shipment.
5	SFTREQSTRINFO_QUEUE_TO_ATTACH	This queue is for handling requests from SFT for individual storage.
6	SFTREQUPD_QUEUE_TO_ATTACH	This queue is for handling requests for individual update.

To External Systems (MSMQ)

See "Microsoft Message Queue (MSMQ)" on page 21 for additional information about MSMQ and a listing of the queues.

Bartrack uses an MSMQ interface towards external systems. An external system might be any system capable of handling MSMQ. A typical example of an external system is a test system, such as Testnet. For each action or request there is a corresponding queue. Each queue is uni-directional.

See "SFT Interface Description - Bartrack for Windows" (KS001B11V1/EN) for a full specification on the format of the messages on each queue.

Note: The messages to external systems exist in two versions. One is the same as in old Bartrack R5A, and the other is a new format for Bartrack 6.0, and later versions. The selection of either of these two versions can be done for each external system separately. Please refer to the "External Interface Specification: Bartrack – Shop Floor Transaction" (KS001B03/EN) document for details.

Messages sent from Bartrack to external systems by MSMQ

Event	MSMQ-message	Explanation
CREATE	NewID (transaction code SERCRT)	The message contains the data of the individual
REGISTER (only Reg Manually)	NewID (transaction code SEREXT)	The message contains the data of the individual
ASSEMBLE	AsmID (transaction codes SERPCA, SERPCD)	The message contains the serial numbers of child and parent. Note: The event ASSEMBLE occurs when the criteria for the <Ready> -button in the Assemble tab is met. For example, that the completeness check is performed.
CHANGE (only Change Data)	UpdID (transaction code SERTST, SERCOM, SEREXE, SERPRO)	The message contains the data of the individual Note: This message has four different versions. One for changes of test status (transaction code SERTST), one for changes of individual comment (transaction code SERCOM), one for changes of the individual exemption (transaction code SEREXE) and the last one that is used when changes are made to individual's product data (transaction code SERPRO).
STORE	UpdInfo (transaction code SERSTO)	The message contains the data of the individual
SHIP	UpdInfo (transaction code SERSHP)	The message contains the data of the individual
SHIP (only forced ship)	FshipID (transaction code SERFSH)	The message contains the data of the individual Note: This message is only used when a shipment is made by force.
SCRAP	ScpInfo (transaction code SERSCP)	The message contains scrap information.
PRODUCTION FLOW	ChkFlow (transaction code CHKTST)	The message contains information about test status for an individual whether it is allowed to be updated according to the defined production flow.

From External Systems (MSMQ)

If a test system is in use at the factory, it is possible for the test system to send a message to Bartrack containing the test status for tested individuals.

The BAR_TST_UPD_01 queue used for these updates is read by a dedicated service, which communicates with Bartrack: `SFTREQUPTD_QUEUE_TO_ATTACH`.

Messages sent from external systems to Bartrack by MSMQ

Event	MSMQ-message	Explanation
An individual has been tested	SERTST	The message contains the status of the test (passed or failed)

To a Financial System

It is possible to connect Bartrack to a financial system capable of handling orders, such as SAP/R3. The order system will send order information to Bartrack, which will prepare the structure of the order automatically.

Overview

The order system sends messages to the Bartrack system. These messages contain details about orders and products.

The messages can be transferred as a file. Such file has to be placed in the `BAR_ORD_SAVE` directory with the name `<name>.IN`.

Interface Description

For a full description of the message formats, please refer to the KS001B07 “Interface Description - Order Handling”.

Files and Directories

The order import interface is based on files being delivered to an in-directory. The name of these files must have an .IN-extension (*.IN) and is a plain text file containing the specified records of this interface description.

Table of directories hosting order information

Directory	Comment
BAR_ORD_IN	The location of all incoming order files.
BAR_ORD_SAVE	The location of successfully imported files.
BAR_ORD_ERROR	The location of files being neglected and defined as failed at import.

Note: These three directories are located in the application directory on the web server.

Handling of Order Files

Each order being received from the order system is considered to have a unique order number, at least for the duration of the production of the order, and any historic storage after that point.

All incoming order files are copied to the **BAR_ORD_IN** directory. The **BAR_ORDERREC.EXE** service is then polling the directory for new files, and will start with the oldest file. The service makes an interpretation of the records found in the file.

During the interpretation, files containing faulty records will be transferred to the **BAR_ORD_ERROR** directory. Files containing successful records will be put in the **BAR_ORD_SAVE** directory. The files placed in the **BAR_ORD_ERROR** directory must be inspected by a preparer who then makes adequate actions to solve the problem. Most probably the error is caused by a missing product in Bartrack. When this product is added, the system administrator can move the failed file back to the **BAR_ORD_IN** directory. The next time the **BAR_ORDERREC.EXE** service polls the directory, the file is read once again. Successful files will then be moved to the **BAR_ORD_SAVE** directory.

File delivery

There are many different ways to put a file in the **BAR_ORD_IN** directory. You can use FTP, EDI or e-mail.

Messages from Order System

A message with order data may contain any number of records, as long as the sending system, transmission and receiving system limits are considered.

When an order is added to Bartrack, it is considered to be a collection of one A-record and zero or more B-records having the same order number and order item number.

These messages are possible to receive from order system:

- Comment to an order (\-record)
- Overall information about an order (A-record)
- “Text1” or “Text2” information about an order (T-record 1 and 2)
- “Text3” information about an order (T-record 3)
- “Text4” or “Text5” information about an order (T-record 4 and 5)
- Order row details for an order (B-record)
- Order row details for an order connected to a serial number (C-record)

See “Interface description Order Handling” (KS001B07/EN) for a full specification on the format of the messages on each record.

Messages received from order system

Event	Record received	Explanation
Order information	A-record and [B-record] [T-record]	This message contains the data of the order. Order row details for the order. Each B-record only contains one order row, and therefore a message can contain one or more B-records. This message contains text information about an order.
Comment	\-record	This message is a comment. Everything from the record start to the next CR-LF is considered a comment.
Order information for an individual	A-record and	This message contains the data of the order.

	C-record	This record contains the order row details for an order connected to a serial number
--	----------	--

Error logging

There are normally only two occasions when an error is logged. The errors are logged in the Windows Event Viewer:

1. A product in the order header or order row does not exist in Bartrack.
2. Deleting of an order that is started in Bartrack.

Tracy

Installation

How to install Tracy for Bartrack is described in the document “Installation and User Guide, Bartrack Tracy”, KS001M00XXF01/EN.

Receiving data

Data from Tracy is received by the **Bartrack Tracy Service** (see “Bartrack Tracy Service” on page 26 for more information about the service) and placed in the **BAR_TCY_IN** directory on the application server.

More about receiving information from Tracy is described on page 31 in the chapter “Receive information from M2T”.

The data is received as files which are formatted in a pre-defined form according to the kind of data. B-records is sorted out and forwarded to the **BAR_TCY_OUT** directory. The **Tracyrec.exe** service (see “Tracyrec.exe” on page 26 for more information) then checks this directory for new data files and transfer them to a temporary directory, **BAR_TCY_TEMPOUT**, also located on the application server. From this directory the Tracy Receive service reads the file and will then process its’ content. If the content is found to be correct the data is sent to the Bartrack server for processing and forwarding it into the Bartrack database. Incorrect data files, received from Tracy, is instead of being read into Bartrack, placed in the **BAR_TCY_ERRORIN** directory. These files must then be investigated by a preparer for making corrections to the file content.

Preparing data

The Tracy Receive service does not send data to Tracy directly. This is handled by the **Bartrack Tracy Service**. Instead the Tracy Receive service prepares the data to be sent and it creates data files containing the various kinds of records. Note that a data file can only contain one kind of records.

When, and which, data files are to be created is decided in the Bartrack Product Preparation. The creation of these files is then handled by the Tracy Receive service, and when the files are created they are put into the **BAR_TCY_TEMPOUT** directory on the application server. Here the file is placed temporarily until it is transferred to the **BAR_TCY_OUT** directory.

Tracyrec.exe

Bartrack is equipped with a service for internal handling of Tracy information. The service is called **Tracyrec.exe**, or Tracy Receive, and it takes care of creating the certain kind of records used for transferring data to Tracy and reading the data contained in the files received from Tracy. This service also takes care of transferring files to and from certain Tracy file directories on the Bartrack web server. The service prepares the data received from Tracy for the Bartrack server routines.

Configuration settings for Tracyrec.exe

The **Tracyrec.exe** service uses one configuration file, called **Tracyrec.ini**. In this file only the name of the service is pointed out.

Tracyrec.ini settings

Setting	Value	Explanation
serviceName	BAR_TRACYREC	The name of the service to be displayed in the Windows Service Manager.

Service purpose

The Tracy Receive service's main purpose is to take care of data records received by the **Bartrack Tracy Service** from the Ericsson's global system for traceability information concerning produced individuals, Tracy. This **Tracyrec.exe** service does also prepare data for actions made within Bartrack to be sent to that system. The types of messages going from Bartrack to Tracy and being received from Tracy are presented in the chapter "Messages to Tracy" on page 33 and chapter "Messages from Tracy" on page 35.

Bartrack Tracy Service

The second service, communicating with Tracy, is called **Bartrack Tracy Service** and through this service Bartrack receives individual or structure information from Tracy. Tracy can in its turn make requests to Bartrack to ship individuals. The communication with Tracy is made through the M2T application at Ericsson, using e-mail.

Both the **Tracyrec.exe** and **Bartrack Tracy Service** are dealing with the data located in the **BAR_TCY_<x>** directories (see "File Structure and Files" on page 38).

Each file transferred between Bartrack and Tracy can contain several messages.

There are seven messages going from Bartrack to Tracy:

- Send individual data (B-record)
- Update individual data (C-record)
- Send additional number(s) (E-record)
- Send external serial number information (F-record)
- Send structure data (S-record)
- Request information about an individual (Y-record)
- Scrap an individual (Z-record)

From Tracy there are five messages:

- Individual information requested by Bartrack (B-record)
- Additional numbers, if any (E-record)
- Retail products, if any (F-record)
- Structure information requested by Bartrack (S-record)
- Request to ship individuals from Bartrack (X-record)

There are some duplicated words (used in different context) when it comes to Tracy. The following table explains the Bartrack meaning and the Ericsson equivalent.

Bartrack terminology	Ericsson/Tracy terminology	Description
Undefined product	External serial number	A product that has not been prepared for use. These products can be registered automatically at assembly or manually.
Additional number	Synonym number	Extra numbers that can be used to identify the individual. For example MAC-address, IPEI, suppliers serial number.

If a message is to be sent to Tracy, or not, is decided for each product in the Bartrack **Product Preparation**. Only necessary messages are sent, that is, even if a product has been defined to send information to Tracy at shipment, Bartrack can decide not to. But only if Bartrack knows that no information is changed since the last time Tracy knew about the information.

Configuration settings for Bartrack Tracy Service

The Bartrack Tracy Service uses two configuration files in XML format. One is for its' own start-up purpose and contains only the name of the service and the corresponding configuration file to look for. This file is installed to the directory chosen at installation.

Bartrack Tracy Service service.config file settings

Setting	Value	Explanation
config\ DisplayName	Prevas Bartrack Tracy	The name of the service to be displayed in the Service Manager.
config\ ConfigFile	BartrackTracyService.config	The name of the configuration file for the service. Must be located in the application directory or in the System32 directory.

The other contains a set of settings that tells the Bartrack Tracy Service how to work during operation. These settings are found in the **BartrackTracyService.config** file. In this file it is possible to specify server names, ports, and directories etc which are used when communicating with Tracy.

