

TravelCCM

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1 TravelCCM Documentation

1.1 Getting Started

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- [Installation](#)
- [Linking with TravelCCM](#)
- [Users Guide](#)
- [Tutorials](#)
- [Copyright and License](#)
- [Make a Difference](#)
- [Make a new release](#)
- [TravelCCM People](#)

1.2 TravelCCM at SourceForge

- [Project page](#)
- [Download TravelCCM](#)
- [Open a ticket for a bug or feature](#)
- [Mailing lists](#)
- [Forums](#)
 - [Discuss about Development issues](#)
 - [Ask for Help](#)
 - [Discuss TravelCCM](#)

1.3 TravelCCM Development

- [Git Repository](#) (Subversion is deprecated)
- [coding_rules](#)
- [Documentation Rules](#)
- [Test Rules](#)

1.4 External Libraries

- [Boost](#) (C++ STL extensions)
- [Python](#)
- [MySQL client](#)
- [SOI](#) (C++ DB API)

1.5 Support TravelCCM

1.6 About TravelCCM

TravelCCM aims at providing a clean API, and the corresponding C++ implementation, for choosing one item among a set of travel solutions, given demand-related characteristics (e.g., Willingness-To-Pay, preferred airline, preferred cabin, etc.). [N](#)

The TravelCCM C++ library implements some simple Customer Choice Models (CCM), as referenced in the literature (PhD dissertations at MIT, for instance: <http://dspace.mit.edu>).

The TravelCCM C++ library exposes a simple, clean and object-oriented, API. For instance, the `choose()` method takes, as input, both a structure representing the travel request (e.g., from Washington, DC, US, to Beijing, China, on the 25th of May) and a list of travel solutions (as provided by the Airline Schedule Manager project: <http://sourceforge.net/projects/air-sched>), and yields, as output, the chosen item.

The output can then be used by other systems, for instance to book the corresponding travel or to visualise it on a map and calendar and to share it with others.

TravelCCM makes an extensive use of existing open-source libraries for increased functionality, speed and accuracy. In particular [Boost](#) (C++ STL Extensions) library is used.

The TravelCCM project originates from the department of Operational Research and Innovation at [Amadeus](#), Sophia Antipolis, France. TravelCCM is released under the terms of the [GNU Lesser General Public License](#) (LGPLv2.1) for you to enjoy.

TravelCCM should work on [GNU/Linux](#), [Sun Solaris](#), Microsoft Windows (with [Cygwin](#), [MinGW/MSYS](#), or [Microsoft Visual C++ .NET](#)) and [Mac OS X](#) operating systems.

Note

(N) - The TravelCCM library is **NOT** intended, in any way, to be used by airlines for production systems. If you want to report issue, bug or feature request, or if you just want to give feedback, have a look on the right-hand side of this page for the preferred reporting methods. In any case, please do not contact Amadeus directly for any matter related to TravelCCM.

2 TravelCCM People

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2.5 Distribution Maintainers

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- **Debian**: Emmanuel Bastien ebastien@users.sourceforge.net (N)

Note

(N) - **Amadeus** employees.

3 Coding Rules

In the following sections we describe the naming conventions which are used for files, classes, structures, local variables, and global variables.

3.1 Default Naming Rules for Variables

Variables are named using lower-case letters and words are separated using under-score. Abbreviations, when used in variable names, are also written with lower-case letters. Examples:

- ``fft_size'`
- ``nrof_paths'`
- ``my_variable_name'`

Some variable names or parts of variable names are commonly used in several different functions and files to denote the same thing. For instance the following common names and prefixes should be used:

- `'rows'` - number of rows in a matrix
- `'cols'` - number of columns in a matrix
- `'nrof_'` - number of ...

3.2 Default Naming Rules for Files

Files are named using lower-case letters and words are separated using under-score. Abbreviations, when used in file names, are also written with lower-case letters.

Source files are named using `' .cpp'` suffix, whereas header files end with `' .h'` extension. Examples:

- `'my_file.h'`
- `'my_file.cpp'`

3.3 Default Naming Rules for Functions

Function names are named using lower-case letters and words are separated using under-score. Abbreviations, when used in function names, are also written with lower-case letters. This rule applies both to stand-alone functions as well as to member functions of classes. Example:

- `int my_function_name(int a, int b)`

3.4 Default Naming Rules for Classes and Structures

Each new word in a class or structure name should always start with a capital letter and the words should be separated with an under-score. Abbreviations are written with capital letters. Examples:

- `'My_Class_Name'`
- `'My_Struct_Name'`
- `'OFDM'`

3.5 Default Functionality of Classes

All classes that are configured by input parameters should include:

- default empty constructor
- one or more additional constructor(s) that takes input parameters and initializes the class instance
- setup function, preferably named `'setup'` or `'set_parameters'`

Explicit destructor functions are not required, unless they are needed. It shall not be possible to use any of the other member functions unless the class has been properly initiated with the input parameters.

4 Copyright and License

4.1 GNU LESSER GENERAL PUBLIC LICENSE

4.1.1 Version 2.1, February 1999

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[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

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We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

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When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

4.3 TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

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- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
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- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that,

in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

1. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

1. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

1. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

1. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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4.3.2 END OF TERMS AND CONDITIONS

4.4 How to Apply These Terms to Your New Programs

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.
```

```
You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library 'Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

Source

5 Documentation Rules

5.1 General Rules

All classes in IT++ should be properly documented with Doxygen comments in include (‘.h’) files. Source (‘.cpp’) files should be documented according to a normal standard for well documented C++ code.

An example of how the interface of a class shall be documented in IT++ is shown here:

```

/*!
 * \brief Brief description of My_Class here
 *
 * Detailed description of My_Class here. With example code if needed.
 */
class My_Class {

public:

    //! Default constructor
    My_Class(void) { setup_done = false; }

    /*!
     * \brief Constructor that initializes the class with parameters
     *
     * Detailed description of the constructor here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    My_Class(TYPE1 param1, TYPE2 param2) { setup(param1, param2); }

    /*!
     * \brief Setup function for My_Class
     *
     * Detailed description of the setup function here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    void setup(TYPE1 param1, TYPE2 param2);

    /*!
     * \brief Brief description of member_function1
     *
     * Detailed description of member_function1 here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     * \param[in,out] param3 Description of \a param3 here
     * \return Description of the return value here
     */
    TYPE4 member_function1(TYPE1 param1, TYPE2 param2, TYPE3 &param3);

private:

    bool setup_done;          /*!< Variable that checks if the class is properly
                               initialized with parameters */
    TYPE1 private_variable1; /*!< Short description of private_variable1 here
    TYPE2 private_variable2; /*!< Short description of private_variable2 here
};

```

5.2 File Header

All files should start with the following header, which include Doxygen’s \file, \brief and \author tags, \$Date\$ and \$Revisions\$ CVS tags, and a common copyright note:

```

/*!
 * \file

```

```

* \brief Brief description of the file here
* \author Names of the authors who contributed to this code
*
* Detailed description of the file here if needed.
*
* $Date: 2005-12-13 12:27:39 +0100 (mar, 13 déc 2005) $
* $Revision: 93 $
*
* -----
*
* IT++ - C++ library of mathematical, signal processing, speech processing,
*       and communications classes and functions
*
* Copyright (C) 1995-2005 (see AUTHORS file for a list of contributors)
*
* This program is free software; you can redistribute it and/or modify
* it under the terms of the GNU General Public License as published by
* the Free Software Foundation; either version 2 of the License, or
* (at your option) any later version.
*
* This program is distributed in the hope that it will be useful,
* but WITHOUT ANY WARRANTY; without even the implied warranty of
* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
* GNU General Public License for more details.
*
* You should have received a copy of the GNU General Public License
* along with this program; if not, write to the Free Software
* Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
*
* -----
*/

```

5.3 Grouping Various Parts

All functions must be added to a Doxygen group in order to appear in the documentation. The following code example defines the group 'my_group':

```

/*!
* \defgroup my_group Brief description of the group here
*
* Detailed description of the group here
*/

```

The following example shows how to document the function 'my_function' and how to add it to the group 'my_group':

```

/*!
* \brief Brief description of my_function here
* \ingroup my_group
*
* Detailed description of my_function here
*
* \param[in] param1 Description of \a param1 here
* \param[in] param2 Description of \a param2 here
* \return Description of the return value here
*/
TYPE3 my_function(TYPE1 param1, TYPE2 &param2);

```

6 Main features of TravelCCM

A short list of the main features of TravelCCM is given below sorted in different categories. Some more features and functions exist and for these we refer to the reference documentation.

6.1 Customer-Choice features

- Customer-Choice Model (CCM)

6.2 Other features

- CSV input file parsing

7 Make a Difference

Do not ask what TravelCCM can do for you. Ask what you can do for TravelCCM.

You can help us to develop the TravelCCM library. There are always a lot of things you can do:

- Start using TravelCCM
- Tell your friends about TravelCCM and help them to get started using it
- If you find a bug, report it to us. Without your help we can never hope to produce a bug free code.
- Help us to improve the documentation by providing information about documentation bugs
- Answer support requests in the TravelCCM discussion forums on SourceForge. If you know the answer to a question, help others to overcome their TravelCCM problems.
- Help us to improve our algorithms. If you know of a better way (e.g. that is faster or requires less memory) to implement some of our algorithms, then let us know.
- Help us to port TravelCCM to new platforms. If you manage to compile TravelCCM on a new platform, then tell us how you did it.
- Send us your code. If you have a good TravelCCM compatible code, which you can release under the LGPL-2.1, and you think it should be included in TravelCCM, then send it to us.
- Become an TravelCCM developer. Send us an e-mail and tell what you can do for TravelCCM.

8 Make a new release

8.1 Introduction

This document describes briefly the recommended procedure of releasing a new version of TravelCCM using a Linux development machine and the SourceForge project site.

The following steps are required to make a release of the distribution package.

- [Initialisation](#)
- [Release branch maintenance](#)
- [Commit and publish the release branch](#)
- [Create source packages \(tar-balls\)](#)
- [Upload the HTML documentation to SourceForge](#)
- [Generate the RPM packages](#)
- [Update distributed change log](#)
- [Create the binary package, including the documentation](#)

- [Upload the files to SourceForge](#)
- [Make a new post](#)
- [Send an email on the announcement mailing-list](#)

8.2 Initialisation

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://travel-ccm.git.sourceforge.net/gitroot/travel-ccm/travel-ccm travelccm
cd travelccm
git checkout trunk
```

8.3 Release branch maintenance

Switch to the release branch, on your local clone, and merge the latest updates from the trunk. Decide about the new version to be released.

```
cd ~/dev/sim/travelccm
git checkout releases
git merge trunk
```

Update the version in the various build system files, replacing the old version numbers by the correct ones:

```
vi CMakeLists.txt
vi autogen.sh
vi README
```

Update the version, add some news in the NEWS file, add a change-log in the ChangeLog file and in the RPM specification files:

```
vi NEWS
vi ChangeLog
vi travelccm.spec
```

8.4 Commit and publish the release branch

Commit the new release:

```
cd ~/dev/sim/travelccm
git add -A
git commit -m "[Release 0.5.0] Release of the 0.5.0 version of TravelCCM."
git push
```

8.5 Create source packages (tar-balls)

Create the distribution packages using the following command:

```
cd ~/dev/sim/travelccm
git checkout releases
rm -rf build && mkdir -p build
cd build
export INSTALL_BASEDIR=/home/user/dev/deliveries
export LIBSUFFIX_4_CMAKE="-DLIB_SUFFIX=64"
cmake -DCMAKE_INSTALL_PREFIX=${INSTALL_BASEDIR}/travelccm-0.5.0 \
  -DWITH_STDAIR_PREFIX=${INSTALL_BASEDIR}/stdair-stable \
  -DWITH_AIRRAC_PREFIX=${INSTALL_BASEDIR}/airsched-stable \
  -DWITH_AIRRAC_PREFIX=${INSTALL_BASEDIR}/airrac-stable \
```

```
-DWITH_TravelCCM_PREFIX=${INSTALL_BASEDIR}/travelccm-stable \
-DWITH_TravelCCM_PREFIX=${INSTALL_BASEDIR}/airinv-stable \
-DWITH_TravelCCM_PREFIX=${INSTALL_BASEDIR}/simfqt-stable \
-DCMAKE_BUILD_TYPE:String=Debug -DINSTALL_DOC:BOOL=ON \
${LIBSUFFIX_4_CMAKE} ..
make check && make dist
make install
```

This will configure, compile and check the package. The output packages will be named, for instance, `travelccm-0.5.0.tar.gz` and `travelccm-0.5.0.tar.bz2`.

8.6 Upload the HTML documentation to SourceForge

In order to update the Web site files, either:

- **synchronise them with rsync and SSH:** Upload the just generated HTML (and PDF) documentation onto the **SourceForge Web site**.

```
cd ~/dev/sim/travelccmgit/build
git checkout releases
rsync -aiv ${INSTALL_BASEDIR}/travelccm-0.5.0/share/doc/travelccm-0.5.0/html/ \
your_sf_user,travel-ccm@web.sourceforge.net:htdocs/
```

where `-aiv` options mean:

- `-a`: archive/mirror mode; equals `-rlptgoD` (no `-H`, `-A`, `-X`)
- `-v`: increase verbosity
- `-i`: output a change-summary for all updates
- Note the trailing slashes (/) at the end of both the source and target directories. It means that the content of the source directory (`doc/html`), rather than the directory itself, has to be copied into the content of the target directory.

- or use the **SourceForge Shell service**.

8.7 Generate the RPM packages

Optionally, generate the RPM package (for instance, for **Fedora/RedHat**):

```
cd ~/dev/sim/travelccmgit/build
git checkout releases
make dist
```

To perform this step, `rpm-build`, `rpmlint` and `rpmdevtools` have to be available on the system.

