

i2
Transportation Manager
Installation Manual

Version 5.2





Powering the Bottom Line™

One i2 Place
11701 Luna Rd.
Dallas, TX 75234 USA

i2® Transportation Manager Installation Manual
Version 5.2, 2001

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Singapore PATENT NO. 51047	U. S. Patent No. 5,930,156	U. S. Patent No. 6,233,493
Singapore PATENT NO. 51051	U. S. Patent No. 5,931,900	U. S. Patent No. 6,233,572
Singapore PATENT NO. 64044	U. S. Patent No. 5,937,155	

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Chapter 1

Introduction

Welcome to the i2 Transportation Manager Installation Manual.

This manual is for advanced users and system administrators who need to install and configure Transportation Manager on their system.

Note: For Transportation Optimizer for Manager installation instructions, refer to the *Transportation Optimizer for Manager Installation Manual*.

About This Manual

This manual describes various installation procedures including:

- setup and testing of the Transportation Manager servers
- Oracle configuration
- Transportation Optimizer for Manager
- Transportation Manager Web Interface
- configuration for API, EDI, and SAP

Task Instructions

A subheading indicates individual tasks. For example:

To select a module

Sequential instructions are numbered under the heading. If there are several different ways to do the same task, they appear in a bulleted list under the chevron.

Chapter 2

Prerequisites

This chapter deals with the hardware and software requirements that you will need prior to installing Transportation Manager (and Transportation Optimizer for Manager, if part of your installation plan). It covers the following areas:

- Software and Platforms
- Licensing Requirements
- Hardware and Bandwidth Requirements
- Personnel
- Standard Oracle Requirements

Software and Platforms

To install Transportation Manager, you will require an operating system (for both the client and the application server), a web browser, a relational database (RDBMS), and a web server. Additional third party software might be required, recommended, or optional. The following tables show the various products, versions, platform availability, and what additional software is included on the product CD. Please see “Software Ordering Information” on page 101 for ordering information on products not included.

Required

Supported Operating Systems	Version	Included
Windows 98 – for clients only	Second Edition	--
Windows NT 4	SP6a	--
Windows 2000 Professional – for clients only	SP2	--
Windows 2000 Advanced Server	SP2	--

Prerequisites

Supported Web Browsers	Version	Included
Microsoft Internet Explorer	5.01 SP2 or 5.5 SP1 or SP2	--

Supported Databases (RDBMS)	Version	Included	NT	2000	AIX	HP-UX	Solaris
Oracle 8i	8.1.7.1.1	--	Y	Y	--	--	--
Oracle 8i	8.1.7.1	--	--	--	Y	Y	Y

Supported Web Services	Version	Included	NT	2000	AIX	HP-UX	Solaris
Microsoft IIS 4	Option Pack 4	--	Y*	--	--	--	--
Microsoft IIS 5	5	--	--	Y	--	--	--
iPlanet Web Server	4.1 EE, SP 8	--	--	--	Y	Y	Y

*Windows NT Service Pack 6a is required for security reasons.

3 rd Party Software & Data	Version	Included	NT	2000
Crystal Reports Runtime	8	Y	Y	Y
Secant Extreme – Distributed Processing and Persistent Object Manager	3.05, build 0723	Y	Y	Y
VisiBroker C++ Runtime – API Object Request Broker	4.1	Y*	Y	Y
WebLogic Server - Web Application Server	6.0, SP2	Y	Y	Y
JDK (included with WebLogic)	1.3	Y	Y	Y
U.S. Postal Data – stored in database	Apr. 30, 1999	Y	**	**
Canada Post Postal Data – stored in database	Feb., 1999	Y	**	**

* Included only for API clients developed by i2

** Stored in database

Recommended

3 rd Party Software	Version	Included	NT	2000
Optimization Solver				
ILOG Cplex	6.5	Y*	Y	Y
Distance Engine				
PC*Miler (North American distance engine), plus Server and Mapping modules	14	--	Y	Y
or PC*Miler Europe, plus Server and Mapping modules	2000	--	Y	Y
or PC*Miler Worldwide, plus Server and Mapping modules	14.1	--	Y	Y
Custom Reports				
Crystal Decisions Crystal Reports (Seagate) - not required if custom reporting done in legacy system	Version 8	--	Y	Y

* Included with Transportation Optimizer for Manager license

Optional

3 rd Party Software	Version	Included	NT	2000
AND TDSerVer – alternate distance engine for Europe and South America		--	Y	Y
Citrix MetaFrame – for thin client deployment	1.8	--	Y	Y
CZAR Rating Engine – external tariffs	4.8	--	Y	Y
Fax for Domino – for fax tendering and event notification	R5	--	Y	Y
FaxMaker for Exchange – for fax tendering and event notification	V6	--	Y	Y
Kewill Ship - Parcel rating engine	1.7	--	Y	Y
Rand McNally MileMaker – alternate distance engine for North America	SP32 (11-1-98)	--	Y	Y
VisiBroker Java Runtime – for use with Java Client API	4.1	Y*	Y	Y
VisiBroker C++ Development – for developing your own CORBA API clients	4.1	--	Y	Y
VisiBroker Java Development – for developing your own JAVA API clients	4.1	--	Y	Y

* Included only for custom Java API clients developed by i2

Licensing Requirements

All software on the CD is protected by product keys. Be sure to order these keys in advance from Product Support. The most efficient way to order is to log on to <http://support.i2.com>, click on Quick Menu, and select Request License Key. Then select Transportation Manager as the product name. The same product key will work for several Transportation Manager installation programs (TM\setup, TM-Web\setup and DB-Upgrade\setup).

This manual also contains instructions for installing the WebLogic license. The file **isv.jar** is required to complete the process and should be sent to you by email or floppy disk when you order your licenses.

Starting with Release 5.0, the database upgrades were packaged into **Setup** programs and require a product install key to open. If you have skipped the upgrade to 5.0, i2 Support can provide the necessary key. Note that this is the same product key that is used to install the Transportation Manager Servers, Client, and Web Interface.

Licensing for Optimizer is described in the Transportation Optimizer for Manager Installation Manual.

Hardware and Bandwidth Requirements

The following hardware and bandwidth requirements are guidelines to be followed when installing Transportation Manager.

Hardware

The following hardware requirements are discussed:

- Servers
- Clients

Servers

The hardware requirement for the size and configuration of servers is entirely dependent on your storage requirements, transaction volumes, and number of users. These numbers are obtained from a “Sizing Questionnaire” and then processed by i2 Technologies to produce a recommended configuration of servers including the number of servers required, number of CPUs, DASD, and RAM.

Server hardware must consist of a minimum of three server machines:

- one for the RDBMS (any platform supported by Oracle Enterprise Server)
- two or more application servers running on a supported platform (see “Software and Platforms” on page 9).

Note: Configurations of four or more servers are common.

Clients

Requirements for client workstations are fairly consistent across the scope of customer profiles and activities. Assuming no other applications will be significantly competing for client resources, the following client workstation configurations are recommended:

Platform	Processing	RAM	Free Disk
NT Recommended	P2-350+	128 MB	200 MB
NT Minimum	P166	96 MB	200 MB
Win98 Recommended	P2-350+	96 MB	200 MB
Win98 Minimum	P166	64 MB	200 MB
Win 2000 Pro Recommended	P3-500+	128 MB	200 MB
Win 2000 Pro Minimum	P2-350	128 MB	200 MB

The client machine must be configured with a supported operating system, along with a network card and TCP/IP connectivity to the application servers. The product requires a video resolution of at least 800 x 600 to be used effectively.

Bandwidth

The following bandwidth categories are discussed:

- LAN
- WAN: Desktop Clients
- WAN: Browser Clients

LAN

A LAN speed of 100 Mbps (megabits per second) or more is recommended for communication between servers (including the database server). However, 10 Mbps will suffice for environments of up to 100,000 shipments per month. If a low speed LAN is being heavily utilized, performance problems might ensue when the Transportation Management environment is installed.

WAN: Desktop Clients

If WAN deployment is part of the implementation, the application will require up to 56 Kbps (kilobits per second) per user, for those remaining functions that still require Client/Server access. As more users are added, the proportionate requirement declines such that 15 simultaneous users performing mixed functions can be serviced over a dedicated 512 Kbps line and 50 users over a dedicated T1 line (1.544 Mbps). Alterna-

tively, the client program has been successfully tested on Citrix MetaFrame. If you choose this option, you will need your own in-house or outsourced Citrix expert to implement this software.

WAN: Browser Clients

The average screen size is about 40 KB, with large screens taking up to 60 KB. Assuming up to five screen refreshes per minute (which could include scrolling regions), the bandwidth requirement is about 25 Kbps. This is the minimum recommended bandwidth per active user.

In an actual deployment, you might require a large number of users to have simultaneous access to the application. However, a much smaller number would be anticipated to be active at any given time, with the remainder reading the information on the screen, or performing activities not involving the browser client.

Test Environments and Test Plans

Each release is subjected to a thorough regression and functional testing process before it is available for distribution. However, the application is highly configurable, and each customer environment is unique. i2 urges every customer to develop their own specific formal test plan and execute it rigorously in a test environment before applying any upgrade to the production server(s).

This plan should be designed to ensure that an upgrade, which has passed the test acceptance criteria, will provide reliable processing along with all required functionality in the customer's own production environment. This is the best protection against unexpected integration or customer-specific problems and potential downtime.

The upgrade must be tested on a separate physical machine before applying to the production server, since conflicts can arise from attempting to install multiple versions of dependant software on the same server. Additionally, any installation of new software can put a server at risk.

Depending on the volumes of transactions being tested, it is not necessary to use a server of the same power as the production server. It is possible for all application components of Transportation Manager and Optimizer to run on a single server, volume permitting (although RDBMS services should be run on another machine). A Pentium III 600 Mhz computer with 1 GB RAM, and 12 GB of DASD should be sufficient for moderate-volume application testing (less than 500 transactions per day).

Fault tolerance, backup and recovery, and disaster recovery

These issues need to be addressed as part of the implementation process. Tolerance for the amount of risk and downtime varies significantly between customers. A company's IT department normally establishes the requirements in this area. In most cases, customers have one or more "warm stand-by" servers that can be manually brought into service in the event of a failure of any of the servers and server functions they cover. Customers processing high volumes of transactions might elect for the additional security (and expense) of an automatic fail-over solution that will guarantee uptime despite any hardware failures.

The frequency and method for doing backups will depend on how much downtime can be tolerated (if “cold” backups are required), and how much loss of transaction processing can be tolerated in the event that the system must be restored from backups.

It is important to have a backup and disaster recovery plan prepared in advance, and to periodically test the integrity of system and database backups.

Personnel

There are four technical roles required to implement and maintain a Transportation Manager installation:

- Oracle DBA
- Application Administrator
- System Administrator (UNIX and NT)
- Network Analyst

Many companies are staffed with people capable of fulfilling multiple roles. Clarification and commitment with respect to the role assignments, response times, and level of involvement must be obtained in the initial stage of the project to ensure a successful implementation.

Oracle DBA

- creates instance and tablespaces based on i2 Technologies requirements before install date (see “Standard Oracle Requirements” on page 16)
- participates in planning and deployment of the RDBMS
- monitors space utilization and performance on an on-going basis to ensure maximum throughput and sufficient available storage
- will likely require a dedicated resource as volumes pass one million containers shipped per month (for example, 100,000 shipments with an average of 10 containers each).

Note: See “Transportation Manager Product Integrity” on page 16 for warnings about changing the database.

Application Administrator

- works with i2 to perform the initial installation
- monitors server status and provides first level support in case users are not able to log on or perform certain tasks
- performs product upgrades.

System Administrator (UNIX and NT)

- builds and configures application and RDBMS servers
- monitors system performance and resource utilization
- works with Application Administrator and/or DBA to resolve system performance or operating system errors.

- performs operating system upgrades (within application requirements).

Network Analyst

- evaluates LAN and WAN readiness for product implementation
- monitors network performance and resource utilization
- resolves performance issues (including routing, latency, uptime)

Standard Oracle Requirements

The following section details the standard Oracle requirements for Transportation Manager.

Transportation Manager Product Integrity

Note that changes to the schema objects or data are not permitted, except as performed by the application, or an i2 support representative correcting a problem. The schema must contain only the standard objects supplied by i2 Technologies.

WARNING: Any addition, modification, or deletion, or linking of foreign objects will void the warranty, and might require a complete database reload from bootstrap to rectify, resulting in a loss of data.

Schema Naming Conventions

The following schema names are suggested but not required. You can conform to your own naming requirements.

Standard Schemas		Optional Additional Schemas	
Name	Purpose	Name	Purpose
i2tm_prod	Production Schema	i2tm_crp	CRP
i2tm_train	Training	i2tm_at	Acceptance Testing
i2tm_pstl	Postal Data	i2tm_demo	Demo

Oracle Configuration Requirements

- Oracle 8.1.7 Enterprise Server – patch version depends on platform (see “Software and Platforms” on page 9)
- Oracle Client software on each server machine, and SQL*Net client/server connectivity. The middleware to access the database is embedded in our application (using Secant for Object Persistence Layer, and SQL transparency, along with some embedded SQL)
- Character Set: WE8ISO8859P1 (preferred – this is default on NT) or US7ASCII
- **catalog** and **catproc** scripts must be run when instance is created

- separate Schema IDs for Transportation Manager data (and indexes) and Postal data (and indexes)
- Schema IDs must have unlimited quota or no quota at all on their respective tablespaces, and require privileges for connect, resource, and 'create materialized views'
- Separate tablespace for each of Transportation Manager data, index, Postal Data, and Postal Index
- Current size for Postal tablespaces is at least 175 MB for Postal Data and 200 MB for Postal Index
- Temp tablespace of 200 MB, with appropriate extent sizes
- Minimum of 5 rollback segments: 4 with a minimum of 1 MB each, and 1 segment of at least 30MB for upgrades
- Separate User and Tools tablespaces are not used by our application
- archive log mode off during installation
- minimum Redo Logs: 4 groups, 20M per log (groups should be multiplexed)
- INIT parameters:

```

shared_pool_size          minimum:      24 MB
db_block_buffers          minimum:      20 MB
                           recommended: much higher
                           (e.g. 100 MB)

shared_pool_size          minimum:      50 MB
                           recommended: 50+ MB

java_pool_size            minimum:      20 MB
log_buffer                minimum:        0.5 MB
open_cursors              minimum:        100
optimizer_mode            CHOOSE,
                           with statistics on table
                           to force cost-based

optimizer compatibility    8.1.0.0
                           (should match current server
                           version req't)

db_block_size             minimum:      8192
job_queue_processes       minimum:        1
db_handles_cached = 0

```

Configuration for Server-based Sorting

Transportation Manager takes advantage of server-based sorting in order to minimize the delay when a client requests a change to the order in which rows are displayed. Care must be taken to configure the Oracle server for optimal sorting parameters and settings so that such server-based sorting will not significantly impact on other server activities.

For a moderate system, the following INIT parameter settings are recommended:

- `sort_direct_writes = true`
- `sort_write_buffers = 4`
- `sort_write_buffer_size = 65536`
- `sort_area_size = 1048576`
- `sort_area_retained_size = 524288`

In addition, make sure the TEMP segment is created to accommodate these settings (enough extents and space, marked TEMPORARY, initial and next segments are increments of 'sort_area_size', etc.). See the "Oracle8 Server Tuning" section of the Oracle manual for further details.

Oracle Configuration Recommendations:

- Create a separate instance for Transportation Manager/Optimizer. This helps to diagnose any performance issues.
- For a production environment, it is optimal to have a dedicated machine for the database server. If the production installation is a critical part of the enterprise, then the production schema should be the only schema within the production instance (separation of testing from production).
- The multi-thread server (MTS) should be configured for UNIX instances. The dispatcher to server ratio is a function of the number of concurrent sessions.
- Start with a flat temp tablespace of 200 MB (must be flagged as temporary).
- You might want to split large tablespaces into multiple files for back-up purposes.
- For performance in a non-RAID environment, Redo Logs and Rollback should be on separate devices. We also recommend that each of the Temp Tablespace, Data Tablespace, and indexes be on separate devices as well.
- Separate tablespaces and devices for Materialized View data and indexes (apart from those for regular data and indexes). You might also want a separate 30MB rollback segment if refresh could occur alongside other off-hours processing.
- In a RAID-5 environment, separation is not an issue as long as there are a sufficient number of separate devices. However, for performance, we recommend that even under a RAID configuration, Redo Logs should be set up on a Journalled Filesystem.
- Archiving should be activated in a production environment. The size of the archive logs should match the redo logs (20 MB), and the 'log_buffers' parameter in the Oracle initialization file should be large enough to support this structure.

Note: These are basic configuration recommendations. A production environment should be tuned by a qualified DBA to maximize throughput, and address issues such as fault tolerance, backup and recovery, and disaster recovery. A DBA will also be required to monitor and manage database growth. (For example, keeping the database from running out of extents or getting extremely fragmented and requiring a reorg.)

Notes on Installation

Sample scripts have been provided for defining both the tablespaces and users, and the required schema. These should be reviewed by the DBA and can be tuned to your requirements. i2 Technologies prefers to run the `cr_usr.sql` script during first installation, but `cr_tblspc.sql` should be run and the instance configuration should be done by the DBA in advance. Note that i2 requires DBA access to run `cr_usr.sql`, to revoke some rights after installing postal data, and to create synonyms to the postal data objects.

During installation, more scripts are run to define the actual schema. Note that the examples shown here use separate tablespaces for main data and postal data. Indexes are also defined on separate tablespaces for both types of data.

Materialized Views and Import Errors

According to the Oracle documentation, you cannot import materialized views from a schema export that has a different schema name than the target schema (the name is hard coded in the DDL). Therefore, you must either drop the materialized views and the associated package before exporting (not always possible on a production system), or ignore the resulting errors upon import, and recreate the views later. There are currently six materialized views, so the errors are repeated in groups of six.

This section includes instructions on how to recreate materialized views in the schema. This must be done either in the source schema after the export is finished, or in the target schema after the import is finished. Two scripts called `drop_mvviews.sql` and `create_mvviews.sql` are found in the database script installation to help with these tasks.

The dump files on the product CD do not include active materialized views.

Sample of Possible Import Errors

The appearance of errors will depend on whether you import as a DBA, if the schema name within the dump file already exists on the instance, and if the refresh job has previously been created in the view. This could happen where you are importing the same dump file for the second time. All stanzas of errors begin with IMP-00017: following statement failed with Oracle Error.