Table of configuration settings for Bartrack Tracy Service

Setting	Default Value	Explanation
mail\ 	server.domain.com	The mail server name for sending mail through

IMAPserver		IMAP.
mail\ SMTPserver	server1	The mail server name for sending mail through SMTP.
mail\ SMTPPort	25	The port number to use for SMTP communication.
mail\ SMTP Authenticate	True	Shall authentication be used for SMTP?
mail\ UserName	domain\m2t	The user name for the mail account used to send e-mails to Tracy.
mail\ Password		The corresponding password for the mail user.
mail\ Inbox	Inbox	The name of the inbox.
mail\ UseSSL	False	Shall SLL be used?
mail\ Address	m2t@domain.com	The e-mail address used as sender.
mail\ RecipientAddress	m2t@npbcg1.ericsson.se	The recipient address for M2T at Ericsson.
temp_folder\ TEMP_FOLDER	C:\Temp	The directory where the application creates temporary files.
bartrack_input\ Directory	C:\BAR_TCY_IN_DIR	The input directory for Bartrack files.
bartrack_input\ Request	EDIREQUEST_*.IN	The filename for request answers from M2T to Bartrack.
bartrack_input\ Information	EDIINDIVIDS_*.IN	The filename for information files from M2T to Bartrack. Can contain several different types of records.
bartrack_output\ Directory	C:\BAR_TCY_OUT_DIR	Output directory for Bartrack files.
bartrack_output\ Request	EDIREQUEST.UT_*	The filename for request files from Bartrack to M2T. Contains Y records.
bartrack_output\ Information	EDIINDIVIDS.UT_*	The filename for information files from M2T to Bartrack. Can contain several different types of records.
bartrack_tracyservice\ FactoryCode	XXX	The factory code used for Ericsson production.
bartrack_tracyservice\ KeepFiles	YES	Shall the output files be kept after sending them to M2T?
bartrack_tracyservice\ HoursBetweenScan	1	The number of hours between each attempt to send information files to M2T.
bartrack_tracyservice\ ServiceInterval	1	The number of minutes between each loop in the application.
bartrack_tracyservice\ MaxWaitCycles	3	How many wait cycles waiting for answer from M2T before resending messages.
bartrack_tracy_request\ Products	ROA 111 333;ROA 111 222;BFL 119 127/1	The products which to request more data for when receiving a B record from M2T.

bartrack_tracy_request\ Type	NYYN1	The request type to use.
error_eventlog\ EventSource	Prevas Bartrack Tracy	The event source for logging errors.
trace_eventlog\ EventSource	Prevas Bartrack Tracy Trace	The event source for logging traces messages.

Starting Bartrack Tracy Service

The Bartrack Tracy service is started by using the Windows Service Manager. Select the row for Prevas Bartrack Tracy and then click the Start button in the toolbar. Another way to start the service is to make a mouse right-click on the row and then select the menu option Start, or using the menu Action/Start.

Stopping Bartrack Tracy Service

To stop the Bartrack Tracy Service, run the Windows Service Manager and click on the row for Prevas Bartrack Tracy. Then click the Stop button in the toolbar. Another way to stop the service is to right-click on the row and then selects the Stop menu option, or using the menu Action/Stop.

Error logging

Information and errors from the application are logged to the event log BT Snitcher Log. This event log is displayed in the Windows Event Viewer. To view details about any entry, just double-click on the current row.

Trace logging

Some trace logging that can be helpful when troubleshooting the service and its' doings can be found in the BT Trace Snitcher Log. This log can be found in the Windows Event Viewer. To view details about any entry, just double-click on the current row.

Bartrack's internal Tracy handling

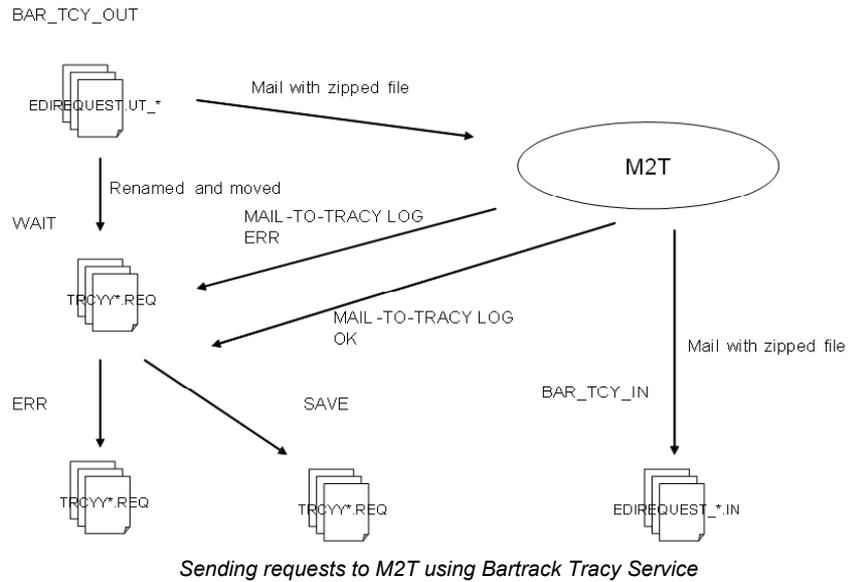
The **Tracyrec.exe** service handles the reading of files coming from Tracy into the Bartrack system, and the creation of Tracy files within Bartrack.

Communication with Tracy

The communication with Tracy is made through the M2T (Mail to Tracy) application at Ericsson. The **Bartrack Tracy Service** has a general flow that is described in the following sections.

Send request to M2T

To send request files to Tracy through M2T the following steps are performed:

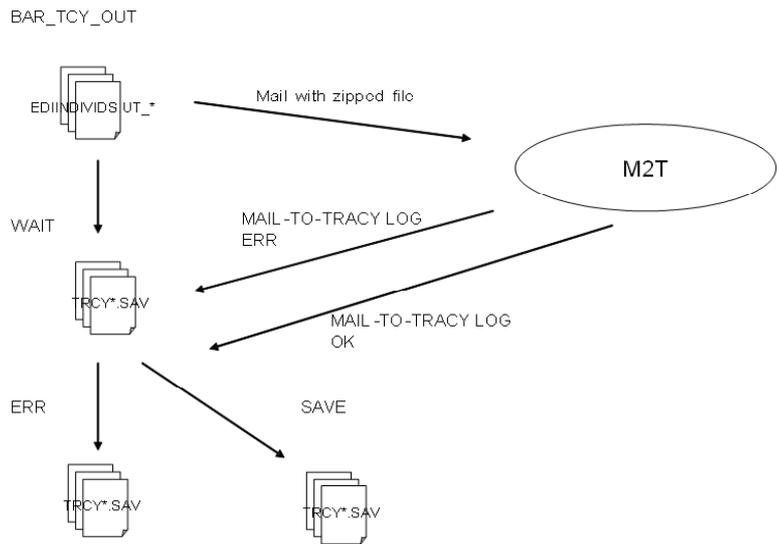


1. All the EDIREQUEST.UT_* file there is found in the BAR_TCY_OUT directory is sent through e-mail to M2T. If more than one file, a merge is made into files with a maximum of 10000 rows. Each mail only contains one file. This file is zipped before being sent.
2. The request files are renamed to TRCYY*.REQ, just as they are named in the e-mail sent to M2T, and then moved to the WAIT subdirectory.
3. A log is received from M2T. If any failure has occurred the file is moved to the ERR subdirectory.
4. If the sending was successful and an OK is received from M2T, Tracyrec.exe waits for an answer to the request.
5. When an answer to the request is received from M2T, Tracyrec.exe moves the request file to the SAVE subdirectory and saves the received zip-file to the BAR_TCY_IN directory and unzips it to a file named EDIREQUEST.IN.

This information is important and is sent in each scan of the service.

Send information to M2T

To send information files to Tracy through M2T the following steps are performed:



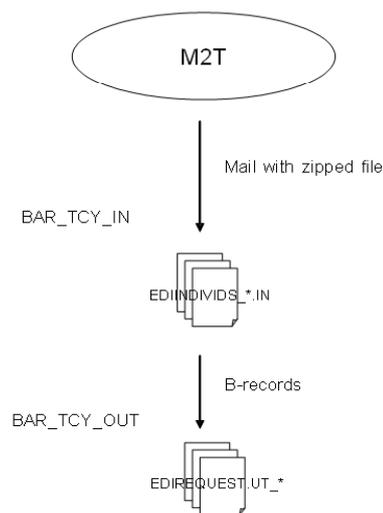
Sending information to M2T using Bartrack Tracy Service

1. All the EDIINDIVIDS.UT_* files found in the BAR_TCY_OUT directory are sent by e-mail to M2T. If more than one file, a merge is made into files containing a maximum of 10000 rows.
2. The request files are renamed to TRCY*.SAV, just as they are named in the e-mail sent to M2T, and then moved to the WAIT subdirectory.
3. A log is received from M2T. If a failure has occurred the file is moved to the ERR subdirectory.
4. If the received log from M2T says OK, the file is moved to the SAVE subdirectory.

This information is not critical and is sent once each hour.

Receive information from M2T

To receive information files from Tracy through M2T, the following steps are performed.



Receiving information from M2T

1. All e-mail files from M2T are read. All received files are saved as EDIINDIVIDS*.IN in the BAR_TCY_IN directory after they have been unzipped.
2. For each B record of the requested products in the received files, create a Y record request in an EDIREQUEST.UT_* file and place it in the BAR_TCY_OUT directory.

Directories and file structure

The input and output file structure for the **Bartrack Tracy Service** is described below:

Directories and file structure for the Bartrack Tracy Service

Directory	File	Explanation
BAR_TCY_OUT	EDIREQUEST.UT_*	A file containing Y records to be sent to M2T.
BAR_TCY_OUT	EDIINDIVIDS.UT_*	A file containing B or S records to be sent to M2T
BAR_TCY_OUT\WAIT	TRCYY*.REQ	A file containing Y records sent to M2T, waiting for an answer.
BAR_TCY_OUT\WAIT	TRCY*.SAV	A file containing B or S records sent to M2T, waiting for an answer.
BAR_TCY_OUT\SAVE	TRCYY*.REQ	A file containing Y records sent to M2T and a correct answer is received.
BAR_TCY_OUT\SAVE	TRCY*.SAV	A file containing B or S records sent to M2T and a correct answer is received.
BAR_TCY_OUT\ERR	TRCYY*.REQ	A file containing Y records sent to M2T and a failed answer is received.
BAR_TCY_OUT\ERR	TRCY*.SAV	A file containing B or S records sent to M2T and a failed answer is received.
BAR_TCY_IN	EDIREQUEST_*.IN	A file containing answers on Y records received from M2T.
BAR_TCY_IN	EDIINDIVIDS_*.IN	A file containing B, S, E or X records received from M2T.

To Tracy using service

The **TracyReceive** (TracyRec.exe) and the **Bartrack Tracy Service** share the responsibility for the actions on the “out” directories. **Bartrack Tracy Service** will scan the “out” directory, **BAR_TCY_OUT**, and its’ **WAIT** subdirectory.

Bartrack Tracy Service handles all record types and scans them every minute, or the time interval defined in the configuration file.

When a message from **Bartrack** is sent to **Tracy**, the **TracyReceive** service creates a file in the **BAR_TCY_TEMP** directory. When the file is complete (including the <EOF> character) it is moved to the **BAR_TCY_OUT** directory. The **Bartrack Tracy Service** will then move it to the **WAIT** subdirectory. The file is then transferred to **Tracy** via e-mail by the service. If the transfer was successful, the file is moved and appended to a file, named with today's date and a

timestamp into the **SAVE** subdirectory. The extension for the sent file is **.SAV**. However, if the transfer was unsuccessful, the file is moved to the **ERR** subdirectory.

When files including external serial numbers are sent, the serial numbers are stripped.

To Tracy Using Mail

The **Bartrack Tracy Service** is responsible for scanning the “out” directory **BAR_TCY_OUT** and its’ **WAIT** subdirectory.

The service handles all record types and scans it every minute, or the time interval defined in the configuration file.

When a message from Bartrack is sent to Tracy, a file is created in the **BAR_TCY_TEMPOUT** directory. When the file is complete (including the <EOF> character) the **TracyReceive** service will move it to the **BAR_TCY_OUT** directory and its’ **WAIT** subdirectory. Then an e-mail is created and sent to Tracy by the **Bartrack Tracy Service**. If the transfer was successful, the file is moved and appended to a file, named with today's date and a timestamp, in the **BAR_TCY_OUT** directory and its’ **SAVE** subdirectory. However, if the transfer was unsuccessful, the file is moved to the **ERR** subdirectory in the **BAR_TCY_OUT** directory.

Messages to Tracy

The messages possible to send to Tracy are:

- Individual data (B-record)
- Individual data update (C-record)
- Synonym number (E-record)
- External serial number information (F-record)
- Structure data (S-record)
- Individual information request (Y-record)
- Scrap an individual (Z-record)

See “System Specification for Tracy” (EDT/R/IK-97:0106 Uen) for a full specification on the format of the messages on each record.

Messages sent to Tracy (Service or Mail)

On event:	Messages sent	Explanation
CREATE	B-record and [E-record]	The message contains the data of the individual. Additional numbers or synonym numbers for the individual. This message is only sent if there are additional numbers to send.
REGISTER (Reg Manually)	B-record	The message contains the data of the individual.
REGISTER (Reg from Tracy)	Y-record	The message contains a request for individual information.
ASSEMBLE	[SA-record] or [FA-record] (add)	The message contains the serial numbers of the connected individuals. The message contains the data of the retail product. Note: The event ASSEMBLE occurs when the criteria for the <Ready>-button in the Assemble tab is met. For example, that the completeness check is performed.