```
cp ../travelccm.spec ~/dev/packages/SPECS \
&& cp travelccm-0.5.0.tar.bz2 ~/dev/packages/SOURCES
cd ~/dev/packages/SPECS
rpmbuild -ba travelccm.spec
cd ~/dev/packages
rpmlint -i SPECS/travelccm.spec SRPMS/travelccm-0.5.0-1.fc16.src.rpm \
RPMS/noarch/travelccm-* RPMS/i686/travelccm-*
```

8.8 Update distributed change log

Update the `NEWS` and `ChangeLog` files with appropriate information, including what has changed since the previous release. Then commit and push the changes into the **TravelCCM's Git repository**.

8.9 Create the binary package, including the documentation

Create the binary package, which includes HTML and PDF documentation, using the following command:

```
cd ~/dev/sim/travelccmgit/build
git checkout releases
make package
```

The output binary package will be named, for instance, `travelccm-0.5.0-Linux.tar.bz2`. That package contains both the HTML and PDF documentation. The binary package contains also the executables and shared libraries, as well as C++ header files, but all of those do not interest us for now.

8.10 Upload the files to SourceForge

Upload the distribution and documentation packages to the SourceForge server. Check [SourceForge help page on uploading software](#).

8.11 Make a new post

- submit a new entry in the [SourceForge project-related news feed](#)
- make a new post on the [SourceForge hosted WordPress blog](#)
- and update, if necessary, [Trac tickets](#).

8.12 Send an email on the announcement mailing-list

Finally, you should send an announcement to travelccm-announce@lists.sourceforge.net (see <https://lists.sourceforge.net/lists/listinfo/travelccm-announce> for the archives)

9 Installation

9.1 Table of Contents

- [Fedora/RedHat Linux distributions](#)
- [TravelCCM Requirements](#)
- [Basic Installation](#)
- [Compilers and Options](#)
- [Compiling For Multiple Architectures](#)
- [Installation Names](#)
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- [Sharing Defaults](#)
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- [‘cmake’ Invocation](#)

9.2 Fedora/RedHat Linux distributions

Note that on [Fedora/RedHat](#) Linux distributions, RPM packages are available and can be installed with your usual package manager. For instance:

```
yum -y install travelccm-devel travelccm-doc
```

RPM packages can also be available on the [SourceForge download site](#).

9.3 TravelCCM Requirements

TravelCCM should compile without errors or warnings on most GNU/Linux systems, on UNIX systems like Solaris SunOS, and on POSIX based environments for Microsoft Windows like Cygwin or MinGW with MSYS. It can be also built on Microsoft Windows NT/2000/XP/Vista/7 using Microsoft's Visual C++ .NET, but our support for this compiler is limited. For GNU/Linux, SunOS, Cygwin and MinGW we assume that you have at least the following GNU software installed on your computer:

- GNU Autotools:
 - [autoconf](#),
 - [automake](#),
 - [libtool](#),
 - [make](#), version 3.72.1 or later (check version with `'make --version'`)
- [GCC](#) - GNU C++ Compiler (g++), version 4.3.x or later (check version with `'gcc --version'`)
- [Boost](#) - C++ STL extensions, version 1.35 or later (check version with `'grep "define BOOST_LIB_VERSION" /usr/include/boost/version.hpp'`)
- [MySQL](#) - Database client libraries, version 5.0 or later (check version with `'mysql --version'`)
- [SOXI](#) - C++ database client library wrapper, version 3.0.0 or later (check version with `'soci-config --version'`)

Optionally, you might need a few additional programs: [Doxygen](#), [LaTeX](#), [Dvips](#) and [Ghostscript](#), to generate the HTML and PDF documentation.

We strongly recommend that you use recent stable releases of the GCC, if possible. We do not actively work on supporting older versions of the GCC, and they may therefore (without prior notice) become unsupported in future releases of TravelCCM.

9.4 Basic Installation

Briefly, the shell commands `./cmake .. && make install` should configure, build, and install this package. The following more-detailed instructions are generic; see the `'README'` file for instructions specific to this package. Some packages provide this `'INSTALL'` file but do not implement all of the features documented below. The lack of an optional feature in a given package is not necessarily a bug. More recommendations for GNU packages can be found in the info page corresponding to "Makefile Conventions: (standards)Makefile Conventions".

The `'cmake'` shell script attempts to guess correct values for various system-dependent variables used during compilation. It uses those values to create a `'Makefile'` in each directory of the package. It may also create one or more `'.h'` files containing system-dependent definitions. Finally, it creates a `'CMakeCache.txt'` cache file that you can refer to in the future to recreate the current configuration, and a file `'CMakeFiles'` containing compiler output (useful mainly for debugging `'cmake'`).

It can also use an optional file (typically called `'config.cache'` and enabled with `'--cache-file=config.cache'` or simply `'-C'`) that saves the results of its tests to speed up reconfiguring. Caching is disabled by default to prevent problems with accidental use of stale cache files.

If you need to do unusual things to compile the package, please try to figure out how `'configure'` could check whether to do them, and mail diffs or instructions to the address given in the `'README'` so they can be considered for the

next release. If you are using the cache, and at some point `'config.cache'` contains results you don't want to keep, you may remove or edit it.

The file `<tt>'CMakeLists.txt'</tt>` is used to create the `\c 'Makefile'`

files.

The simplest way to compile this package is:

1. `'cd'` to the directory containing the package's source code and type `'./cmake .'` to configure the package for your system. Running `'cmake'` is generally fast. While running, it prints some messages telling which features it is checking for.
2. Type `'make'` to compile the package.
3. Optionally, type `'make check'` to run any self-tests that come with the package, generally using the just-built uninstalled binaries.
4. Type `'make install'` to install the programs and any data files and documentation. When installing into a prefix owned by root, it is recommended that the package be configured and built as a regular user, and only the `'make install'` phase executed with root privileges.
5. You can remove the program binaries and object files from the source code directory by typing `'make clean'`. To also remove the files that `'configure'` created (so you can compile the package for a different kind of computer), type `'make distclean'`. There is also a `'make maintainer-clean'` target, but that is intended mainly for the package's developers. If you use it, you may have to get all sorts of other programs in order to regenerate files that came with the distribution.
6. Often, you can also type `'make uninstall'` to remove the installed files again. In practice, not all packages have tested that uninstallation works correctly, even though it is required by the GNU Coding Standards.

9.5 Compilers and Options

Some systems require unusual options for compilation or linking that the `'cmake'` script does not know about. Run `'./cmake -help'` for details on some of the pertinent environment variables.

You can give `'cmake'` initial values for configuration parameters by setting variables in the command line or in the environment. Here is an example:

```
./cmake CC=c99 CFLAGS=-g LIBS=-lposix
```

See also

[Defining Variables](#) for more details.

9.6 Compiling For Multiple Architectures

You can compile the package for more than one kind of computer at the same time, by placing the object files for each architecture in their own directory. To do this, you can use GNU `'make'`. `'cd'` to the directory where you want the object files and executables to go and run the `'configure'` script. `'configure'` automatically checks for the source code in the directory that `'configure'` is in and in `'..'` . This is known as a "VPATH" build.

With a non-GNU `'make'`, it is safer to compile the package for one architecture at a time in the source code directory. After you have installed the package for one architecture, use `'make distclean'` before reconfiguring for another architecture.

On MacOS X 10.5 and later systems, you can create libraries and executables that work on multiple system types-known as "fat" or "universal" binaries-by specifying multiple `'-arch'` options to the compiler but only a single `'-arch'` option to the preprocessor. Like this:

```
./configure CC="gcc -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
           CXX="g++ -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
           CPP="gcc -E" CXXCPP="g++ -E"
```

This is not guaranteed to produce working output in all cases, you may have to build one architecture at a time and combine the results using the `'lipo'` tool if you have problems.

9.7 Installation Names

By default, `'make install'` installs the package's commands under `'/usr/local/bin'`, include files under `'/usr/local/include'`, etc. You can specify an installation prefix other than `'/usr/local'` by giving `'configure'` the option `'-prefix=PREFIX'`, where PREFIX must be an absolute file name.

You can specify separate installation prefixes for architecture-specific files and architecture-independent files. If you pass the option `'-exec-prefix=PREFIX'` to `'configure'`, the package uses PREFIX as the prefix for installing programs and libraries. Documentation and other data files still use the regular prefix.

In addition, if you use an unusual directory layout you can give options like `'-bindir=DIR'` to specify different values for particular kinds of files. Run `'configure -help'` for a list of the directories you can set and what kinds of files go in them. In general, the default for these options is expressed in terms of `'${prefix}'`, so that specifying just `'-prefix'` will affect all of the other directory specifications that were not explicitly provided.

The most portable way to affect installation locations is to pass the correct locations to `'configure'`; however, many packages provide one or both of the following shortcuts of passing variable assignments to the `'make install'` command line to change installation locations without having to reconfigure or recompile.

The first method involves providing an override variable for each affected directory. For example, `'make install prefix=/alternate/directory'` will choose an alternate location for all directory configuration variables that were expressed in terms of `'${prefix}'`. Any directories that were specified during `'configure'`, but not in terms of `'${prefix}'`, must each be overridden at install time for the entire installation to be relocated. The approach of makefile variable overrides for each directory variable is required by the GNU Coding Standards, and ideally causes no recompilation. However, some platforms have known limitations with the semantics of shared libraries that end up requiring recompilation when using this method, particularly noticeable in packages that use GNU Libtool.

The second method involves providing the `'DESTDIR'` variable. For example, `'make install DESTDIR=/alternate/directory'` will prepend `'/alternate/directory'` before all installation names. The approach of `'DESTDIR'` overrides is not required by the GNU Coding Standards, and does not work on platforms that

have drive letters. On the other hand, it does better at avoiding recompilation issues, and works well even when some directory options were not specified in terms of `'${prefix}'` at `'configure'` time.

9.8 Optional Features

If the package supports it, you can cause programs to be installed with an extra prefix or suffix on their names by giving `'cmake'` the option `'-program-prefix=PREFIX'` or `'-program-suffix=SUFFIX'`.

Some packages pay attention to `'-enable-FEATURE'` options to `'configure'`, where `FEATURE` indicates an optional part of the package. They may also pay attention to `'-with-PACKAGE'` options, where `PACKAGE` is something like `'gnu-as'` or `'x'` (for the X Window System). The `'README'` should mention any `'-enable-'` and `'-with-'` options that the package recognizes.

For packages that use the X Window System, `'configure'` can usually find the X include and library files automatically, but if it doesn't, you can use the `'configure'` options `'-x-includes=DIR'` and `'-x-libraries=DIR'` to specify their locations.

Some packages offer the ability to configure how verbose the execution of `'make'` will be. For these packages, running `'./configure -enable-silent-rules'` sets the default to minimal output, which can be overridden with `'make V=1'`; while running `'./configure -disable-silent-rules'` sets the default to verbose, which can be overridden with `'make V=0'`.

9.9 Particular systems

On HP-UX, the default C compiler is not ANSI C compatible. If GNU CC is not installed, it is recommended to use the following options in order to use an ANSI C compiler:

```
./configure CC="cc -Ae -D_XOPEN_SOURCE=500"
```

and if that doesn't work, install pre-built binaries of GCC for HP-UX.

On OSF/1 a.k.a. Tru64, some versions of the default C compiler cannot parse its `<wchar.h>` header file. The option `'-nodtk'` can be used as a workaround. If GNU CC is not installed, it is therefore recommended to try

```
./configure CC="cc"
```

and if that doesn't work, try

```
./configure CC="cc -nodtk"
```

On Solaris, don't put `'/usr/ucb'` early in your `'PATH'`. This directory contains several dysfunctional programs; working variants of these programs are available in `'/usr/bin'`. So, if you need `'/usr/ucb'` in your `'PATH'`, put it *after* `'/usr/bin'`.

On Haiku, software installed for all users goes in `'/boot/common'`, not `'/usr/local'`. It is recommended to use the following options:

```
./cmake -DCMAKE_INSTALL_PREFIX=/boot/common
```

9.10 Specifying the System Type

There may be some features `'configure'` cannot figure out automatically, but needs to determine by the type of machine the package will run on. Usually, assuming the package is built to be run on the *same* architectures, `'configure'` can figure that out, but if it prints a message saying it cannot guess the machine type, give it the `'-build=TYPE'` option. TYPE can either be a short name for the system type, such as `'sun4'`, or a canonical name which has the form CPU-COMPANY-SYSTEM

where SYSTEM can have one of these forms:

- OS
- KERNEL-OS

See the file `'config.sub'` for the possible values of each field. If `'config.sub'` isn't included in this package, then this package doesn't need to know the machine type.

If you are *building* compiler tools for cross-compiling, you should use the option `'-target=TYPE'` to select the type of system they will produce code for.

If you want to use a cross compiler, that generates code for a platform different from the build platform, you should specify the "host" platform (i.e., that on which the generated programs will eventually be run) with `'-host=TYPE'`.

9.11 Sharing Defaults

If you want to set default values for `'configure'` scripts to share, you can create a site shell script called `'config.site'` that gives default values for variables like `'CC'`, `'cache_file'`, and `'prefix'`. `'configure'` looks for `'PREFIX/share/config.site'` if it exists, then `'PREFIX/etc/config.site'` if it exists. Or, you can set the `'CONFIG_SITE'` environment variable to the location of the site script. A warning: not all `'configure'` scripts look for a site script.

9.12 Defining Variables

Variables not defined in a site shell script can be set in the environment passed to `'configure'`. However, some packages may run `'configure'` again during the build, and the customized values of these variables may be lost. In order to avoid this problem, you should set them in the `'configure'` command line, using `'VAR=value'`. For example:

```
./configure CC=/usr/local2/bin/gcc
```

causes the specified `'gcc'` to be used as the C compiler (unless it is overridden in the site shell script).

Unfortunately, this technique does not work for `'CONFIG_SHELL'` due to an Autoconf bug. Until the bug is fixed you can use this workaround:

```
CONFIG_SHELL=/bin/bash /bin/bash ./configure CONFIG_SHELL=/bin/bash
```

9.13 'cmake' Invocation

`'cmake'` recognizes the following options to control how it operates.

- '-help', '-h' print a summary of all of the options to 'cmake', and exit.
- '-help=short', '-help=recursive' print a summary of the options unique to this package's 'configure', and exit. The 'short' variant lists options used only in the top level, while the 'recursive' variant lists options also present in any nested packages.
- '-version', '-V' print the version of Autoconf used to generate the 'configure' script, and exit.
- '-cache-file=FILE' enable the cache: use and save the results of the tests in FILE, traditionally 'config.cache'. FILE defaults to '/dev/null' to disable caching.
- '-config-cache', '-C' alias for '-cache-file=config.cache'.
- '-quiet', '-silent', '-q' do not print messages saying which checks are being made. To suppress all normal output, redirect it to '/dev/null' (any error messages will still be shown).
- '-srcdir=DIR' look for the package's source code in directory DIR. Usually 'configure' can determine that directory automatically.
- '-prefix=DIR' use DIR as the installation prefix.

See also

[Installation Names](#) for more details, including other options available for fine-tuning the installation locations.

- '-no-create', '-n' run the configure checks, but stop before creating any output files.

'cmake' also accepts some other, not widely useful, options. Run 'cmake' -help' for more details.

The 'cmake' script produces an output like this:

```
-- Requires Git without specifying any version
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/travelccm-99.99.99 -DLIB_SUFFIX=64 -DCMAKE_BUILD_TYPE:S
-- The C compiler identification is GNU
-- The CXX compiler identification is GNU
-- Check for working C compiler: /usr/lib64/ccache/gcc
-- Check for working C compiler: /usr/lib64/ccache/gcc -- works
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Check for working CXX compiler: /usr/lib64/ccache/c++
-- Check for working CXX compiler: /usr/lib64/ccache/c++ -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Requires Git without specifying any version
-- Current Git revision name: dbedfae29cd555c176034d09ecff12e80f28e915 trunk
-- Requires Boost-1.41
-- Boost version: 1.46.0
-- Found the following Boost libraries:
--   regex
--   program_options
--   date_time
--   iostreams
--   serialization
--   filesystem
--   unit_test_framework
--   python
-- Found Boost version: 1.46.0
-- Found BoostWrapper: /usr/include (Required is at least version "1.41")
-- Requires MySQL without specifying any version
-- Using mysql-config: /usr/bin/mysql_config
```

```

-- Found MySQL: /usr/lib64/mysql/libmysqlclient.so
-- Found MySQL version: 5.5.14
-- Requires SOCI-3.0
-- Using soci-config: /usr/bin/soci-config
-- SOCI headers are buried
-- Found SOCI: /usr/lib64/libsoci_core.so (Required is at least version "3.0")
-- Found SOCIMySQL: /usr/lib64/libsoci_mysql.so (Required is at least version "3.0")
-- Found SOCI with MySQL back-end support version: 3.0.0
-- Requires StdAir-0.35
-- Found StdAir version: 0.38.0
-- Requires Doxygen without specifying any version
-- Found Doxygen: /usr/bin/doxygen
-- Found DoxygenWrapper: /usr/bin/doxygen
-- Found Doxygen version: 1.7.4
-- Had to set the linker language for 'travelccmlib' to CXX
-- Test 'TravelChoiceTestSuite' to be built with 'TravelChoiceTestSuite.cpp'
--
-- =====
-- -----
-- ---      Project Information      ---
-- -----
-- PROJECT_NAME ..... : travelccm
-- PACKAGE_PRETTY_NAME ..... : TravelCCM
-- PACKAGE ..... : travelccm
-- PACKAGE_NAME ..... : TRAVELCCM
-- PACKAGE_BRIEF ..... : C++ Travel Customer Choice Model Library
-- PACKAGE_VERSION ..... : 99.99.99
-- GENERIC_LIB_VERSION ..... : 99.99.99
-- GENERIC_LIB_SOVERSION ..... : 99.99
--
-- -----
-- ---      Build Configuration      ---
-- -----
-- Modules to build ..... : travelccm
-- Libraries to build/install ..... : travelccmlib
-- Binaries to build/install ..... : travelccm
-- Modules to test ..... : travelccm
-- Binaries to test ..... : TravelChoiceTestSuitetst
--
-- * Module ..... : travelccm
--   + Layers to build ..... : .;basic;bom;factory;command;service
--   + Dependencies on other layers :
--   + Libraries to build/install . : travelccmlib
--   + Executables to build/install : travelccm
--   + Tests to perform ..... : TravelChoiceTestSuitetst
--
-- BUILD_SHARED_LIBS ..... : ON
-- CMAKE_BUILD_TYPE ..... : Debug
-- * CMAKE_C_FLAGS ..... :
-- * CMAKE_CXX_FLAGS ..... : -Wall -Werror
-- * BUILD_FLAGS ..... :
-- * COMPILER_FLAGS ..... :
-- CMAKE_MODULE_PATH ..... : /home/user/dev/sim/travelccm/travelccmgithub/config/
-- CMAKE_INSTALL_PREFIX ..... : /home/user/dev/deliveries/travelccm-99.99.99
--
-- * Doxygen:
--   - DOXYGEN_VERSION ..... : 1.7.4
--   - DOXYGEN_EXECUTABLE ..... : /usr/bin/doxygen
--   - DOXYGEN_DOT_EXECUTABLE ..... : /usr/bin/dot
--   - DOXYGEN_DOT_PATH ..... : /usr/bin
--
-- -----
-- ---      Installation Configuration      ---
-- -----
-- INSTALL_LIB_DIR ..... : /home/user/dev/deliveries/travelccm-99.99.99/lib64
-- INSTALL_BIN_DIR ..... : /home/user/dev/deliveries/travelccm-99.99.99/bin
-- INSTALL_INCLUDE_DIR ..... : /home/user/dev/deliveries/travelccm-99.99.99/include
-- INSTALL_DATA_DIR ..... : /home/user/dev/deliveries/travelccm-99.99.99/share
-- INSTALL_SAMPLE_DIR ..... : /home/user/dev/deliveries/travelccm-99.99.99/share/travelccm/samples
-- INSTALL_DOC ..... : ON
--
-- -----
-- ---      Packaging Configuration      ---

```

```

-- -----
-- CPACK_PACKAGE_CONTACT ..... : Denis Arnaud <denis_arnaud - at - users dot sourceforge dot net>
-- CPACK_PACKAGE_VENDOR ..... : Denis Arnaud
-- CPACK_PACKAGE_VERSION ..... : 99.99.99
-- CPACK_PACKAGE_DESCRIPTION_FILE . : /home/user/dev/sim/travelccm/travelccmgithub/README
-- CPACK_RESOURCE_FILE_LICENSE .... : /home/user/dev/sim/travelccm/travelccmgithub/COPYING
-- CPACK_GENERATOR ..... : TBZ2
-- CPACK_DEBIAN_PACKAGE_DEPENDS ... :
-- CPACK_SOURCE_GENERATOR ..... : TBZ2;TGZ
-- CPACK_SOURCE_PACKAGE_FILE_NAME . : travelccm-99.99.99
--
-- -----
-- ---      External libraries      ---
-- -----
--
-- * Boost:
--   - Boost_VERSION ..... : 104600
--   - Boost_LIB_VERSION ..... : 1_46
--   - Boost_HUMAN_VERSION ..... : 1.46.0
--   - Boost_INCLUDE_DIRS ..... : /usr/include
--   - Boost required components .. : regex;program_options;date_time;iostreams;serialization;filesystem;unit_
--   - Boost required libraries ... : optimized;/usr/lib64/libboost_regex-mt.so;debug;/usr/lib64/libboost_rege
--
-- * MySQL:
--   - MYSQL_VERSION ..... : 5.5.14
--   - MYSQL_INCLUDE_DIR ..... : /usr/include/mysql
--   - MYSQL_LIBRARIES ..... : /usr/lib64/mysql/libmysqlclient.so
--
-- * SOCI:
--   - SOCI_VERSION ..... : 3.0.0
--   - SOCI_INCLUDE_DIR ..... : /usr/include/soci
--   - SOCI_MYSQL_INCLUDE_DIR ..... : /usr/include/soci
--   - SOCI_LIBRARIES ..... : /usr/lib64/libsoci_core.so
--   - SOCI_MYSQL_LIBRARIES ..... : /usr/lib64/libsoci_mysql.so
--
-- * StdAir:
--   - STDAIR_VERSION ..... : 0.38.0
--   - STDAIR_BINARY_DIRS ..... : /home/user/dev/deliveries/stdair-0.38.0/bin
--   - STDAIR_EXECUTABLES ..... : stdair
--   - STDAIR_LIBRARY_DIRS ..... : /home/user/dev/deliveries/stdair-0.38.0/lib64
--   - STDAIR_LIBRARIES ..... : stdairlib;stdairuiclib
--   - STDAIR_INCLUDE_DIRS ..... : /home/user/dev/deliveries/stdair-0.38.0/include
--   - STDAIR_SAMPLE_DIR ..... : /home/user/dev/deliveries/stdair-0.38.0/share/stdair/samples
--
-- Change a value with: cmake -D<Variable>=<Value>
-- =====
--
-- Configuring done
-- Generating done
-- Build files have been written to: /home/user/dev/sim/travelccm/travelccmgithub/build

```

It is recommended that you check if your library has been compiled and linked properly and works as expected. To do so, you should execute the testing process 'make check'. As a result, you should obtain a similar report:

```

[ 0%] Built target hdr_cfg_travelccm
[ 88%] Built target travelccmlib
[100%] Built target TravelChoiceTestSuitetst
Scanning dependencies of target check_travelccmtst
Test project /home/user/dev/sim/travelccm/travelccmgithub/build/test/travelccm
  Start 1: TravelChoiceTestSuitetst
1/1 Test #1: TravelChoiceTestSuitetst ..... Passed    0.02 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.30 sec
[100%] Built target check_travelccmtst
Scanning dependencies of target check
[100%] Built target check

```

Check if all the executed tests PASSED. If not, please contact us by filling a [bug-report](#).

Finally, you should install the compiled and linked library, include files and (optionally) HTML and PDF documentation by typing:

```
make install
```

Depending on the PREFIX settings during configuration, you might need the root (administrator) access to perform this step.

Eventually, you might invoke the following command

```
make clean
```

to remove all files created during compilation process, or even

```
cd ~/dev/sim/travelccmgit
rm -rf build && mkdir build
cd build
```

to remove everything.

10 Linking with TravelCCM

10.1 Table of Contents

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- [Dependencies](#)
- [Using the pkg-config command](#)
- [Using the travelccm-config script](#)
- [M4 macro for the GNU Autotools](#)
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10.2 Introduction

There are two convenient methods of linking your programs with the TravelCCM library. The first one employs the 'pkg-config' command (see <http://pkgconfig.freedesktop.org/>), whereas the second one uses 'travelccm-config' script. These methods are shortly described below.

10.3 Dependencies

The TravelCCM library depends on several other C++ components.

10.3.1 StdAir

Among them, as for now, only StdAir has been packaged. The support for StdAir is taken in charge by a dedicated M4 macro file (namely, 'stdair.m4'), from the configuration script (generated thanks to 'configure.ac').

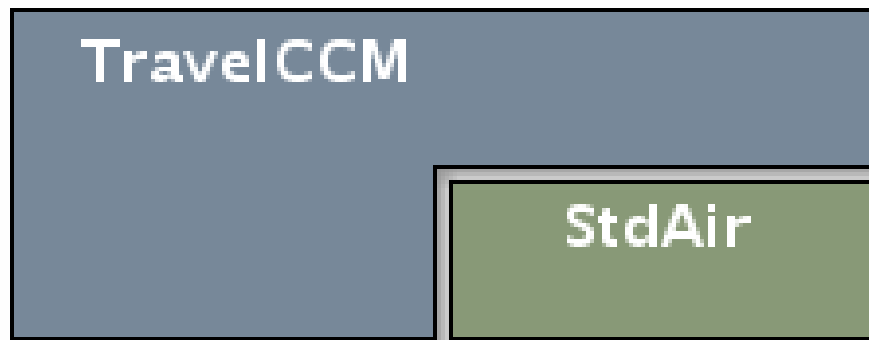


Figure 1: TravelCCM Dependencies

10.4 Using the pkg-config command

'pkg-config' is a helper tool used when compiling applications and libraries. It helps you insert the correct compiler and linker options. The syntax of the 'pkg-config' is as follows:

```
pkg-config <options> <library_name>
```

For instance, assuming that you need to compile an TravelCCM based program 'my_prog.cpp', you should use the following command:

```
g++ `pkg-config --cflags travelccm` -o my_prog my_prog.cpp `pkg-config --libs travelccm`
```

For more information see the 'pkg-config' man pages.

10.5 Using the travelccm-config script

TravelCCM provides a shell script called `travelccm-config`, which is installed by default in '\$prefix/bin' ('/usr/local/bin') directory. It can be used to simplify compilation and linking of TravelCCM based programs. The usage of this script is quite similar to the usage of the 'pkg-config' command.

Assuming that you need to compile the program 'my_prog.cpp' you can now do that with the following command:

```
g++ `travelccm-config --cflags` -o my_prog_opt my_prog.cpp `travelccm-config --libs`
```

A list of 'travelccm-config' options can be obtained by typing:

```
travelccm-config --help
```

If the 'travelccm-config' command is not found by your shell, you should add its location '\$prefix/bin' to the PATH environment variable, e.g.:

```
export PATH=/usr/local/bin:$PATH
```

10.6 M4 macro for the GNU Autotools

A M4 macro file is delivered with TravelCCM, namely 'travelccm.m4', which can be found in, e.g., '/usr/share/aclocal'. When used by a 'configure' script, thanks to the 'AM_PATH_TravelCCM' macro (specified in the M4 macro file), the following Makefile variables are then defined:

- 'TravelCCM_VERSION' (e.g., defined to 0.23.0)
- 'TravelCCM_CFLAGS' (e.g., defined to '-I\${prefix}/include')
- 'TravelCCM_LIBS' (e.g., defined to '-L\${prefix}/lib -ltravelccm')

10.7 Using TravelCCM with dynamic linking

When using static linking some of the library routines in TravelCCM are copied into your executable program. This can lead to unnecessary large executables. To avoid having too large executable files you may use dynamic linking instead. Dynamic linking means that the actual linking is performed when the program is executed. This requires that the system is able to locate the shared TravelCCM library file during your program execution. If you install the TravelCCM library using a non-standard prefix, the 'LD_LIBRARY_PATH' environment variable might be used to inform the linker of the dynamic library location, e.g.:

```
export LD_LIBRARY_PATH=<TravelCCM installation prefix>/lib:$LD_LIBRARY_PATH
```

11 Test Rules

This section describes rules how the functionality of the IT++ library should be verified. In the 'tests' subdirectory test files are provided. All functionality should be tested using these test files.

11.1 The Test File

Each new IT++ module/class should be accompanied with a test file. The test file is an implementation in C++ that tests the functionality of a function/class or a group of functions/classes called modules. The test file should test relevant parameter settings and input/output relations to guarantee correct functionality of the corresponding classes/functions. The test files should be maintained using version control and updated whenever new functionality is added to the IT++ library.

The test file should print relevant data to a standard output that can be used to verify the functionality. All relevant parameter settings should be tested.

The test file should be placed in the 'tests' subdirectory and should have a name ending with '_test.cpp'.

11.2 The Reference File

Consider a test file named 'module_test.cpp'. A reference file named 'module_test.ref' should accompany the test file. The reference file contains a reference printout of the standard output generated when running the test program. The reference file should be maintained using version control and updated according to the test file.

11.3 Testing IT++ Library

One can compile and execute all test programs from 'tests' subdirectory by typing

```
% make check
```

after successful compilation of the IT++ library.

12 Users Guide

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12.2 Introduction

The `TravelCCM` library contains classes for airline business management. This document does not cover all the aspects of the `TravelCCM` library. It does however explain the most important things you need to know in order to start using `TravelCCM`.

12.3 Get Started

12.3.1 Get the TravelCCM library

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://travel-ccm.git.sourceforge.net/gitroot/travel-ccm/travel-ccm travelccmgit
cd travelccmgit
git checkout trunk
```

12.3.2 Build the TravelCCM project

Link with `StdAir`, create the distribution package (say, 0.5.0) and compile using the following commands:

```
cd ~/dev/sim/travelccmgit
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=~/.dev/deliveries/travelccm-0.5.0 \
-DWITH_STDAIR_PREFIX=~/.dev/deliveries/stdair-stable \
-DMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
make
```

12.3.3 Build and Run the Tests

After building the TravelCCM project, the following commands run the tests:

```
cd ~/dev/sim/travelccmgit
cd build
make check
```

As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_travelccm
[ 96%] Built target travelccmlib
[100%] Built target AirlineScheduleTestSuitetst
Scanning dependencies of target check_travelccmtst
Test project /home/user/dev/sim/travelccm/travelccmgithub/build/test/travelccm
  Start 1: AirlineScheduleTestSuitetst
1/1 Test #1: AirlineScheduleTestSuitetst ..... Passed    0.15 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.40 sec
[100%] Built target check_travelccmtst
Scanning dependencies of target check
[100%] Built target check
```

12.3.4 Install the TravelCCM Project (Binaries, Documentation)

After the step [Build the TravelCCM project](#), to install the library and its header files, type:

```
cd ~/dev/sim/travelccmgit
cd build
make install
```

You can check that the executables and other required files have been copied into the given final directory:

```
cd ~/dev/deliveries/travelccm-0.5.0
```

To generate the TravelCCM project documentation, the commands are:

```
cd ~/dev/sim/travelccmgit
cd build
make doc
```

The TravelCCM project documentation is available in the following formats: HTML, LaTeX. Those documents are available in a subdirectory:

```
cd ~/dev/sim/travelccmgit
cd build
cd doc
```

12.4 Input file of TravelCCM Project

The schedule input file structure should look like the following sample:

Each line, beyond the header, represents a schedule entry, i.e., the specification of a given flight-period (see `TRAVELCCM::FlightPeriodStruct`). The fields are as follows:

- Flights section

- AirlineCode (e.g., BA)
- FlightNumber (e.g., 9)
- Start of the flight departure period (e.g., 2007-04-20)
- End of the flight departure period (e.g., 2007-06-30)
- Day-Of-the-Week for the flight departure period (DOW) (e.g., 0000011)
- Leg section
- Segment section
- Leg section
 - BoardPoint (e.g., LHR)
 - OffPoint (e.g., BKK)
 - BoardTime (e.g., 22:00)
 - ArrivalTime (e.g., 15:15)
 - ArrivalDateOffset (e.g., +1)
 - ElapsedTime (e.g., 11:15)
 - Leg-cabin section
- Leg-cabin section
 - Cabin code (e.g., F, J, W or Y)
 - Capacity (e.g., respectively 5, 12, 20 or 300)
- Segment section
 - Specificity flag:
 - * 0 means that all the segments behave the same way, i.e., have got the same dressing (distribution and order of the booking classes per cabin)
 - * 1 means that each segment behave differently. The full specification of each of those segments must therefore be given.
 - Segment-cabin section
 - Fare family section
- Segment-cabin section
 - Cabin code (e.g., F, J, W or Y)
 - List of (one-letter-code) booking classes for the cabin (e.g, respectively FA, JCDI, WT or YBHKMLSQ)
- Fare family section
 - Fare family code (e.g., 1)
 - List of (one-letter-code) booking classes for the fare family (e.g, respectively FA, JCDI, WT or YBHKMLSQ)

Some fare input examples (including the example above named `schedule03.csv`) are given in the `StdAir` project.

12.5 The schedule BOM Tree

The schedule-related Business Object Model (BOM) tree is a structure allowing to store all the `TRAVELCCM: : - FlightPeriodStruct` objects of the simulation. That is why parsing an input file, containing the specification for all the flight-periods, is more convenient (

See also

the previous section [Input file of TravelCCM Project](#)).

As it may be time consuming, and it for sure requires some know-how, to first build such a schedule input file, a small sample BOM tree is provided by default when needed.

12.5.1 Build of the schedule BOM tree

First, a BOM root object (i.e., a root for all the classes in the project) is instantiated by the `stdair::STDAIR_ServiceContext` context object, when the `stdair::STDAIR_Service` is itself instantiated (during the instantiation of the `TRAVELCCM::TRAVELCCM_Service` object).

The corresponding type (class) `stdair::BomRoot` is defined in the `StdAir` library.

Then, the BOM root can be either constructed thanks to the `TRAVELCCM::TRAVELCCM_Service::buildSampleBom()` method:

```
void buildSampleBom();
```

or can be constructed using the schedule input file described above thanks to the `TRAVELCCM::TRAVELCCM_Service::parseAndLoad (const stdair::Filename_T&)` method:

12.5.2 Display of the schedule BOM tree

Note

That feature (of BOM tree display) has not been implemented yet. Do not hesitate to [open a ticket](#) if you would like to have it implemented more quickly.

The schedule BOM tree can be displayed as done in the `batches::travelccm.cpp` program:

When the default BOM tree is used (`-b/-builtin` option of the main program `travelccm.cpp`), the schedule BOM tree display (for now, corresponding to `schedule01.csv` parsed by `TRAVELCCM::travelccm`) should look like:

```
=====
BomRoot:  -- ROOT --
=====
+++++
Inventory: SQ
+++++
*****
FlightDate: SQ11, 2010-Jan-15
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ11 2010-Jan-15, SIN-BKK, 2010-Jan-15, 08:20:00, 2010-Jan-15, 11:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-15, SIN-BKK 2010-Jan-15, Y, 300, 300, 0, 0, 0, 0, 0, 0, 2, 298
    , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-15, SIN-BKK 2010-Jan-15, Y, 1, 0, 0, 0, 2, 298, 0,
SQ11 2010-Jan-15, SIN-BKK 2010-Jan-15, Y, 2, 0, 0, 0, 2, 298, 0,
*****
```

```
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-15, SIN-BKK 2010-Jan-15, Y, 1, Y, 300 (0), 0, 0, 0, 2, 0 (0), 0,
    0, 0, 0, 0, 0,
SQ11 2010-Jan-15, SIN-BKK 2010-Jan-15, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-16
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ11 2010-Jan-16, SIN-BKK, 2010-Jan-16, 08:20:00, 2010-Jan-16, 11:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-16, SIN-BKK 2010-Jan-16, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
    , 9, 1.83244e-319, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-16, SIN-BKK 2010-Jan-16, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-16, SIN-BKK 2010-Jan-16, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-16, SIN-BKK 2010-Jan-16, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
SQ11 2010-Jan-16, SIN-BKK 2010-Jan-16, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-17
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ11 2010-Jan-17, SIN-BKK, 2010-Jan-17, 08:20:00, 2010-Jan-17, 11:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-17, SIN-BKK 2010-Jan-17, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
    , 9, 1.58896e-319, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-17, SIN-BKK 2010-Jan-17, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-17, SIN-BKK 2010-Jan-17, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
```

```

SQ11 2010-Jan-17, SIN-BKK 2010-Jan-17, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-17, SIN-BKK 2010-Jan-17, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-18
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-18, SIN-BKK, 2010-Jan-18, 08:20:00, 2010-Jan-18, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-18, SIN-BKK 2010-Jan-18, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-18, SIN-BKK 2010-Jan-18, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-18, SIN-BKK 2010-Jan-18, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-18, SIN-BKK 2010-Jan-18, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-18, SIN-BKK 2010-Jan-18, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-19
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-19, SIN-BKK, 2010-Jan-19, 08:20:00, 2010-Jan-19, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-19, SIN-BKK 2010-Jan-19, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-19, SIN-BKK 2010-Jan-19, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-19, SIN-BKK 2010-Jan-19, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-19, SIN-BKK 2010-Jan-19, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-19, SIN-BKK 2010-Jan-19, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****

```



```
*****
FlightDate: SQ11, 2010-Jan-20
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-20, SIN-BKK, 2010-Jan-20, 08:20:00, 2010-Jan-20, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-20, SIN-BKK 2010-Jan-20, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-20, SIN-BKK 2010-Jan-20, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-20, SIN-BKK 2010-Jan-20, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-20, SIN-BKK 2010-Jan-20, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-20, SIN-BKK 2010-Jan-20, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-21
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-21, SIN-BKK, 2010-Jan-21, 08:20:00, 2010-Jan-21, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-21, SIN-BKK 2010-Jan-21, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-21, SIN-BKK 2010-Jan-21, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-21, SIN-BKK 2010-Jan-21, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-22
*****
*****
Leg-Dates:
```

```

-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-22, SIN-BKK, 2010-Jan-22, 08:20:00, 2010-Jan-22, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-22, SIN-BKK 2010-Jan-22, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-22, SIN-BKK 2010-Jan-22, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-22, SIN-BKK 2010-Jan-22, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-22, SIN-BKK 2010-Jan-22, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-22, SIN-BKK 2010-Jan-22, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-23
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-23, SIN-BKK, 2010-Jan-23, 08:20:00, 2010-Jan-23, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-23, SIN-BKK 2010-Jan-23, Y, 300, 300, 0, 0, 0, 0, 0, 6.64029e-
319, 0, 300, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-23, SIN-BKK 2010-Jan-23, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-23, SIN-BKK 2010-Jan-23, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-23, SIN-BKK 2010-Jan-23, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-23, SIN-BKK 2010-Jan-23, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-24
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-24, SIN-BKK, 2010-Jan-24, 08:20:00, 2010-Jan-24, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,

```

```

*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-24, SIN-BKK 2010-Jan-24, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-24, SIN-BKK 2010-Jan-24, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-24, SIN-BKK 2010-Jan-24, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-24, SIN-BKK 2010-Jan-24, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-24, SIN-BKK 2010-Jan-24, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-25
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-25, SIN-BKK, 2010-Jan-25, 08:20:00, 2010-Jan-25, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-25, SIN-BKK 2010-Jan-25, Y, 300, 300, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-25, SIN-BKK 2010-Jan-25, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-25, SIN-BKK 2010-Jan-25, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-25, SIN-BKK 2010-Jan-25, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-25, SIN-BKK 2010-Jan-25, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-26
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-26, SIN-BKK, 2010-Jan-26, 08:20:00, 2010-Jan-26, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,

```

```
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-26, SIN-BKK 2010-Jan-26, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-26, SIN-BKK 2010-Jan-26, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-26, SIN-BKK 2010-Jan-26, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-26, SIN-BKK 2010-Jan-26, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-26, SIN-BKK 2010-Jan-26, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-27
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-27, SIN-BKK, 2010-Jan-27, 08:20:00, 2010-Jan-27, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-27, SIN-BKK 2010-Jan-27, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-27, SIN-BKK 2010-Jan-27, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-27, SIN-BKK 2010-Jan-27, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-27, SIN-BKK 2010-Jan-27, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Jan-27, SIN-BKK 2010-Jan-27, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-28
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Jan-28, SIN-BKK, 2010-Jan-28, 08:20:00, 2010-Jan-28, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-28, SIN-BKK 2010-Jan-28, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
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Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-28, SIN-BKK 2010-Jan-28, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-28, SIN-BKK 2010-Jan-28, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-28, SIN-BKK 2010-Jan-28, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ11 2010-Jan-28, SIN-BKK 2010-Jan-28, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-29
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ11 2010-Jan-29, SIN-BKK, 2010-Jan-29, 08:20:00, 2010-Jan-29, 11:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-29, SIN-BKK 2010-Jan-29, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-29, SIN-BKK 2010-Jan-29, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-29, SIN-BKK 2010-Jan-29, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-29, SIN-BKK 2010-Jan-29, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ11 2010-Jan-29, SIN-BKK 2010-Jan-29, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-30
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ11 2010-Jan-30, SIN-BKK, 2010-Jan-30, 08:20:00, 2010-Jan-30, 11:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-30, SIN-BKK 2010-Jan-30, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-30, SIN-BKK 2010-Jan-30, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-30, SIN-BKK 2010-Jan-30, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-30, SIN-BKK 2010-Jan-30, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ11 2010-Jan-30, SIN-BKK 2010-Jan-30, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Jan-31
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ11 2010-Jan-31, SIN-BKK, 2010-Jan-31, 08:20:00, 2010-Jan-31, 11:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Jan-31, SIN-BKK 2010-Jan-31, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Jan-31, SIN-BKK 2010-Jan-31, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Jan-31, SIN-BKK 2010-Jan-31, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Jan-31, SIN-BKK 2010-Jan-31, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ11 2010-Jan-31, SIN-BKK 2010-Jan-31, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-01
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ11 2010-Feb-01, SIN-BKK, 2010-Feb-01, 08:20:00, 2010-Feb-01, 11:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-01, SIN-BKK 2010-Feb-01, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-01, SIN-BKK 2010-Feb-01, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-01, SIN-BKK 2010-Feb-01, Y, 2, 0, 0, 0, 0, 300, 0,
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Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-01, SIN-BKK 2010-Feb-01, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
SQ11 2010-Feb-01, SIN-BKK 2010-Feb-01, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-02
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ11 2010-Feb-02, SIN-BKK, 2010-Feb-02, 08:20:00, 2010-Feb-02, 11:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-02, SIN-BKK 2010-Feb-02, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
    , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-02, SIN-BKK 2010-Feb-02, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-02, SIN-BKK 2010-Feb-02, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-02, SIN-BKK 2010-Feb-02, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
SQ11 2010-Feb-02, SIN-BKK 2010-Feb-02, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-03
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ11 2010-Feb-03, SIN-BKK, 2010-Feb-03, 08:20:00, 2010-Feb-03, 11:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-03, SIN-BKK 2010-Feb-03, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
    , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-03, SIN-BKK 2010-Feb-03, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-03, SIN-BKK 2010-Feb-03, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,