Example 1: Following stanza occurs when schema ID does not already exist in instance

Six occurrences of errors similar to:

```
IMP-00017: following statement failed with ORACLE error 1435:
  "BEGIN
dbms_refresh.make(' "TRAIN51_BL"."MV_COMPLETED_BY_CUSTOMER"',list=>n"

"ull,next_date=>null,interval=>null,implicit_destroy=>TRUE,lax=>FALSE,job=>1"

"23,rollback_seg=>'RBS_MVIEW',push_deferred_rpc=>TRUE,refresh_after_errors=>"

"FALSE,purge_option => 1,parallelism => 0,heap_size => 0); END;"
```

```
IMP-00003: ORACLE error 1435 encountered
ORA-01435: user does not exist
ORA-06512: at "SYS.DBMS_IREFRESH", line 77
ORA-01403: no data found
ORA-06512: at "SYS.DBMS_REFRESH", line 104
ORA-06512: at "SYS.DBMS_REFRESH", line 83
ORA-06512: at line 1
IMP-00017: following statement failed with ORACLE error 1435:
  "BEGIN
dbms_refresh.add(name=>' "TRAIN51_BL". "MV_COMPLETED_BY_CUSTOMER"',li"

"st=>' "TRAIN51_BL". "MV_COMPLETED_BY_CUSTOMER"',siteid=>0,export_db=>'BRU
CE.I"
  "2.COM'); END;"
IMP-00003: ORACLE error 1435 encountered
ORA-01435: user does not exist
ORA-06512: at "SYS.DBMS_IREFRESH", line 77
ORA-01403: no data found
ORA-06512: at "SYS.DBMS_REFRESH", line 41
ORA-06512: at "SYS.DBMS_REFRESH", line 155
ORA-06512: at "SYS.DBMS_REFRESH", line 146
ORA-06512: at line 1
```

Example 2: Following stanza occurs where job ID has been created by previous import

Six occurrences of errors similar to:

```
IMP-00017: following statement failed with ORACLE error 1:
  "BEGIN
dbms_job.isubmit(job=>121,what=>'dbms_refresh.refresh('' "TRAIN51_BL"
  " ". "MV_UNDELIVERED_BY_CUSTOMER"'' );',next_date=>to_date('2001-05-
03:01:00:00"
  ','YYYY-MM-DD:HH24:MI:SS'),interval=>'(TRUNC(SYSDATE) + 1 + (1/24) +
(24/24"
  ")) ',no_parse=>TRUE); END;"
IMP-00003: ORACLE error 1 encountered
ORA-00001: unique constraint (SYS.I_JOB_JOB) violated
ORA-06512: at "SYS.DBMS_JOB", line 97
ORA-06512: at line 1
```

Example 3: Following stanza occurs where import as DBA, and schema name already exists

Six occurrences of errors similar to:

```
IMP-00017: following statement failed with ORACLE error 23421:
```

```

"BEGIN
dbms_refresh.make(' "TRAIN51_BL"."MV_COMPLETED_BY_CUSTOMER"',list=>n"

"ull,next_date=>null,interval=>null,implicit_destroy=>TRUE,lax=>FALSE,job=>1"

"23,rollback_seg=>'RBS_MVIEW',push_deferred_rpc=>TRUE,refresh_after_errors=>"
  "FALSE,purge_option => 1,parallelism => 0,heap_size => 0); END;"
IMP-00003: ORACLE error 23421 encountered
ORA-23421: job number 123 is not a job in the job queue
ORA-06512: at "SYS.DBMS_SYS_ERROR", line 86
ORA-06512: at "SYS.DBMS_IJOB", line 525
ORA-06512: at "SYS.DBMS_REFRESH", line 107
ORA-06512: at "SYS.DBMS_REFRESH", line 83
ORA-06512: at line 1
IMP-00017: following statement failed with ORACLE error 23410:
  "BEGIN
dbms_refresh.add(name=>' "TRAIN51_BL"."MV_COMPLETED_BY_CUSTOMER"',li"

"st=>' "TRAIN51_BL"."MV_COMPLETED_BY_CUSTOMER"',siteid=>0,export_db=>'BRUCE.I"
  "2.COM'); END;"
IMP-00003: ORACLE error 23410 encountered
ORA-23410: snapshot "TRAIN51_BL"."MV_COMPLETED_BY_CUSTOMER" is already
in a refresh group
ORA-06512: at "SYS.DBMS_SYS_ERROR", line 95
ORA-06512: at "SYS.DBMS_IREFRESH", line 388
ORA-06512: at "SYS.DBMS_REFRESH", line 156
ORA-06512: at "SYS.DBMS_REFRESH", line 146
ORA-06512: at line 1

```

Note: If you were not logged in with DBA privileges, you would get permission errors when trying to add to the refresh group.

Sample Scripts

The following are sample scripts that can be used when configuring Oracle to work with Transportation Manager.

Creating Tablespaces

```

/* cr_tblspc.sql - sample script to create tablespaces */

create tablespace i2tm_pstl_data

```

```
datafile '/u04/oradata/tsta/i2tm_pstl_data_1.dbf' size 175m
autoextend on next 15m maxsize 250m
default storage(  initial 100k
                  next      100k
                  minextents 1
                  maxextents 249
                  pctincrease 0)

permanent;
```

```
create tablespace i2tm_pstl_index
datafile '/u03/oradata/tsta/i2tm_pstl_index_1.dbf' size 200m
autoextend on next 15m maxsize 300m
default storage(  initial 100k
                  next      100k
                  minextents 1
                  maxextents 249
                  pctincrease 0)

permanent;
```

```
create tablespace i2tm_data
datafile '/u04/oradata/tsta/i2tm_data_1.dbf' size 500m
autoextend on next 100m maxsize 1000m
default storage(  initial 100k
                  next      100k
                  minextents 1
                  maxextents 249
                  pctincrease 0)

permanent;
```

```
create tablespace i2tm_index
datafile '/u03/oradata/tsta/i2tm_index_1.dbf' size 350m
autoextend on next 100m maxsize 1000m
default storage(  initial 100k
                  next      100k
                  minextents 1
                  maxextents 249
                  pctincrease 0)

permanent;
```

Creating Users

```
/* cr_usr.sql - sample script for creating users */
/*
Create Schema:  i2tm_crp

Description:
Application schema for Transportation Manager CRP
*/
create user i2tm_crp identified by i2tm_crp
default tablespace i2tm_data
temporary tablespace temp
quota unlimited on i2tm_data
quota unlimited on i2tm_index
;
grant connect , resource, create materialized view
to i2tm_crp
;
alter user i2tm_crp default role all
;

/*Create Schema:  i2tm_train

Description:
Application schema for Transportation Manager training data
*/
create user i2tm_train identified by i2tm_train
default tablespace i2tm_data
temporary tablespace temp
quota unlimited on i2tm_data
quota unlimited on i2tm_index
;
grant connect , resource, create materialized view
to i2tm_train
;
alter user i2tm_train default role all
;

/*
Create Schema:  i2tm_pstl
```

Description:

Postal validation data owner for Transportation Manager

*/

```
create user i2tm_pstl identified by i2tm_pstl
```

```
default tablespace i2tm_pstl_data
```

```
temporary tablespace temp
```

```
quota unlimited on i2tm_data
```

```
quota unlimited on i2tm_index
```

```
;
```

```
grant connect , resource
```

```
to i2tm_pstl
```

```
;
```

```
alter user i2tm_pstl default role all
```

```
;
```

Chapter 3

Initial Setup

This chapter describes the initial setup of Transportation Manager. It includes the following topics:

- Overview of the Upgrading Process
- Installing Database Components
- Installing Transportation Manager Server
- Installing Distance Calculation Engines
- Installing Supporting Software for Load Tender Fax and Email
- Installing Transportation Manager Client

Overview of the Upgrading Process

If you do not have Transportation Manager installed, you will need to follow most or all of the procedures in this manual. If you are upgrading an existing installation, then the process is simpler.

The basic steps in this upgrade are:

1. Order your installation Product Keys from support in advance. You will need a separate product key for the 5.0 schema upgrade if you are not up to that version yet. Refer to “Licensing Requirements” on page 12
2. Back up all servers and databases.
3. Upgrade the schemas to version 5.0 if they are not already at that version. This can involve several upgrades if releases have been skipped. See “Upgrading Existing Schemas” on page 34.
4. Upgrade the Oracle server to the applicable 8.1.7.x version. See “Supported Databases (RDBMS)” on page 10. Check that the Oracle server parameters meet the current requirements appearing in “Configuring the Oracle Server” on page 28. Refer to the `Orac18_mig` migration document in the `\Docs` directory for tips on upgrading Oracle.
5. Upgrade the schemas to the current version. See “Upgrading Existing Schemas” on page 34.
6. Check that the Oracle clients on all application servers (including the Optimizer and Web Application servers) have been upgraded to the applicable 8i version.

Refer to the `Orac18_mig` migration document in the `\Docs` directory for tips on upgrading Oracle clients.

7. Ensure that your application servers, clients, and browsers have been upgraded to the required operating system version and patch level as shown in the **Description of Software Updates** table, below.
8. Install the Transportation Manager servers. The installation program upgrades the existing program. Refer to “Installing Transportation Manager Server” on page 40.
9. Upgrade the Transportation Manager clients. Refer to “Installing Transportation Manager Client” on page 46.
10. Purge your cached distances if the **Distance Engine** has been changed or upgraded and you are using **Distance Caching**. Refer to “Installing Distance Calculation Engines” on page 41.
11. Uninstall/Reinstall Transportation Optimizer for Manager (if applicable).
12. Upgrade the Web Interface. Refer to “Installing the Web Interface” on page 59.

You also need to update the dependant software and data to meet the current requirements. The following table describes the software updates required for Transportation Manager since version 4.2.

TM Version	Description of Software Updates
5.2	Windows 2000 Advanced Server, SP2 now supported for server processes (in addition to current support for NT 4)
5.2	NT 4 — upgrade to Service Pack 6a
5.2	IIS 5 Web server now supported on above Windows 2000 server (in addition to current support for IIS 4 on NT 4)
5.2	Oracle Enterprise Server — upgrade to 8.1.7.x (patch version depends on platform – see “Software and Platforms” on page 9)
5.2	Oracle Client – upgrade to 8.1.7
5.2	CZAR — upgrade to version 4.6, if applicable
5.2	WebLogic — upgrade to version 6.0, SP2: included on CD
5.2	Windows 9x clients — upgrade to Windows 98, Second Edition
5.2	Windows 2000 clients — upgrade to Service Pack 2
5.2	iPlanet Web Server — upgrade to EE 4.1, SP8, if applicable
5.2	Outlook 2000 is now the recommended e-mail client if using an Exchange Server along with fax or e-mail tenders or Event Notification
5.2	Internet Explorer — upgrade to at least 5.01, SP2 or 5.5, SP1
5.2	Netscape Communicator support discontinued
5.2	NES 3.6.3 (Netscape Enterprise Server) — if using this web server, upgrade to iPlanet EE 4.1, SP8. NES support has been discontinued

TM Version	Description of Software Updates
5.2	VisiBroker 4.1 C++ replaces Orbix as the API CORBA layer (VisiBroker Runtime included on CD). Customer Orbix clients still supported
5.2	VisiBroker 4.1 Java replaces OrbixWeb for use in the custom Java Client APIs
5.1	Windows NT 4 — application services and clients – added support for use of Service Pack 6a
5.1	PC*Miler – upgrade to PC*Miler 14.0 (Windows Mapping and server) if currently using PC*Miler 2000 or older
5.1	WebLogic – upgrade to 6.0: included on CD
5.1	Crystal Reports Development – upgrade to version 8.0 if you use this product to develop your own reports
5.1	PC*Miler Worldwide 14.1 and Europe 2000 – Transportation Manager now interfaces with these products
5.1	JDK 3.1 – now using version included with WebLogic a separate JRE is no longer required
5.1	Kewill Ship 1.7 – TM can now integrate with this parcel rating software
5.0	Oracle Enterprise Server – upgrade to 8.1.6.2 for UNIX and 8.1.6.1.2 for NT refer to the Oracl8_mig migration document in the \Docs directory
5.0	Oracle 8i Server Setting – block size must be at least 8 KB refer to “Standard Oracle Requirements” on page 16 for other 8i setting information
5.0	Oracle Client – upgrade to 8.1.5 for Web Application server and 8.1.6 for other application servers
5.0	JRun – no longer required
5.0	WebLogic 5.1.0 (SP5) – new requirement: included on CD
5.0	Orbix 3.0.1 – apply patches 20 and 54: included on CD. Orbix is no longer required for EDI or SAP interface servers
5.0	Rand McNally MileMaker (optional) – upgrade to SP32 (11-1-98)
5.0	Windows 2000 Pro clients – now supported (minimum P2-350, 128MB RAM)
4.3.1	PC*Miler – upgrade to PC*Miler 2000 (Windows, Mapping, and Server) if this is your distance engine
4.3	Orbix – upgrade to version 3.0.1 using API Runtime
4.2.2	NT 4 – upgrade to Service Pack 5
4.2.2	Windows 95 clients – upgrade to B version, and install Y2K patch
4.2.2	JRE – upgrade to Java 2 (version 1.2.2)
4.2	CZAR – upgrade to version 4.1
4.2	Crystal Reports – upgrade to version 7 if you are creating your own reports: see the Transportation Manager 4.2 Read Me file for suggestions

Installing Database Components

The following procedures describe how to install the database components.

Configuring the Oracle Server

Transportation Manager uses server-based sorting to improve the responsiveness of row order resorting in the user interface, and uses materialized views to enhance the reporting performance.

Ensure that the Oracle server is properly configured so that these activities will not adversely affect the overall database performance. Some suggested settings are provided below. If you have not previously installed Transportation Manager, refer to “Standard Oracle Requirements” on page 16 for detailed recommendations.

To configure the Oracle server

1. You must set the database block size INIT parameter to at least 8192 bytes (8 KB) to accommodate large indexes in the application. For example:
`db_block_size = 8192`
2. The job queue processes INIT parameter must be set to at least 1 as shown below:
`job_queue_processes = 1`
3. The db handles cached INIT parameter should be set to 0 (as shown below) to avoid ORA-04031 and ORA-00604 errors in allocating shared memory:
`db_handles_cached = 0`
4. For a typical system, the following INIT parameter settings are recommended for sorting:
 - `sort_direct_writes = true`
 - `sort_write_buffers = 4`
 - `sort_write_buffer_size = 65536`
 - `sort_area_size = 1048576`
 - `sort_area_retained_size = 524288`
5. Ensure the TEMP segment is created to accommodate these settings. This includes checking there are enough extents and space marked TEMPORARY and that the initial and next segments are increments of `sort_area_size`. For further details, refer to *Oracle Server Tuning* in the *Oracle Manual*.
6. Restart the Oracle server to implement the changes you have made.

Updating Postal Data

Update the postal data only if you will be using postal data verification and you have not already updated the database instance with April 1999 postal data.

If you are upgrading older Postal Data, delete the current schema.

CAUTION: The following procedure can unintentionally affect the production database.

To delete the current zip/postal code schema

1. From the command prompt, connect to the postal schema using the sqlplus command in the following format:

```
sqlplus <Schema_ID/Password@dbalias>
```

For example:

```
sqlplus i2tm_pst1/i2tm_pst1@i2tmdb
```
2. Type the following command to query the default tablespace and temporary tablespace.

```
select * from user_users;
```
3. Record the results here:
Temporary Tablespace _____
Default Tablespace _____
4. Type EXIT to exit sqlplus.
5. Reconnect as the system manager using the sqlplus command in the following format:

```
sqlplus <DBA_ID/Password@dbalias>
```

For example:

```
sqlplus system/manager@i2tmdb
```
6. Delete the postal schema in the following format:

```
drop user <Schema_ID> cascade;
```
7. Exit sqlplus.

You can now update the postal data.

To update the postal data

1. Copy the Postal Data directory from the product CD to C:\ on the NT server.
2. Unzip the pst130apr99 file to the new Postal Data directory on the server.
3. Open a command window in the Postal Data directory.
4. Connect to sqlplus as the system manager.
5. Check that the temporary tablespace is at least 200 MBs.
6. Type the following to verify that the other tablespaces have been created.

```
select a.tablespace_name, sum(a.bytes) allocated from
sys.dba_data_files a group by a.tablespace_name;
```
7. Check with your database administrator that you can enlarge the temporary tablespace if required, for example:

```
alter tablespace temporary_data
add datafile 'D:\orant\database\tmp2orcl.ora'
size 100m reuse;
```
8. Exit from sqlplus.

You can now create the postal data schema.

To create the postal data schema

1. If the postal tablespaces do not already exist, edit the crPst1Tspc.sql script as required, and run it as a system manager using the following format:

```
sqlplus <DBA_ID/Password@dbalias> @crPst1Tspc
```

2. Edit `crPstlUsr.sql` and run it as a system manager using the following format:

```
sqlplus <DBA_ID/Password@dbalias> @crPstlUsr
```

3. From the command prompt, create empty postal data tables using the following format:

```
sqlplus <Schema_ID/Password@dbalias> @crPstlTab.sql  
<Schema_ID> <Postal Data tablespace>
```

For example:

```
sqlplus i2tm_pstl/i2tm_pstl@i2tmdb @crPstlTab.sql i2tm_pstl  
i2tm_pstl_data
```

4. From the SQL prompt, turn off archive logging as a system manager.

```
alter system archive log stop;
```

5. From the command prompt, import the postal data using the following format:

```
imp <DBA_ID/Password@dbalias> file=pstl30apr99.dmp commit=y  
ignore=y buffer=1240444 fromuser=itlstm_pstl_data  
touser=<Schema_ID>
```

For example:

```
imp system/manager@i2tmdb file=pstl30apr99.dmp commit=y  
ignore=y buffer=1240444 fromuser=itlstm_pstl_data  
touser=i2tm_pstl
```

6. Create indexes for the postal data using the following format:

```
sqlplus <Schema_ID/Password@dbalias>  
@crPstlIdx <Schema_ID> <postal index tablespace>
```

For example:

```
sqlplus i2tm_pstl/i2tm_pstl@i2tmdb @crPstlIdx.sql i2tm_pstl  
i2tm_pstl_index
```

7. From the SQL prompt, turn archive logging back on if it was on at the beginning of this procedure.

```
alter system archive log start;
```

8. From the command prompt, run the analyze function for the schema using the following format:

```
sqlplus <Schema_ID/Password@dbalias>  
@anPstl.sql <Schema_ID>
```

For example:

```
sqlplus i2tm_pstl/i2tm_pstl@i2tmdb  
@anPstl.sql i2tm_pstl
```

9. Create synonyms for the new tables, using the following format:

```
sqlplus <DBA_ID/Password@dbalias>@crSynonyms.sql <Schema_ID>
```

For example:

```
sqlplus system/manager@i2tmdb  
@crSynonyms.sql i2tm_pstl
```

10. Grant select to all users using the following format:

```
sqlplus <Schema_ID/Password@dbalias>@grSelect.sql  
<Schema_ID>
```

For example:

```
sqlplus i2tm_pstl/i2tm_pstl@i2tmdb
@grSelect.sql i2tm_pstl
```

11. Check that the postal data was exported to the correct tablespaces by connecting to sqlplus as the system account and typing the following SQL command :


```
select distinct owner, tablespace_name from dba_segments;
```
12. Exit from sqlplus.

Creating a Bootstrap Schema

Use the following procedure to create a new schema that will initially contain only bootstrap (system) data. It will not contain any user data until later.

To create a bootstrap schema

1. Create a new schema ID with an appropriate default tablespace, temporary tablespace, resource, connect, and materialized view privileges. For an example, see the `crusr.sql` script in “Standard Oracle Requirements” on page 16.
2. On an NT system which has Oracle client utilities, run Setup from the DB-Upgrade directory on the product CD.
3. Accept the default prompts, and select a path to install the DB scripts, for example, `C:\scripts`.
4. You will be prompted to click Next to proceed with configuring the upgrade. Click cancel, because this is not a database upgrade. You can ignore the standard message that states the ‘program’ will not be installed.
5. Copy the dump file `boot52.dmp` from `\Common\Dmp` on the product CD to `C:\scripts\scripts`.
6. Open a command prompt window in `C:\scripts\scripts`.
7. Import the bootstrap data into the correct schema using the following format:

```
imp <Schema_ID/Password@dbalias>
file=boot52.dmp full=y buffer=1240444
```

For example:

```
imp i2tm_crp/i2tm_crp@i2tmdb
file=boot52.dmp full=y buffer=1240444
```

Note: If the system language will not be English, be sure to import the bootstrap file for the appropriate language, for example, `boot52-pt.dmp` for Portuguese.

8. Connect to the schema using sqlplus using the following format:


```
sqlplus <Schema_ID/Password@dbalias>
```

 For example:


```
sqlplus i2tm_crp/i2tm_crp@i2tmdb
```
9. If this system is not using postal data, you must create empty postal data tables using the `Pstl_cd_t.SQL` script as follows:


```
@Pstl_cd_t.SQL
```
10. If this system is using postal data, run a program which scans for postal data by country and sets a flag to show it is available. From the command prompt, run the `setPstlFlag` command using the following format:


```
setPstlFlag <Schema_ID/Password@dbalias>
```

For example:

```
setPstlFlag i2tm_crp/i2tm_crp@i2tmdb
```

11. Recompile the schema objects using the @recompile command.

12. Check for any objects in the schema that are not valid.

```
select * from user_objects where status <> 'VALID';
```

13. Check for any indexes that were not created on the correct tablespace, for example:

```
select index_name, tablespace_name from user_indexes where  
tablespace_name <> '  
<Index tablespace>';
```

For example:

```
select index_name, tablespace_name from user_indexes where  
tablespace_name <> 'I2TM_INDEX';
```

14. Exit from sqlplus.

If the indexes were not created on the index tablespace, have an Oracle DBA move them to the appropriate tablespace.