CHANGE (Change Data) Note: This event only occurs if product number, R-state or exemption is changed.	C-record [EA-record] (add) or [ED-record] (delete)	The message contains updated information of the individual. Additional numbers or synonym numbers for the individual. This message is only sent if there are additional numbers to send. If the change will cause the additional numbers to be deleted for the individual, then no E-record is sent.
CHANGE (Change Structure) Note: This event occurs when the criteria for the <Ready>-button in the Change Structure tab is met. For example, that the completeness check is performed.	[SA-record] (add) [SD-record] (delete) [FA-record] (add) or [FD-record] (delete)	The message contains the serial numbers of all individuals in a structure. This message is only sent when children are added to the structure. The message contains the serial numbers of removed individuals. This message is only sent when children are removed from the structure. The message contains the data of the retail products. This message is only sent if the structure contains retail products.
STORE	B-record or C-record [SA-record] (add) [FA-record] (add) [EA-record] (add)	The message contains the data of the individual. The message contains updated information of the individual. Only used if the destination is changed. The message contains the serial numbers of all individuals in a structure. This message is only sent when a structure is stored. The message contains the data of the retail products. This message is only sent if the structure contains retail products. Additional numbers or synonym numbers for the individual. This message is only sent if there are additional numbers to send.
SHIP	B-record or C-record [SA-record] (add) [FA-record] (add) [EA-record] (add)	The message contains the data of the individual. The message contains updated information of the individual. Only used if the destination is changed. The message contains the serial numbers of all individuals in a structure. This message is only sent when a structure is shipped. The message contains the data of the retail products. This message is only sent if the structure contains retail products. Additional numbers or synonym numbers for the individual. This message is only sent if there are additional numbers to send.
SCRAP	Z-record	The message contains a request to scrap an individual.
REACTIVATE	Z-record	The message contains the data of the individual.

Note: Any number of messages can be mixed within a file, or occur as a single message in a single file.

From Tracy using service

The **TracyReceive** service is responsible for all actions on the “in” directories. It will scan the “in” directory **BAR_TCY_TEMPIN**.

TracyReceive handles all record types and makes a scan of the directory content every minute.

When Bartrack is ready to receive data from Tracy, the received file is created in the **BAR_TCY_TEMPIN** directory. When the file is complete (including the <EOF> character) it is moved to **BAR_TCY_IN** directory by the scanning process. The file is then read into Bartrack by the service. If the read transaction was successful, the file is moved to the **BAR_TCY_SAVEIN** directory. However, if

the read transaction was unsuccessful, the file is moved to **BAR_TCY_ERRORIN** directory.

From Tracy using Mail

Although the **Bartrack Tracy Service** gets the data from Tracy, the **TracyReceive** service is responsible for all actions performed on incoming e-mail from Tracy.

When an e-mail arrives at the Bartrack node, the **TracyReceive** service will decode its contents and act on it. The subject of the mail contains instructions to the service, which will move files, generate files and so on. The files intended to feed into Bartrack is stored in the **BAR_TCY_IN** directory. These files are then read into Bartrack by the service. If the read transaction was successful, the files are moved to the **BAR_TCY_SAVEIN** directory. However, if the read transaction was unsuccessful, the files are moved to the **BAR_TCY_ERRORIN** directory.

Messages from Tracy

The messages possible to receive from Tracy are:

- Individual information requested by Bartrack (B-record)
- Additional numbers if any (E-record)
- Structure information requested by Bartrack (S-record)
- Retail products if any (F-record)
- Request to ship individuals from Bartrack (X-record)

See “System Specification for Tracy” (EDT/R/IK-97:0106 Uen) for a full specification on the format of the messages on each record.

Messages sent from Tracy (Service or Mail)

On event:	EDI-messages sent	Explanation
Individual information requested	B-record and [E-record] [S-record] [F-record]	The message contains the data of the individual. Additional numbers or synonym numbers for the individual. This message is only sent if there are additional numbers to send. The message contains the serial numbers of the connected individuals. The message contains the data of external individuals.
Request to ship an individual	X-record	The message contains the serial number of an individual that Tracy wants to ship from Bartrack.

Web Server

Specifications

For a full specification, read the “Target Environment Specification”, document number KS001F17.

The Target Environment Specification document, TES, contains the minimum hardware specifications required in order to run Bartrack.

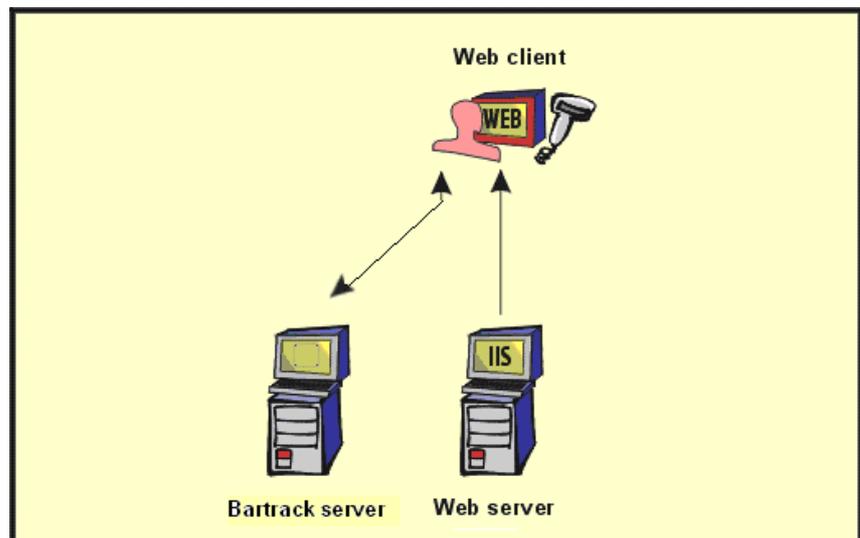
Distributing Bartrack Using the Web

One of the advantages of using the web interface is that the program files can be distributed using normal web technology.

How It Works

Bartrack does not use the web server after the web client has started. The web server is only used to distribute the required files. When the files have been downloaded to the client, the client communicates directly with the Bartrack server.

This means that the web server load caused by Bartrack is limited to start-up of the client only. If you have problems with long start-up times, the web server should be upgraded or tuned. If you are having problems with response times, the network might be the cause of the problems, and not the web server.



A system overview

File Structure and Files

Bartrack is installed in its own directory named **BARTRACK**, or preferably named after its particular release's version – **BARTRACK_011**. Under this directory all the specific Bartrack files and directories are located. The current Bartrack release is defined during start-up.

All installation files for the clients can be found in the **APPS** directory.



Web server file structure: The Bartrack directory structure

Web server directories

Directory name	Explanation
Bartrack	The main directory where the installation is made.
Apps	In this directory all files for both the client interface and the server routines are located. Also the files for starting up the client and managing the Bartrack server are found here.
Bartrack	The data found in this directory is used when serial port connected barcode readers are used.
Bartrack_Files	This directory keeps sub-directories hosting various resources for the Bartrack installation. The sub-directories are also used for communicating with external systems like SAP, Tracy and PRIM, and dealing with orders.
BAR_LABEL	This directory contains label DAT-files.
BAR_LAYOUT	This directory contains label layout files.
BAR_ORD_ERROR	This directory is used by Bartrack for order files containing some kind of error that the Bartrack Order Receiver service can not manage to read.

BAR_ORD_IN	This directory contains incoming orders not yet processed by the Bartrack Order Receiver service.
BAR_ORD_SAVE	This directory contains the orders that have been processed by the Bartrack Order Receiver service.
BAR_PRIMERR	This directory contains the structure files arrived from PRIM that Bartrack not has been able to process.
BAR_PRIMOK	This directory contains the structure files arrived from PRIM that has been processed by Bartrack.
BAR_REPORT	This directory contains the reports created within Bartrack.
BAR_SAP_OUT	This directory contains files being ready to be sent to SAP.
BAR_SAP_TEMPOUT	This directory contains the files to be sent to SAP before they are complete.
BAR_TCY_ERRORIN	This directory contains the files arrived from Tracy that the Bartrack Tracy Receiver service has detected containing some kind of error.
BAR_TCY_IN	This directory contains the files received from the Bartrack Tracy Service and not yet read by the Tracy Receiver service.
BAR_TCY_OUT	This directory contains the files that have been created by Bartrack containing data to be sent to Tracy by the Bartrack Tracy Service.
ERR	This sub-directory to the BAR_TCY_OUT directory contains files that were supposed to be sent to Tracy, but some kind of error within the data hindered the sending.
SAVE	This sub-directory to the BAR_TCY_OUT directory contains the files successfully sent to Tracy.
WAIT	This sub-directory to the BAR_TCY_OUT directory contains files with data to be sent to Tracy. They are waiting for the Bartrack Tracy Service to send them.
BAR_TCY_SAVEIN	This directory contains files ready to be sent to Tracy.
BAR_TCY_TEMPIN	This directory contains the files received from Tracy and temporarily placed here until the Bartrack Tracy Receiver service reads them into Bartrack.
BAR_TCY_TEMPOUT	This directory contains the files to be sent to Tracy temporarily until the Bartrack Tracy Service takes care of the file sending.
BAR_TRANSFER	This directory contains a sub-directory for file transfer.
TRANSFER	This directory contains SPU files.
Bartrack_logs	This directory contains various kinds of log files created by the Bartrack system.
BARTRACK_PCTTRANSFER	This directory contains various kinds of files for transfer between PCs.
Lib	This directory contains a file containing a program for logging data for a Java program like Bartrack.
Com	This directory contains dll-files needed when using serial-port connected barcode readers to the client-PCs
Images	This directory contains various images used by the client application.
Plugin	This directory contains the Java Run-time Environment installation program.

Contents in ../Bartrack on the web server Apps directory

File name	Explanation
Ala.dll	Application extension containing resources for handling alarms.
BAR_ORDERREC.EXE	Application for the Bartrack Order Receiver service for receiving order information from SAP.
BAR_ORDERREC.INI	Configuration file containing values for the Bartrack Order Receiver service
Bartrack.html	A HTML file for starting Bartrack from a web page and running it via a web site.
Bartrack.jar	Communication objects for the communication between client and server.
Bartrack.jnlp	This file is the start up file for the Bartrack client in a Java Web Start environment.
BartrackClient.jar	Graphics and logic for the web client.

BartrackHelp.jar	Help texts for the web client.
BARWORKERKILL.BAT	Batch file for terminating the Bartrack WebClient Service Process
BcrBean.jar	Java bean for barcode readers connected to the serial port.
BcrJava.jar	Resource files for the barcode reader.
ClientConfig.ini	Configurations file for the separate databases available for the web client.
Com.dll	Application extension for taking care of common functions used by the various parts of Bartrack.
Comdlg32.dll	Microsoft application extension.
COM_GEN.dll	Application extension for taking care of general common functions used by the various parts of Bartrack.
CreateProcess.exe	Program for creating Bartrack processes.
Csj.dll	Application extension containing resource files for the client to server interaction.
DBI.dll	Application extension containing routines for database interaction.
Index2.html	Html-page for starting Bartrack from a web page and running via Java Web Start.
Ini.ini	Configurations file for a factory/database available for the web client.
InstallService.bat	Batch file for installing the Bartrack services.
Jhall.jar	For supporting the Bartrack web client on-line help.
Jnlp.jar	For supporting the Bartrack web client start up.
JreInstaller.html	Web page for triggering the installation Java Run-time Environment installation application
JreInstaller.jar	Application for installing the Java Run-time Environment.
Kill.exe	Application for stopping the RMIregistry and Bartrack services
KillBartrack.bat	Batch file for starting the application for stopping the RMIregistry and Bartrack services
License.txt	File containing the license data for the installation
Log.dll	Application extension for taking care of system logging.
Man.dll	Application extension containing resource files for the manufacturing part of Bartrack.
Message.dll	Application extension for Bartrack messages.
MFC71D.dll	Microsoft application extension for foundation classes.
Msvcp71.dll	Microsoft application extension.
MSVCR71D.dll	Microsoft application extension.
Msvrt.dll	Microsoft application extension.
NeedInstall.html	Web page shown when installing Java Web Start.
Oledlg.dll	Microsoft application extension
PolicyInstaller.html	Web page for installing the policy file.
PolicyInstaller.jar	Running this application gives the Bartrack client permission to write to local disks and for caching files.
Pre.dll	Application extension containing resource files for the preparer part of Bartrack.
Prevas.policy	This policy file will give permission for the web application to run on the client.
Prevaskey	This key will ensure that only signed JAR files will be able to execute on the client.
PRM.exe	Service for handling PRIM data.
Queue.ini	Configuration file containing the set of queues available for the installation
QueueToFile.exe	Application for the BAR_MQtoFile service for handling information sending through a message queue to file.
QueueToFile.ini	Configuration file for the service for handling queue information to file
RegService.bat	Batch file for registration of the services to be used by Bartrack.
SAP.dll	Application extension for dealing with information to and from SAP.