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GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-03, SIN-BKK 2010-Feb-03, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-03, SIN-BKK 2010-Feb-03, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-04
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-04, SIN-BKK, 2010-Feb-04, 08:20:00, 2010-Feb-04, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-04, SIN-BKK 2010-Feb-04, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-04, SIN-BKK 2010-Feb-04, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-04, SIN-BKK 2010-Feb-04, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-04, SIN-BKK 2010-Feb-04, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-04, SIN-BKK 2010-Feb-04, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-05
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-05, SIN-BKK, 2010-Feb-05, 08:20:00, 2010-Feb-05, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-05, SIN-BKK 2010-Feb-05, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-05, SIN-BKK 2010-Feb-05, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-05, SIN-BKK 2010-Feb-05, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
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*****
*****
FlightDate: SQ11, 2010-Feb-06
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-06, SIN-BKK, 2010-Feb-06, 08:20:00, 2010-Feb-06, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-06, SIN-BKK 2010-Feb-06, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-06, SIN-BKK 2010-Feb-06, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-06, SIN-BKK 2010-Feb-06, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-06, SIN-BKK 2010-Feb-06, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-06, SIN-BKK 2010-Feb-06, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-07
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-07, SIN-BKK, 2010-Feb-07, 08:20:00, 2010-Feb-07, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-07, SIN-BKK 2010-Feb-07, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-07, SIN-BKK 2010-Feb-07, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-07, SIN-BKK 2010-Feb-07, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-07, SIN-BKK 2010-Feb-07, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-07, SIN-BKK 2010-Feb-07, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-08
*****
*****
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Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-08, SIN-BKK, 2010-Feb-08, 08:20:00, 2010-Feb-08, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-08, SIN-BKK 2010-Feb-08, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-08, SIN-BKK 2010-Feb-08, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-08, SIN-BKK 2010-Feb-08, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-08, SIN-BKK 2010-Feb-08, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-08, SIN-BKK 2010-Feb-08, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-09
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-09, SIN-BKK, 2010-Feb-09, 08:20:00, 2010-Feb-09, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-09, SIN-BKK 2010-Feb-09, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-09, SIN-BKK 2010-Feb-09, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-09, SIN-BKK 2010-Feb-09, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-09, SIN-BKK 2010-Feb-09, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-09, SIN-BKK 2010-Feb-09, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-10
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*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-10, SIN-BKK, 2010-Feb-10, 08:20:00, 2010-Feb-10, 11:00:00, 07:40:
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00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-10, SIN-BKK 2010-Feb-10, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-10, SIN-BKK 2010-Feb-10, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-10, SIN-BKK 2010-Feb-10, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-10, SIN-BKK 2010-Feb-10, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-10, SIN-BKK 2010-Feb-10, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
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*****
FlightDate: SQ11, 2010-Feb-11
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*****
Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-11, SIN-BKK 2010-Feb-11, 08:20:00, 2010-Feb-11, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-11, SIN-BKK 2010-Feb-11, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-11, SIN-BKK 2010-Feb-11, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-11, SIN-BKK 2010-Feb-11, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-11, SIN-BKK 2010-Feb-11, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-11, SIN-BKK 2010-Feb-11, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
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*****
FlightDate: SQ11, 2010-Feb-12
*****
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Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-12, SIN-BKK 2010-Feb-12, 08:20:00, 2010-Feb-12, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
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Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-12, SIN-BKK 2010-Feb-12, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-12, SIN-BKK 2010-Feb-12, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-12, SIN-BKK 2010-Feb-12, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-12, SIN-BKK 2010-Feb-12, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-12, SIN-BKK 2010-Feb-12, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-13
*****
*****
Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-13, SIN-BKK, 2010-Feb-13, 08:20:00, 2010-Feb-13, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-13, SIN-BKK 2010-Feb-13, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-13, SIN-BKK 2010-Feb-13, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-13, SIN-BKK 2010-Feb-13, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-13, SIN-BKK 2010-Feb-13, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-13, SIN-BKK 2010-Feb-13, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-14
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-14, SIN-BKK, 2010-Feb-14, 08:20:00, 2010-Feb-14, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-14, SIN-BKK 2010-Feb-14, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
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*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL1 2010-Feb-14, SIN-BKK 2010-Feb-14, Y, 1, 0, 0, 0, 0, 300, 0,
SQL1 2010-Feb-14, SIN-BKK 2010-Feb-14, Y, 2, 0, 0, 0, 0, 300, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL1 2010-Feb-14, SIN-BKK 2010-Feb-14, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQL1 2010-Feb-14, SIN-BKK 2010-Feb-14, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL1, 2010-Feb-15
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQL1 2010-Feb-15, SIN-BKK, 2010-Feb-15, 08:20:00, 2010-Feb-15, 11:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL1 2010-Feb-15, SIN-BKK 2010-Feb-15, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL1 2010-Feb-15, SIN-BKK 2010-Feb-15, Y, 1, 0, 0, 0, 0, 300, 0,
SQL1 2010-Feb-15, SIN-BKK 2010-Feb-15, Y, 2, 0, 0, 0, 0, 300, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL1 2010-Feb-15, SIN-BKK 2010-Feb-15, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQL1 2010-Feb-15, SIN-BKK 2010-Feb-15, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL1, 2010-Feb-16
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQL1 2010-Feb-16, SIN-BKK, 2010-Feb-16, 08:20:00, 2010-Feb-16, 11:00:00, 07:40:
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*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL1 2010-Feb-16, SIN-BKK 2010-Feb-16, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-16, SIN-BKK 2010-Feb-16, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-16, SIN-BKK 2010-Feb-16, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-16, SIN-BKK 2010-Feb-16, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ11 2010-Feb-16, SIN-BKK 2010-Feb-16, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-17
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ11 2010-Feb-17, SIN-BKK, 2010-Feb-17, 08:20:00, 2010-Feb-17, 11:00:00, 07:40:
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-17, SIN-BKK 2010-Feb-17, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-17, SIN-BKK 2010-Feb-17, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-17, SIN-BKK 2010-Feb-17, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-17, SIN-BKK 2010-Feb-17, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ11 2010-Feb-17, SIN-BKK 2010-Feb-17, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-18
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ11 2010-Feb-18, SIN-BKK, 2010-Feb-18, 08:20:00, 2010-Feb-18, 11:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-18, SIN-BKK 2010-Feb-18, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-18, SIN-BKK 2010-Feb-18, Y, 1, 0, 0, 0, 0, 300, 0,

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SQL1 2010-Feb-18, SIN-BKK 2010-Feb-18, Y, 2, 0, 0, 0, 0, 300, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL1 2010-Feb-18, SIN-BKK 2010-Feb-18, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQL1 2010-Feb-18, SIN-BKK 2010-Feb-18, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL1, 2010-Feb-19
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQL1 2010-Feb-19, SIN-BKK 2010-Feb-19, 08:20:00, 2010-Feb-19, 11:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL1 2010-Feb-19, SIN-BKK 2010-Feb-19, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL1 2010-Feb-19, SIN-BKK 2010-Feb-19, Y, 1, 0, 0, 0, 0, 300, 0,
SQL1 2010-Feb-19, SIN-BKK 2010-Feb-19, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL1 2010-Feb-19, SIN-BKK 2010-Feb-19, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQL1 2010-Feb-19, SIN-BKK 2010-Feb-19, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
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*****
FlightDate: SQL1, 2010-Feb-20
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQL1 2010-Feb-20, SIN-BKK 2010-Feb-20, 08:20:00, 2010-Feb-20, 11:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL1 2010-Feb-20, SIN-BKK 2010-Feb-20, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL1 2010-Feb-20, SIN-BKK 2010-Feb-20, Y, 1, 0, 0, 0, 0, 300, 0,
SQL1 2010-Feb-20, SIN-BKK 2010-Feb-20, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-20, SIN-BKK 2010-Feb-20, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ11 2010-Feb-20, SIN-BKK 2010-Feb-20, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-21
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ11 2010-Feb-21, SIN-BKK, 2010-Feb-21, 08:20:00, 2010-Feb-21, 11:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-21, SIN-BKK 2010-Feb-21, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-21, SIN-BKK 2010-Feb-21, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-21, SIN-BKK 2010-Feb-21, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-21, SIN-BKK 2010-Feb-21, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ11 2010-Feb-21, SIN-BKK 2010-Feb-21, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-22
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ11 2010-Feb-22, SIN-BKK, 2010-Feb-22, 08:20:00, 2010-Feb-22, 11:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-22, SIN-BKK 2010-Feb-22, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 300
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-22, SIN-BKK 2010-Feb-22, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-22, SIN-BKK 2010-Feb-22, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-22, SIN-BKK 2010-Feb-22, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ11 2010-Feb-22, SIN-BKK 2010-Feb-22, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
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0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-23
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-23, SIN-BKK, 2010-Feb-23, 08:20:00, 2010-Feb-23, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-23, SIN-BKK 2010-Feb-23, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-23, SIN-BKK 2010-Feb-23, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-23, SIN-BKK 2010-Feb-23, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-23, SIN-BKK 2010-Feb-23, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-23, SIN-BKK 2010-Feb-23, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-24
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-24, SIN-BKK, 2010-Feb-24, 08:20:00, 2010-Feb-24, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-24, SIN-BKK 2010-Feb-24, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-24, SIN-BKK 2010-Feb-24, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-24, SIN-BKK 2010-Feb-24, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-24, SIN-BKK 2010-Feb-24, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-24, SIN-BKK 2010-Feb-24, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-25
*****
*****

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*****
Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-25, SIN-BKK, 2010-Feb-25, 08:20:00, 2010-Feb-25, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-25, SIN-BKK 2010-Feb-25, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-25, SIN-BKK 2010-Feb-25, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-25, SIN-BKK 2010-Feb-25, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-25, SIN-BKK 2010-Feb-25, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-25, SIN-BKK 2010-Feb-25, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-26
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ11 2010-Feb-26, SIN-BKK, 2010-Feb-26, 08:20:00, 2010-Feb-26, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ11 2010-Feb-26, SIN-BKK 2010-Feb-26, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ11 2010-Feb-26, SIN-BKK 2010-Feb-26, Y, 1, 0, 0, 0, 0, 300, 0,
SQ11 2010-Feb-26, SIN-BKK 2010-Feb-26, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ11 2010-Feb-26, SIN-BKK 2010-Feb-26, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ11 2010-Feb-26, SIN-BKK 2010-Feb-26, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ11, 2010-Feb-27
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,

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SQL1 2010-Feb-27, SIN-BKK, 2010-Feb-27, 08:20:00, 2010-Feb-27, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL1 2010-Feb-27, SIN-BKK 2010-Feb-27, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL1 2010-Feb-27, SIN-BKK 2010-Feb-27, Y, 1, 0, 0, 0, 0, 300, 0,
SQL1 2010-Feb-27, SIN-BKK 2010-Feb-27, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL1 2010-Feb-27, SIN-BKK 2010-Feb-27, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQL1 2010-Feb-27, SIN-BKK 2010-Feb-27, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL1, 2010-Feb-28
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQL1 2010-Feb-28, SIN-BKK, 2010-Feb-28, 08:20:00, 2010-Feb-28, 11:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL1 2010-Feb-28, SIN-BKK 2010-Feb-28, Y, 300, 300, 0, 0, 0, 0, 0, 0, 0, 0, 300
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL1 2010-Feb-28, SIN-BKK 2010-Feb-28, Y, 1, 0, 0, 0, 0, 300, 0,
SQL1 2010-Feb-28, SIN-BKK 2010-Feb-28, Y, 2, 0, 0, 0, 0, 300, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL1 2010-Feb-28, SIN-BKK 2010-Feb-28, Y, 1, Y, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQL1 2010-Feb-28, SIN-BKK 2010-Feb-28, Y, 2, M, 300 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL2, 2010-Jan-15
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQL2 2010-Jan-15, SIN-HND, 2010-Jan-15, 09:20:00, 2010-Jan-15, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
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-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-15, SIN-HND 2010-Jan-15, Y, 200, 200, 2.082e+121, 5.53287e-48, 5.
20268e-90, 0, 1.31346e-47, 1.05119e-153, 2.78986e+179, 0, 200, 9, 3.66962e-62, 1
.0854e-71, 6.74783e-67, 6.9835e-77, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-15, SIN-HND 2010-Jan-15, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-15, SIN-HND 2010-Jan-15, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-15, SIN-HND 2010-Jan-15, Y, 1, Y13856, 200 (0), 0, 0, 0, 0, 0 (0)
, 0, 0, 0, 0, 0, 0,
SQ12 2010-Jan-15, SIN-HND 2010-Jan-15, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-16
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-16, SIN-HND, 2010-Jan-16, 09:20:00, 2010-Jan-16, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-16, SIN-HND 2010-Jan-16, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 2.63638e-319, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-16, SIN-HND 2010-Jan-16, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-16, SIN-HND 2010-Jan-16, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-16, SIN-HND 2010-Jan-16, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-16, SIN-HND 2010-Jan-16, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-17
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-17, SIN-HND, 2010-Jan-17, 09:20:00, 2010-Jan-17, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-17, SIN-HND 2010-Jan-17, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200