To apply the DB patches (if applicable) to the schema

1. If the \Patches\DB Patches directory exists on the product CD, the schema supplied must be upgraded to the current patch level as shown below. This is necessary because the supplied dump files are not updated for each patch release.

Note: If the directory does not exist, you can skip this section.

2. Open a Windows Explorer window in the \scripts directory you created in previous steps.
3. Double click on the shortcut to Config.exe. Refer to the table in “To continue preparing for the upgrade from version 5.0 or higher” on page 35 for details on what information you will need before proceeding.
4. Follow the prompts and enter the required information. The program will update these values to a configuration file called parm.txt, but nothing else will be updated at this time. Click Finish to complete the configuration.
5. Open a command window in the \scripts directory created when the scripts were installed, for example, C:\scripts\scripts.
6. Begin the upgrade by entering the following command:

```
upgrade config=parm.txt
```
7. The program will display the values entered during configuration and prompt you to confirm. Enter Y if the values are correct. If incorrect, double click on the config shortcut to rerun the configuration steps and change them.
8. The program will now upgrade the schema. If any errors are detected during processing, the upgrade will terminate and display a message telling you what problem occurred and how to restart the upgrade. Refer to the table in “Troubleshooting the database upgrade” on page 37 for a list of possible errors and how to correct them.
9. When the upgrade is complete, the following text should be displayed (where 5.2x is the appropriate patch level):

```
UPGRADE TO 5.2x SUCCESSFUL
```

```
NO ORACLE ERRORS DETECTED
NO INVALID SCHEMA OBJECTS DETECTED
```

You can now update the reporting views.

To update the reporting views

1. Install the database scripts (if not already done in a previous step) by running Setup from the \DB-Upgrade directory on the product CD. Install to the C:\scripts\ directory. You do not need to configure the upgrade when prompted.
2. Open a command window in C:\scripts\scripts\ReportingViews.
3. Use the following format to load the views:

```
main_rpt <Schema_ID/Password@dbalias> <data tablespace>
<index tablespace>
```

For example:

```
main_rpt i2tm_crp/i2tm_crp@i2tmdb i2tm_data i2tm_index
```

To set the Distance Engine ID for Distance/Transit

The default Distance Engine setting for bootstrap data is PC*Miler for the U.S and Canada only. You will need to modify this within the application if you are using a different distance engine or additional countries. Please refer to “Configuring the Distance Calculator Server” on page 54 for further details.

You can now create the materialized views.

Materialized Views

Materialized views (or snapshots) are used to minimize the impact of ad-hoc reporting on database performance. Certain web reports will fail until these views have been created. The bootstrap and training schemas are shipped without materialized views activated to allow your administrator to customize the configuration to your needs and to avoid import errors that occur when the target schema name is different from the source. For requirements and additional information refer to “Standard Oracle Requirements” on page 16. Further details are also available in the Oracle 8i documentation.

To create the materialized views

1. Open a command window in c:\scripts\scripts
2. Connect to the schema where you want to create the materialized views, for example,

```
sqlplus i2tm_crp/i2tm_crp@i2tmdb
```

3. Create materialized views using a command in the following format:

```
@create_mviews <database tablespace> <index tablespace>
<rollback segment> <refresh rate>
```

For example,

```
@create_mviews i2tm_matdata i2tm_matindex rbs_mview 24
```

Note: Tablespaces and segments will usually be separate from the schema defaults to improve performance. The refresh rate for materialized view data is typically 24 (once every 24 hours).

4. Check for errors in the log file using the following command:

```
findstr /ni ora- create_mvviews.log
```

Upgrading Existing Schemas

The upgrade process has changed considerably from earlier releases. Much of the pre-checking is done for you, and the upgrade program will scan the error logs after each phase of the upgrade to avoid wasting hours processing scripts, only to discover that there was an error and it must be run again.

The standard upgrade program for the current version is now used for both patch upgrades and major upgrades. It can upgrade older schemas as long as they are at least at version 5.0. The process for upgrading schemas at version 4.3.2 p1 or older is described later in the documentation.

You will need the password to the Oracle “system” account, and the upgrade must be run from an NT system installed with the correct version of the Oracle Client software and utilities.

The new version includes use of ‘materialized views’, which should be created on separate tablespaces on separate disk drives from existing data in order to optimize performance.

The encryption algorithm in the middleware has changed and therefore the user passwords must be reinitialized. The system will ask users to enter a new password the first time they login to the desktop client after the upgrade. Alternatively, there is a command script to help you initialize all the passwords after upgrading. This will prevent unauthorized first-time logins to other accounts, and will initialize accounts for non-desktop users without requiring them to first login to the desktop client.

Perform the following procedures for all applicable schemas. In the event of an error during the upgrade, the program will instruct you what to check, and how to continue. In the rare case where an error is not recoverable, you may need to reload the schema from backup, correct the problem, and then run the upgrade again.

To prepare for an upgrade from any version

1. Ensure no one is logged into the Oracle database instance.
2. Connect to the database using the “system” account, for example:

```
sqlplus system/manager@i2tmdb
```
3. Grant materialized view privileges to the schema to be upgraded, for example:

```
grant create materialized view to i2tm_crp;
```
4. Grant unlimited quota to the schema on relevant tablespaces, for example:

```
alter user i2tm_crp quota unlimited on i2tm_data;  
alter user i2tm_crp quota unlimited on i2tm_index;
```
5. Reserve the instance and schema for exclusive use by temporarily changing the passwords, for example:

```
alter user system identified by locked4upgrade;  
alter user i2tm identified by locked4upgrade;
```

6. Exit from sqlplus.
7. Stop and restart the database instance.
8. Back up the schema you are about to upgrade by exporting it to a .DMP file. To do this, open a command prompt and type the `exp` command in the following format:

```
exp <Schema_ID/Password@dbalias> file=<filename>
```

 For example:

```
exp i2tm_crp/i2tm_crp@i2tmdb file=i2tmcrp.dmp
```

 If you are using Oracle 7.3.4, you must substitute `exp73` for `exp` in the previous example.

If your schema is not at least version 5.0 or 5.0p1, see “Upgrading Databases from Version 4.2x-4.3 to Version 5.0” on page 79. Run the applicable upgrades in the correct order to update your schema to version 5.0 before doing the following procedures.

To continue preparing for the upgrade from version 5.0 or higher

1. Upgrade Oracle to the applicable 8.1.7.x version. See “Supported Databases (RDBMS)” on page 10 and the **Oracle8_mig** migration document in the \DOCS directory on the product CD.
2. You will need the following information ready before continuing:

Item	Min. Free Space	Your Info Here
Oracle "system" password	n/a	*****
Name of a large Rollback segment	30 MB	
Schema Name to be upgraded	n/a	
Schema Password	n/a	*****
Data Tablespace Name	25%	
Desired Data Extent Size (128K, 256K, etc.)	n/a	
Index Tablespace Name	25%	
Desired Data Index Size (128K, 256K, etc.)	n/a	
Materialized View Information	n/a	
Data Tablespace	30 MB	
Index Tablespace	30 MB	
Rollback segment	30 MB	
Desired data refresh rate in hours (6, 12, or 24)	n/a	

To install and configure the database upgrade scripts

1. On an NT system which has the Oracle client and utilities, run Setup from the DB-Upgrade directory on the product CD.
2. The setup program displays the Welcome screen. Click Next.

3. If you accept the Software License Agreement terms, click Yes when prompted.
4. Enter the Transportation Manager Product key when prompted. Click Next.
5. Click Next to accept the default Destination Folder (C:\scripts), or click Browser to specify another location.

Note: You must specify a DOS-compatible filename and location (no spaces, no more than eight characters in each section). This is due to the compiler used to generate the upgrade program. This will be changed in a future release.

6. The program will install the database scripts to the location specified and then prompt you to click Next to configure the upgrade.
7. Click Next to continue. If you decide to cancel instead, you can later continue by double-clicking on the `config` shortcut in the C:\scripts directory just created.
8. Follow the prompts and enter the required information (described previously). The program will update these values to a configuration file called `parm.txt`, but nothing else will be updated at this time. Click Finish to complete the configuration.

Note: If you do not want password information stored in a file, delete all characters from the password prompts. The upgrade program will then prompt you for these at run time.

The upgrade program is now ready to run. It will validate the values entered during the configuration and then upgrade the schema to the new version. It could take several hours to complete.

To upgrade from version 5.0 or higher

WARNING: Do not resize the command window while the upgrade is running. This can cause the program to terminate unexpectedly or lose important status messages.

1. Open a command window in the \scripts directory created when the scripts were installed, for example, C:\scripts\scripts.
2. Begin the upgrade by entering the following command:
`upgrade config=parm.txt`
3. The program will display the values entered during configuration and prompt you to confirm. Enter Y if the values are correct. If incorrect, double click on the `config` shortcut to rerun the configuration steps and change them.
4. The program will now upgrade the schema. If any errors are detected during processing, the upgrade will terminate and display a message telling you what problem occurred and how to restart the upgrade. Refer to the table at the end of this section for a list of possible errors and how to correct them.
5. When the upgrade is complete, the following text should be displayed, where 5.2x is the appropriate patch or version level:
`UPGRADE TO 5.2.X SUCCESSFUL`
`NO ORACLE ERRORS DETECTED`
`NO INVALID SCHEMA OBJECTS DETECTED`

Note: The upgrade program now performs a post-upgrade check for any inconsistencies that were not serious enough to cancel the upgrade. Call i2 Support if the program identifies problems during this process.

Troubleshooting the database upgrade

The table in “Database Upgrade Error Codes” on page 103 includes a list of possible errors and the suggested action to correct them. If your error is not found in the list, examine the log created at the time the program failed for possible causes. The upgrade program provides for an ‘entry point’ to resume once the problem has been corrected.

The upgrade syntax is:

```
upgrade config=parm.txt entry=xx
```

where xx is the restart point as instructed by the upgrade program or the error codes table.

If reporting any errors to i2 support, compress the contents of the C:\scripts\scripts\en directory and send this by email. Do not attempt to update reporting views until the error has been corrected.

Completing the Upgrade

Perform the following procedures to complete the upgrade.

To complete the upgrade

Note: You do not need to apply additional DB patches. The DB upgrade program will always be at the most current level.

1. Update the reporting views from the product CD (refer to “To update the reporting views” on page 33.)
2. Check the default distance engine settings for each country in use. Refer to “Configuring the Distance Calculator Server” on page 54.
3. Connect to the database using the *system* account, for example:

```
sqlplus system/manager@i2tmdb
```
4. Release the instance and schema from exclusive access by changing back the passwords modified during preparation.
5. If you have not yet installed Transportation Manager Server, the schema will be initialized during the install process. Otherwise, run Configure DSC now to initialize the security tables and shortcuts. The schema will not be usable until this is done.
6. If you do not want users initializing their own passwords through the desktop client, follow the steps outlined below to initialize all user passwords.

To initialize all user passwords

1. Open a command window in the \scripts\scripts directory created in previous steps.

2. Enter a command in the following form to build an NT command file that initializes the passwords:

```
getusers <SchemaID/Password@dbalias> <DSC Hostname>
```

For example,

```
getusers i2tm_crp/i2tm_crp@i2tmdb myDSChost
```

This command will build another command file called `initusers_exec.cmd`, which uses the `admtool` function to set the password for each user. It will access the DSC process on the machine you specified for `<DSC Hostname>`.

3. Copy the `initusers_exec.cmd` file to your Transportation Manager directory, and edit the file, modifying the last parameter on each line with the desired password. You will need to notify each user of their new password. Each password should be uniquely structured such that users cannot guess each other's password based on how theirs was formed.
4. Run the `initusers_exec` command file. No parameters are required. It will only work for user accounts that have not already been initialized or accessed since the upgrade.

Note: It is important that the schema and indexes are analyzed after you install or upgrade to this version of TM. Refer to *Analyzing the Schema and Indexes*.

Analyzing the Schema and Indexes

i2 always recommends that the schema be analyzed by a qualified DBA whenever there has been a significant change to the amount or distribution of data and indexes. This process will ensure that the Oracle query optimizations are relevant and effective. Each version normally updates several indexes, so the schema must be analyzed to ensure that there is no deterioration in performance.

The following process can be executed by any administrative user with access to the schema. It may take several hours to complete on a large schema.

To analyze the schema and indexes

1. While still in a command window in the existing `C:\scripts\scripts` directory, execute the `analyze.sql` script as follows:

```
sqlplus <Schema_ID/Password@dbalias> @analyze.sql
```

For example,

```
sqlplus i2tm_crp/i2tm_crp@i2tmdb @analyze.sql
```

This command will perform a `statistics estimate` on the schema.

2. Execute the `analyze_ind.gen` script to generate SQL for the next step as follows:

```
sqlplus <Schema_ID/Password@dbalias> @analyze_ind.gen
```

For example,

```
sqlplus i2tm_crp/i2tm_crp@i2tmdb @analyze_ind.gen
```

This command will generate an SQL file called `@analyze_ind.sql`. Do not exit from the SQL prompt.

3. Execute the following command from the SQL prompt, to execute the SQL script just created (performs a `compute statistics` on all the indexes in the schema):


```
@analyze_ind.sql
```
4. Exit from `sqlplus`.

Creating a Training Schema (Optional)

Use the following procedure to create a schema that will contain training data.

To create a training schema

1. Create a new schema ID with an appropriate default tablespace, temporary tablespace, resource, connect, and materialized view privileges. For an example, see the `crusr.sql` script in “Standard Oracle Requirements” on page 16.
2. Install the database scripts (if not already done in a previous step) by running Setup from the `\DB-Upgrade` directory on the product CD. Install to the `C:\scripts\` directory. You do not need to configure the upgrade when prompted.
3. Copy the dump file `train52.dmp` from `\Common\Dmp` on the product CD to `C:\scripts\scripts`.
4. Open a command prompt window in `\scripts\scripts`.
5. Import the training data into the correct schema using the following format:


```
imp <Schema_ID/Password@dbalias> file=train52.dmp full=y
buffer=1240444
```

 For example:


```
imp i2tm_train/i2tm_train@i2tmdb file=train52.dmp full=y
buffer=1240444
```
6. Connect to the training schema using `Sqlplus`.
 For example:


```
sqlplus i2tm_train/i2tm_train@i2tmdb
```
7. If this system is not using postal data, you must create empty postal data tables using the `Pstl_cd_t.SQL` script as follows:


```
@Pstl_cd_t.SQL
```
8. Recompile the schema objects using the `@recompile` command.
9. Check for any objects in the schema that are not valid.


```
select * from user_objects where status <> 'VALID';
```
10. Exit from `sqlplus`.
11. Apply the DB patches to the schema (refer to “To apply the DB patches (if applicable) to the schema” on page 32).
12. Update the reporting views from the product CD (refer to “To update the reporting views” on page 33).
13. Create the materialized views where applicable. Refer to “To create the materialized views” on page 33.
14. Modify the distance engines for the schema if you are not using PC*Miler, or if you are using countries other than the U.S. and Canada. Refer to “Configuring the Distance Calculator Server” on page 54 for details.

Installing Transportation Manager Server

To prepare for the installation

1. Ensure that you have obtained a valid product key from Product Support.
2. Ensure that the correct versions of NT 4 or Windows 2000, Oracle Server 8i, and Oracle Client 8i have been installed or upgraded in all applicable servers (including the Optimizer and Web Application servers). For details on the Oracle 8i upgrade, refer to the Oracl8_mig migration document in the \Docs directory.
3. Ensure that all the Transportation Manager clients, server processes, and the Process Monitor have been terminated.
4. Due to a new feature in the ORB middleware, you must have a domain name defined for your computer or the DSC will not run. If you do not use DNS on your network, any string will work, for example: mydomain.com.

To check that a domain name has been set up:

From the desktop, select Network Neighborhood > Properties > Protocols > TCP/IP > Protocol > Properties > DNS. Check the Domain field.

5. If you have done any customizations such as server allocation, save your `singlehost.rsp` file to another location.

To install Transportation Manager Server

1. Run Setup from the TM directory on the product CD.
2. Click Next to dismiss the Welcome screen. Read the Software License Agreement Terms and click Yes if you agree, and wish to continue.
3. Enter the Transportation Manager product key when prompted. Click Next.
4. If the installation process detects any read-only files, click No when prompted to overwrite them.
5. Accept the default prompts, and select a path to install Transportation Manager applications, for example `D:\tm`.
Do not include spaces in the pathname because the ORB middleware will interpret this as a list of parameters.
6. If a previous installation exists, a prompt will appear asking you if you want to perform an upgrade. Click Yes.
7. Select the desired folder for the VisiBroker runtime and click the Next button.
8. Select the desired language and click the Next button.
9. Select Custom at the Setup Type window and ensure all the options are selected.
10. Select all default options until the files start copying to your system.
11. If you did not select to upgrade, a prompt will ask you to configure the DSC. Click Yes, unless your schema is not set up yet and you wish to configure later. For more information, refer to “Configuring the Distributed Service Coordinator (DSC)” on page 50.
12. Whether this is an upgrade or a new install, the program will format `singlehost.rsp` to the newest layout and recompile it using the `xconfig` program. It will also create the new security tables in your schema that are required for this release.

Note: If you will be accessing other upgraded schemas from this machine, you must run Configure DSC on each one. Otherwise, you will get a message saying “Cannot obtain secure connection to DSC” when you try to login.

13. Click Finish when prompted. Click Yes when prompted to reboot.
14. If you saved a customized `singlehost.rsp` file from a previous release, then you should now apply these same customizations to the new `singlehost.rsp` file created during installation, and run the `xconfig` command from the command prompt. For details, refer to “Customizing the DSC” on page 50.
15. Copy the following patches and customization files from the product CD to your Transportation Manager directory. Ensure that you copy them in this order so that the correct files will be replaced where the file names are the same.
(Some of these directories may not be on the CD if there are no applicable files.)
 - `\Patches\Report Patches`
 - `\Patches\Client Patches`
 - `\Patches\Server Patches`
 - `\Custom SAP`
16. If you are using CZAR tariffs, the previous CZAR subdirectory will be retained during an upgrade. If this is a new installation, or you need to upgrade to CZAR version 4.6, install the new CZAR software and tariffs. Then move the files to a CZAR subdirectory below the Transportation Manager directory, for example:
 - `D:\tm\czar`
 Next, copy the `czar32.dll` file to the Transportation Manager directory, for example `D:\tm\czar32.dll`.
17. Reboot the system.
18. To configure the VisiBroker runtime to write logs to the installed folder, open a command window and run `vregedit`. Set the `VBROKER_ADM` parameter to the install folder, for example, `c:\i2tradematrix\scmui\5.2\thirdparty\vbroker`. This will cause logs to be written to a `\log` subdirectory under the selected folder. No other parameters need to be set.

Installing Distance Calculation Engines

If you require distance-based ratings, install one or more of the following distance calculation engines.

Note: The software must be installed on each server that calls the distance interface. In general, all machines hosting servers for Transportation Manager and Optimizer, except for a stand-alone Web server, will require an installation of the distance software.

If you are using the distance cache feature, ensure that you purge cached distances any time you change or upgrade the distance engine.

To purge cached distances:

1. Start the desktop client program and log in as an administrator.
2. Select the *Environment* tab on the *Setup* page.

3. Select *Services* and then *Distance Engines* from the left pane.
4. Right-click on any distance engine that needs to be purged and select *Purge Cache*.

ALK PC*Miler

If an older version of PC*Miler (Version 11, Version 12, or 2000) was previously installed on the system, you will need to remove it.

To uninstall PC*Miler Version 11 or Version 12

1. Delete the entire directory (e.g. D:\Pmw120).
2. Delete the PC*Miler folder from the start menu for the user who installed it (e.g. "Administrator").
3. Delete the registry key from HKEY_LOCAL_MACHINE\SOFTWARE\ALK Associates.