SetupParameters.exe	Application for setting up the parameters to be used by the web client in it's' web pages and launch files.
SFT.dll	Application extension for dealing with Shop Floor Transaction data, for example data to and from BarApix.
SFT_REQ_CRT.exe	Application for the BAR_SFT_REQ_CRT service handling requests to create individuals.
SFT_REQ_CRT.ini	Configurations file the SFT_REQ_CRT.exe application.
SFT_REQ_IDINFO.exe	Application for the BAR_SFT_REQ_IDI service handling requests for individual information.
SFT_REQ_IDINFO.ini	Configurations file for the SFT_REQ_IDINFO.exe application.
SFT_REQ_PRO.exe	Application for the BAR_SFT_REQ_PRO service handling requests for product information.
SFT_REQ_PRO.ini	Configurations file for the SFT_REQ_PRO.exe application.
SFT_REQ_SHIP.exe	Application for the BAR_SFT_REQ_SHP service handling requests for individual shipments.
SFT_REQ_SHIP.ini	Configurations file for the SFT_REQ_SHIP.exe application.
SFT_REQ_STR.exe	Application for the BAR_SFT_REQ_STR service handling requests for individual storage.
SFT_REQ_STR.ini	Configurations file for the SFT_REQ_STR.exe application.
SFT_REQ_UPD.exe	Application for the BAR_SFT_REQ_UPD service handling requests for individual update.
SFT_REQ_UPD.ini	Configuration file for the SFT_REQ_UPD.exe application
StartBartrackServer.bat	Batch file for starting up the Bartrack server.
TCY.dll	Application extension for dealing with data coming from Tracy, and preparing data to be sent to that system.
TIF.exe	Application for dealing with information to and from test systems and converting them into MSMQ-messages.
TIF.ini	Configurations file for the TIF.exe application.
Tracyrec.exe	Application for the Tracy Receiver service handling reception of data from Tracy.
Tracyrec.ini	Configurations file for the Tracyrec.exe application.
Tskill.exe	Application for terminating the Bartrack WebClient Service Process
UnRegService.bat	Batch file for un-registration of the various Bartrack services.

Contents in ../Bartrack/Apps/Bartrack/Client/Bcr on the web server

File name	Explanation
Bcr.properties	File containing setup data clients using serial port connected barcode readers.

Contents in ../Bartrack/Images on the web server

File name	Explanation
32x32.gif	An image of the Bartrack symbol
BarSplash.gif	A Bartrack picture shown at application start up.
Prevas.gif	An image of the Prevas logotype.

There are two sub-directories called **com** and **plugin**. The **plugin** directory might contain the client JRE package needed to run the web client. The **com** directory contains configuration files for Bartrack and serial port connected barcode readers.

Contents in ../Bartrack/Com on the web server

File name	Explanation
jspWin.dll	Application extension needed for serial port connected barcode readers.
jspWinNm.dll	Application extension needed for serial port connected barcode readers.
jspWinRni.dll	Application extension needed for serial port connected barcode readers.
jspWinRnia.dll	Application extension needed for serial port connected barcode readers.

Contents in ../Bartrack/Plugin on the web server

File name	Explanation
jre-6-windows-i586.exe	The JRE installation program.

Sometimes it might be necessary to have several different Bartrack servers within the same factory. In these cases you will have to duplicate the **Bartrack** structure in the **wwwroot** directory, and of course naming them uniquely.

Each duplicate will allow you to have different settings for the server and/or the barcode reader. All you have to do to use the different settings is to distribute the web address of the **Index2.html** file located in the **apps** directory structure. That particular branch of the settings will be then be used.

To make the duplicate to use correct settings you have to run the **SetupParameters.exe** application, which will create all, for the web client, necessary files.

Note: Some web servers are case sensitive (typically UNIX systems) and it might be important what case you use for your file names.

External Programs

Label Design Software

You can use your favourite application for designing labels. This manual does not cover this topic. All information about designing labels can be found in the User Guide.

Web Client

Specifications

The web-client can be an Internet Explorer 5 (or later) browser. Any computer capable of running this browser can use Bartrack. For a full specification, read the “KS001F17 Target Environment Specification”.

The target Environment Specification (TES) document contains the minimum hardware specifications required in order to run Bartrack.

Adding a Web Client to the System

When you are adding a web client, you must have administrator privileges on that machine.

These are the tasks to perform in order to connect a web client to the Bartrack environment:

1. The client must comply with the specifications above. In short, it must be able to run Java Run-time Environment, and have a network connection.
2. The client must have access through TCP/IP to the following two locations:
 - The Bartrack server
 - The web server containing the web client
3. If you are going to run Bartrack from a web browser by using the **Bartrack.html** file, and not the **Java Web Start**, using the **Index2.html** file: Execute the PolicyInstaller.exe found in the Bartrack\Apps directory of the web server. This file will add the Bartrack policy file to the policy file already installed by JRE.
4. Start a web browser and enter the URL (address) of the Bartrack web server. There might be different URL:s depending on how you are going to run the client:
 - **Index2.html** when using the **Java Web Start** application, or
 - **Bartrack.html** when running it in a web browser.

Now it should be possible to start the Bartrack client.

If the communication fails, see the Troubleshooting chapter in this manual (page 73).

Parameters and Variables

It is highly recommended to use the **Java Web Start** technology for running Bartrack. When doing so the client specific files are being signed together with no further action to be taken before running the web client. If you are unsecure about which technology you are using, refer to the file you are using when starting up the web client:

- Index2.html will start up through Java Web Start, and
- Bartrack.html will start up the client by using a web browser.

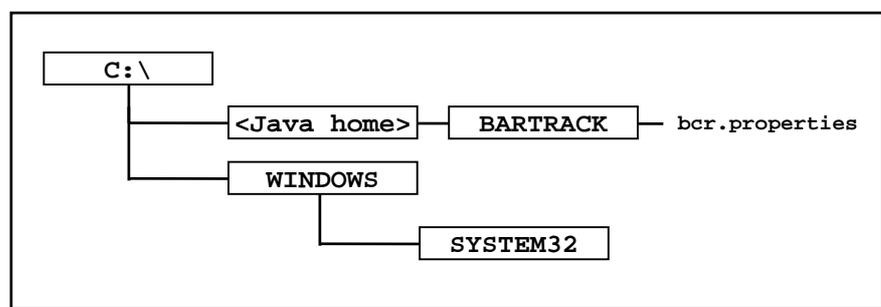
If Bartrack is to be run within a web browser, like Internet Explorer, there is only one setting applicable to the web client. It is stored in the java.policy file, and contains the path to the prevas.policy file, found at the Bartrack web server. This path is needed for the Java Run-time Environment to be able to verify that the Bartrack web application files are authentic.

To set this path, you will have to execute the PolicyInstaller.exe reached from the PolicyInstaller.html file found in the Bartrack\Apps directory of the web server. It is also found by using the link in the Bartrack client home page.

The policy installer will not prompt for the URL of the Bartrack website, where a file called prevaskey is located. This information is already known by the PolicyInstaller application. The prevas.policy file and the prevaskey file in cooperation will ensure that only approved code will be executed on the client.

Files and File Structure

All files needed by the web-client will be downloaded and stored automatically by the browser according to normal browser operation. The only exception to this rule is the .java.policy file. Please refer to the "Adding a Web Client to the System" section on page 44 for information on this file.



Windows-based web browser - client file structure

Contents in <Java home>

File name	Explanation
bcr.properties	Contains the settings for the serial-port connected barcode reader. Copied to this location at the first time such a barcode reader is used.

Contents in ...\\Windows\\System32

File name	Explanation
jspWin.dll	Application extension used by the serial-port connected barcode reader. Copied to this location at the first time such a barcode reader is used.

jspWinNm.dll	Application extension used by the serial-port connected barcode reader. Copied to this location at the first time such a barcode reader is used.
jspWinRni.dll	Application extension used by the serial-port connected barcode reader. Copied to this location at the first time such a barcode reader is used.
jspWinRnia.dll	Application extension used by the serial-port connected barcode reader. Copied to this location at the first time such a barcode reader is used.

Internal Interfaces

To a Barcode Reader

Bartrack can use a barcode reader connected to the web-client. When a barcode is used for scanning, its data is transferred to the correct field in Bartrack. When a PDF-code is scanned with a serial port connected scanner, all the data is written in the correct fields.

The web-client has a special way of handling the settings for a barcode reader. Please refer to the Bartrack User Guide on how to select barcode reader.

It is possible to connect barcode readers to a Bartrack web client in two ways; either via the serial port or via a keyboard connector. The option to choose is given during installation of the client. This selection does not hinder the change of the option later on.

Keyboard-connected barcode reader

A computer with a keyboard-connected reader can not differentiate between typed keys or scanned barcodes. It is therefore necessary to always be in the right field when scanning a barcode, that is, have the cursor where you want the scanned data to appear.

Different techniques can be used though to navigate between fields. For a web-client, the access keys (for example **ALT-D**) can be used as barcode shortcuts to jump between fields, besides the tab key.

Any data identifiers in the barcode (for example **S** for serial number) must be stripped before the contents are used. See next section for more information on data identifiers.

Serial port connected barcode reader

If you have a barcode reader connected to the serial port, you have to edit the **bcr.properties** file to fit the brand of the reader. This file can be found in the web server **Apps** directory for Bartrack.

The initialisation file can contain several settings for different barcode readers. They are separated by having its name as a prefix like this:

```
intermec_9510_
```

Then the different settings applicable to the specific barcode reader follow.

In order for Bartrack to find the correct initialisation file, and the correct barcode reader section for each web-client, it is possible to select from a menu in Bartrack which barcode reader to use.

It is also possible to transfer settings (programming) from the initialisation file to the barcode reader automatically. See the sample entries in the initialisation file for examples on different barcode readers and settings.

Fact Prefix

The data in a barcode or PDF-code can be preceded with different codes for the type of information. These codes are referred to as Fact Prefixes.

There are several different Fact Prefixes supported by Bartrack:

- **S** Serial number
- **6D** New standard: Any unspecified date
- **11D** Manufacturing week in the format YYYYWW
- **12D** Manufacturing date in the format YYYYMMDD
- **1P** Product number or Product number and R-state
- **21P** R-state
- **22P** Product name
- **3C** MAC-address
- **22S** Electronic serial number (ESN)
- **K** Order number
- **1K** Order number
- **14K** Order number

Note: There is an old version of the standard, where product number and R-state were defined like this:

- **1P** Product number
- **2P** R-state
- **6D** Manufacturing week in the format YYYWWW

Any other data or data with other identifiers will be mapped to the least significant fields, for example **Description**, **Comments** or **Free text**.

When PDF codes are used, all Fact Prefixes can be used simultaneously in one barcode. Any number of data elements can be used in a PDF-code, although at least one has to be present. The maximum number of data elements is limited by the PDF-code security level.

A PDF-code with just one data element looks like this:

```
] )>rs06Gs<data>rseot
```

A PDF-code with several data elements looks like this:

```
] )>rs06Gs<data>Gs<data>Gs<data>rseot
```

Where

<data>	is the required data fields (for example SA24000001)
rs	is the ASCII character Record Separator (value 30)
Gs	is the ASCII character Group Separator (value 29)
eot	is the ASCII character End of Text (value 04)

This is an example of data to print as a PDF-code:

```
Serial number: A24000001  
Product number: ABC1234 567  
R-state: R2C
```

The corresponding PDF-code:

```
] )>rs06GsSA24000001Gs1PABC1234567Gs2PR2Crseot
```

Database

Backup and Restore

Operation

Read the database application (Oracle) documentation set to find out how to backup and restore the database.

You can also contact helpdesk for information regarding backup and restore. See page 7 for contact information.

Creating an empty database

Note: Extreme caution must be taken if the Bartrack database is to be created. Do not attempt to do this unless you are very confident that you know what you are doing.