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, 9, 2.39291e-319, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-17, SIN-HND 2010-Jan-17, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-17, SIN-HND 2010-Jan-17, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-17, SIN-HND 2010-Jan-17, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-17, SIN-HND 2010-Jan-17, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Jan-18
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-18, SIN-HND, 2010-Jan-18, 09:20:00, 2010-Jan-18, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-18, SIN-HND 2010-Jan-18, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 2.14469e-319, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-18, SIN-HND 2010-Jan-18, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-18, SIN-HND 2010-Jan-18, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-18, SIN-HND 2010-Jan-18, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-18, SIN-HND 2010-Jan-18, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Jan-19
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-19, SIN-HND, 2010-Jan-19, 09:20:00, 2010-Jan-19, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-19, SIN-HND 2010-Jan-19, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0, 0,
*****
Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-19, SIN-HND 2010-Jan-19, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-19, SIN-HND 2010-Jan-19, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-19, SIN-HND 2010-Jan-19, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ12 2010-Jan-19, SIN-HND 2010-Jan-19, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Jan-20
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ12 2010-Jan-20, SIN-HND, 2010-Jan-20, 09:20:00, 2010-Jan-20, 12:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-20, SIN-HND 2010-Jan-20, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
      , 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-20, SIN-HND 2010-Jan-20, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-20, SIN-HND 2010-Jan-20, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-20, SIN-HND 2010-Jan-20, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ12 2010-Jan-20, SIN-HND 2010-Jan-20, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Jan-21
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ12 2010-Jan-21, SIN-HND, 2010-Jan-21, 09:20:00, 2010-Jan-21, 12:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-21, SIN-HND 2010-Jan-21, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
      , 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-21, SIN-HND 2010-Jan-21, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-21, SIN-HND 2010-Jan-21, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-21, SIN-HND 2010-Jan-21, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ12 2010-Jan-21, SIN-HND 2010-Jan-21, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-22
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ12 2010-Jan-22, SIN-HND, 2010-Jan-22, 09:20:00, 2010-Jan-22, 12:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-22, SIN-HND 2010-Jan-22, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-22, SIN-HND 2010-Jan-22, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-22, SIN-HND 2010-Jan-22, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-22, SIN-HND 2010-Jan-22, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ12 2010-Jan-22, SIN-HND 2010-Jan-22, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-23
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ12 2010-Jan-23, SIN-HND, 2010-Jan-23, 09:20:00, 2010-Jan-23, 12:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-23, SIN-HND 2010-Jan-23, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
      , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-23, SIN-HND 2010-Jan-23, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-23, SIN-HND 2010-Jan-23, Y, 2, 0, 0, 0, 0, 200, 0,
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Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-23, SIN-HND 2010-Jan-23, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ12 2010-Jan-23, SIN-HND 2010-Jan-23, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-24
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ12 2010-Jan-24, SIN-HND, 2010-Jan-24, 09:20:00, 2010-Jan-24, 12:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-24, SIN-HND 2010-Jan-24, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-24, SIN-HND 2010-Jan-24, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-24, SIN-HND 2010-Jan-24, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-24, SIN-HND 2010-Jan-24, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ12 2010-Jan-24, SIN-HND 2010-Jan-24, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-25
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ12 2010-Jan-25, SIN-HND, 2010-Jan-25, 09:20:00, 2010-Jan-25, 12:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-25, SIN-HND 2010-Jan-25, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
  , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-25, SIN-HND 2010-Jan-25, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-25, SIN-HND 2010-Jan-25, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-25, SIN-HND 2010-Jan-25, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
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0, 0, 0, 0, 0,
SQ12 2010-Jan-25, SIN-HND 2010-Jan-25, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-26
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-26, SIN-HND, 2010-Jan-26, 09:20:00, 2010-Jan-26, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-26, SIN-HND 2010-Jan-26, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-26, SIN-HND 2010-Jan-26, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-26, SIN-HND 2010-Jan-26, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-26, SIN-HND 2010-Jan-26, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-26, SIN-HND 2010-Jan-26, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-27
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-27, SIN-HND, 2010-Jan-27, 09:20:00, 2010-Jan-27, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-27, SIN-HND 2010-Jan-27, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-27, SIN-HND 2010-Jan-27, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-27, SIN-HND 2010-Jan-27, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-27, SIN-HND 2010-Jan-27, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-27, SIN-HND 2010-Jan-27, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****

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FlightDate: SQ12, 2010-Jan-28
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-28, SIN-HND, 2010-Jan-28, 09:20:00, 2010-Jan-28, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-28, SIN-HND 2010-Jan-28, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-28, SIN-HND 2010-Jan-28, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-28, SIN-HND 2010-Jan-28, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-28, SIN-HND 2010-Jan-28, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-28, SIN-HND 2010-Jan-28, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-29
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-29, SIN-HND, 2010-Jan-29, 09:20:00, 2010-Jan-29, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-29, SIN-HND 2010-Jan-29, Y, 200, 200, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-29, SIN-HND 2010-Jan-29, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-29, SIN-HND 2010-Jan-29, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-29, SIN-HND 2010-Jan-29, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-29, SIN-HND 2010-Jan-29, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-30
*****
*****
Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-30, SIN-HND, 2010-Jan-30, 09:20:00, 2010-Jan-30, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-30, SIN-HND 2010-Jan-30, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-30, SIN-HND 2010-Jan-30, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-30, SIN-HND 2010-Jan-30, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-30, SIN-HND 2010-Jan-30, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-30, SIN-HND 2010-Jan-30, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Jan-31
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Jan-31, SIN-HND, 2010-Jan-31, 09:20:00, 2010-Jan-31, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Jan-31, SIN-HND 2010-Jan-31, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Jan-31, SIN-HND 2010-Jan-31, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Jan-31, SIN-HND 2010-Jan-31, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Jan-31, SIN-HND 2010-Jan-31, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Jan-31, SIN-HND 2010-Jan-31, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-01
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-01, SIN-HND, 2010-Feb-01, 09:20:00, 2010-Feb-01, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-01, SIN-HND 2010-Feb-01, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-01, SIN-HND 2010-Feb-01, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-01, SIN-HND 2010-Feb-01, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-01, SIN-HND 2010-Feb-01, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-01, SIN-HND 2010-Feb-01, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Feb-02
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-02, SIN-HND, 2010-Feb-02, 09:20:00, 2010-Feb-02, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-02, SIN-HND 2010-Feb-02, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-02, SIN-HND 2010-Feb-02, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-02, SIN-HND 2010-Feb-02, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-02, SIN-HND 2010-Feb-02, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-02, SIN-HND 2010-Feb-02, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Feb-03
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-03, SIN-HND, 2010-Feb-03, 09:20:00, 2010-Feb-03, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
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SQL12 2010-Feb-03, SIN-HND 2010-Feb-03, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL12 2010-Feb-03, SIN-HND 2010-Feb-03, Y, 1, 0, 0, 0, 0, 200, 0,
SQL12 2010-Feb-03, SIN-HND 2010-Feb-03, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL12 2010-Feb-03, SIN-HND 2010-Feb-03, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQL12 2010-Feb-03, SIN-HND 2010-Feb-03, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL12, 2010-Feb-04
*****
*****
Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQL12 2010-Feb-04, SIN-HND, 2010-Feb-04, 09:20:00, 2010-Feb-04, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL12 2010-Feb-04, SIN-HND 2010-Feb-04, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQL12 2010-Feb-04, SIN-HND 2010-Feb-04, Y, 1, 0, 0, 0, 0, 200, 0,
SQL12 2010-Feb-04, SIN-HND 2010-Feb-04, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQL12 2010-Feb-04, SIN-HND 2010-Feb-04, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQL12 2010-Feb-04, SIN-HND 2010-Feb-04, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQL12, 2010-Feb-05
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQL12 2010-Feb-05, SIN-HND, 2010-Feb-05, 09:20:00, 2010-Feb-05, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQL12 2010-Feb-05, SIN-HND 2010-Feb-05, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
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-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-05, SIN-HND 2010-Feb-05, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-05, SIN-HND 2010-Feb-05, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-05, SIN-HND 2010-Feb-05, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ12 2010-Feb-05, SIN-HND 2010-Feb-05, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Feb-06
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ12 2010-Feb-06, SIN-HND, 2010-Feb-06, 09:20:00, 2010-Feb-06, 12:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-06, SIN-HND 2010-Feb-06, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
      , 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-06, SIN-HND 2010-Feb-06, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-06, SIN-HND 2010-Feb-06, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-06, SIN-HND 2010-Feb-06, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
SQ12 2010-Feb-06, SIN-HND 2010-Feb-06, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
      0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Feb-07
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
      Elapsed, Distance, Capacity,
SQ12 2010-Feb-07, SIN-HND, 2010-Feb-07, 09:20:00, 2010-Feb-07, 12:00:00, 07:40:
      00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
      CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-07, SIN-HND 2010-Feb-07, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
      , 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-07, SIN-HND 2010-Feb-07, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-07, SIN-HND 2010-Feb-07, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-07, SIN-HND 2010-Feb-07, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ12 2010-Feb-07, SIN-HND 2010-Feb-07, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Feb-08
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ12 2010-Feb-08, SIN-HND, 2010-Feb-08, 09:20:00, 2010-Feb-08, 12:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-08, SIN-HND 2010-Feb-08, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
  , 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-08, SIN-HND 2010-Feb-08, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-08, SIN-HND 2010-Feb-08, Y, 2, 0, 0, 0, 0, 200, 0,
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-08, SIN-HND 2010-Feb-08, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
SQ12 2010-Feb-08, SIN-HND 2010-Feb-08, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
  0, 0, 0, 0, 0,
*****
FlightDate: SQ12, 2010-Feb-09
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
  Elapsed, Distance, Capacity,
SQ12 2010-Feb-09, SIN-HND, 2010-Feb-09, 09:20:00, 2010-Feb-09, 12:00:00, 07:40:
  00, 0, -05:00:00, 6300, 0,
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-09, SIN-HND 2010-Feb-09, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
  , 9, 0, 0, 0, 0, 0,
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-09, SIN-HND 2010-Feb-09, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-09, SIN-HND 2010-Feb-09, Y, 2, 0, 0, 0, 0, 200, 0,
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Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-09, SIN-HND 2010-Feb-09, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
SQ12 2010-Feb-09, SIN-HND 2010-Feb-09, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-10
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ12 2010-Feb-10, SIN-HND, 2010-Feb-10, 09:20:00, 2010-Feb-10, 12:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-10, SIN-HND 2010-Feb-10, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
    , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-10, SIN-HND 2010-Feb-10, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-10, SIN-HND 2010-Feb-10, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-10, SIN-HND 2010-Feb-10, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
SQ12 2010-Feb-10, SIN-HND 2010-Feb-10, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
    0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-11
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
    Elapsed, Distance, Capacity,
SQ12 2010-Feb-11, SIN-HND, 2010-Feb-11, 09:20:00, 2010-Feb-11, 12:00:00, 07:40:
    00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-11, SIN-HND 2010-Feb-11, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
    , 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-11, SIN-HND 2010-Feb-11, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-11, SIN-HND 2010-Feb-11, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
    GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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SQ12 2010-Feb-11, SIN-HND 2010-Feb-11, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-11, SIN-HND 2010-Feb-11, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-12
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-12, SIN-HND, 2010-Feb-12, 09:20:00, 2010-Feb-12, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
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*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-12, SIN-HND 2010-Feb-12, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-12, SIN-HND 2010-Feb-12, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-12, SIN-HND 2010-Feb-12, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-12, SIN-HND 2010-Feb-12, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-12, SIN-HND 2010-Feb-12, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-13
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-13, SIN-HND, 2010-Feb-13, 09:20:00, 2010-Feb-13, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-13, SIN-HND 2010-Feb-13, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-13, SIN-HND 2010-Feb-13, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-13, SIN-HND 2010-Feb-13, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-13, SIN-HND 2010-Feb-13, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-13, SIN-HND 2010-Feb-13, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****