You can now install the new version of PC*Miler.

To uninstall PC*Miler Version 2000

1. Uninstall all components (Mapping, Server, and PC*Miler) using the Uninstall feature found in the PC*Miler 2000 program group under the Windows Start Menu.
2. Delete the PC*Miler directory if it still remains (e.g. D:\pmw2000).
3. Delete the PC*Miler folder from the Start Menu\Programs folder for All Users.

You can now install the new version of PC*Miler.

Install PC*Miler 14 for Windows, PC*Miler Server, and PC*Miler Mapping software from the PC*Miler CD-ROM. Run the setup programs, follow the prompts, and install as required.

Note: You do not need to install the COM objects referenced during the installation of the Mapping and Server modules.

Be sure to reboot after installing PC*Miler.

Rand McNally MileMaker SP32 (11-1-98)

If this is the distance engine you require, and it is not already installed, install MileMaker from the CD onto an NT server (refer to "Installing MileMaker" on page 99).

TD Server

Use the TD Server to interface with European distance databases. Installation instructions are provided in a separate document. Configuration settings for accessing this distance engine are provided in this document.

i2 Distance

Use the i2 Distance engine to interface with distance databases outside of North America and Europe. It does not require a separate installation, but the licenses for the required data must be purchased separately, usually from the data vendor.

Instructions for loading data for this distance engine are provided in a separate document. Configuration settings for accessing this distance engine are provided in this document

Installing Supporting Software for Load Tender Fax and Email

How it Works

The Transportation Manager Report server can be configured to send the tenders using either the Microsoft “MAPI” messaging standard or the API for Lotus Notes (known in the product as “Native Notes”). In either case, most fax server products are implemented using connectors that detect email messages intended for fax delivery, and reroute them to the fax server.

When a fax or an email is to be transmitted, the report server calls the embedded Crystal routines to export a report in Microsoft Word format. If the call was made using the “Send MAPI” option, Crystal will then send a MAPI message using the Exchange email client (or the Fax client software), with the report as an attachment. Microsoft Messaging takes over to send the message through the email server to the final destination (an email or fax address).

If Native Notes mode has been configured, the report server calls Crystal without the “Send MAPI” option. Crystal returns the attachment to the report server, which uses the Notes API and Notes client program to send a message itself to the Notes email server, with Word document attached.

Some implementations use a hybrid configuration with a Notes email server and an Exchange compatible email client (such as Outlook) configured to access Notes. This has been found to be less robust than the Native Notes configuration for those customers using a Notes email server. Now that the Native Notes interface is available, this configuration should only be used for those fax servers that have their own custom client program and employ the Microsoft Messaging layer (MAPI) to communicate with the fax server process.

As Transportation Manager uses Microsoft Messaging or the native Notes API to forward the messages, and the MAPI and Notes interfaces are supported by many email and fax servers (these servers are said to provide Exchange or Notes Connectors), Transportation Manager theoretically supports all email and fax servers with the compatible Connectors. In practice, this is not necessarily the case — not all products tested were able to connect in this way, or were robust enough to support dozens or more faxes per day. TM has been successfully tested with both Lotus Notes and Microsoft Exchange Server as the email server, in combination with the fax servers shown in the SW Dependencies document.

Fax Server Software

Install the preferred fax server software on the appropriate server. This should normally be separate from your application servers to minimize resource contention. For those using FaxMaker for Exchange, note that GFI Fax & Voice recommends that the fax server software be installed directly on the Email server.

Each product will have its own installation requirements, but some general principles will apply to most products:

- i2 recommends the use of intelligent fax ports for anything more than a few dozen faxes per day. Such products are available starting at about US\$2000 for a 4-port fax board
- install the fax or modem board before installing the fax server software
- carefully select the correct fax board or modem when installing and configuring the fax server
- most products will require you to add and configure the users that will have permission to send faxes
- set the applicable NT service (if any) to autostart, so that fax services will be available after a reboot

Fax Client Software

Install the client software for your fax product (if applicable) on the same machine as the Transportation Manager Report server. Some products will only require the installation of an email client, which can then be employed to send the request through the email, to the fax server.

Email Client

Install the Notes client or the Microsoft Messaging client (only Outlook 2000 has been tested) onto the same machine(s) as the Transportation Manager Report server.

Note: Outlook Express does not work for fax and e-mail tenders and Event Notification.

It is recommended that you place a shortcut to the email client program in the Startup folder so that it is available to send tenders whenever the system and its server processes are restarted.

Microsoft Messaging Client Configuration

If you are using a Microsoft Messaging client, configure it as follows:

In the Control Panel, double-click on the Mail or Mail and Fax icon.

If no Microsoft Exchange Settings Profile exists, a wizard will guide the setup of the first profile. Just select the services needed, for example, Microsoft Exchange Server, which will then request the Exchange server and mailbox name. For LanFax or VSI-FAX services you will have to specify the Fax Server name.

If a profile already exists, the MS Exchange Settings Properties dialog will appear. Click the "Add..." button, and select the desired service. Depending on the service selected, additional dialogs will appear in which you can configure the settings specific to that service.

Notes Client Configuration

If you are using a Notes client, configure it as follows:

1. Configure the client as a standard email client, along with the necessary ID file and server information.
2. Ensure that all information in the location document is accurate. Deviations in fields such as server, domain, or mailbox name can cause the API interface to fail even if the GUI client is working properly
3. From the Notes client menu, select `File > Tools > User ID`.
4. Ensure that the box is checked to indicate that the User ID password should be shared with other Notes-based programs.
5. Add the Notes binary file path to your `PATH` environment variable so Transportation Manager can locate the `nnotes.dll` file, for example, `c:\Lotus\notes`.

If it exists, delete `nnotes.dll` from the Transportation Manager directory (it is there only as a placeholder and will not be compatible with your Notes client).

Microsoft Word

Install Microsoft Word on the same machine(s) as the Transportation Manager Report server. This is the format for the load tender which becomes an attachment in the email or fax message.

Parameter Set Configuration

The reporting parameter set (default is RPT) must be set based on your choice of email and fax server. This is done using the Server Configuration Tool (`servcnfg.exe`), which is documented in more detail in "Configuration Tool" on page 51. The relevant parameters are `MapiTransport` and `NativeNotes`. `MapiTransport` consists of a pair of settings separated by a comma as illustrated by the examples below. The first value in the pair represents the email server and the second is for the fax server.

MapiTransport Parameter Settings

	Email Server	
	Microsoft Exchange	Lotus Notes
Tested Fax Servers		
Fax for Domino	N/A	notes,notes
FaxMaker	smtp,faxmaker	notes,faxmaker
Other Fax Servers		
Alcom LanFax	smtp,lanfax	notes,lanfax
VSI-FAX	smtp,fax	notes,fax

Note: These settings are case-sensitive.

The possible values for NativeNotes are Y or N — Y if you are using a Notes client, and N if you are using a Microsoft Messaging email client.

Installing Transportation Manager Client

You should set up a designated Windows NT or Windows 2000 client with database access, including SQL*Net and utilities. This will allow future support and database SQL commands to be run from the client rather than the server. Transportation Manager upgrades and patches are created in command files that are designed for Windows NT or Windows 2000. Thus, this Windows access is required, even if you are you using a Unix server for the RDBMS.

To print reports from the server, set up client machines with the same printer drivers as the report server.

To install Transportation Manager Client

1. Ensure that your operating system and browser have been upgraded to the correct version and patch level.
2. Run Setup from \TM on the product CD. If the installation process detects any read-only files, click No when prompted to overwrite them.
3. If a previous installation is detected, a prompt will appear asking you if you want to upgrade. Click Yes.
4. Select a Typical install when prompted, or Compact if you do not want to install Tools or Flat File Driver.
5. Complete the installation, and reboot when finished.
6. If applicable, copy all files from the \Patches\Client Patches directory on the product CD to your Transportation Manager directory.

You can now configure the Transportation Manager client.

To configure Transportation Manager client

1. Select Windows Start Menu > Programs > i2 TradeMatrix > Transportation Manager 5.2 > Admin > TM Config.
2. Add the relevant fields.
3. Ensure the Client Error Logging Level is initially set to zero to avoid wasting space on your hard drive.
4. Select the Disable Distance Calculation box if you are not using distance calculation.
5. Select Enable Full Event Notification if required. This may cause logins over a WAN to take several minutes.

Note: If this field is not selected, this client will not be able to initiate notification of events and these requests will be ignored.

6. Add a URL shortcut to the Web Interface if required. For details, refer to “Installing the Web Interface” on page 59.

You can now set the cache for the LAN and WAN.

To set the cache for the LAN and WAN

Initially, as various entities are being updated, the cache should be OFF (Disable = Y) for a number of entities as shown in the screen shots below. This is now the default setting for the bootstrap data. As the data stabilizes and these entities are no longer changing very often (create/update/delete), the cache should be turned ON for best client performance (Disable = N).

1. Ensure that the DSC has been started.
2. Start the Transportation Manager client.
3. Log on as an administrator, usually VENTURE.
4. Select Global Defaults under the Setup system tab.
5. Select the Cache Control tab.
6. Turn the cache ON (Disable=N) for any entities that are no longer changing very often.

The current bootstrap default settings are as shown below. The first line is unchecked, that is, Disable = N.

Updating Global Defaults 'C0'

Controls | A/R Control | A/P Control | Load | Last Numbers | EDI | Business Hours | Cache Control

Entity Name	Disable
Dom_Tab_c	<input type="checkbox"/>
Dom_Val_c	N
Stat_c	N
Fhrt_Cls_c	Y
Cdty_c	Y
Ctry_c	N
Sta_c	N
TO_Ent_Typ_c	N
TO_Ent_Ver_c	N
Mstr_Chrg_c	Y
Div_c	Y
Lgst_Grp_c	Y
Srvc_Excp_Cd_c	N
Comp_Typ_c	Y
Mask_Val_c	N
Rfrc_Num_Qlfr_c	N
Rfrc_Num_Cat_c	N
SAP_Shpcnd_c	N
SAP_Cdty_cd_c	N
SAP_Fhrt_Cls_c	N
Mstr_Srvc_c	N
Cust_c	Y
Carr_c	Y
Shpg_Loc_c	Y
Cust_Ver_c	Y
Ust_Grp_c	Y
Comp_Typ_Grp_c	Y

OK Cancel Help

Chapter 4

Configuring Transportation Manager

This chapter describes how to configure Transportation Manager. It includes the following topics:

- Overview
- Configuring the Distributed Service Coordinator (DSC)
- Using Parameter Sets
- Preconfigured Servers
- Servers Requiring Configuration
- Configuring the API Flat File Driver
- Configuring the Process Monitor

Overview

The installation process creates shortcuts for all servers that you need to start manually. If you chose to configure the DSC during installation, the shortcuts will already have all the standard parameters.

The configuration of the API, API Flat File, EDI, and Auto Load Tender servers are optional, depending on whether they were previously installed or are now required.

Configuring the Distributed Service Coordinator (DSC)

The DSC monitors all the standard Transportation Manager application servers, except API. Once the DSC is started, most Transportation Manager applications will start automatically when a request is made from a Transportation Manager client. However, the following servers must be started manually: EDI, API, AutoLoad Tender, Financial, and Optimizer.

Once you have installed the Transportation Manager servers, you need a binary server configuration file called `DSC.DB` to start the DSC. You can automatically create this file during installation, or run `Configure DSC` later when you have a schema available.

`Configure DSC` is a new item on the Transportation Manager menu that allows you to easily configure which schema the application should use. This program modifies all related shortcuts, updates and compiles the `singlehost.rsp` template configuration file, and creates the new security tables in the schema. Therefore, each upgraded schema is not usable until this is done, either automatically during installation, or from the start menu later on. If this is not done, you will get a message saying “Cannot obtain secure connection to DSC” when you try to login.

Note: Any customizations are lost when you run `Configure DSC`, so be sure to save a reference copy of `singlehost.rsp` if you are using a non-standard configuration.

If you chose to automatically configure the DSC during installation, the DSC is ready to run. You can proceed to “Starting the DSC”, assuming you do not need to customize the DSC by editing and compiling `singlehost.rsp`.

Customizing the DSC

Customization is only required when specified by `i2`, or for advanced users with unique requirements. Be sure to initialize schemas first by automatically configuring the DSC during installation, or running the `Configure DSC` process afterwards.

For the Routing and Rating server, ensure that the `-DISTMODE` parameter is set to `DISABLED` if you are not using the distance calculation feature. This is one example where you need to manually edit `singlehost.rsp` and recompile it using `xconfig`.

To customize the DSC

1. Edit the `singlehost.rsp` file and make the necessary changes. Refer to the System Administration manual or `i2` support if you need further details.
2. Open a command window in your Transportation Manager directory.

- Run `xconfig` from the command prompt as shown below to create a compiled `DSC.DB` file from the modified `singlehost.rsp` file.

```
xconfig -d DSCINIDIR=<TMgr Directory> singlehost.rsp
```

For example,

```
xconfig -d DSCINIDIR=D:\tm singlehost.rsp
```

Note: `xconfig` will compile the `singlehost.rsp` file in the directory from which it is run, so do not run this program from a different directory.

Starting the DSC

To start the DSC

Double-click the DSC shortcut in the Admin folder by selecting either:

- the Transportation Manager 5.2 folder on the desktop
- Windows Start Menu > Programs > i2 TradeMatrix > Transportation Manager 5.2

Alternatively, run `dsc.exe -m 1` from Explorer or a command window at the Transportation Manager directory.

Note: The `-m` parameter is required to set the message logging level to 1. By using this setting, the various server programs that are registered or removed from the server map are displayed. The default value of 5 is too verbose.

Using Parameter Sets

In addition to the basic database access parameters, the server configuration is stored in a database as a parameter set. Use these sets to configure each server function online. In some cases, such as Message Level Logging, you can change the settings dynamically—you do not have to restart the server to recognize the new values. Settings that are not dynamically recognized are “static”.

In addition to dynamic changes, parameter sets have easier parameter retention between upgrades. They also allow you to visually manage the configuration for multiple servers and database schemas.

Configuration Tool

Use the graphical interface configuration tool `servcnfg` to create, modify, or delete parameter sets. This program can access the data in a similar way to the Transportation Manager client. It would therefore require the DSC to be running. Alternatively, you can use the `/LOCAL` feature to connect directly to the database if you have the Oracle client installed. The command line format for this mode is:

```
SERVCNFG /LOCAL <Schema_ID/Password@dbalias>
```

Each parameter set is derived from a predefined parameter set type. There is a set type for each Transportation Manager server function. These set types define allowable parameter names and the data type for each parameter, indicate whether the parameter is dynamic, and provide the default value for that parameter.

Bootstrap data includes all the necessary parameter set types, and a default parameter set for each type. You cannot modify the parameter set types, but you can copy or modify the parameter sets.

The migration scripts, which upgrade your databases, include the same types and sets. The default parameter sets work for most installations, with a few minor changes as specified in the configuration instructions for the individual servers.

Preconfigured Servers

The servers listed in the following table are ready to use immediately after installation and do not normally require further configuration.

Server Function	Executable Name	Default Parameter Set	Shortcut Required
Administration	AdmSrv.exe	ADM	--
Auto Load Tender	AutoTdrSrvr.exe	AUTOTDR	Y
Business Object	BobjSrv.exe	BOBJ	--
Financial	FinSrv.exe	FIN	Y
Notification Agent	NotifAgent.exe	EVNT	Y
Report Distribution	DistribRptSrv.exe	DISTRIBRPT	Y
XML	XMLSrv.exe	XML	--

Note: The Notification Agent uses the same message transport method as Load Tendering through Fax and Email. If you are using Event Notification, please refer to “Installing Supporting Software for Load Tender Fax and Email” on page 43 for configuration information.

The install program will create shortcuts for those servers that need them and you can use these shortcuts to manually start specific servers as required. Alternatively, you can configure the Process Monitor to start them automatically after each reboot. Refer to “Configuring the Process Monitor” on page 57 for more details. Some servers do not require shortcuts because the DSC automatically starts them when the related services are requested.

For diagnostic purposes, any of these functions can be started manually from the command line with a command in the form shown below. This is also how the install program configures the shortcuts, where applicable. You can edit these shortcuts to point to another schema if required.

```
<Path\Executable Name> -USER <Database user name> -PASS
<Database user password> -DB <Database name> -PS <Parameter
Set>
```

For example, the shortcut for the Financial server would look similar to:

```
D:\tm\finsrv.exe -USER i2tm -PASS i2tm -DB i2tmdb -PS FIN
```

Servers Requiring Configuration

The servers in the following section normally require some configuration after you run the install program before they can be used. Again, some need shortcuts and others do not because the DSC starts them automatically as required. For diagnostic purposes, any of these functions can be started manually from the command line like the preconfigured servers.

Server Function	Executable Name	Default Parameter Set	Shortcut Required
API	ApiSrv.exe	API	Y
Distance Calculator	DistSrv.exe	DIST	--
EDI	EdiSrv.exe	EDI_INOUT	Y
Reporting	RptSrv.exe	RPT	--
Routing and Rating	RouteRateServer.exe	ROUTERATE	--

Configuring the API Server

If you are using the API, you have to configure the API server.

To configure the API Server

1. If Orbix runtime was previously installed, and you are not using it for your own API clients, uninstall it now using the Add/Remove Programs applet in the control panel.
2. If you have created your own CORBA client programs,
 - o be sure to check the API Reference Guide for any changes to the API in this release, and modify your programs accordingly.
 - o if developing them using VisiBroker C++, upgrade to the current version if not done already. See “Software and Platforms” on page 9 for more details.
3. If no distance calculation engine will be used, use `servcnfg` to set the `DistEnable` parameter to N.
4. Decide how you are going to connect to the API server.
 - o If you will be connecting using an Interoperable Object Reference (IOR) file, you might have to provide the `IORFilePath` parameter. This parameter defines where the API IOR string file is created. An IOR file named `VentureFactory.ior` is automatically created in the Transportation Manager directory when the API server is started. You can place the IOR file in a different directory by modifying the `IORFilePath` parameter in the API server parameter set, for example
`\\MyAPIServer\API_Share\VentureFactory.ior.`
 - o If you will be using the VisiBroker Name Server to connect, you will need to configure the service as described in the System Administration Manual.
5. If you will never be using A/R financials, you can improve system performance by setting the `APOnly` parameter to Y.

WARNING: You must not change the `APOnly` parameter after any processing has been done. This will cause problems in the database.

6. If you want to use dynamic tariff updates, run `ConfigApplet` to ensure this feature is enabled (refer to “Configuring the Routing and Rating Server” on page 55).
7. If you are using the `VisiBroker Name Server`, ensure that it is running.
8. Start the API Server using the shortcut.

You do not usually need to change the default parameter set, unless you will be using the `VisiBroker Naming Service` or changing the `Distance Calculator Server` settings (refer to “Configuring the Distance Calculator Server” on page 54). Parameters starting with “`Dist`” have a corresponding setting in the `DIST` parameter set.

Configuring the Distance Calculator Server

To configure the Distance Calculator server

1. Ensure that the `Distance Engine ID` for `Distance/Transit` is set correctly for every country you will be using. This is found in the property sheet for each country under **Setup > System > Countries** using the desktop client.

Note: The schema upgrade program for version 5.1 sets the default for this value to be the same as the old schema `Default Distance Engine` setting for any countries that have postal data defined. Modify this manually if it is not correct. Also, the default value for `Distance Engine ID` for bootstrap and training data is `PC*Miler` for the U.S and Canada, and must be changed if incorrect.

2. Use `servcnfg` to edit the following parameters for each set as required. You should turn cache on if `Routing and Rating` performance is a problem.