There are occasions when an empty database is required, for example for training purposes. The necessary steps to create an empty database are:

1. Log on to SQLPlus using SYSTEM user.
2. Create space for the new database by running the TABLESPACE_CREATE.SQL script:

```
SQLPLUS>@TABLESPACE_CREATE.SQL
```
3. Grant DBA privilege to application user (by example: BAR)

```
SQLPLUS> GRANT DBA TO BAR;
```
4. Log on to SQLPlus using the application user-ID BAR and associated password.
5. Execute the script that will create the log file TABLE_CREATE.LOG.

```
SQLPLUS>@TABLE_CREATE.SQL
```
6. Execute the script that will create indexes, INDEX_CREATE.LOG

```
SQLPLUS>@INDEX_CREATE.SQL
```
7. Execute the script that will create the log file called VIEW_CREATE.LOG

```
SQLPLUS>@VIEW_CREATE.SQL
```
8. Execute the script for creating the log for foreign key constraints, FKCONSTRAINT_CREATE.LOG.

```
SQLPLUS>@FKCONSTRAINT_CREATE.SQL
```
9. Connect to the database using SQLPlus and create a directory.

```
SQLPLUS> CREATE DIRECTORY TESTDIR AS  
'<directory name>' ;
```
10. Run the EXTERNALTABLE_CREATE.SQL script on the database to create external tables for data reading.

```
SQLPLUS>@EXTERNALTABLE_CREATE.SQL
```
11. Add database init parameters.
If you use pfile, open the database's init.ora file with a text editor and add:

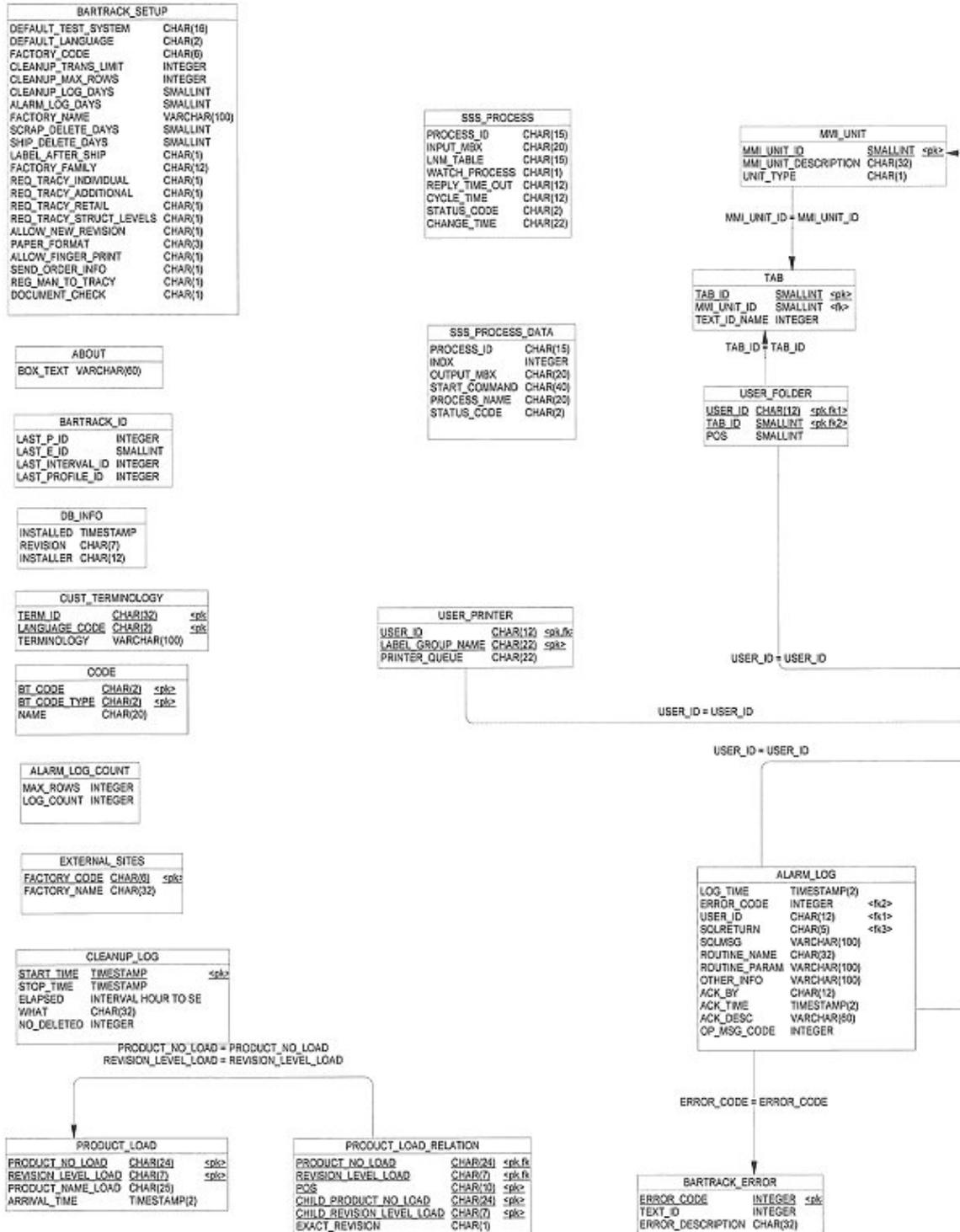
```
NLS_DATE_FORMAT='YYYY-MM-DD'  
NLS_TIMESTAMP_FORMAT='YYYY-MM-DD HH24:MI:SS.FF2'
```
12. If you use spfile, run the following commands from the SQLPlus prompt:

```
ALTER SYSTEM SET NLS_DATE_FORMAT='YYYY-MM-DD' SCOPE=SPFILE;  
ALTER SYSTEM SET NLS_TIMESTAMP_FORMAT='YYYY-MM-DD HH24:MI:SS.FF2'  
SCOPE=SPFILE;
```
13. Restart the database.

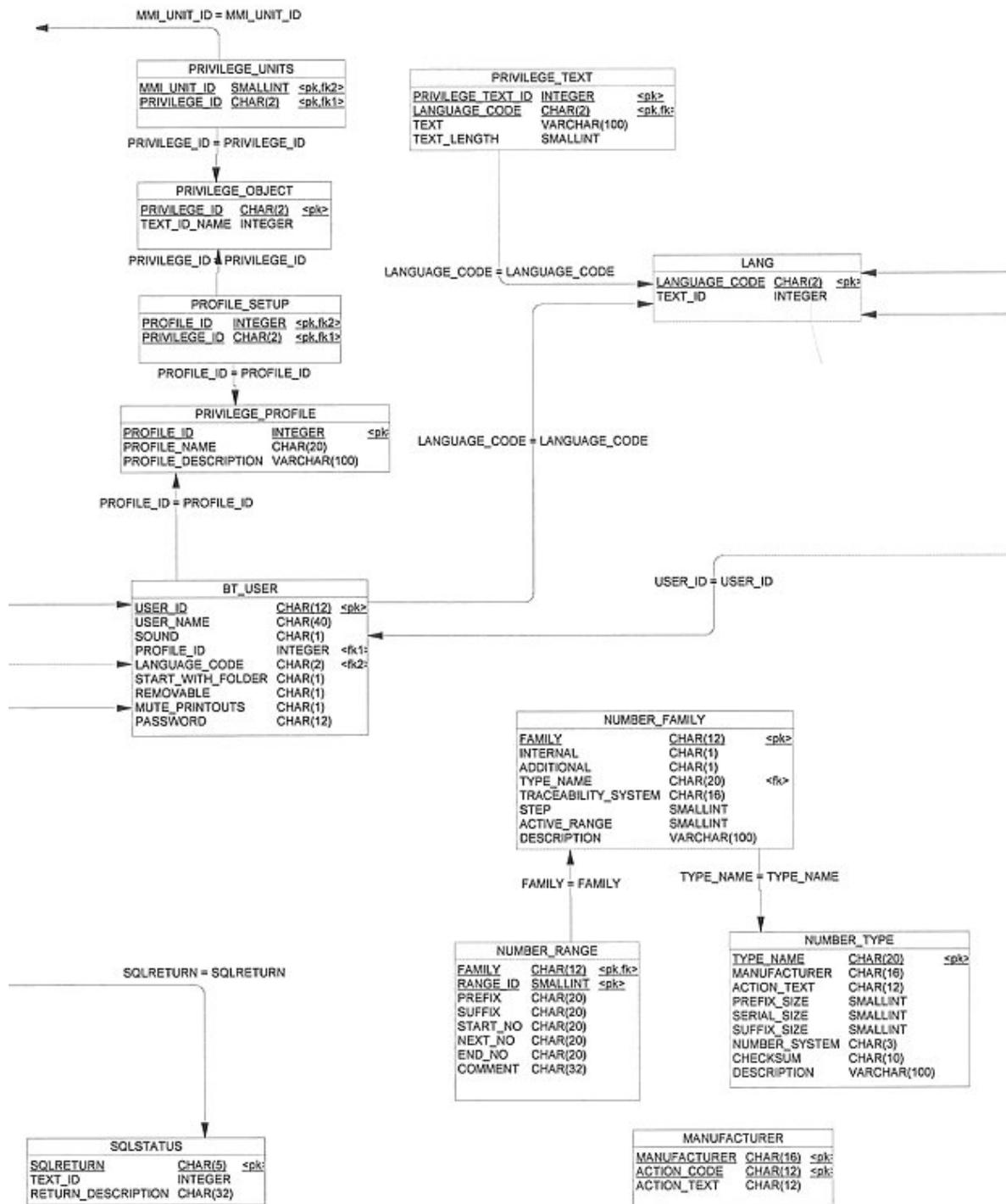
Please refer to the “KS001f04/en Bartrack Installation Guide” for more information on creating databases.

Map

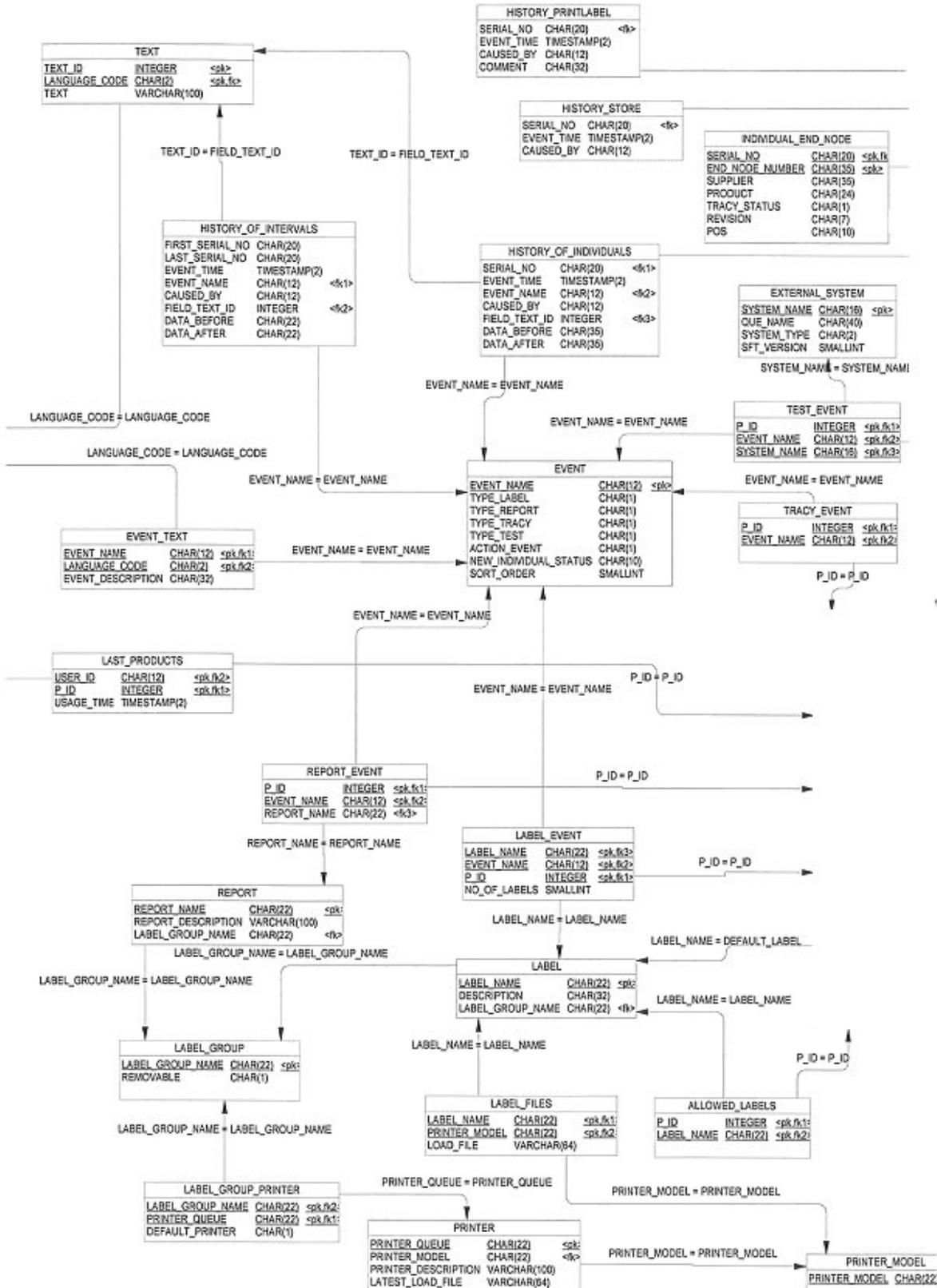
This is a map of all the tables in the relational database. There are arrows connecting the tables, and the direction of an arrow indicates the relation. The table from where the table starts need something to be defined in the table where the arrow ends.