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*****
FlightDate: SQ12, 2010-Feb-14
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-14, SIN-HND, 2010-Feb-14, 09:20:00, 2010-Feb-14, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-14, SIN-HND 2010-Feb-14, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-14, SIN-HND 2010-Feb-14, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-14, SIN-HND 2010-Feb-14, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-14, SIN-HND 2010-Feb-14, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-14, SIN-HND 2010-Feb-14, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-15
*****
*****
Leg-Dates:
-----
Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-15, SIN-HND, 2010-Feb-15, 09:20:00, 2010-Feb-15, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-15, SIN-HND 2010-Feb-15, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-15, SIN-HND 2010-Feb-15, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-15, SIN-HND 2010-Feb-15, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-16
*****
*****
Leg-Dates:
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Flight, Leg, BoardDate, BoardTime, OffDate, OffTime, Date Offset, Time Offset,
Elapsed, Distance, Capacity,
SQ12 2010-Feb-16, SIN-HND, 2010-Feb-16, 09:20:00, 2010-Feb-16, 12:00:00, 07:40:
00, 0, -05:00:00, 6300, 0,
*****
*****
LegCabins:
-----
Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
SQ12 2010-Feb-16, SIN-HND 2010-Feb-16, Y, 200, 200, 0, 0, 0, 0, 0, 0, 0, 200
, 9, 0, 0, 0, 0, 0,
*****
*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-16, SIN-HND 2010-Feb-16, Y, 1, 0, 0, 0, 0, 200, 0,
SQ12 2010-Feb-16, SIN-HND 2010-Feb-16, Y, 2, 0, 0, 0, 0, 200, 0,
*****
*****
Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
SQ12 2010-Feb-16, SIN-HND 2010-Feb-16, Y, 1, Y, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
SQ12 2010-Feb-16, SIN-HND 2010-Feb-16, Y, 2, M, 200 (0), 0, 0, 0, 0, 0 (0), 0,
0, 0, 0, 0, 0,
*****
*****
FlightDate: SQ12, 2010-Feb-17
*****
*****
Leg-Dates:
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CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
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*****
*****
Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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*****
SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
SQ12 2010-Feb-17, SIN-HND 2010-Feb-17, Y, 1, 0, 0, 0, 0, 200, 0,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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Buckets:
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SegmentCabins:
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Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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Flight, Leg, Cabin, OffedCAP, PhycAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
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Buckets:
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SegmentCabins:
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CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
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*****
Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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*****
Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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Buckets:
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
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Leg-Dates:
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LegCabins:
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  CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
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Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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SQ12 2010-Feb-23, SIN-HND 2010-Feb-23, Y, 2, 0, 0, 0, 0, 200, 0,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
  GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
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*****
Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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SQ12 2010-Feb-24, SIN-HND 2010-Feb-24, Y, 2, 0, 0, 0, 0, 200, 0,
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Subclasses:
-----
Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
      GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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SQ12 2010-Feb-25, SIN-HND 2010-Feb-25, Y, 2, 0, 0, 0, 0, 200, 0,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
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Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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Subclasses:
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LegCabins:
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Flight, Leg, Cabin, OffedCAP, PhyCAP, RgdADJ, AU, UPR, SS, Staff, WL, Group,
    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
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*****
Buckets:
-----
Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
*****
*****
SegmentCabins:
-----
Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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SQ12 2010-Feb-27, SIN-HND 2010-Feb-27, Y, 2, 0, 0, 0, 0, 200, 0,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
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    CommSpace, AvPool, Avl, NAV, GAV, ACP, ETB, BidPrice,
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Buckets:
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Flight, Leg, Cabin, Yield, AU/SI, SS, AV,
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SegmentCabins:
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Flight, Segment, Cabin, FF, Bkgs, MIN, UPR, CommSpace, AvPool, BP,
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Subclasses:
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Flight, Segment, Cabin, FF, Subclass, MIN/AU (Prot), Nego, NS%, OB%, Bkgs,
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GrpBks (pdg), StfBkgs, WLBkgs, ETB, ClassAvl, RevAvl, SegAvl,
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12.6 Exploring the Predefined BOM Tree

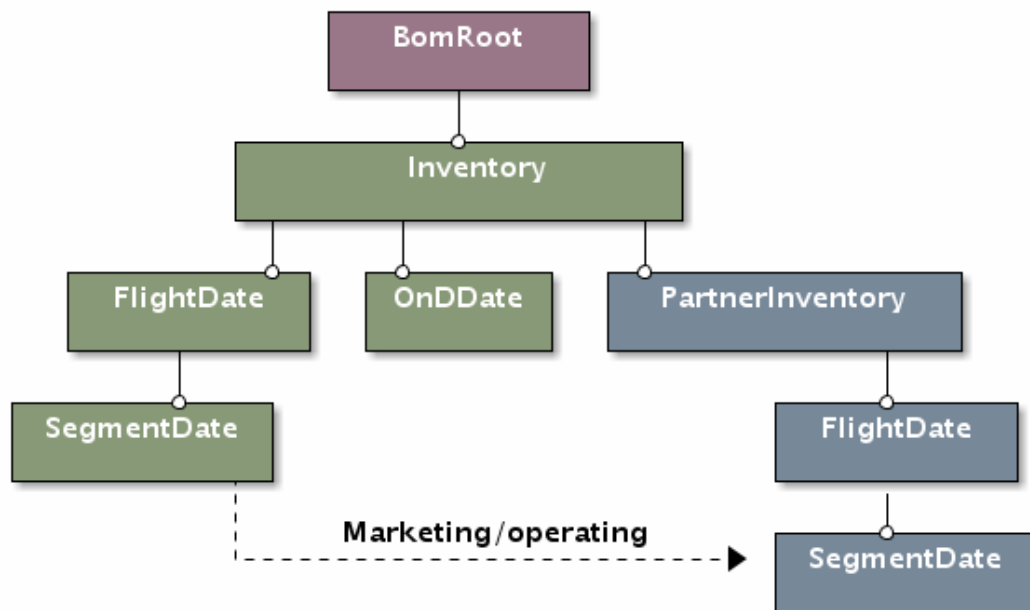


Figure 2: TravelCCM BOM tree

TravelCCM predefines a BOM (Business Object Model) tree specific to the airline IT arena.

12.6.1 Airline Network BOM Tree

- TRAVELCCM::ReachableUniverse
- TRAVELCCM::OriginDestinationSet
- TRAVELCCM::SegmentPathPeriod

12.6.2 Airline Schedule BOM Tree

- stdair::Inventory
- stdair::FlightPeriod
- stdair::SegmentPeriod
- stdair::OnDPeriod

12.7 Extending the BOM Tree

12.8 The travel solution calculation procedure

The project TravelCCM aims at calculating a list of `travel solutions` for every incoming `booking request`.

13 TRAVELCCM Supported Systems

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 - * [Gentoo Linux with ACML](#)
 - * [Gentoo Linux with ATLAS](#)
 - * [Gentoo Linux with MKL](#)
 - * [Gentoo Linux with NetLib's BLAS and LAPACK](#)
 - * [Red Hat Enterprise Linux with TRAVELCCM External](#)
 - * [SUSE Linux 10.0 with NetLib's BLAS and LAPACK](#)
 - * [SUSE Linux 10.0 with MKL](#)
 - [Windows Systems](#)
 - * [Microsoft Windows XP with Cygwin](#)
 - * [Microsoft Windows XP with Cygwin and ATLAS](#)
 - * [Microsoft Windows XP with Cygwin and ACML](#)
 - * [Microsoft Windows XP with MinGW, MSYS and ACML](#)
 - * [Microsoft Windows XP with MinGW, MSYS and TRAVELCCM External](#)
 - * [Microsoft Windows XP with MS Visual C++ and Intel MKL](#)
 - [Unix Systems](#)
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- [TRAVELCCM 3.9.1](#)
- [TRAVELCCM 3.9.0](#)
- [TRAVELCCM 3.8.1](#)

13.2 Introduction

This page is intended to provide a list of [TRAVELCCM](#) supported systems, i.e. the systems on which configuration, installation and testing process of the [TRAVELCCM](#) library has been successful. Results are grouped based on minor release number. Therefore, only the latest tests for bug-fix releases are included. Besides, the information on this page is divided into sections dependent on the operating system.

Where necessary, some extra information is given for each tested configuration, e.g. external libraries installed, configuration commands used, etc.

If you manage to compile, install and test the [TRAVELCCM](#) library on a system not mentioned below, please let us know, so we could update this database.

13.3 TRAVELCCM 3.10.x

13.3.1 Linux Systems

13.3.1.1 Fedora Core 4 with ATLAS

- **Platform:** Intel Pentium 4
- **Operating System:** Fedora Core 4 (x86)
- **Compiler:** g++ (GCC) 4.0.2 20051125
- **TRAVELCCM release:** 3.10.0
- **External Libraries:** From FC4 distribution:
 - `fftw3.i386-3.0.1-3`
 - `fftw3-devel.i386-3.0.1-3`
 - `atlas-sse2.i386-3.6.0-8.fc4`
 - `atlas-sse2-devel.i386-3.6.0-8.fc4`
 - `blas.i386-3.0-35.fc4`
 - `lapack.i386-3.0-35.fc4`
- **Tests Status:** All tests PASSED
- **Comments:** TRAVELCCM configured with:


```
% CXXFLAGS="-O3 -pipe -march=pentium4" ./configure
```
- **Date:** March 7, 2006
- **Tester:** Tony Ottosson

13.3.1.2 Gentoo Linux with ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler(s):** g++ (GCC) 3.4.5
- **TRAVELCCM release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:
 - `sci-libs/acml-3.0.0`
- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:


```
% eselect blas set ACML
% eselect lapack set ACML
```

TRAVELCCM configured with:

```
% export CPPFLAGS="-I/usr/include/acml"
% ./configure --with-blas="-lblas"
```
- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.3 Gentoo Linux with ATLAS

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **TRAVELCCM release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:
 - sci-libs/fftw-3.1
 - sci-libs/blas-atlas-3.6.0-r1
 - sci-libs/lapack-atlas-3.6.0
- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ATLAS
% eselect lapack set ATLAS
```

TRAVELCCM configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.4 Gentoo Linux with MKL

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler:** g++ (GCC) 3.4.5
- **TRAVELCCM release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory:
/opt/intel/mkl/8.0.1
- **Tests Status:** All tests PASSED
- **Comments:** TRAVELCCM configured using the following commands:

```
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/32"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date:** February 28, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.5 Gentoo Linux with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **TRAVELCCM release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:
 - sci-libs/fftw-3.1
 - sci-libs/blas-reference-19940131-r2
 - sci-libs/cblas-reference-20030223
 - sci-libs/lapack-reference-3.0-r2
- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% blas-config reference
% lapack-config reference
```

TRAVELCCM configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.6 Red Hat Enterprise Linux with TRAVELCCM External

- **Platform:** Intel Pentium 4
- **Operating System:** Red Hat Enterprise Linux AS release 4 (Nahant Update 2)
- **Compiler:** g++ (GCC) 3.4.4 20050721 (Red Hat 3.4.4-2)
- **TRAVELCCM release:** 3.10.0
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from TRAVELCCM External 2.1.1 package
- **Tests Status:** All tests PASSED
- **Date:** March 7, 2006
- **Tester:** Erik G. Larsson

13.3.1.7 SUSE Linux 10.0 with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **TRAVELCCM release:** 3.10.0
- **External Libraries:** BLAS, LAPACK and FFTW libraries installed from OpenSuse 10.0 RPM repository:
 - blas-3.0-926
 - lapack-3.0-926
 - fftw3-3.0.1-114

- fftw3-threads-3.0.1-114
- fftw3-devel-3.0.1-114

- **Tests Status:** All tests PASSED
- **Comments:** TRAVELCCM configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% ./configure --with-lapack="/usr/lib64/liblapack.so.3"
```

- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.8 SUSE Linux 10.0 with MKL

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **TRAVELCCM release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory:
/opt/intel/mkl/8.0.1
- **Tests Status:** All tests PASSED
- **Comments:** TRAVELCCM configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/em64t"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2 Windows Systems

13.3.2.1 Microsoft Windows XP with Cygwin

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **TRAVELCCM release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:
 - fftw-3.0.1-2
 - fftw-dev-3.0.1-1
 - lapack-3.0-4
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. TRAVELCCM configured with:

```
% ./configure
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.2 Microsoft Windows XP with Cygwin and ATLAS

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **TRAVELCCM release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:
 - fftw-3.0.1-2
 - fftw-dev-3.0.1-1

ATLAS BLAS and LAPACK libraries from [TRAVELCCM](#) External 2.1.1 package configured using:

```
% ./configure --enable-atlas --disable-fftw
```

- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. [TRAVELCCM](#) configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% ./configure
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.3 Microsoft Windows XP with Cygwin and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **TRAVELCCM release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. [TRAVELCCM](#) configured with:

```
% export LDFLAGS="-L/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.4 Microsoft Windows XP with MinGW, MSYS and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **TRAVELCCM release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. TRAVELCCM configured with:


```
% export LDFLAGS="-L/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```
- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.5 Microsoft Windows XP with MinGW, MSYS and TRAVELCCM External

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **TRAVELCCM release:** 3.10.5
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from TRAVELCCM External 2.2.0 package
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. TRAVELCCM configured with:


```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-Wall -O3 -march=athlon-tbird -pipe"
% ./configure --disable-html-doc
```
- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.6 Microsoft Windows XP with MS Visual C++ and Intel MKL

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2
- **Compiler(s):** Microsoft Visual C++ 2005 .NET
- **TRAVELCCM release:** 3.10.5
- **External Libraries:** Intel Math Kernel Library (MKL) 8.1 installed manually in the following directory: "C:\Program Files\Intel\MKL\8.1"
- **Tests Status:** Not fully tested. Some TRAVELCCM based programs compiled and run with success.
- **Comments:** Only static library can be built. TRAVELCCM built by opening the "win32\travelccm.-vcproj" project file in MSVC++ and executing "Build -> Build Solution" command from menu.
- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.3 Unix Systems

13.3.3.1 SunOS 5.9 with TRAVELCCM External

- **Platform:** SUNW, Sun-Blade-100 (SPARC)
- **Operating System:** SunOS 5.9 Generic_112233-10
- **Compiler(s):** g++ (GCC) 3.4.5
- **TRAVELCCM release:** 3.10.2
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from [TRAVELCCM External 2.1.1](#) package. The following configuration command has been used:

```
% export CFLAGS="-mcpu=ultrasparc -O2 -pipe -funroll-all-loops"
% ./configure
```

- **Tests Status:** All tests PASSED
- **Comments:** [TRAVELCCM](#) configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-mcpu=ultrasparc -O2 -pipe"
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

14 TRAVELCCM Supported Systems (Previous Releases)

14.1 TRAVELCCM 3.9.1

14.2 TRAVELCCM 3.9.0

14.3 TRAVELCCM 3.8.1

15 Tutorials

15.1 Table of Contents

- [Preparing the TravelCCM Project for Development](#)
- [Your first networkBuilde](#)
 - [Summary of the different steps](#)
 - [Result of the Batch Program](#)
- [Network building with an input file](#)
 - [How to build a network input file?](#)
 - [Building the BOM tree with an input file](#)
 - [Result of the Batch Program](#)

15.2 Preparing the TravelCCM Project for Development

The source code for these examples can be found in the `batches` and `test/travelccm` directories. They are compiled along with the rest of the `TravelCCM` project. See the [Users Guide](#) for more details on how to build the `TravelCCM` project.

15.3 Your first networkBuild

15.3.1 Summary of the different steps

All the steps below can be found in the same order in the batch `TravelCCM.cpp` program.

First, we instantiate the `TRAVELCCM_Service` object:

Then, we construct a default sample list of travel solutions and a default booking request (as mentioned in `ug_procedure_bookingrequest` and `ug_procedure_travelsolution` parts):

```
stdair::TravelSolutionList_T lTSList;
```

For basic use, the default BOM tree can be built using:

The main step is the network building (see [The travel solution calculation procedure](#)):

15.3.2 Result of the Batch Program

When the `TravelCCM.cpp` program is run (with the `-b` option), the log output file should look like:

What is interesting is to compare the travel solution list (here reduced to a single travel solution) displayed before:

and after the network building:

Between the two groups of dashes, we can see that a network option structure has been added by the network builder: the price is 450 EUR for the Y class, the ticket is refundable but there are exchange fees and the customer must stay over on Saturday night.

Let's return to our default BOM tree display: the only network rule stored was a match for the travel solution into consideration (same origin airport, same destination airport, flight date included in the network rule date range, same airline "BA", ...).

By looking at the network rule trip type "RT", we can guess we face a round trip network: that means the price given in the default bom tree construction in `stdair::CmdBomManager.hpp` has been divided by 2 because we are considering either an inbound trip or an outbound one.

15.4 Network building with an input file

15.4.1 How to build a network input file?

The objective here is to build a network input file to network build the default travel solution list built using:

This travel solution list, reduced to a singleton, can be displayed as done before:

We deduce:

- we need a network rule whose origin-destination couple is "LHR, SYD".
- the date range must include the date "2011-06-10".
- the time range must include the time "21:45".
- the airline operating is "BA", so it must be the airline pricing.

We can deduce a part of our network rule file :

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
      DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
      Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
      nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ???; ?; ??; ?; ?; ?; ?;
  ?; ???; BA; ?;
```

We have no information about stay duration and advance purchase (such information are contained into the booking request): so let us put "0" to embrace all the requests possible.