Parameter	Description
Cache	the distance cache for each distance engine, for example: <code>PC*Miler:Off</code> separate by commas if there is more than one
Enable	the supported distance engines, for example: <code>PC*Miler</code> separate by commas if there is more than one (set to <code>PC*Miler:CANZipOn</code> if you have installed the optional <code>PC*Miler Canadian Postal Codes</code> module)
OvrPoll	the frequency in milliseconds to poll for new distance/time overrides entered through <code>Transportation Manager</code> , for example, <code>PC*Miler:30000</code>
Route	the default route type for each distance engine, for example: <code>PC*Miler:Practical</code>

Allowed Enable and Default Route Values

- Enable - `PC*Miler`, `PC*Miler:CANZipOn`, `MileMaker:45`, `TDSer`, and `I2Distance: <path to data>`
 - the default value is `PC*Miler`

- the default <path to data> is I2Distance (under the Transportation Manager directory)
- PC*Miler Routes - Practical, Shortest, National, Avoidtoll, Air
- MileMaker Routes - Practical, HHG, Shortest
- TDServer Routes - Shortest, Fastest, Cheapest
- i2 Distance Engine Routes - Not applicable

Configuring the EDI Server

If you are using EDI, configure the EDI server.

One server process can handle both inbound and outbound transactions. However, you may still want multiple EDI servers, for example, one for Inbound and another for Outbound. If so, create new parameter sets with new shortcuts to use these parameter sets.

To configure the EDI server

1. Use `servcnfg` to edit the following parameters for each applicable set as required.

Parameter	Description
DefaultUser	the default Transportation Manager user, for example: *DFT
EDUserID	a valid EDI Transportation Manager user, for example: *DFT
InboundPathName	the pathname of a valid NT directory to poll for inbound transactions
OutboundPathName	the pathname of a valid NT directory to send outbound transactions
ServerType	set to Both (default), Inbound, or Outbound

2. Start the EDI server using the shortcut.

Configuring the Report Server

To configure the Report server

Use `servcnfg` to edit the `RptPath` parameter in the `RPT` set. `RptPath` contains the NT path where reports are stored, for example `D:\tm\reports`.

Configuring the Routing and Rating Server

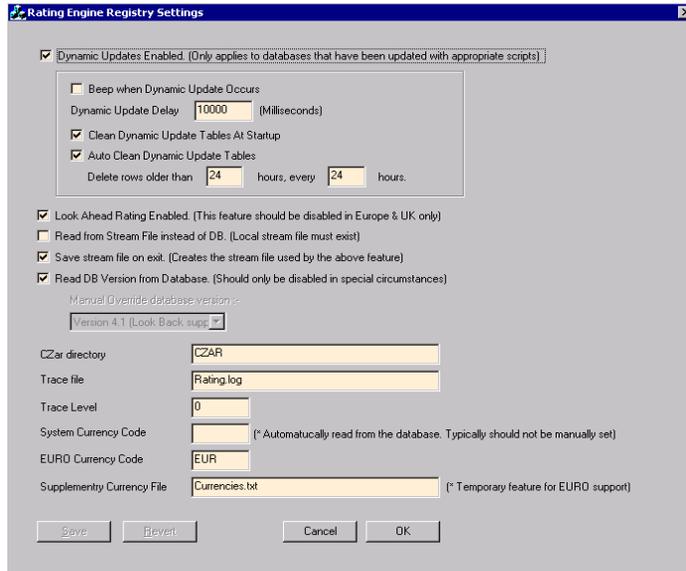
You do not usually need to change the default parameter set, unless you also need to disable distance calculation. If so, set the `DistMode` to `DISABLED`.

Configure the routing and rating server to enable the dynamic tariff updates if required.

Note: You do not need to restart servers that use dynamic tariff updates after changing the tariff information.

To configure the Routing and Rating server

1. Run the rating engine configuration applet (ConfigApplet). The following dialog box appears.



2. Select **Dynamic Updates**.
3. Click **OK**.

Configuring the API Flat File Driver

If you are using the API flat file driver, it must be configured to connect to an API server. The driver connects using a Visibroker runtime which is installed at the same time as the flat file driver.

To configure the API flat file driver

1. If Orbix runtime was previously installed, and you are not using it for your own API clients, uninstall it now using the Add/Remove Programs applet in the control panel.
2. Install the Transportation Manager client and patches if you have not done so already. `vffder.exe` is installed automatically when you install the API server. If you only install the Transportation Manager client, you must specifically choose to install `vffder.exe` during the installation process.
3. Decide how you are going to connect to the API server.
 - o If you will use an IOR file, use the following syntax:
`vffder -G -ior <IOR string>`
 For example, `vffder -G -ior D:\tm52\VentureFactory.ior`
 - o If you will use the VisiBroker Naming service, use the following syntax:
`vffder -G -nsname <IDInNamingService parameter>`
`-nshost <NamingServiceHost parameter>`
`-nsport <NamingServicePort parameter>`
 For example, `vffder -G -nsname TransportationManager`
`-nshost myAPIServer -nsport 14090`

All these parameters are API server parameters.

Note: For further details on using the Flat File Driver, see the API Reference Manual.

Configuring the Process Monitor

The Transportation Manager Process Monitor is a Windows NT service that manages a list of processes. It allows processes which have stopped to be automatically restarted. The processes are independent of the user currently logged in.

1. Set the PATH in the NT environment to include the Transportation Manager directory, for example, D:\tm.
2. Open a command prompt and change to the Windows system32 directory.
3. Run the following command to install the TM Process monitor as a service.

```
C:\winnt\system32\TmProcMonSrvc -Service
```
4. Run Services in the Windows Control panel (or Programs > Administrative tools if you are using Windows 2000).
5. Scroll down and highlight the service Transportation Manager Process Monitor.
6. Click Startup.
7. Select Automatic as the start type.
8. In the Log On As field, select This Account.
9. Select a user and password to a local account which has permissions to start services.
10. Run TM Process Monitor in the Windows Control panel.
11. Select Add.
12. In Path, enter the full pathname of the executable file to monitor (see following chart).
13. In Working Directory, enter the directory where the executable is located.
14. In Program Arguments, enter any command line parameters that are passed to the executable file on startup.
15. Enter 5 in Pause After Start (seconds).
16. Enter 1 in Restart Attempts.
17. Select the Enabled check box.
18. Click OK.

The following list of services are normally launched by the process monitor. This list shows the suggested settings.

Repeat step 11 through 17 for each of these services. Substitute the variables where required.

Variables	Replacement Value
<Schema_ID>	The database user ID.
<Password>	The database password.
<dbalias>	The database alias which points to a database instance.

For all processes:

- restart attempts = 1
- pause after start = 5
- Windows style = Minimized
- Enabled = Selected

Process/Server	Path	Working Directory	Program Arguments
DSC	d:\tm\dsc.exe	d:\tm\	-m 1
API	d:\tm\apisrv.exe	d:\tm\	-user <Schema_ID> -pass <Password> -db <dbalias> -ps API
EDI	d:\tm\edisrv.exe		-user <Schema_ID> -pass <Password> -db <dbalias> -ps EDI_INOUT
Financial	d:\tm\finsrv.exe	d:\tm\	-user <Schema_ID> -pass <Password> -db <dbalias> -ps FIN
Optimizer	d:\optimizer\optserve.exe	d:\optimizer\	

Chapter 5

Installing the Web Interface

This chapter describes how to install and configure the Transportation Manager Web Interface, if you are using this program. This interface allows you to access most Transportation Manager data and functions using only a Web browser.

This chapter includes the following topics:

- Preparing to Install the Web Interface
- Installing the Web Interface
- Configuring Web Servers to Proxy Requests
- Accessing the Web Interface

Preparing to Install the Web Interface

Note: There is no language selection during the TM-Web installation or configuration. The default language will be the same as that selected during the Transportation Manager Server installation on the same machine.

To prepare for the Web Interface installation

1. Ensure that you have obtained a valid Product Installation key, and WebLogic license activation file (`isv.jar`) from Product Support (by email or floppy disk).
2. Shutdown all Transportation Manager processes and servers on this machine.
3. Shutdown the WebLogic service (WebLogic 5.1.0) from the Services applet in the Control Panel (or Programs > Administrative Tools if you are using Windows 2000) if WebLogic 5.1 was previously installed on this machine and was configured to run as a service.
4. If JRE (Java Runtime Environment) was previously installed and is not required for other applications, uninstall it using the Add/Remove Programs applet in the Control Panel.
5. If WebLogic 5.1 or 6.0 (no service pack) was previously installed, uninstall it using the Add/Remove Programs applet in the Control Panel.
6. Manually delete the WebLogic directory to remove any leftover files, for example, `D:\weblogic`.

7. If Oracle 7.3.4 or Oracle 8.1.5 was previously installed on this machine, uninstall it. Refer to the `Orac18_mig.pdf` document in the `\docs` directory on the product CD for tips on removing older versions of Oracle.
8. Install and configure the Oracle 8.1.7 client if it is not already installed.
9. The Web Interface requires DLLs found in the Transportation Manager Client installation. Ensure you have run the Setup from the `\TM` directory of the product CD before proceeding. If you will be running other Transportation Manager servers on this machine, refer to “Installing Transportation Manager Server” on page 40. (Ensure that the client installation is also selected.) Otherwise, refer to “Installing Transportation Manager Client” on page 46.
10. If JRun 2.3.3 was previously installed on this machine for Transportation Manager, uninstall it.

Note: Versions of JRun older than 2.3.3 may need to be uninstalled using the Add/Remove Programs applet in the Control Panel. You should still manually delete the JRun directory when done.

To uninstall JRun 2.3.3

1. Stop the NT service.
2. Remove the NT service by selecting Windows Start Menu > Programs > JRun > UnInstall > Remove NT Service.
3. Uninstall the JRun programs by selecting Uninstall JRun from the same menu as above.
4. Manual delete the JRun directory to remove any leftover files, for example, `D:\JRun`.

Installing the Web Interface

To begin the Web Interface installation

1. Run Setup from `\TM-Web` on the product CD.
2. The setup program will display the Welcome screen. Click Next.
3. If you accept the Software License Agreement terms, click Yes when prompted.
4. Enter the Transportation Manager Product key when prompted. Click Next.
5. The setup program will check if the correct version of WebLogic has already been installed. If not, the program will display a message indicating which products it needs to install. If prompted with this message, click Next.
6. Click Yes or No when prompted with "Do you wish to run WebLogic as a service?". (Yes is recommended.)
7. Enter the name of the machine that will be running the DSC. Click Next.
8. Enter the database connection information. Defaults are taken from the DSC settings, if configured. Click Next.
9. Modify the JDBC connection settings, if required. This setting represents the number of simultaneous connections open to the database server.

Note: i2 recommends leaving the minimum at 10 and setting the maximum to between 50% and 75% of your total number of possible users. If the number is set too low, users may have to wait for connections to become available. If set too high, you will require more database connection licenses and RAM.

10. Click the *Next* button after you set these values.
11. Modify the RAM settings if required. The defaults are usually correct if no other programs are running on this system. Otherwise, you may want to reduce the RAM settings by 50% or more. Click *Next*.
12. Modify the Computer Name information if required. Click *Next*.
13. If the correct version of WebLogic is already installed on this system, skip to “To complete the Web Interface installation.” Otherwise, the WebLogic install will begin now.

To install WebLogic

1. The program will display the WebLogic splash screen. Select English as the install language and click *OK* to continue. Other languages will not work with Transportation Manager at this time.
2. The program will display the Welcome screen. Click *Next*.
3. If you accept the Software License Agreement terms, select *Yes* and click *Next* when prompted.
4. Click *Next* to accept the default Server Install Set.
5. When prompted, change the BEA Home directory to <drive letter>:\weblogic\bea, for example D:\weblogic\bea. Do not use the suggested default. Only \weblogic\bea under the root directory will work. The drive letter is your choice.
6. Click *Next*.
7. Enter a new product installation directory, for example D:\weblogic. Again, do not use the default, but enter \weblogic for the appropriate drive.
8. Click *Next*.
9. Click *Next* to accept the Default Server Configuration settings.

Note: Do not change the Listen Ports at this time. They should be reconfigured later if required. Refer to “Changing the WebLogic Ports” on page 62.

10. When prompted to install the WebLogic server as a service, always select *No*. i2 creates its own service as part of the installation.
11. Click *Next*.
12. Enter a system password of at least eight characters and re-enter it in the verify window. You will not need to use this password again.
13. Click *Install* to begin installing the WebLogic files.
14. Click *Done* to complete the WebLogic installation when prompted.

To complete the Web Interface installation

1. The program will now install the Transportation Manager files and classes into the WebLogic directory.

2. Click Finish to complete the installation. It is recommended that you reboot the system.

To install the WebLogic License

1. Copy the `isv.jar` license activation file you received from Product Support to the `\weblogic\bea` directory, for example, `D:\weblogic\bea`. You should overwrite any existing instance of the file.
2. Run the `ISVInstall.bat` program in the `\weblogic\bea` directory to install the license.

To start the WebLogic server

1. If you did not select WebLogic to run as a service during the TM-Web installation, then create a shortcut to the `startmarkham_domain.bat` file found in your `\weblogic\config\markham_domain` directory.
2. Ensure that the DSC is running on the specified system.
3. Start the server using the shortcut or the Windows services applet, depending on your configuration. The service name is `TMWebService`. It will take several minutes to start up as it compiles and prepares the Java code.

To tell when it is finished, use the Task Manager program. While loading, the `java.exe` process (or `beasvc.exe` if running as a service) will use a lot of CPU time and grow in memory usage. Once finished, the memory usage will stabilize.

Changing the WebLogic Ports

The default installation sets the WebLogic listener ports to 7001 and 7002. You do not usually need to change these port numbers unless you have a conflict with an application already in use. In the recommended configuration, these ports are only used to forward requests by proxy from the web server to the web application server. Therefore, they are not open to users outside the private network if the outside firewall is only open for http and/or https requests.

Note: Do not attempt to change any other configuration parameters manually. You must reinstall TM-Web if you wish to change any other settings.

To change the WebLogic ports

1. Stop the `TMWebService` service or the command window, depending on your chosen configuration.
2. Edit the `application.properties` file in your `\weblogic\config\markham_domain\applications\tm\tm_misc\config` directory.
3. Change the line near the beginning that says `WebLogicServerPort=7001` and set it to the desired port number.
4. Save the file and exit.
5. Edit the `config.xml` file in your `\weblogic\config\markham_domain` directory using Notepad.
6. Search out and change the following two lines and set your desired port number. These two numbers should not be set the same.

```
ListenPort="7001"
```

```
ListenPort="7002"
```

7. Save the file and exit.
8. If you are using an IIS web server to proxy requests, you will have to manually edit the `WebLogicPort=7001` line in the `iisproxy.ini` file on the web server and restart it. This should be done after the web server is configured as described in the next section.
9. If you are using an iPlanet web server to proxy requests, you will have to manually edit both occurrences of the `WebLogicPort=7001` line in the `obj.conf` file on the web server and restart it. This should be done after the web server is configured as described in the next section. In this case, the port number should be set the same for both lines (one is for browser requests, and the other is for XML API clients).
10. If you are using XML APIs, and will not be proxying requests through a web server, you will need to use the modified WebLogic port setting in your URL and also modify the `testXML` test client in the Transportation Manager tools directory if you are using it (described later in this document).
11. Be sure to modify the URL for any browser clients if requests are sent directly to the WebLogic server and not through a web server.

Configuring Web Servers to Proxy Requests

It is important to implement the appropriate level of security using firewalls and SSL (Secure Socket Layer) if the application is to be deployed outside the immediate LAN. This could include the Internet, or a WAN where other networks are not given full access to the local network. Your own technical people or consultants need to design and execute the web application deployment, in order to address your specific security requirements.

It is possible to run the Web Interface using only WebLogic and a browser (plus a DSC). However, the normal configuration would be to have an independent web server outside the firewall that redirects the appropriate web traffic to the WebLogic Server within the private network. The following are instructions pertaining to Microsoft Internet Information Server (IIS) and the iPlanet Web Server. Other web servers support this functionality, but have not been specifically tested.

IIS Web Servers

If you have set up IIS to proxy requests for an earlier version of Transportation Manager, perform the following steps to clean out the old settings before configuring for the new release.

To remove IIS proxy settings for the prior version

Note: When it is time to configure for the new version, be sure to use the latest proxy DLLs and .INI files as described later in the section on configuring IIS.

1. Delete the `\tm` folder and all its contents under your `\InetPub\wwwroot` directory, for example, `c:\InetPub\wwwroot\tm`. It is no longer required on the IIS server.

2. On your IIS server, Select Windows Start Menu > Programs > Windows NT 4.0 Option Pack > Microsoft Internet Information Server > Internet Service Manager (or Programs > Administrative Tools > Internet Services Manager if using Windows 2000).
3. If it is not expanded already, click on the plus sign beside Internet Information Server in the left pane, and then click on the plus sign beside the server name.
4. Right click on the default web site and select Properties.
5. Click on the Home Directory tab, and then the Configuration button.
6. Remove any entries for the .gsm or .wforward extensions by clicking on the line item for the extension and clicking the Remove button.
7. Click OK to exit back to the main Manager screen
8. Remove any virtual directories named tm under the default web site in the left pane.
9. Exit the program.

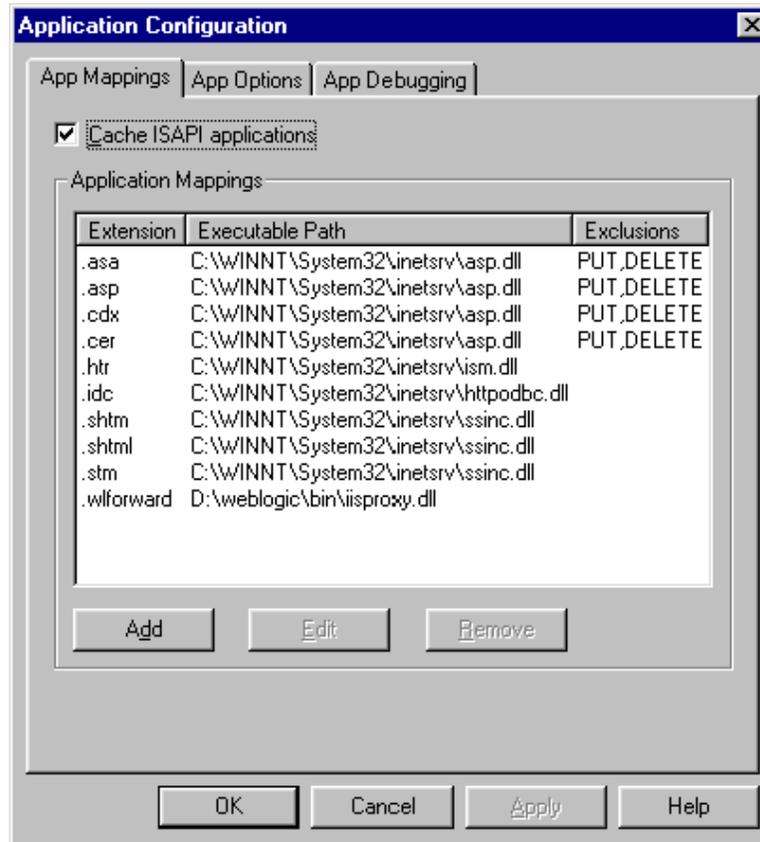
To configure IIS to forward requests to the WebLogic server

Only follow this process if you are using the IIS Web server.

1. Ensure that IIS is installed at Version 4 (Option pack 4) for Windows NT or Version 5 for Windows 2000 and running properly. If not, apply necessary upgrades and any recent security patches. You should be able to access the default page from a web browser before continuing.

Note: Framepage should not be installed on the IIS server.