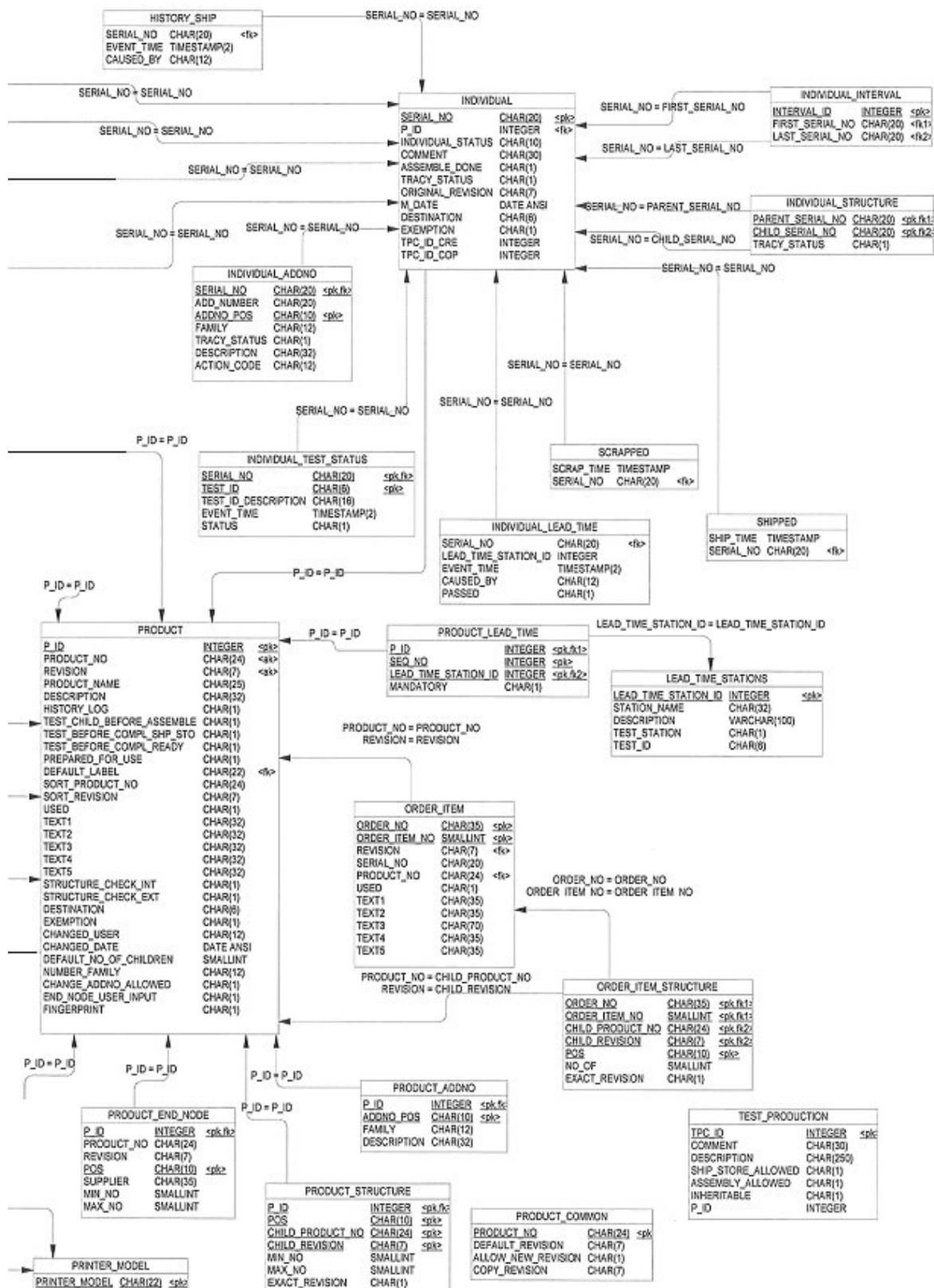
Map of Bartrack's database



Map of Bartrack's database



Map of Bartrack's database



Map of Bartrack's database

Tables

Note: Extreme caution must be taken if the Bartrack database tables are to be read or written. Do not attempt to do this unless you are very confident that you know what you are doing.

You attach yourself to the database when logging in to SQLPlus entering user name, password and host string. Then the prompt is shown:

SQLPLUS>

This is a selection of some of the tables that can come in handy when you work with Bartrack. Each table has its own listing, and a brief explanation of the field contents.

Field names in table BT_USER

Field name	Length	Explanation
USER_ID	CHAR(12)	Unique ID of users known to Bartrack. (KEY)
USER_NAME	CHAR(40)	Free text describing the user.
SOUND	CHAR(1)	Y or N for enabling audible alerts.
PROFILE_ID	INT	A number corresponding to the privilege profile for the user
LANGUAGE_CODE	CHAR(2)	EN or SV for English or Swedish texts.
START_WITH_FOLDER	CHAR(1)	Y or N for starting with personal folder.
REMOVABLE	CHAR(1)	Y or N for disabling deletion of the user.
MUTE_PRINTOUTS	CHAR(1)	Y or N for disabling printouts for the user.
PASSWORD_1	CHAR(12)	Encrypted password for the user. 12 characters, but in encrypted format 20 characters.
LOGIN_TIME	CHAR(12)	Last login for the user.

Field names in table INDIVIDUAL

Field name	Length	Explanation
SERIAL_NO	CHAR(20)	Unique serial number. (KEY)
P_ID	INT	Short, unique reference to the product.
INDIVIDUAL_STATUS	CHAR(10)	The individual's current Bartrack status.
COMMENT_1	CHAR(30)	Free text field, for comments.
ASSEMBLE_DONE	CHAR(1)	Y or N for telling if the individual is ready.
TRACY_STATUS	CHAR(1)	N: No data or structure sent to Tracy D: Data sent to Tracy S: Structure and data sent to Tracy C: C-record sent to Tracy
ORIGINAL_REVISION	CHAR(7)	The original revision for the product used for the individuals' product.
M_DATE	DATE ANSI	Manufacturing time of the individual.
DESTINATION	CHAR(6)	The destination of the individual when it is stored or shipped. Only values from the DESTINATION table are allowed.
EXEMPTION	CHAR(1)	Y or N for telling if the individual is manufactured with an exemption. U: The exemption state of the individual is unknown. N.B. This status is only used for individuals manufactured before the exemption was introduced in Bartrack.

TPC_ID_CRE	INT	The ID value of the Test Production Comment added to the individuals' product to be used when creating new individuals of that product.
TPC_ID_COP	INT	The ID value of the Test Production Comment added to the individuals' product to be used when copying individual information.
INFO	CHAR(35)	Extra information for the individual. Can be enabled for current site.
MAN_UNIT	CHAR(6)	Factory code for the site manufacturing the individual.

Field names in table PRODUCT

Field name	Length	Explanation
P_ID	INT	Short, unique reference to a product. (KEY)
PRODUCT_NO	CHAR(24)	The product number, with spaces.
REVISION	CHAR(7)	Revision number (R-state).
PRODUCT_NAME	CHAR(25)	The product name.
DESCRIPTION	VARCHAR(32)	The products description.
HISTORY_LOG	CHAR(1)	Character Y or N for enabling the logging of transactions for this product.
TEST_CHILD_BEFORE_ASSEMBLE	CHAR(1)	Character Y or N for demanding passed individuals before assembly.
TEST_BEFORE_COMPL_SHP_STO	CHAR(1)	Character Y or N for demanding passed individuals in assemblies at individual shipment or storage.
TEST_BEFORE_COMPL_READY	CHAR(1)	Character Y or N for demanding passed individuals in assemblies when marking individual structures as being ready.
PREPARED_FOR_USE	CHAR(1)	Character Y or N for enabling the use of the product in manufacturing.
DEFAULT_LABEL	CHAR(22)	The name of the preferred label.
SORT_PRODUCT_NO	CHAR(24)	A copy of PRODUCT_NO optimised for sorting and searching.
SORT_REVISION	CHAR(7)	A copy of REVISION optimised for sorting and searching.
USED	CHAR(1)	Character Y or N. Used for telling whether or not the product has been used to create serial numbers.
TEXT1 to TEXT5	CHAR(32)	Free text field. Used for any site-specific data.
STRUCTURE_CHECK_INT	CHAR(1)	Character Y or N for demanding of structure check.
STRUCTURE_CHECK_EXT	CHAR(1)	Character Y or N for demanding of structure check.
DESTINATION	CHAR(6)	The factory code of the factory where this individual is being sent.
EXEMPTION	CHAR(1)	Character Y or N to indicate exemption from specification.
CHANGED_USER	CHAR(12)	The user-ID of the user that created or changed this product.
CHANGED_DATE	DATE ANSI	The date when the user created or changed this product.
DEFAULT_NO_OF_CHILDREN	SMALLINT	A default value of the number of children for this product. Displayed in the Assemble tab.
NUMBER_FAMILY	CHAR(12)	The number family to use when individuals from this product is created.
CHANGE_ADDNO_ALLOWED	CHAR(1)	Character Y or N for telling if additional numbers assembled to the product is allowed.
END_NODE_USER_INPUT	CHAR(1)	Character N, A or M: N: [N]o, doesn't need user input. Use the default values. A: Yes, [a]sk the user. Display the default values. M: Yes, [m]andatory. The user must not leave blank values. Default values are displayed.
FINGERPRINT	CHAR(1)	Character Y or N telling if the product is used as a finger print

		product.
PROD_HISTORY	CHAR(1)	Character Y or N telling if changes made to the product is to be recorded.
ERI_EXTERN	CHAR(1)	Character Y or N telling if the the product is external within Ericsson.

Field names in table BARTRACK_SETUP

Field name	Length	Explanation
DEFAULT_TEST_SYSTEM	CHAR(16)	The default test system for all new (not copied) products.
DEFAULT_LANGUAGE	CHAR(2)	The default language for all new (not copied) users.
FACTORY_CODE	CHAR(6)	The installation's factory code. Used as 'Sending unit' when Bartrack is communicating with Tracy.
CLEANUP_TRANS_LIMIT	INT	Internal use.
CLEANUP_MAX_ROWS	INT	Internal use.
CLEANUP_LOG_DAYS	SMALLINT	Internal use.
ALARM_LOG_DAYS	SMALLINT	Internal use
FACTORY_NAME	VARCHAR(100)	The name shown in the Main Menu and on reports.
SCRAP_DELETE_DAYS	SMALLINT	The number of days a scrapped individual is retained in Bartrack.
SHIP_DELETE_DAYS	SMALLINT	The number of days a shipped individual is retained in Bartrack.
LABEL_AFTER_SHIP	CHAR(1)	Character Y or N for allowing printout after an individual is shipped.
FACTORY_FAMILY	CHAR(12)	The default number family for all new (not copied) products.
REQ_TRACY_INDIVIDUAL	CHAR(1)	Character Y or N for allowing individual data to be fetched when making an individual registration from Tracy.
REQ_TRACY_ADDITIONAL	CHAR(1)	Character Y or N for allowing additional information to be fetched when making an individual registration from Tracy.
REQ_TRACY_RETAIL	CHAR(1)	Character Y or N for allowing retail products to be fetched when making an individual registration from Tracy.
REQ_TRACY_STRUCT_LEVELS	CHAR(1)	Character A, 0, 1, 2 or 3. A: All levels of the individual structure will be fetched when making individual registration from Tracy. 0: No structure levels will be fetched. 1: One structure level will be fetched. 2: Two structure levels will be fetched. 3_ Three structure levels will be fetched.
ALLOW_NEW_REVISION	CHAR(1)	Character Y or N for allowing new revisions of products to be created automatically at product preparation when products are imported via Tracy.
PAPER_FORMAT	CHAR(3)	The definition of the paper format to be used at report print-outs, e.g. A4.
ALLOW_FINGER_PRINT	CHAR(1)	Character Y or N for allowing finger print handling of Ericsson products.
SEND_ORDER_INFO	CHAR(1)	Character Y or N for allowing extra information to be attached to individuals.
REG_MAN_TO_TRACY	CHAR(1)	Character Y or N for allowing information to be sent to Tracy when registration of individuals is made manually.
DOCUMENT_CHECK	CHAR(1)	Character Y or N for allowing an extra control of order number at shipment and storage of individuals.
INDIVIDUAL_INFO	CHAR(1)	Character Y or N for allowing information to be added to individuals.
NEXT_SHIP_TIME	TIMESTAMP(2)	Internal use.

Field names in table EXTERNAL_SYSTEM

Field name	Length	Explanation
SYSTEM_NAME	CHAR(16)	The name of the external system. (KEY)
QUE_NAME	CHAR(40)	The MSMQ queue name.
SYSTEM_TYPE	CHAR(2)	The system type. TE=Test system
SFT_VERSION	SMALLINT	The version value of the SFT (Shop Floor transaction).

Field names in table INDIVIDUAL_STRUCTURE

Field name	Length	Explanation
PARENT_SERIAL_NO	CHAR(20)	The serial number of the parent. (KEY)
CHILD_SERIAL_NO	CHAR(20)	The serial number of the child connected to the parent. (KEY)
TRACY_STATUS	CHAR(1)	The Tracy status of this assembly: D: This assembly is sent to Tracy. N: This assembly is not sent to Tracy.

Field names in table PRODUCT_STRUCTURE

Field name	Length	Explanation
P_ID	INT	Short, unique reference to a product. (KEY)
POS	CHAR(10)	The position of the child in the structure. (KEY)
CHILD_PRODUCT_NO	CHAR(24)	The product number of the child. (KEY)
CHILD_REVISION	CHAR(7)	The revision level of the child. (KEY)
MIN_NO	SMALLINT	The minimum number of connections allowed.
MAX_NO	SMALLINT	The maximum number of connections allowed.
EXACT_REVISION	CHAR(1)	Does the revision level have to be exact? Y=Yes N=No

Field names in table PRINTER_MODEL

Field name	Length	Explanation
PRINTER_MODEL	CHAR(22)	The name of a printer model. These models make it possible for Bartrack to send different label files to different printers. A model might be 'Zebra 600dpi'.

Field names in table EXTERNAL_SITES

Field name	Length	Explanation
FACTORY_CODE	CHAR(6)	The factory code of factories that should be displayed as 'Destination' in Bartrack (KEY).
FACTORY_NAME	CHAR(32)	The name of the factory.

Field names in table INDIVIDUAL_END_NODE

Field name	Length	Explanation
SERIAL_NO	CHAR(20)	The Bartrack serial number. Reference to an existing serial number in the INDIVIDUAL table (KEY).
END_NODE_NUMBER	CHAR(35)	The manufacturer of the retail product's own serial number (KEY). Note. This number must be unique within each SUPPLIER. Two different suppliers may have the same number though.
SUPPLIER	CHAR(35)	The name of the supplier for this retail product.
PRODUCT	CHAR(24)	The retail product's manufacturers own product number or product name.
TRACY_STATUS	CHAR(1)	The Tracy status of this individual: Y: This individual is sent to Tracy. N: This individual is not sent to Tracy.
REVISION	CHAR(7)	The retail product's manufacturer's own product revision.
POS	CHAR(10)	The retail product's location in an individual end node structure.

Field names in table INDIVIDUAL_ADDNO

Field name	Length	Explanation
SERIAL_NO	CHAR(20)	The Bartrack serial number. Reference to an existing serial number in the INDIVIDUAL table (KEY).
ADD_NUMBER	CHAR(20)	The additional number for an individual.
ADDNO_POS	CHAR(10)	The position where this additional number is stored. Up to 128 different positions may be used.
FAMILY	CHAR(12)	The number family of the additional number.
TRACY_STATUS	CHAR(1)	The Tracy status of this individual: Y: This individual is sent to Tracy. N: This individual is not sent to Tracy.
DESCRIPTION	CHAR(32)	A description describing the additional number for the individual.
ACTION_CODE	CHAR(12)	An action code is a categorization of the additional number. K: A: D: J:

Field names in table ORDER_ITEM

Field name	Length	Explanation
ORDER_NO	CHAR(35)	The order number (KEY).
ORDER_ITEM_NO	SMALLINT	The order item number. A qualifier to the order number. The value -1 indicates that the order item is not in use. Any other value indicates the actual order item number (KEY).
PRODUCT_NO	CHAR(24)	The product number of the order.
REVISION	CHAR(7)	The R-state of the product for the order.
SERIAL_NO	CHAR(20)	The serial number of the unit being produced for the order.
USED	CHAR(1)	Y: The order has been started

		N: The order is not yet started.
TEXT1 – TEXT5	CHAR(35)	A customer specific text, received from the order system. Se the table CUST_TERMINOLOGY for the meaning of these fields in your particular factory.

Field names in table ORDER_ITEM_STRUCTURE

Field name	Length	Explanation
ORDER_NO	CHAR(35)	The order number (KEY).
ORDER_ITEM_NO	SMALLINT	The order item number. A qualifier to the order number. The value -1 indicates that the order item is not in use. Any other value indicates the actual order item number (KEY).
CHILD_PRODUCT_NO	CHAR(24)	A child product number for an order. (KEY)
CHILD_REVISION	CHAR(7)	A child R-state for an order. (KEY)
POS	CHAR(10)	The position to use in the product structure (KEY).
NO_OF	SMALLINT	The quantity of units on this position.
EXACT_REVISION	CHAR(1)	Character Y or N for allowing the use of an exact child product revision.

Views

Note. Extreme caution must be taken if the Bartrack database tables are to be read or written. Do not attempt to do this unless you are very confident that you know what you are doing.

The Bartrack database is equipped with some views for handling various events and data.

List of Views

View name	Explanation
ERROR_VIEW	Handles errors.
EVENT_ACTION	Handles actions for various events.
HISTORY_VIEW	Handles historical data for individuals.
INTERVAL_VIEW	Handles individual interval information.
PRODUCT_LOAD_LIST_VIEW	Handles product load lists.

Customer Terminology

Note. Extreme caution must be taken if the Bartrack database tables are to be read or written. Do not attempt to do this unless you are very confident that you know what you are doing.

In Bartrack, there are some headings or concepts that may be customized for each factory. This information can only be added by editing the database, when no user interface exists in the Bartrack application. The definition of these headings and concepts are stored in the **CUST_TERMINOLOGY** table.

Each entry has an ID and a language code, which makes it possible to have different terminology in the two different languages available.

To list or change a definition, you have to start SQLPlus and then open the correct database:

1. Start SQLPlus.
2. Enter username, password and host-string.
3. Verify that you are in the right database by typing the following commands:

```
SQLPLUS>SELECT * FROM BARTRACK_SETUP;  
SQLPLUS>ROLLBACK;
```

A list of parameters should appear. The name of the database should be somewhere in the text. The name could be something like "**Acme Industries, production database**".

If this is the correct database, you can continue to list, add, change or delete terminology definitions. Continue with the different "step 4" below.

When you are finished you must exit SQLPlus:

5. To exit SQLPlus, type the command:
SQLPLUS>EXIT

SQLPlus will close, and your changes will be available in Bartrack immediately after the users logged in have refreshed their screens (by logging off and on again, or by switching between folders in Bartrack).

List all terminology definitions in Bartrack

To display a list of all the terminology definitions in Bartrack:

4. Type the following commands:

```
SQLPLUS>SELECT * FROM CUST_TERMINOLOGY;  
SQLPLUS>ROLLBACK;
```

A complete list of all the terminology definitions will be displayed.

Add a terminology definition

To add a terminology definition to Bartrack:

4. Type the following commands:

```
SQLPLUS>INSERT INTO CUST_TERMINOLOGY  
  (TERM_ID, LANGUAGE_CODE, TERMINOLOGY)  
  VALUES ('<the term id>', '<the language>',  
          '<your new definition>');  
SQLPLUS>COMMIT;
```

Where **<your new definition>** is the 100-character terminology definition you want to use instead of the old definition.

Where **<the term id>** is the 32-character label identifying the entry. List all terminology definitions to find out the term_id you want to change.

Where **<the language>** is the 2-character language code.

If the definition is successfully updated, SQLPlus will reply with **1 row updated**. Otherwise you will receive an error message stating that the combination does not exist.

Change a terminology definition

To change a terminology definition in Bartrack:

4. Type the following commands:

```
SQLPLUS>UPDATE CUST_TERMINOLOGY  
  SET TERMINOLOGY='<your new definition>'  
  WHERE TERM_ID='<the term id>'  
  AND LANGUAGE_CODE='<the language>';  
SQLPLUS>COMMIT;
```

Field values as above in the “Add a terminology definition” chapter.

Delete a terminology definition from Bartrack

You should not delete a terminology definition. If you do, the user will not see the header for the definition's fields on the screen.

Logging

Alarms

Some alarms or errors generated by external systems (such as Tracy or PRIM) are stored in the **Alarm Log**. Please refer to the Bartrack User Guide, section "Alarm Log", for more details on handling of alarms.

Server

There are several log files generated by Bartrack. Some of them may not be created, due to different configurations of Bartrack and, off course, the errors that have occurred.

All logs generated by the Bartrack server are stored as files in the directory **Bartrack_logs**.

All logs generated by the **Bartrack WatchDog** service are stored as files which are displayed in the Windows Event Viewer.

All logs generated by the **Prevas Bartrack Tracy Service** are stored as files which are displayed in the Windows Event Viewer.

The Bartrack server logging functionality may be turned off to increase the speed of transactions.

File location for logging

Directory	Path	Explanation
Bartrack_logs	\\Apps\Bartrack_Files\	This directory contains log files.

Server log files that can be found in Bartrack_logs

Log file	Contents
BartrackTrace.log	Trace data from Bartrack server
BartracLog_XXX.log	Database (DBI) transactions

Web user

For web users there are no logging except the normal server logging. That means that no user specific log files exist.

Maintenance

Database

Read the database documentation set to find out what can be done, and how database performance can be optimised.

Files

Once in a while, you can delete or purge all logging files in the login directory for a user. Be sure to leave those logs that may be needed later. See chapter Logging for references as to where the logs can be found.

Configuration files

At Bartrack installation a set of configuration files is added to the Apps folder. The purpose of these files is to supply the Bartrack system with basic information.

Configuration files.

File name	Description
ClientConfig.html	File for containing the set of factories/databases available for the Bartrack client.
Ini.ini	File containing the setup information needed for connecting to a certain database. Note: If the ClientConfig.html file contains more than one factory/database, there has to be one unique ini file for each.
Queue.ini	Contains a list of the names of queues set up for the current Bartrack installation.
Bar_OrderRec.ini	Contains the name of the service for receiving order information.
SFT_REQ_CRT.INI	Contains the name of the service for requesting individual information when using SFT at individual creation.
SFT_REQ_IDINFO.INI	Contains the name of the service for requesting information about an individual when using SFT.
SFT_REQ_PRO.INI	Contains the name of the service for requesting product information for an individual when using SFT.
SFT_REQ_SHIP.INI	Contains the name of the service for requesting information when using SFT at individual shipment.
SFT_REQ_STR.INI	Contains the name of the service for requesting individual information when using SFT at individual storage.
SFT_REQ_UPD.INI	Contains the name of the service for requesting individual information when using SFT at individual update.

Services

Bartrack services are executed in Windows accounts listed in the “User name” column in the table. These accounts are created during installation.

The processes that can be found during Bartrack operation are:

Bartrack services, internal

Service name	File name	Description
BAR_ORDERREC	BAR_ORDERREC.EXE	Order receiving interface.
BAR_SFT_REQ_CRT	SFT_REQ_CRT.EXE	SFT requests information at individual creation.
BAR_SFT_REQ_IDI	SFT_REQ_IDI.EXE	SFT requests information about individual information.
BAR_SFT_REQ_PRO	SFT_REQ_PRO.EXE	SFT requests information about product information for an individual.
BAR_SFT_REQ_STR	SFT_REQ_STR.EXE	SFT requests information at individual storage.
BAR_SFT_REQ_SHP	SFT_REQ_SHIP.EXE	SFT requests information at individual shipment.
BAR_SFT_REQ_UPD	SFT_REQ_UPD.EXE	SFT requests information at individual update.
BAR_PRIM	PRM.EXE	PRIM interface.
BAR_TRACYREC	TRACYREC.EXE	Interface for reading Tracy files into Bartrack.

In addition to these services and batch jobs, there might be additional, temporary, processes and batch jobs.

Environment variables

Environment variables are required for setting up Bartrack. There are two specified variables for Java and one for the database application. These are necessary and points out where Java Run-time Environment and the database application are installed.

Environment variables for Java.

Variable	Description
JAVA_HOME	Points out the root directory of the JRE Installation.
Path	Should have an entry to the bin directory of the JRE installation.

Environment variable for the database application.

Variable	Description
Path	Points out the bin directory of the database application installation.

At Bartrack installation a set of environment variables are installed. These variables are used for various occasions when running the application.