2. If you are running the Web server on a separate machine, copy the current `iisproxy.dll`, `iisforward.dll`, and `iisproxy.ini` files from your `weblogic\bin` directory on the WebLogic server to your IIS scripts folder on the current machine (for example, `C:\InetPub\Scripts`).
3. Select Windows Start Menu > Programs > Windows NT 4.0 Option Pack > Microsoft Internet Information Server > Internet Service Manager (or Programs > Administrative Tools > Internet Services Manager if using Windows 2000).
4. If it is not expanded already, click on the plus sign beside Internet Information Server in the left pane, and then click on the plus sign beside the server name.
5. Right click on the default web site and select Properties.
6. Click on the Home Directory tab, and then the Configuration button.
7. Click Add.
8. Type in the path to `iisproxy.dll` in the Executable field, for example, `D:\weblogic\bin\iisproxy.dll` or `C:\InetPub\Scripts\iisproxy.dll`. This file is installed with WebLogic, and the configuration file `iisproxy.ini` is created and edited during the TM-Web install.
9. Type in `wforward` for the Extension field and click OK.
10. Your screen should look similar to the following screen shot. Note the new line for the `.wforward` extension.



11. Click Apply, and then OK to finish adding the mapping.
12. Click on the ISAPI Filters tab.
13. Click Add.
14. Enter WebLogic as the filter name.
15. Enter the path to `iisforward.dll` in the Executable field, for example,
`D:\weblogic\bin\iisforward.dll` or
`C:\InetPub\Scripts\iisforward.dll`.
16. Click OK.
17. Click Apply.
18. Click OK to finish.
19. Reboot the server.

Note: Additional documentation is available on the WebLogic web site at:
<http://edocs.bea.com/wls/docs60/adminguide/isapi.html>

iPlanet Web Servers

To configure iPlanet 4.1 Enterprise Edition to forward requests to the WebLogic Server

Note: This process should also work for NES (Netscape Enterprise Server) Version 3.6.3, but is no longer supported or tested. On NES, the default install directory is \Netscape\SuiteSpot.

1. Ensure that iPlanet is installed at Version 4.1 (Service Pack 8) and running properly. If not, apply necessary upgrades. You should be able to access the default page from a web browser.
2. Ensure that the Transportation Manager Web Interface (TM-Web) software (including WebLogic) has been installed as instructed in the **Transportation Manager Installation Manual**. This will usually be done on a different machine from iPlanet, but this is not a requirement.
3. On the WebLogic server, use Explorer to navigate to the `weblogic\bin` directory (for example, `D:\weblogic\bin`) and locate the `proxy36.dll` file.

Note: If using iPlanet on UNIX, contact i2 Support. We can provide the UNIX plug-in (found under `weblogic/lib` of a UNIX WebLogic install). It is a shared object (.so), not a DLL, and is not included with your NT version of WebLogic, which is provided on the Transportation Manager product CD.

4. Copy the `proxy36.dll` file (or the `.so` file for UNIX users) to the `\Netscape\Server4\plugins` directory on your iPlanet server, for example, `D:\Netscape\Server4\plugins`.
5. On the WebLogic server, use Explorer to navigate to the `weblogic\Connectors\iPlanet` directory, for example, `D:\weblogic\Connectors\iPlanet`.
6. Copy the `obj.conf` file to a file called `obj_tmgr.txt`.
7. Edit the `obj_tmgr.txt` file and make the substitutions shown below for all occurrences of the original string.

Original String	Substitution String	Notes
<code>D:/Netscape/Server4</code>	Your web server path – no change required if it is the same on your system.	Note the <u>forward slashes</u> instead of the usual backslashes for NT file paths.

Original String	Substitution String	Notes
MyWebServer.i2.com	hostname of your iPlanet server	Under \NetScape\Server4 on your web server, there will be two directories starting with "https-". One of them contains your hostname. If this hostname includes a fully qualified domain (for example MyWebServer.i2.com), you will need the fully qualified name in your substitution string.
WebLogicServer.i2.com	the fully qualified hostname name of your WebLogic server	for example, WLServer1.i2.com.

8. Save the file.
9. On the iPlanet server, save a copy of the obj.conf file as a backup. This file is found under the \Netscape\Server4\https-<your hostname>\config directory, for example, D:\Netscape\Server4\https-MyWebServer.i2.com\config.
10. On the iPlanet server, edit the obj.conf file and append all the text from the obj_tmgr.txt file you previously edited to the end of the obj.conf file.
11. Save the obj.conf file.
12. Restart your iPlanet Web Server. If it won't start, check the \logs directory under the \Netscape\Server4\conf\https-<your hostname>\ directory. The problem is likely found in the obj.conf file and you may have to revert to your backup copy and redo your edits.

Note: Additional documentation is available on the WebLogic web site at <http://www.weblogic.com/docs51/admindocs/nsapi.html>. This was written for NES (Netscape Enterprise Server), but also pertains to iPlanet, except for the default install directory.

Other Web Servers

Additional documentation about configuring proxy plug-ins for various web servers is available at the WebLogic web site at:
<http://edocs.bea.com/wls/docs60/adminguide/index.html>

Accessing the Web Interface

The Web Interface is accessed using a compatible browser version (of Internet Explorer) or an XML client (see the Transportation Manager API Reference Manual). Access is usually through a standard web server such as Microsoft Internet Information Server, or iPlanet Web Server. The IIS and iPlanet configuration instructions and templates allow the web server to proxy any URL requests for tm/ or tmXML/ documents to the WebLogic server.

It is also possible to access the WebLogic server directly, if desired, assuming that the WebLogic socket (default = 7001) is not filtered out by a firewall.

To access the Web Interface through a web server

1. Launch the browser program.
2. Type in the appropriate web URL in the form `http://<server name>/tm/`, for example, `http://mywebserver/tm/`. Note that the `<server name>` may be preceded by "www" if the application is being deployed over the Internet.

Note: The trailing / is required if accessing through IIS.

To access the Web Interface directly through the WebLogic server

1. Launch the browser program.
2. Type in the appropriate web address in the form `http://<server name>:7001/tm`, for example, `http://mywebserver:7001/tm`. The number following the server name and preceded by the colon is the default socket number for the WebLogic server.

Chapter 6

Testing the Servers

This chapter describes how to test the Transportation Manager servers. It includes the following topics:

- Testing General Client/Server Connectivity
- Testing Synchronous DSC-based Servers
- Testing Asynchronous DSC Servers
- Testing Zip/Postal Codes
- Testing Email and Fax Connectivity
- Testing the Web Interface
- Testing Oracle Objects
- Testing SAP Integration Servers

Testing General Client/Server Connectivity

If you are having connectivity problems, first check your general client/server connectivity.

To check general connectivity

1. Ensure that the DSC process is running without errors.
2. Use `ping` to check the TCP/IP connectivity between machines. Ensure that the network is able to quickly resolve host names if you have set up this function.
3. Check Oracle connectivity between the Oracle Server and any systems using the Oracle client by typing the following command from a DOS prompt:

```
tnsping <dbalias>
```

where <dbalias> is the alias defined for the database instance.

Testing Synchronous DSC-based Servers

Servers in the following section are defined in the `singlehost.rsp` file, are monitored within the DSC, and automatically start whenever they are required to fulfill a client request. When you click the Shutdown button, the DSC will automatically stop all these servers. This ensures that the database is left in a consistent state.

Note: The DSC must be started before performing any of the following tests.

Administration Server

This server authenticates client accounts when users log on to Transportation Manager.

Business Object Server

This server is used during transactions with Transportation Manager and the database.

Testing the Routing and Rating Server

This server calculates rates based on specific variables within Transportation Manager. You configure it using the `ConfigApplet` program in the Transportation Manager directory.

To test this server, rate a shipment using Transportation Manager.

To rate a shipment

1. From the Load Build tab, click the Unassigned Shipment Legs tab.
2. Right-click a shipment leg ID and select Rate from the shortcut menu.
3. Click Rate. If you get a result other than “Server could not be found”, this indicates that the Rating engine is running properly.

Distance Calculation Server

This server calculates the distance between two points. It can interface with PC*Miler, TDServer, Rand McNally MileMaker, or the i2 Distance Engine.

To test this server, check the Distance/Transit Time using Transportation Manager.

To check the Distance/Transit Time

1. In the Load Build module, click the Unattached Shipment Legs tab or the Unassigned Shipments Legs tab that contains data.
2. Right-click a shipment leg ID and select Distance/Transit Time from the shortcut menu.

The distance and transit times appear in the far right columns of the dialog box.

Override Defined?	Point B ID	Address of B	Override ID	Distance	Transit Time
N	DETROIT	10000 ROSA PAN/A		241 MILES	4.62 HRS

Testing the Report Server

This server uses a Crystal Reports runtime engine to process reports from the Transportation Manager. You can print the reports or display them locally using the viewer.

To test this server, run a report from Transportation Manager.

To run a report

1. Select Reports from the menu bar.
2. Select a report group, for example, Entity Reports.
3. Select a report from the list and choose the desired Print Mode: Preview or Print.
4. Click Print to display or print the report.

Testing the XML Server

This server handles requests from an XML client. Information on building an XML client that is compatible with Transportation Manager can be found in the Transportation Manager API Reference Guide.

You can test the servers using your own XML client, or the test client provided in the tools directory. The following section describes how to use the test client.

Note: Access is done through the XML servlet in the web application. Ensure that the web application server is running before submitting your request. Also ensure that the web server is running, if applicable to your environment.

To test the XML server using the test client

1. Ensure you have installed a compatible Java Runtime Environment (version 1.2.2 or higher). JRE version 1.3.1 is provided on the product CD for your convenience in the \common\jre directory. The java program is added to your system path during installation.

2. Ensure you have installed the 'tools' component for Transportation Manager. This happens by default when you install servers, or if you selected Typical to install your client.
3. Open an Explore window in the tools directory of transportation manager, for example, `D:\tm\tools`.
4. Left-click once on `RetrieveCustomer.xml` to highlight this file.
5. Press shift and right-click on this file to bring up the file options dialogue and select Open With.
6. Select Notepad to edit the file.
7. Substitute a valid customer code for BIGCO and save the file.
8. If desired, repeat the same procedure for `RetrieveDC.xml` and substitute a valid Distribution Center for ONT-DC.
9. Save the file.
10. Edit the `testXML.bat` batch command file and substitute your WebLogic hostname in place of `<hostname>`. Be sure to remove the `<angle brackets>` when performing the edit.

Note: Alternatively, you can test the XML server through your web server by using its hostname instead of the WebLogic hostname, and removing the `:7001` string which specifies the WebLogic port number.

11. Open a command window in the tools directory.
12. Enter the following command:

```
testXML retrievecustomer.xml
```
13. The DSC will automatically start the XMLServer process as the WebLogic server processes the request through the XML API Servlet. You should see a long string of text returned, representing the Customer API data. If the string was edited incorrectly in the `RetrieveCustomer.xml` file, you will get a much shorter string returned with a tag that says `<Message>Object Not found.</Message>`.
14. If desired, repeat the command for `RetrieveDC.xml`.

Testing Asynchronous DSC Servers

You use `singlehost.rsp` to define the servers in the following section. These servers are monitored within the DSC, but you must start the server manually using the shortcut or through the Transportation Manager Process Monitor. When you click the Shutdown button, the DSC will automatically stop all these servers except the Optimizer server. This ensures that the database is left in a consistent state.

Note: The DSC must be started before performing any of the following tests.

Auto Load Tender Server

This server automatically tenders loads using rate shop and user-defined criteria. It can cancel and re-tender a load to another carrier after a predefined period has elapsed or the tender is rejected.

To test this server, automatically tender a load in Transportation Manager. Only carriers configured to accept tenders through fax, email, or EDI will qualify for auto tendering.

CAUTION: The following steps can actually send a tender to a carrier, depending on your configuration.

To automatically tender a load

1. Manually start the Auto Load Tender server.
2. Within Transportation Manager, select Auto Tender Enabled on the Shipment tab of Global Defaults.
3. On the Load Processing tab, right-click a load and select Start Auto Tendering

Testing the EDI Server

This server administrates the inbound and outbound EDI Transactions.

To test the EDI server

1. Ensure that you have manually started the EDI server(s).
2. Log on to Transportation Manager as the administrator (usually VENTURE).
3. From the Environment tab, select Services, then EDI.
4. Ensure that the EDI servers are active.

“No items found in this group” indicates that no EDI servers are available.

Financial Server

This server processes the financial information for Transportation Manager. You test it by issuing a financial server request in Transportation Manager.

To issue a Financial server request

1. Manually start the Financial server.
2. Click the Financials tab in Transportation Manager.
3. From the Tools menu, select Generate A/P Accruals, then click OK.
4. Click Request Queue on the toolbar and monitor the request queue for the financial server.
5. After processing, the status will change from Wait to Completed if the financial service is active. Press the F5 key to update the display if necessary.

Transportation Optimizer Server

This server optimizes loads for Transportation Manager. To test it, check that the Optimizer servers are registered, then send shipments to Optimizer.

To check that the Optimizer servers are registered

1. Manually start the Optimizer Server.
2. Log on to Transportation Manager as the administrator, usually VENTURE.
3. Click the Setup tab, then the Environment tab.

4. Under Services, double-click Optimizer, then double-click Servers. The server registers itself here when it is started and unregisters itself when it is shut down. If it is registered, you can send shipments to Optimizer.

To send shipments for optimization

1. From the Load Build tab, select the Unassigned Shipment Legs tab. If there are no shipment legs attached to the current plan, attach one from the Unattached Shipment Legs tab.
2. Right-click a shipment and choose Select for Optimization.
3. Click the Optimize button on the toolbar.
4. Click the Optimizer Result button on the toolbar.
5. Wait for the server to return a result. This can take several minutes.

Testing the API Server

You do not define this fully asynchronous server in the `singlehost.rsp` file, nor is it monitored within the DSC. You must start the API server manually, using the shortcut provided, or through the Transportation Manager Process Monitor. However, the API Server does communicate with the DSC as a client, in order to request rating and distance calculation services. Therefore, a DSC process must be running on the same machine.

The API server provides a CORBA interface with other systems. An interface definition (IDL) is provided with Transportation Manager.

To test the API server

1. Ensure that the DSC has been started. If you are using the VisiBroker Naming service, ensure that it is started.
2. Ensure that you have manually started the API server.
3. Start the flat file driver using the shortcut created during previous installation steps.
4. Select Connectivity Dialog from the View menu.
5. Click Connect. A message should appear indicating that a connection has been established to the server.
6. Edit `Getcust.txt` and enter a valid customer ID, for example, PRIMAX.
7. Open `Getcust.txt` in the Venture File Driver GUI.
8. From the Action menu, select Run.
9. From the View menu, check the Transaction Display option for the output and any errors.

Testing Zip/Postal Codes

Zip/postal codes are set up in a separate schema such as `itlstm_pstl` to facilitate sharing across multiple user schemas. This also reduces backup and recovery times for dynamic user data.

There is no server associated with this function. The following test checks that the privileges and synonyms have been set up properly.

To test zip/postal codes

1. Log on to Transportation Manager.
2. From the Setup tab, click the System tab.
3. Click Countries. If an error appears, the zip/postal codes have not been set up properly.
4. To check the availability of codes for a specific country, check the Postal Records Available column in the right pane.

Testing Email and Fax Connectivity

The system can be configured to send load tenders via email, fax, or both. It is recommended that you test your email and fax connectivity before attempting such a load tender to help isolate any potential problems.

To test email and fax connectivity

1. Ensure that all required software has been installed and configured.
2. Ensure that the `MapiTransport` and `NativeNotes` parameters are properly configured in the `RPT` parameter set to match your email and fax software.
3. Make sure there are no other report servers running. Normally, only one DSC process is used, and this is the machine where the Report Server will start itself.
4. Start the email client program (Microsoft Messaging or Notes) if it is not already started.
5. Test an email or fax message sent through the email server to verify that the client is properly configured. Some examples of email strings for sending messages to a fax server are shown below.
6. Ensure that the DSC program is running.
7. Open a command window in the Transportation Manager directory. For example, `D:\tm`.
8. Run the `CmdTest` program to send a report (for example, the Hub report) to the email or fax server as an attachment, as shown below:

```
tools\cmdtest local x M hub 1 Y Y Y *
```
9. Press the Enter key when prompted with `Enter Cc List`.
10. Enter any text string when prompted with `Enter Body` on a line. This will be the body of the email or fax message.
11. The next prompt is `Enter To List`. Your input depends on whether you want to test the email or fax connection. For email, the input format would be:
`[email:<recipient>]`, for example, `[email:John Smith]`.
Some email servers may require you to fully resolve the email address, for example, `John_Smith@mycompany.com`.

To send a message to a fax server, the input will depend on the fax server being used. Some examples are shown in the table below.

Fax Server	"To List" Format	Example
FaxMaker	[faxmaker:<telephone #>]	[faxmaker:555-1212]
Fax for Domino	[<name>@<tel #>@<fax domain>]	[John Smith@555-1212@faxdom1]
VSI-FAX	[fax:<telephone #>]	[fax:555-1212]

Once Enter is pressed, the Report Server will start up, if it is not already running, and the various status messages will display in the command window. If successful, the report will have been sent to the email or fax destination specified. If the test failed, you should increase the report server error logging level to 2 using the `servconfig` program to modify the RPT parameter set and rerun the test to obtain details of the cause of the failure.

Once the `CmdTest` has succeeded, you are ready to test a fax or email Load Tender within the application, as described in the User Manual.

Testing the Web Interface

The Web Interface provides a browser interface to Transportation Manager data. You can make online queries and remote updates to the system, within the constraints of security and data integrity.

For more information, refer to "The Web Interface" in the *User Manual*.

Environment

Web components are mostly a collection of Java classes run on a Web application server using a `Servlet` engine. You can use any compatible Web browser for the Web Interface. The client machine must have the necessary TCP/IP and firewall access.

To test the Web Interface

1. Ensure that the Web server and the DSC have been started on their respective machines.
2. Ensure that the WebLogic server has been started using the shortcut you created, or by starting the `TMWebService` from the Windows services applet.
3. Use a Web browser to open the login page on the Web server. Refer to "Accessing the Web Interface" on page 67.

Testing Oracle Objects

After running any script for an Oracle Database, you may see `INVALID` packages, especially with a `PUB_ADDR_PCK` package. If this package is `INVALID`, compile it and ensure there are no errors.

Check the object status by connecting to the database using an SQL client such as SQL*Plus. Use the appropriate schema ID and password.

To test the Oracle Objects

1. Connect to the database using the Transportation Manager schema ID.
2. Enter the following SQL command to check the user objects:


```
select * from user_objects where status <> 'VALID';
```

 This will show any packages that are not valid, for example:


```
PUB_ADDR_PCK
```
3. Compile any packages that are not valid, for example:


```
alter package pub_addr_pck compile;
```
4. Note any errors when compiling.
5. Compile any views that are not valid using `@recompile`.

Testing SAP Integration Servers

The following servers are all asynchronous and must be started manually using a shortcut or the Transportation Manager Process Monitor. Only the `TMTtoSAPSRvr` server is defined in the `singlehost.rsp` file.

When the Shutdown button is clicked, the DSC will automatically stop all of these servers except `SAPtoTMIDocSrvrNoMQ`. This is the only one of these servers not monitored in the DSC.

These servers all use their own internal API server (no Orbix or VisiBroker required), and connect to the DSC for services such as Distance Calculation and Routing & Rating.

Note: The DSC must be started before performing any of the following tests.

Testing SAPtoTMIDocSrvrNoMQ

`SAPtoTMIDocSrvrNoMQ` is an SAP RFC Server program which allows you to send IDocs from SAP to Transportation Manager. It replaces the `VSCOM` process, which used to perform this function. Specific functions performed by this program are as follows:

- receives location master IDocs (TPSLOC01) from SAP and starts the corresponding Transportation Manager APIs to create, update, or delete Transportation Manager entities
- accepts shipping planning request IDocs (TPSDLS01) and starts the corresponding Transportation Manager APIs to create, update, or delete Transportation Manager Transport Orders
- accepts Load Confirmation IDocs (TPSSHT01) and starts the corresponding Transportation Manager APIs to confirm the built loads, stand-alone shipments, and manifests

To test SAPtoTMIDocSrvrNoMQ

1. Start the SAPtoTMIDocSrvrNoMQ server from the shortcut. Ensure that it remains operational with no errors.
2. Submit the required IDocs from SAP.

Testing SAPtoTMRfcSrvr

SAPtoTMRfcSrvr is an SAP RFC Server program that provides the remote function modules to perform address validation, rate quotation, and order splitting.

To test SAPtoTMRfcSrvr

1. Start the SAPtoTMRfcSrvr server for each required function from the shortcuts. Ensure that it remains operational with no errors.
2. Perform the required RFC calls from SAP.

Testing TMtoSAPSrvr

TMtoSAPSrvr is an SAP RFC Client program which is used to send built loads, manifests, and stand-alone shipments to SAP R/3 as SAP shipments. It replaces the VslcomSrv process, which used to perform this function.

To test TMtoSAPSrvr

1. Start the TMtoSAPSrvr server from the shortcut. Ensure that it remains operational with no errors.
2. Send the required loads, manifests, and stand-alone shipments from Transportation Manager to SAP.

Appendix A

Upgrading Databases from Version 4.2x-4.3 to Version 5.0

Introduction

This chapter provides the necessary steps for upgrading an older database from Transportation Manager version 4.2 (or later) to version 5.0. Be sure to begin at the section that represents which version you will be upgrading from.

In the event of an error during an older upgrade, do not run the scripts again on the same schema. Upgrade programs that are older than version 5.1 are not able to restart after partial completion. To correct the problem:

- Call i2 for assistance
- **or**
- Reload the schema from backup, correct the problem, and then run the upgrade.

Once you are caught up to version 5.0, see “Upgrading Existing Schemas” on page 34 for information on how to upgrade the database from version 5.0 or later to the current version.

All references to paths and directories on the product CD are valid only for the current version of the i2 TradeMatrix Transportation Manager/Optimizer CD.

Preparing for the Upgrade to 4.2.1 (from 4.2)

Follow this procedure for all schemas at version 4.2 or 4.2p1.

To prepare for the upgrade to 4.2.1 (from 4.2)

1. Make sure all preparation steps have been performed as in “To prepare for an upgrade from any version” on page 34.
2. Create a `scripts` directory on `C:\` of the NT system that has the Oracle client utilities.
3. Open the `\Common\Older DB-Upgrades\421.zip` file on the product CD using WinZip and extract the contents to `C:\temp`. Be sure to preserve the directory structure as you do this.

4. Copy the contents of C:\temp\4.2.1 DB-Upgrade on the product CD to C:\scripts for easier access from the command prompt.
5. Remove the read-only attributes from all the files and directories.
6. Open a command prompt window in C:\scripts.
7. Connect to the database as a DBA, for example:
plus33 system/manager@i2tmdb
8. Determine and make note of one data tablespace and one index tablespace for the schema to be upgraded using a command in the following format:

```
select tablespace_name from dba_ts_quotas where  
username='<Schema_ID>'
```

For example:

```
select tablespace_name from dba_ts_quotas where  
username='I2TM_CRP'
```
9. Note that the Schema ID must be in uppercase. Record the results here:
Data Tablespace _____
Index Tablespace _____
10. Verify that adequate rollback is available by determining the size of the ELMT_T table using a command in the following format:

```
SELECT bytes/1024/1024 as "ELMT_T Size (MB)" FROM  
dba_segments WHERE owner = '<Schema_ID>' AND segment_name =  
'ELMT_T';
```

For example:

```
SELECT bytes/1024/1024 as "ELMT_T Size (MB)" FROM  
dba_segments  
WHERE owner = 'I2TM_CRP' AND segment_name = 'ELMT_T';
```

Note: The Schema ID must be in uppercase.

11. Record the size of ELMT_T table here: _____
12. While still connected to the database, display the size of the rollback segments using the following command:
@rbssizes.sql
13. Record a segment below that can extend up to the size of the ELMT_T table. If there is no such segment, ask the onsite DBA to create one for explicit use during the upgrade.
Rollback Segment: _____
14. Exit from Plus33.

Upgrading to Version 4.2.1 (from 4.2)

Use the following procedure only if your database is version 4.2 or 4.2p1.

To upgrade from version 4.2 or 4.2p1

1. Open a command window in the C:\scripts directory created during the preparation steps.
2. Enter the upgrade command to begin the upgrade process. The program will check your database version and select the proper upgrade script to run.

3. Enter the Schema ID when prompted with `Schema >>`.
4. Enter the Schema Password when prompted with `Password >>`.

Note: The Schema Password might have been changed to **locked4upgrade** when you prepared for the upgrade.

5. Enter the DB Alias when prompted with `TNS Alias >>`. The program will launch another command window.
6. Enter the Data Tablespace (from the preparation steps) when prompted with:
Enter the TM Data Tablespace (Press <ENTER> for VENTURE_DATA >>.
7. Enter the Index Tablespace (from the preparation steps) when prompted with:
Enter the TM Index Tablespace (Press <ENTER> for VENTURE_INDEX >>.
8. Enter the Rollback Segment for large transactions (from the preparation steps) when prompted with:
Enter RBS for Large Transactions >>.
9. The script will now perform the object upgrades for the selected schema, recompile any invalid objects, and return to the command prompt.
10. Examine all `.LOG` files for any unusual errors and manually scan the output, for example:
11. To find all `ora-` strings recursively:

```
findstr /sni ora- *.log > error.txt
```


Alternatively, to ignore `ora-00001` errors:

```
findstr /sni ora- *.log | findstr /sniv ora-00001 > error.txt
```
12. Compress the `.LOG` files and send them to i2 Technologies for analysis.
13. From the SQL prompt, check for any objects in the schema that are not valid.

```
select * from user_objects where status <> 'VALID';
```

Preparing for the Upgrade to 4.2.2 (from 4.2.1)

Follow this procedure for all schemas at version 4.2.1 or 4.2.1p1.

Notes: If you are starting here and not at the beginning of this chapter, make sure you have prepared your installation. See “To prepare for an upgrade from any version” on page 34.

If another upgrade was performed, be sure to export your schema at this point to avoid having to repeat any upgrades. See “To prepare for an upgrade from any version” on page 34 for instructions on how to do this.

To prepare for the upgrade to 4.2.2 (from 4.2.1)

1. Create a `scripts` directory on `C:\` of the NT system that has the Oracle client utilities.

2. Open the \Common\Older DB-Upgrades\422.zip file on the product CD using WinZip and extract the contents to C:\temp. Be sure to preserve the directory structure in the zip file.
3. Copy the contents of C:\temp\4.2.2 DB-Upgrade on the product CD to C:\scripts for easier access from the command prompt.
4. Open a command prompt window in C:\scripts.
5. Connect to the database as a DBA, for example:

```
plus33 system/manager@i2tmdb
```
6. Determine and make note of one data tablespace and one index tablespace for the schema to be upgraded using a command in the following format:

```
select tablespace_name from dba_ts_quotas where  
username=' <Schema_ID> '
```

For example:

```
select tablespace_name from dba_ts_quotas where  
username=' I2TM_CRP '
```
7. Note that the Schema ID must be in uppercase. Record the results here:
Data Tablespace _____
Index Tablespace _____
8. Exit from Plus33.

Upgrading to Version 4.2.2 (from 4.2.1)

Use the following procedure only if your database is version 4.2.1 or 4.2.1p1.

To upgrade from version 4.2.1 or 4.2.1p1

1. Open a command window in the C:\scripts directory created during the preparation steps.
2. Type the upgrade command in the following form to upgrade the database:

```
upgrade <Schema_ID/Password@dbalias> <data tablespace>  
<index tablespace>
```

For example:

```
upgrade i2tm_crp/i2tm_crp@i2tmdb i2tm_data i2tm_index
```

The script will now do the required object upgrades for the selected schema, recompile any invalid objects, and return to the command prompt.
3. Check the sqlerrors.txt file and report any unexpected errors to i2 support. The expected error messages are in the following table. The upgrade program generates the sqlerrors.txt file by recursively extracting errors from all log files (findstr /sni ora- *.log).

Expected Error Messages

Log File: Line	Oracle Error	Description of Error
patch42p1\upgrade_fix.log:109	ORA-01418	The specified index does not exist.
991104upgradet4003.log:301	ORA-02256	The number, type and size of referencing columns must match the referenced columns.
991117upgradet4011.log:13	ORA-01430	The column being added already exists in the table.

- If you are integrating with SAP version 3.0F or older, you will need to import the IDoc Names parameter set for compatibility with Transportation Manager. This does not apply to most installations. From a command prompt in the `c:\scripts\parameterSet\SAP30f_parm_set_upgrade` directory, execute the `SAP30f_parm_set_upgrade` command as follows:

```
SAP30f_parm_set_upgrade <Schema_ID/Password@dbalias>
```

For example:

```
SAP30f_parm_set_upgrade i2tm_crp/i2tm_crp@i2tmdb
```

Preparing for the Upgrade to Version 4.3 (from 4.2.2 or 4.2.2p1)

Follow this procedure for all schemas at version 4.2.2 or 4.2.2p1.

Notes: If you are starting here and not at the beginning of this chapter, make sure you have prepared your installation. See “To prepare for an upgrade from any version” on page 34.

If another upgrade was performed, be sure to export your schema at this point to avoid having to repeat any upgrades. See “To prepare for an upgrade from any version” on page 34 for instructions on how to do this.

To prepare for the upgrade to version 4.3 (from 4.2.2 or 4.2.2p1)

- Create a `scripts` directory on `C:\` of the NT system that has the Oracle client utilities.
- Open the `\Common\Older DB-Upgrades\43.zip` file on the product CD using WinZip and extract the contents to `C:\temp`. Be sure to preserve the directory structure as you do this.
- Copy the contents of `C:\temp\4.3 DB-Upgrade` on the product CD to `C:\scripts` for easier access from the command prompt.
- Open a command prompt window in `C:\scripts`.
- Connect to the database as a DBA, for example:

```
plus33 system/manager@i2tmdb
```
- Determine and make note of one data tablespace and one index tablespace for the schema to be upgraded using a command in the following format:

```
select tablespace_name from dba_ts_quotas where
username='<Schema_ID>'
```

For example:

```
select tablespace_name from dba_ts_quotas where  
username=' I2TM_CRP'
```

7. Note that the Schema ID must be in uppercase. Record the results here:
Data Tablespace _____
Index Tablespace _____
8. Exit from Plus33.

Upgrading to Version 4.3 (from version 4.2.2 or 4.2.2p1)

Use the following procedure only if your database is version 4.2.2.

Note: Version 4.2.2p1 did not require a change to the schema or schema version number, and so remained at “Release 4.2.2 Production”.

To upgrade to version 4.3 (from version 4.2.2 or 4.2.2p1)

1. Open a command window in the C:\scripts directory created during the preparation steps.
2. Type the upgrade command in the following form to upgrade the database:
upgrade <Schema_ID/Password@dbalias> <data tablespace>
<index tablespace>
For example:
upgrade i2tm_crp/i2tm_crp@i2tmdb i2tm_data i2tm_index
The script will now do the required object upgrades for the selected schema, recompile any invalid objects, and return to the command prompt.
3. Check the sqlerrors.txt file and report any unexpected errors to i2 support. The upgrade program generates the sqlerrors.txt file by recursively extracting errors from all log files (findstr /sni ora- *.log).

Note: There are no expected error messages for this upgrade.

Preparing for the Upgrade to Version 4.3.1 (from 4.3)

Follow this procedure for all schemas at version 4.3.

Notes: If you are starting here and not at the beginning of this chapter, make sure you have prepared your installation. See “To prepare for an upgrade from any version” on page 34.

If another upgrade was performed, be sure to export your schema at this point to avoid having to repeat any upgrades. See “To prepare for an upgrade from any version” on page 34 for instructions on how to do this.

To prepare for the upgrade to version 4.3.1 (from 4.3)

1. Create a scripts directory on C:\ of the NT system that has the Oracle client utilities.

2. Open the \Common\Older DB-Upgrades\431.zip file on the product CD using WinZip and extract the contents to C:\temp. Preserve the directory structure in the zip file.
3. Copy the contents of C:\temp\4.3.1 DB-Upgrade on the product CD to C:\scripts for easier access from the command prompt.
4. Open a command prompt window in C:\scripts.
5. Connect to the database as a DBA, for example:

```
plus33 system/manager@i2tmdb
```
6. Determine and make note of one data tablespace and one index tablespace for the schema to be upgraded using a command in the following format:

```
select tablespace_name from dba_ts_quotas where
username=' <Schema_ID> '
```

For example:

```
select tablespace_name from dba_ts_quotas where
username=' I2TM_CRP '
```
7. Note that the Schema ID must be in uppercase. Record the results here:

Data Tablespace _____
Index Tablespace _____
8. Exit from Plus33.

Upgrading to Version 4.3.1 (from 4.3)

Use the following procedure only if your database is version 4.3.

To upgrade from version 4.3

1. Open a command window in the C:\scripts directory created during the preparation steps.
2. Type the upgrade command in the following form to upgrade the database:

```
upgrade <Schema_ID/Password@dbalias> <data tablespace>
<index tablespace>
```

For example:

```
upgrade i2tm_crp/i2tm_crp@i2tmdb i2tm_data i2tm_index
```

The script will now do the required object upgrades for the selected schema, recompile any invalid objects, and return to the command prompt.
3. Check the sqlerrors.txt file and report any unexpected errors to i2 support. The upgrade program generates the sqlerrors.txt file by recursively extracting errors from all log files (findstr /sni ora- *.log).

Expected Error Messages

Log File: Line	Oracle Error	Description of Error
20000307upgraddeb66630.log:8	ORA-01430	Column being added already exists in table.

Preparing to Upgrade to Version 4.3.2 (from 4.3.1)

Follow this procedure for all schemas at version 4.3.1 or 4.3.1p1.

Unique shipment numbers (known as Shipment IDs in the user interface) are now being enforced using a unique key. Therefore, the upgrade will not run if there are any existing duplicate shipment numbers in the Shipment table. Steps to check for and correct duplicate shipment numbers are included in the preparation steps detailed below.

To correct the duplication, the oldest of the duplicates will be renamed as REASG_x, where *x* is a sequence number starting at “1”. The step to detect and list the duplicates is separate from the step to correct them. If the proposed renumbering scheme is not workable, a manual restructuring by i2 DBAs will be required before the upgrade can be run.

Notes: If you are starting here and not at the beginning of this chapter, make sure you have prepared your installation. See “To prepare for an upgrade from any version” on page 34.

If another upgrade was performed, be sure to export your schema at this point to avoid having to repeat any upgrades. See “To prepare for an upgrade from any version” on page 34 for instructions on how to do this.

To prepare to upgrade to version 4.3.2 (from 4.3.1)

1. Create a `scripts` directory on `C:` of the NT system that has the Oracle client utilities.
2. Open the `\Common\Older DB-Upgrades\421.zip` file on the product CD using WinZip and extract the contents to `C:\temp`. Be sure to preserve the directory structure as you do this.
3. Copy the contents of `C:\temp\4.2.1 DB-Upgrade` on the product CD to `C:\scripts` for easier access from the command prompt.
4. Copy the contents of `\Common\older DB-Upgrades\4.3.2 DB-Upgrade` on the product CD to `C:\scripts`.
5. Open a command prompt window in `C:\scripts`.
6. Connect to the database as a DBA, for example:


```
plus33 system/manager@i2tmdb
```
7. Determine and make note of one data tablespace and one index tablespace for the schema to be upgraded using a command in the following format:


```
select tablespace_name from dba_ts_quotas where
username=' <Schema_ID> '
```

For example:

```
select tablespace_name from dba_ts_quotas where
username=' I2TM_CRP '
```
8. Note that the Schema ID must be in uppercase. Record the results here:

Data Tablespace _____

Index Tablespace _____
9. Exit from Plus33.

10. Run the `find_dups.sql` script to check for duplicate shipment numbers using the following command:

```
plus33 <Schema_ID/Password@dbalias> @find_dups.sql
```

For example:

```
plus33 i2tm_crp/i2tm_crp@i2tmdb @find_dups.sql
```
11. This command will prompt you for the `data_tablespace` (for example, `I2TM_DATA`). It then generates a text file called `find_dups.lst` which displays the oldest of the duplicate numbers, and the proposed substitution. These values will also be retained in a temporary table in the database called `tmp_shpm_num_t`.
12. If duplicates were detected by the previous step and the substitutions listed in the `find_dups.lst` file are acceptable, run the `fix_dups.sql` script to apply the corrections as follows:

```
plus33 <Schema_ID/Password@dbalias> @fix_dups.sql
```

For example:

```
plus33 i2tm_crp/i2tm_crp@i2tmdb @fix_dups.sql
```
13. This command will prompt you for the `index_tablespace` and then apply the corrections listed in `find_dups.lst`.

Upgrading to Version 4.3.2 (from 4.3.1)

Use the following procedure only if your database is version 4.3.1 or 4.3.1p1

To upgrade to version 4.3.1 (from 4.3.1)

1. Open a command window in the `C:\scripts` directory created during the preparation steps.
2. Type the upgrade command in the following form to upgrade the database:

```
upgrade <Schema_ID/Password@dbalias> <data tablespace>  
<index tablespace>
```

For example:

```
upgrade i2tm_crp/i2tm_crp@i2tmdb i2tm_data i2tm_index
```
3. The script will now do the required object upgrades for the selected schema, recompile any invalid objects, and return to the command prompt.
4. Check the `sqlerrors.txt` file and report any unexpected errors to i2 support. The expected error messages are in the following table. The `upgrade` program generates the `sqlerrors.txt` file by recursively extracting errors from all log files (`findstr /sni ora- *.log`).

Expected Error Messages

Log File: Line	Oracle Error	Description of Error
upgrade432.log:6398	ORA-01418	specified index does not exist
upgrade432.log:7296	ORA-01418	specified index does not exist

Log File: Line	Oracle Error	Description of Error
upgrade432.log:7354	ORA-00942	table or view does not exist
upgrade432.log:8530	ORA-02289	sequence does not exist

5. Be sure to analyze your schema once all upgrades are complete to ensure that your performance is not adversely affected. This upgrade in particular made many changes to the index structures. See “Analyzing the Schema and Indexes” on page 38 for further details.

Upgrading to Version 5.0 (from 4.3.2)

Follow this procedure for all schemas at version 4.3.2 or 4.3.2p1.

Due to enhancements to the status handling in the new release, you must use the existing application version to perform confirmation recovery on any unassigned shipment legs in a **Confirming** status. Likewise, loads in **Confirming** status might need to be manually returned to the prior status (for example, **Tender Accepted**), or fully confirmed using the existing application version.

Checking for Shipments and Loads with a Confirming Status

The database upgrade also performs the following check. Performing it manually in advance helps you prepare for the upgrade without disrupting most regular system activities. It is strongly recommended that you run the `chk_confirm.sql` script against your schema before attempting to upgrade either the schema or the software to see if any data preparation is required before upgrading.

To check for shipments and loads with a confirming status

1. Copy the `chk_confirm.sql` script from the `\common\Older DB- Upgrades\Confirmation Recovery - 4.3.2` folder on the product CD to `C:\temp`.
2. Open a command prompt window in `C:\temp`.
3. Connect to the schema using `sqlplus` as follows:

```
sqlplus <Schema_ID/Password@dbalias>
```

 For example:

```
sqlplus i2tm_crp/i2tm_crp@i2tmdb.
```
4. Execute the check script as follows:

```
@c:\temp\chk_confirm.sql
```

Two log files will be created and displayed on the screen: `loadconfirm.log` and `shplegconfirm.log`. If both these files say “No rows selected”, then you are ready to upgrade the database when required. Otherwise, you will need to manually correct them as described at the beginning of this section, or automatically if applicable.

Automatically Clearing Loads from Confirming Status (version 4.3.2)

A process has been provided for users of Transportation Manager to use a patched version of the 4.3.2 API to unlock loads accidentally left in this state, and to promote loads to a **Confirmed** status wherever possible.

Note: Only users of version 4.3.2 of Transportation Manager can use this functionality of the API. If you are not running version 4.3.2, you must clear loads from **Confirming** status manually.