Environment variables installed by Bartrack

Variable	Value
BAR_ALA_DMQ	BAR_ALA_DMQ
BAR_LABEL_DIR	.\Bartrack_Files\BAR_LABEL
BAR_LAYOUT_DIR	.\Bartrack_Files\BAR_LAYOUT

BAR_LICENSE_WARNING_DATE	30
BAR_LOG_DMQ	BAR_LOG_DMQ
bar_log_Event	TRUE
bar_ora_ini_file	ini.ini
bar_ora_log	.\Bartrack_Files\Bartrack_logs
BAR_ORD_ERROR_DIR	.\Bartrack_Files\BAR_ORD_ERROR
BAR_ORD_IN_DELAY_TIME	5
BAR_ORD_IN_DIR	.\Bartrack_Files\BAR_ORD_IN
BAR_ORD_SAVE_DIR	.\Bartrack_Files\BAR_ORD_SAVE
BAR_PRIMERR	.\Bartrack_Files\BAR_PRIMERR
BAR_PRIMOK	.\Bartrack_Files\BAR_PRIMOK
BAR_REPORT_DIR	.\Bartrack_Files\BAR_REPORT
BAR_SAP_OUT_DIR	.\Bartrack_Files\BAR_SAP_OUT
BAR_SAP_TEMPOUT_DIR	.\Bartrack_Files\BAR_SAP_TEMPOUT
BAR_TCY_ERRORIN_DIR	.\Bartrack_Files\BAR_TCY_ERRORIN
BAR_TCY_IN_DIR	.\Bartrack_Files\BAR_TCY_IN
BAR_TCY_INERRORFILE	BAR_TCY_INERRORFILE
BAR_TCY_INFILE	BAR_TCY_INFILE
BAR_TCY_INSAVEFILE	BAR_TCY_INSAVEFILE
BAR_TCY_INTEMPFILE	BAR_TCY_INTEMPFILE
BAR_TCY_OUT_DIR	.\Bartrack_Files\BAR_TCY_OUT
BAR_TCY_SAVEIN_DIR	.\Bartrack_Files\BAR_TCY_SAVEIN
BAR_TCY_TEMPIN_DIR	.\Bartrack_Files\BAR_TCY_TEMPIN
BAR_TCY_TEMPOUT_DIR	.\Bartrack_Files\BAR_TCY_TEMPOUT
BAR_TRANSFER	.\Bartrack_Files\BAR_TRANSFER
BARAPI_RECEIVE_QUEUE	qn02
BARTRACK_PCTRANSFER_DIR	.\Bartrack_Files\BARTRACK_PCTRANSFER
BT2	btbtb
C:M	cmcmcm
File	BAR_FIL_01
NLS_DATE_FORMAT	YYYY-MM-DD
NLS_TIMESTAMP_FORMAT	YYYY-MM-DD HH24:MI:SS.FF2
PRIM	prprpr
QUEUE_TO_ATTACH	QUEUE_TO_ATTACH
SftReqCrt_QUEUE_TO_ATTACH	SftReqCrt_QUEUE_TO_ATTACH
SftReqIdInfo_QUEUE_TO_ATTACH	SftReqIdInfo_QUEUE_TO_ATTACH
SftReqPro_QUEUE_TO_ATTACH	SftReqPro_QUEUE_TO_ATTACH
SftReqShip_QUEUE_TO_ATTACH	SftReqShip_QUEUE_TO_ATTACH
SftReqStrInfo_QUEUE_TO_ATTACH	SftReqStrInfo_QUEUE_TO_ATTACH
SftReqUpd_QUEUE_TO_ATTACH	SftReqUpd_QUEUE_TO_ATTACH
Testnet	T95_BAR_01
Testnet95	T95_BAR_01
TIMEOUT_CRT	10
TIMEOUT_NOT_CRT	10
TRACY	trtrtr

Users

Identifiers

All web client users must have the identifier **BARTRACK_WEB** granted.

Adding a Web User

To add a web user, all you have to do is add the user in the Bartrack **User Administration** folder.

Every Web-user shares the Bartrack Windows system account, **BAR**. For every user there will be a process called **BAR_RMT_XXXX**, where **XXXX** is a hexadecimal value, starting from 7FFF and counting downwards for each process.

Resources

Each active (logged in) Web user uses the **BAR** account, and the settings for the **BAR** account applies to each web user.

System Users

There are a number of users that are not real users, that is, they are virtual users used by Bartrack:

- **BAR_PRIM**
- **BAR_SFT**
- **BAR_TIF**
- **BAR_TRACY**

There is one account that can be logged in to:

- **BAR** – The main account for Bartrack processes

The last user is also used when Bartrack commands shall be given, such as start, stop and restoring.

Starting, Stopping and Upgrading

Starting Bartrack

Normally, Bartrack will be started during the computer's boot sequence. Should you want to start Bartrack manually, you have to be logged in as a system administrator (having the rights to submit in other user's names), then start the **Bartrack WatchDog** service.

- Open the **Service Manager**,
- Mark the **Prevas Bartrack WatchDog**, and
- Click the **Start** button.

As an alternative you can use the following command to start the Bartrack application on the server:

- **StartBartrackServer.bat**

Both the service and the batch file execute the **RMIRegistry.exe** file, and then start the Bartrack server.

Use the following procedure to start a web-session to the application:

- Click on the link to Bartrack on the Bartrack homepage. The location of the homepage is defined locally at each factory.

Stopping Bartrack

To stop Bartrack on the server, you have to be logged in as a system administrator (having the rights to submit in other user's names), then stop the **Bartrack Watchdog** service.

- Open the **Service Manager**
- Mark the **Prevas Bartrack WatchDog**, and
- Click the **Stop** button

As an alternative you can use the following command to stop the Bartrack application on the server:

- **KillBartrack.bat**

Both the service and the batch file first ends the **RMIRegistry** before it stops the Bartrack server.

Upgrading Bartrack

Please contact the helpdesk for information regarding upgrading. See page 7 for contact information.

Troubleshooting

If you encounter any problems or errors that you cannot deal with yourself, please contact our helpdesk. The contact information can be found at page 7 of this manual.

Web

Problem:

It is not possible to connect to Bartrack using the web interface. Connection is refused or nothing happens.

Cause:

There are no available RMI processes because the RMI process handler has crashed.

Solution:

Restart the Bartrack server:

You must have Bartrack privileges. Start the following service

```
Prevas Bartrack WatchDog
```

Problem:

It is not possible to connect to Bartrack using the web interface. Connection is refused or nothing happens.

Cause:

It is not possible to access the Bartrack web server and/or Bartrack server using the network.

Solution:

Investigate if it is possible to access Bartrack from the client:

- Ping the Bartrack web server
- Ping the Bartrack server

Problem:

It is not possible to connect to Bartrack using the web interface. Connection is refused or nothing happens.

Cause:

The version of JRE (Java Runtime Environment) is not correct.

Solution:

Verify which version of JRE is installed on the client. Compare it to the version stated in the TES (Target Environment Specification) or Prevas website:

www.prevas.com

Go to Bartrack and log in to the customer pages to see if more information on JRE versions is available.

Problem:

It is not possible to connect to Bartrack using the web interface when having the Bartrack server and database located distant from your factory. Connection is refused and timed out.

Cause:

The firewall does not allow the answer from the Bartrack server to enter your factory.

Solution:

Contact your network administrator.

Problem:

The error message “4999” is displayed when trying to start a Bartrack session.

Cause:

The database is not accessible.

Solution:

Check the **Bartrack_logs** directory for more details about the problem.

Check the access rights, subsystems and identifiers for the user.

Problem:

Index2.html and/or Bartrack.html file is not found in the Apps directory.

Cause:

The file is not created.

Solution:

Run SetupParameters.exe from Apps folder.

Problem:

Problem starting RMI Server and PolicyInstaller.html

Cause:

JRE may not be installed or the JAVA_HOME and Path variables are not set.

Solution:

Install JRE and check that JAVA_HOME and Path variables are set.

Problem:

Problems with the OCI.dll file

Cause:

Oracle libraries are not installed or path variables are not set to Oracle bin.

Solution:

Install Oracle libraries and set the path variables to Oracle bin.

Glossary of Terms

Data identifier	Special codes in the beginning of a barcode. Used for navigating between fields
IIS	Internet Information Server. Microsoft's web server
MSMQ	Microsoft Message Queuing. Message oriented middleware from Microsoft.
PC	Personal Computer. A desktop computer with Windows.
PRIM	Ericsson's central products register.
RMI	Remote Method Invocation. This is a communication feature used by Java and the web browser.
SFQ	Shop Floor Quality - The collection of Prevas' software for manufacturing
SFT	Shop Floor Transaction – Interface for Bartrack communication.
SPU	SFQ Primgate Utility - A subscription utility
Tracy	Ericsson's global traceability database where all individuals produced and delivered are stored
UI/GUI	User Interface / Graphical User Interface - The screen layout and procedures used seen by the user

Indexes

—A—

Access to Bartrack	11
Alarms	
Logging	65

—B—

Barcode readers	46
Barcodes	46
Bartrack	8

—C—

Configuration files	66
Contact information	7
Customer Terminology	62
Add	63
Change	63
Delete	63
List	63

—D—

Data identifiers	47
Database	
Map	52
Tables	56

—E—

Environment variables	67
Error logging	29
External system	22

—F—

File delivery	24
File structure	19

—I—

Identifier	
BARTRACK_WEB	69

—L—

Licence	17
---------------	----

—M—

M2T 29	
MSMQ	21, 22

—O—

Order system	23
Messages	24

—P—

PDF-code	46
PRIM	
Subscribing to	20

—S—

Serial port	46
Server	
Logging	65
Services	67
SFQ Primgate Utility	
SPU	19
Start Bartrack	71
Start Tracy service	29
Stop Bartrack	71
Stop Tracy service	29
System user	69

—T—

Testnet	22
Trace logging	29
Tracy	
Bartrack Tracy Service	26
M2T	29
Mail	33, 35
Messages	33, 35
Service	32, 34
Tracy Receive	26
Tracy Receive service	
Tracyrec.exe	26

—U—

Upgrade Bartrack	72
User	
User-ID	11
Username	11

—V—

Version	7
---------------	---

—W—

WatchDog.....	12
Logging.....	15
Removing process.....	15
Starting.....	15
Stopping.....	15
Web client.....	12, 44
Web interface	
Policy file.....	45
RMI.....	19
Web server.....	37
Web user	
Add	69
Logging.....	65
Web client.....	12

Lists

List of pictures

A system overview	9
Picture of PRIM import sequence via SPU	20
Sending requests to M2T using Bartrack Tracy Service	30
Sending information to M2T using Bartrack Tracy Service.....	31
Receiving information from M2T	31
A system overview	37
Web server file structure: The Bartrack directory structure	38
Windows-based web browser - client file structure	45
Map of Bartrack's database	52
Map of Bartrack's database	53
Map of Bartrack's database	54
Map of Bartrack's database	55

List of tables

Access path to Bartrack for web client.....	11
Bartrack WatchDog service settings.....	13
Table of configuration settings for Bartrack WatchDog	13
List of general MSMQs	21
Messages sent from Bartrack to external systems by MSMQ	22
Messages sent from external systems to Bartrack by MSMQ	23
Table of directories hosting order information.....	23
Messages received from order system.....	24
Tracyrec.ini settings	26
Bartrack Tracy Service service.config file settings	27
Table of configuration settings for Bartrack Tracy Service	27
Directories and file structure for the Bartrack Tracy Service	32
Messages sent to Tracy (Service or Mail)	33
Messages sent from Tracy (Service or Mail).....	35
Web server directories.....	38
Contents in ../Bartrack_065 on the web server Apps directory	39
Contents in ../Bartrack_065/Apps/Bartrack/Client/Bcr on the web server	41
Contents in ../Bartrack_065/Images on the web server	41
Contents in ../Bartrack_065/Com on the web server	42
Contents in ../Bartrack_065/Plugin on the web server	42
Contents in <Java home>	45
Contents in ... \Windows\System32.....	45
Field names in table BT_USER.....	56
Field names in table INDIVIDUAL	56

Field names in table PRODUCT	57
Field names in table BARTRACK_SETUP	58
Field names in table EXTERNAL_SYSTEM	59
Field names in table INDIVIDUAL_STRUCTURE	59
Field names in table PRODUCT_STRUCTURE	59
Field names in table PRINTER_MODEL	59
Field names in table EXTERNAL_SITES	59
Field names in table INDIVIDUAL_END_NODE	60
Field names in table INDIVIDUAL_ADDNO	60
Field names in table ORDER_ITEM	60
Field names in table ORDER_ITEM_STRUCTURE	61
List of Views	62
File location for logging	65
Server log files that can be found in Bartrack_logs	65
Configuration files	66
Bartrack services, internal	67
Environment variables for Java	67
Environment variable for the database application	67
Environment variables installed by Bartrack	67