To automatically clear loads from Confirming status (version 4.3.2)

1. Log in to the API Server machine and ensure that the API server process is not running.
2. Make a backup copy of your existing `ApiSrv.exe` and `Vffder.exe` files from the Transportation Manager directory.
3. Copy all files from the `\common\Older DB-Upgrades\Confirmation Recovery - 4.3.2` folder on the product CD to your Transportation Manager directory, for example, `D:\TM`.
4. Ensure that Orbix and the API Server have been started.
5. Open a command prompt window in the Transportation Manager directory.
6. Run the `auto_fix` command as follows:

```
auto_fix <Schema_ID/Password@dbalias> <API Server Hostname>
<TM Security User> <TM Password>
```

For example:

```
auto_fix i2tm_crp/i2tm_crp@i2tmdb myapiserver VENTURE
VENTURE
```

Note: The TM Security user must be defined with Security privileges within the application.

7. Check the `confirm.out` and `error.txt` files for any errors or status messages. The program should be able to unlock the applicable loads, even if it cannot promote them to **Confirmed** status.

Preparing to Upgrade to Version 5.0 (from 4.3.2)

After you have completed the tasks in “Checking for Shipments and Loads with a Confirming Status” on page 88 and “Automatically Clearing Loads from Confirming Status (version 4.3.2)” on page 89, you are ready to continue preparing for the upgrade to version 5.0 from version 4.3.2.

Notes: If you are starting here and not at the beginning of this chapter, make sure you have prepared your installation. See “To prepare for an upgrade from any version” on page 34.

If another upgrade was performed, be sure to export your schema at this point to avoid having to repeat any upgrades. See “To prepare for an upgrade from any version” on page 34 for instructions on how to do this.

To continue preparing for the upgrade from version 4.3.2

1. On an NT system that has the Oracle client utilities, open the \Common\Older DB-Upgrades\50.zip zip file on the product CD using WinZip and extract the contents to C:\temp. Be sure to preserve the directory structure as you do this.
2. Run Setup from the C:\temp\5.0 DB-Upgrade directory and enter the product key for this release, as described in “Overview of the Upgrading Process” on page 25.
3. Accept the default prompts and select a path to install the DB scripts, for example, C:\temp\scripts.
4. Open a command prompt window in C:\temp\scripts.
5. Connect to the database as a DBA. For example:

```
sqlplus system/manager@i2tmdb
```
6. Determine and make note of one data tablespace and one index tablespace for the schema to be upgraded using a command in the following format:

```
select tablespace_name from dba_ts_quotas where  
username=' <Schema_ID> '
```

For example:

```
select tablespace_name from dba_ts_quotas where  
username=' I2TM_CRP '
```
7. Note that the Schema ID must be in uppercase. Record the results here:
Data Tablespace _____
Index Tablespace _____
8. Exit from sqlplus.

Upgrading to Version 5.0 (from 4.3.2)

Use the following procedure only if your database is version 4.3.2 or 4.3.2p1.

To upgrade from version 4.3.2

1. Open a command window in the C:\temp\scripts directory created during the preparation steps.
2. Type the upgrade command in the following form to upgrade the database:

```
upgrade <Schema_ID/Password@dbalias> <data tablespace>  
<index tablespace>
```

For example:

```
upgrade i2tm_crp/i2tm_crp@i2tmdb i2tm_data i2tm_index
```

The script will now do the required object upgrades for the selected schema, recompile any invalid objects, and return to the command prompt.
3. Check the sqlerrors.txt file and report any unexpected errors to i2 support. The expected error messages are in the following table. The upgrade program generates the sqlerrors.txt file by recursively extracting errors from all log files (findstr /sni ora- *.log).

Expected Error Messages

Log File: Line	Oracle Error	Description of Error
upgrade50.log:7439	ORA-00942	table or view does not exist
upgrade50.log:15536	ORA-00001	unique constraint (QA_PER_RTMBL1.PK_DOMVAL) violated
upgrade50.log:19077	ORA-00942	table or view does not exist

Verifying your Database Upgrade

Log files should always be scanned for errors as shown above (using `findstr`). If any errors are found, the log file should be compressed into a zip file and sent to i2 for analysis. When performing several upgrades at one time, it is crucial that i2 support can verify the integrity of the final result by also looking at a dump of the schema structure.

To verify your database upgrade

1. From the command prompt, export the schema without any data rows. Use the `exp` command in the following format:

```
exp <Schema_ID/password@dbalias> file=<output file> rows=N
```

For example:

```
exp i2tm_crp/i2tm_crp@i2tmdb file=i2tm_crp_42norows.dmp
rows=N
```

2. Compress the export file and the `.LOG` files created above and send them to i2 Technologies for analysis.

Note: If you are using Oracle 7.3.4, substitute `exp73` for `exp` in the above commands.

Appendix B

SAP Configuration

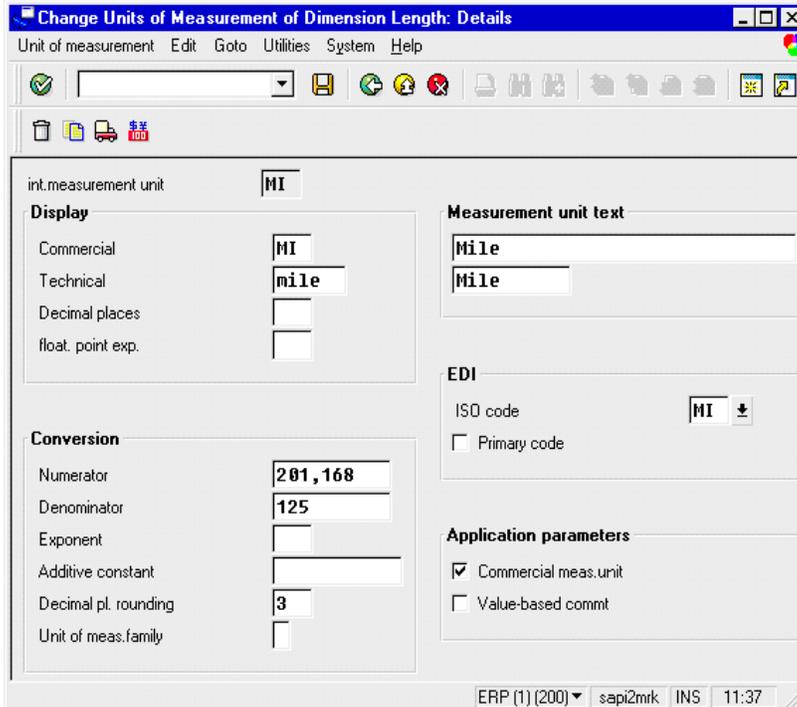
Due to extensive changes in the architecture, it is not possible to automate the migration of parameter sets and shortcuts from versions prior to 4.2.2. If you need to perform this kind of migration, please contact i2 Global Customer Solutions Management to arrange an appointment with a consultant from the i2 Integration team.

Configuring Unit of Measure (UOM) for SAP

Transportation Manager now passes mileage back to SAP (the E1TPSHH segment, fields DISTNC and DSUNIT). The distance unit of measure for miles (“MI”) must be defined for SAP to accept the IDoc.

To check the distance unit of measure “MI” in SAP

1. In the SAP client, navigate to IMG > Global Setting > Check Unit of Measures > UOM for Length.
2. Ensure that the MI unit has been created as shown below.

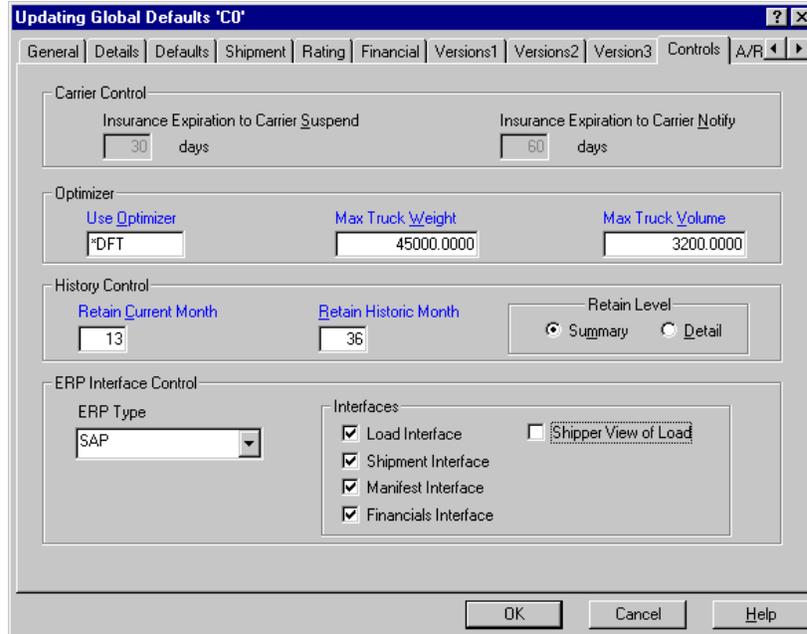


Configuring Global Defaults for SAP

You have to configure certain portions of Global Defaults in Transportation Manager to allow the interface with SAP to work.

To configure Global Defaults for SAP

1. Log on to Transportation Manager as a System Administrator, for example, VENTURE.
2. Click the System tab in the Setup module.
3. Select Global Defaults, then click the Controls tab.
4. Ensure that the ERP Type is set to SAP, and that the Interfaces for Load, Shipment, Manifest, and Financials are selected as shown below. Shipper View of Load should not be selected unless you are using a third party to manage your shipping.



Configuring IDoc Updates from SAP to Transportation Manager (SAPtoTMIDocSrvrNoMQ)

SAPtoTMIDocSrvrNoMQ is an SAP RFC Server program which allows you to send IDocs from SAP to Transportation Manager.

To configure SAPtoTMIDocSrvrNoMQ

1. Create a shortcut to SAPtoTMIDocSrvrNoMQ.exe using the following command line options:

```
-USER <Database user name>
-PASS <Database user password>
-DB <Database name>
-PS <Parameter Set>
```

Note: The default value for Parameter Set is SAPInterface.

For example:

```
D:\tm\SAPtoTMIDocSrvrNoMQ.exe -user i2tm_crp
-pass i2tm_crp -db i2tmdb -ps SAPInterface
```

2. Use servcnfg to edit the parameters of the SAPInterface parameter set as shown below.

Parameter	Description
APIDOC	the IDoc type for interfacing A/P Transactions: ACLPAY01 (use FIDCMT01 for SAP R/3 3.1H and older)
ARIDOC	the IDoc type for interfacing A/R Transactions: ACLREC01 (use FIDCMT01 for SAP R/3 3.1H and older)

Parameter	Description
APIRefInt	the refresh interval in seconds for the internal API server to refresh the domain table and master data default = 601
CustID	optional – a 3-character customer code to enable customer-specific business logic
DefaultSAPTMCompType	optional – default container type for all containers (Customer, Hub, and Transport Orders)
DefaultSAPTMCustomer	optional – Customer ID to be used for all Transport Orders created through SAP interfaces
DefaultUser	a valid Transportation Manager user, for example, *DFT
DirectShpmlntf	set to Y if SAPToTMIDocSrvr should process SAP Shipping documents (delivery notes, returns delivery, and shipping notification) as Shipments set to N if you require processing the documents as Transport Orders
DSC Host	the hostname of the machine running the DSC
GLIDOC	the IDoc type for interfacing G/L Transactions: FIDCCP01 (use FIDCMT01 for SAP R/3 3.11 and older)
IDOCMap	Optional Customer specific – set to IDOCNAMEFORxxx where such a parameter set exists of type SAPIdocNameMap
LGID	the Transportation Manager logistics group ID to use when retrieving SAP parameters from the Transportation Manager database you must also specify this in the Transportation Manager program: choose Setup > System > SAP Configuration > Properties > Logon Parameters > Logistics Group ID
OrdEntTyp	the order entry type for the Transport Order. Default is AP.
OrdEntVer	the order entry version for the Transport Order default is *DFT
OutDebugMsg	set to Y if SAPToTMIDocSrvr should display the values passed to API for processing
PlanID	optional – the plan ID to which the Transport Order should be attached default is blank
R3Release	the release of SAP R/3 with which this server connects possible values: 45B, 46D, etc. replaces R3ID parameters
SAPRfcDest	the SAP RFC Destination (same as that specified in saprfc.ini)
TMID	the Transportation Manager user ID to log onto the API server
TMPW	the Transportation Manager user password to log onto the API server

3. Ensure that the following items are configured in your `saprfc.ini` file for each Transportation Planning Point and mode.

Parameter	Description / Value
DEST=	the SAP RFC Destination if you are using the SAPtoTMRfcSrvr server, you must have an entry for RATESRVR, ADDRVALSRVR, and ODRDLVYSPLITSRVR, depending on which of these functions are being called
PROGID=	identifies the program to SAP this is usually the same as the DEST parameter
TYPE=	R
GWHOST=	name of the gateway host machine
GWSERV=	name of the gateway service. This is usually in the form <code>sapgwxx</code> where <code>xx</code> is the SAP R/3 system number.
RFC_TRACE=	0

4. Start the server using the shortcut.

Configuring IDoc Updates from Transportation Manager to SAP (TMtoSAPsRvr)

TMtoSAPsRvr is an SAP RFC Client program which is used to send built loads, manifests, and stand-alone shipments to SAP R/3 as SAP shipments.

To configure TMtoSAPsRvr

1. Create a shortcut to `TMtoSAPsRvr.exe` using the following command line options:
 - USER <Database user name>
 - PASS <Database user password>
 - DB <Database name>
 - PS <Parameter Set>

Note: The default value for Parameter Set is `SAPInterface`.

For example:

```
D:\tm\TMtoSAPsRvr.exe -user i2tm_crp -pass i2tm_crp -db i2tmdb -ps SAPInterface
```

Note: Please refer to “Configuring IDoc Updates from SAP to Transportation Manager (SAPtoTMIDocSrvrNoMQ)” on page 95 for details on configuring the `SAPInterface` parameter set.

2. Start the server using the shortcut.

Configuring RFC Requests from SAP to Transportation Manager (SAPtoTMRfcSrvr)

SAPtoTMRfcSrvr is an SAP RFC Server program which provides the remote function modules to perform address validation, rate quotation, and order splitting.

To configure SAPtoTMRfcSrvr

1. Create a shortcut to `SAPtoTMRfcSrvr.exe` for each RFC function required using the following command line options:

```
-USER <Database user name>
-PASS <Database user password>
-DB <Database name>
-PS <Parameter Set>
```

Note: The default values for the parameter set are ADDRVALSRVR, RATESRVR, or ODRDLVYSPLITSRVR.

The following is an example of a shortcut to start the rate quotation function:

```
d:\tm\SAPTOTMRfcSrvr.exe -user i2tm_crp -pass i2tm_crp -db
i2tmdb -ps RATESRVR
```

2. Use `servcnfg` to edit the parameters of the applicable parameter sets (ADDRVALSRVR, RATESRVR, or ODRDLVYSPLITSRVR) as shown below.

Parameter	Description
SAPRfcDest	the SAP RFC destination this is the same as in <code>saprfc.ini</code> example: RATESRVR
LGID	the Transportation Manager logistics group ID to use when retrieving SAP parameters from the Transportation Manager database you must also specify this in the Transportation Manager program: choose Setup > System > SAP Configuration > Properties > Logon Parameters > Logistics Group ID.

Note: Refer to “Configuring IDoc Updates from SAP to Transportation Manager (SAPtoTMIDocSrvrNoMQ)” on page 95 for details on configuring the `saprfc.ini` configuration file.

3. Start the servers using the shortcuts.

Appendix C

Installing MileMaker

To install MileMaker

1. Log on to the system as an Administrator.
2. Ensure that you uninstall any versions prior to SP32 (11-1-98).
3. Insert the installation floppy disk and CD and run `Setup.exe` from the floppy disk.
4. Ensure that the Install Example File checkbox is selected. Accept any defaults and complete the installation.
5. Set the `PATH` in the NT Environment to include the path to the MileMaker `\bin` directory. The default path is:
`C:\Program Files\Rand McNally\MMaker32\bin.`
6. If required, create a network share for the MileMaker directory. Ensure that all users have full access rights.

Appendix D

Software Ordering Information

The following is a list of suppliers for software used with Transportation Manager and not included on the product CD. If you have any questions, log on to support.i2.com or contact your account representative.

3 rd Party Software	Supplier / Phone #	Web Site
AND TD Server	order from i2	support.i2.com
Citrix MetaFrame	Citrix	www.citrix.com
Crystal Reports	Crystal Decisions (Seagate)	www.crystaldecisions.com
CZAR Rating Engine	SMC Danny Slaton: 770-486-5850	www.smcsystems.com
Kewill Ship	order from i2	support.i2.com
MileMaker	Rand McNally	www.milemaker.com
IIS	Microsoft	www.microsoft.com
iPlanet Web Server	iPlanet (Sun/Netscape Alliance)	www.iplanet.com
Fax for Domino	Lotus	for existing customers only
FaxMaker for Exchange	GFI Fax & Voice USA	www.faxmaker.com
Oracle Enterprise Server	Oracle	www.oracle.com
PC*Miler	ALK Associates Alice Elgrim: 800-573-0138	www.pcmiler.com
VisiBroker Development	Borland Software Corporation	www.borland.com

Appendix E

Database Upgrade Error Codes

The following is a list of error codes that can occur when upgrading your database. Other codes might occur. See “Troubleshooting the database upgrade” on page 37

Error Number	Description	Suggested Action
UPG-01	UPGRADE cannot interpret your command line	restart using the config=parm.txt string
UPG-02	Invalid Entry Point	valid points are 1 - 50
UPG-03	Cannot open CONFIG file specified	check permissions, make sure path is DOS compatible.
UPG-04	You are missing a mandatory parameter	rerun config and enter missing parameters.
UPG-05	Non-specific parameter value detected in configuration file	run config program — not done yet.
UPG-06	Invalid extent size	rerun config — change to a valid extent size (128K, 256K, 512K, 1024K or 1M).
UPG-07	general failure	make sure sqlplus can be invoked, check system password, check file permissions, check free space on drive
UPG-08	ora- error detected in pre-upgrade step 1	check logfile — restart using ENTRY=1
UPG-09	Oracle job system de-activated	set job_queue_processes=1 in init.ora -- restart db, then restart upgrader
UPG-10	other programs are still connected	disconnect them
UPG-11	tablespace in config file does not exist	change config, or create tablespace
UPG-12	not enough free space	resize datafiles or add datafiles to tablespace — at least 25% free space required
UPG-13	schema needs quota unlimited on tablespace	grant quota unlimited on tablespace as dba
UPG-14	rollback segment does not exist	change config or create rollback segment

Database Upgrade Error Codes

Error Number	Description	Suggested Action
UPG-15	invalid schema objects detected	try recompile — invalid count must be zero before upgrade will start
UPG-17	orphaned addresses	call i2 support — schema needs preparation / cleanup
UPG-18	error detected in pre-upgrade step 2	check logfile — restart using ENTRY=1
UPG-19	segment error detected	check logfile — follow re-entry instructions after manual fix
UPG-20	invalid m. view refresh frequency	Rerun config, change to valid frequency in hours (6, 12, or 24)
UPG-21	tablespace needs at least 50 mb in free space	allocate more space — this error only shows up on tablespaces that have no schema objects
UPG-22	non-fatal error detected	ignore for now, call customer support to fix index later
UPG-23	invalid language code	rerun config and select a valid language
UPG-25	ora- error detected in pre-upgrade sequence	check logfile and call i2 support
UPG-30	Invalid logfile autodelete setting	setting corrupted during manual edit - must be YES or NO
UPG-35	specified entry point beyond selected release level	use a lower entry point, or select a higher release level in the config file
UPG-41	current schema release level unrecognizable	schema release level setting is corrupt or at an unknown version – call i2 support
UPG-42	upgrade_to_release level unrecognizable	setting corrupted during manual edit – choose a valid setting or reinstall the db upgrade scripts
UPG-43	schema already at specified level	no further action required
UPG-44	schema downgrade not supported	release level setting corrupted during manual edit – choose a valid setting or reinstall the db upgrade scripts
UPG-50	Diagnostic warning detected	call i2 support – further analysis required – schema is OK to use for now.

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