No information for the point-of-sale and the channel too: let us consider all the channels ("IN", "DN", "IF" and "DF") and all the points of sale (the origin "LHR", the destination "SYD" and the rest-of-the-world "ROW") existing. To access this information, we could look into the default booking request.

The input file is now:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
      DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
      Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
      nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IN; 0; ?; ?; ?;
  0; ???; BA; ?;
2; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IF; 0; ?; ?; ?;
  0; ???; BA; ?;
3; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DN; 0; ?; ?; ?;
  0; ???; BA; ?;
4; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DF; 0; ?; ?; ?;
  0; ???; BA; ?;
5; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IN; 0; ?; ?; ?;
  0; ???; BA; ?;
6; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IF; 0; ?; ?; ?;
  0; ???; BA; ?;
7; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DN; 0; ?; ?; ?;
  0; ???; BA; ?;
8; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DF; 0; ?; ?; ?;
  0; ???; BA; ?;
9; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IN; 0; ?; ?; ?;
  0; ???; BA; ?;
10; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IF; 0; ?; ?; ?;
  0; ???; BA; ?;
11; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DN; 0; ?; ?; ?;
  0; ???; BA; ?;
12; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DF; 0; ?; ?; ?;
  0; ???; BA; ?;
```

Let us say we have just the Economy cabin "Y" and British Airways prices ticket for class "Y".

No information about the trip type, so we duplicate all the network rules for both type: one-way "OW" and round-trip "RT" (to access this information, we could look to the default booking request).

The network options are all set to a default value "T" (meaning true) and the network values are chosen to be all distinct.

We obtain:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
//         DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
//         Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
// nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T;
0; 50; BA; Y;
2; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T;
0; 150; BA; Y;
3; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T;
0; 250; BA; Y;
4; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T;
0; 350; BA; Y;
5; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T;
0; 450; BA; Y;
6; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T;
0; 550; BA; Y;
7; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T;
0; 650; BA; Y;
8; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T;
0; 750; BA; Y;
9; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T;
0; 850; BA; Y;
10; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T;
0; 950; BA; Y;
11; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T;
0; 1050; BA; Y;
12; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T;
0; 1150; BA; Y;
13; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T;
0; 90; BA; Y;
14; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T;
0; 190; BA; Y;
15; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T;
0; 290; BA; Y;
16; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T;
0; 390; BA; Y;
17; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T;
0; 490; BA; Y;
18; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T;
0; 590; BA; Y;
19; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T;
0; 690; BA; Y;
20; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T;
0; 790; BA; Y;
21; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T;
0; 890; BA; Y;
22; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T;
0; 990; BA; Y;
23; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T;
0; 1090; BA; Y;
24; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T;
0; 1190; BA; Y;
```

15.4.2 Building the BOM tree with an input file

The steps are the same as before [Summary of the different steps](#) except the bom tree must be built using the network input file :

15.4.3 Result of the Batch Program

When the TravelCCM.cpp program is run with the -f option linking with the file built just above:

```
~/TravelCCM -f ~/<YourFileName>.csv
```

the last lines of the log output should look like:

```
[D]~/TravelCCMgit/TravelCCM/batches/TravelCCM.cpp:223: Travel solutions:
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 145, 1 1 1 ---
```

We have just one network option added to the travel solution. We can deduce from the price value 145 that the network builder used the network rule number 15 to price the travel solution. We have an inbound or outbound trip of a round trip: the total price 290 has been divided by 2.

16 Command-Line Test to Demonstrate How To Test the Travel CCM Project

```
*/
// //////////////////////////////////////
// Import section
// //////////////////////////////////////
// STL
#include <sstream>
#include <fstream>
#include <string>
// Boost Unit Test Framework (UTF)
#define BOOST_TEST_DYN_LINK
#define BOOST_TEST_MAIN
#define BOOST_TEST_MODULE TravelCCMTest
#include <boost/test/unit_test.hpp>
// StdAir
#include <stdair/basic/BasLogParams.hpp>
#include <stdair/basic/BasDBParams.hpp>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/basic/PassengerChoiceModel.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
// TravelCCM
#include <travelccm/TRAVELCCM_Service.hpp>
#include <travelccm/config/travelccm-paths.hpp>
>

namespace boost_utf = boost::unit_test;

// (Boost) Unit Test XML Report
std::ofstream utfReportStream ("TravelChoiceTestSuite_utfresults.xml");

struct UnitTestConfig {
    UnitTestConfig() {
        boost_utf::unit_test_log.set_stream (utfReportStream);
        boost_utf::unit_test_log.set_format (boost_utf::XML);
        boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
        //boost_utf::unit_test_log.set_threshold_level
        (boost_utf::log_successful_tests);
    }
    ~UnitTestConfig() {
    }
};

// //////////////////////////////////////
void testTravelCCMHelper (const unsigned short iTestFlag,
                        const
                        stdair::PassengerChoiceModel& iPassengerChoiceModel,
                        const unsigned int iExpectedPrice) {

    // Output log File
    std::ostream oStr;
    oStr << "TravelChoiceTestSuite_" << iTestFlag << ".log";
    const stdair::Filename_T lLogFilename (oStr.str());

    // Set the log parameters
    std::ofstream logOutputFile;
    // Open and clean the log outputfile
    logOutputFile.open (lLogFilename.c_str());
    logOutputFile.clear();

    // Initialise the service context
    const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);

    // Build the BOM tree
    TRAVELCCM::TRAVELCCM_Service travelccmService (
        lLogParams);
    travelccmService.buildSampleBom ();

    // DEBUG
```

```

STDAIR_LOG_DEBUG ("Welcome to TravelCCM");

// Build a list of travel solutions
const stdair::BookingRequestStruct& lBookingRequest =
    travelccmService.buildSampleBookingRequest();

// DEBUG
STDAIR_LOG_DEBUG ("Booking request: " << lBookingRequest.display());

// Build the sample BOM tree
stdair::TravelSolutionList_T lTSList;
travelccmService.buildSampleTravelSolutions (lTSList);

// DEBUG: Display the list of travel solutions
const std::string& lCSVDump = travelccmService.csvDisplay (lTSList);
STDAIR_LOG_DEBUG (lCSVDump);

// Choose a travel solution
const stdair::TravelSolutionStruct* lTS_ptr =
    travelccmService.chooseTravelSolution (lTSList, lBookingRequest,
        iPassengerChoiceModel);

// Check that a solution has been found
BOOST_REQUIRE_MESSAGE (lTS_ptr != NULL,
    "No travel solution can be found for "
    << lBookingRequest.display()
    << " within the following list of travel solutions. "
    << lCSVDump);

STDAIR_LOG_DEBUG (lTS_ptr->describe());

// Retrieve the chosen fare option
stdair::FareOptionStruct lFareOption = lTS_ptr->getChosenFareOption();

// DEBUG
std::ostringstream oMessageExpectedPrice;
oMessageExpectedPrice << "The price chosen by the passenger is: "
    << lFareOption.getFare() << " Euros. It is expected to
    be "
    << iExpectedPrice << " Euros.";
STDAIR_LOG_DEBUG (oMessageExpectedPrice.str());

// Check that the price corresponds to the expected one
BOOST_CHECK_EQUAL (std::floor (lFareOption.getFare() + 0.5), iExpectedPrice);

BOOST_CHECK_MESSAGE (std::floor (lFareOption.getFare() + 0.5)
    == iExpectedPrice, oMessageExpectedPrice.str());

// Close the log file
logOutputFile.close();
}

// //////////// Main: Unit Test Suite ////////////

// Set the UTF configuration (re-direct the output to a specific file)
BOOST_GLOBAL_FIXTURE (UnitTestFixture);

// Start the test suite
BOOST_AUTO_TEST_SUITE (master_test_suite)

BOOST_AUTO_TEST_CASE (simple_hard_restriction_model_test) {
    const unsigned int lExpectedPrice = 1000;

    BOOST_CHECK_NO_THROW (testTravelCCMHelper
        (0,
         stdair::PassengerChoiceModel::HARD_RESTRICTION,
         lExpectedPrice));
}

BOOST_AUTO_TEST_CASE (simple_price_oriented_model_test) {
    const unsigned int lExpectedPrice = 900;

    BOOST_CHECK_NO_THROW (testTravelCCMHelper
        (1,
         stdair::PassengerChoiceModel::PRICE_ORIENTED,
         lExpectedPrice));
}

BOOST_AUTO_TEST_CASE (simple_hybrid_model_test) {
    const unsigned int lExpectedPrice = 920;

```

```

BOOST_CHECK_NO_THROW (testTravelCCMHelper
                      (2,
                       stdair::PassengerChoiceModel::HYBRID,
                       lExpectedPrice));
}

// End the test suite
BOOST_AUTO_TEST_SUITE_END ()

/*!

```

17 Namespace Index

17.1 Namespace List

Here is a list of all namespaces with brief descriptions:

stdair	
Forward declarations	91
TRAVELCCM	91

18 Class Index

18.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

std::basic_fstream< char >	
std::basic_fstream< wchar_t >	
std::basic_ifstream< char >	
std::basic_ifstream< wchar_t >	
std::basic_ios< char >	
std::basic_ios< wchar_t >	
std::basic_iostream< char >	
std::basic_iostream< wchar_t >	
std::basic_istream< char >	
std::basic_istream< wchar_t >	
std::basic_istringstream< char >	
std::basic_istringstream< wchar_t >	
std::basic_ofstream< char >	
std::basic_ofstream< wchar_t >	
std::basic_ostream< char >	
std::basic_ostream< wchar_t >	
std::basic_ostringstream< char >	
std::basic_ostringstream< wchar_t >	
std::basic_string< char >	
std::basic_string< wchar_t >	
std::basic_stringstream< char >	
std::basic_stringstream< wchar_t >	
TRAVELCCM::ChoiceManager	91
TRAVELCCM::CmdAbstract	92
FacServiceAbstract	93
TRAVELCCM::FacTRAVELCCMServiceContext	93

TRAVELCCM::FileMgr	94
TRAVELCCM::HardRestrictionModel	95
TRAVELCCM::HybridModel	95
TRAVELCCM::PriceOrientedModel	96
RootException	97
TRAVELCCM::CustomerChoiceException	92
ServiceAbstract	97
TRAVELCCM::TRAVELCCM_ServiceContext	101
TestFixture	97
TravelChoiceTestSuite	102
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19 Class Index

19.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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TRAVELCCM::CmdAbstract	92
TRAVELCCM::CustomerChoiceException	92
FacServiceAbstract	93
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TestFixture	97
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TRAVELCCM::TRAVELCCM_ServiceContext	
Inner class holding the context for the TravelCCM Service object	101
TravelChoiceTestSuite	102

20 File Index

20.1 File List

Here is a list of all files with brief descriptions:

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travelccm/bom/HybridModel.hpp	114
travelccm/bom/PriceOrientedModel.cpp	115
travelccm/bom/PriceOrientedModel.hpp	116
travelccm/command/ChoiceManager.cpp	117
travelccm/command/ChoiceManager.hpp	118
travelccm/command/CmdAbstract.cpp	118
travelccm/command/CmdAbstract.hpp	119
travelccm/command/FileMgr.cpp	119
travelccm/command/FileMgr.hpp	120
travelccm/config/travelccm-paths.hpp	122
travelccm/config/travelccm-paths.hpp.in	124
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travelccm/factory/FacTRAVELCCMServiceContext.hpp	125
travelccm/service/TRAVELCCM_Service.cpp	126
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21 Namespace Documentation

21.1 stdair Namespace Reference

Forward declarations.

21.1.1 Detailed Description

Forward declarations.

21.2 TRAVELCCM Namespace Reference

Classes

- class [HardRestrictionModel](#)
- class [HybridModel](#)
- class [PriceOrientedModel](#)
- class [ChoiceManager](#)
- class [CmdAbstract](#)
- class [FileMgr](#)
- class [FacTRAVELCCMServiceContext](#)
- class [TRAVELCCM_ServiceContext](#)
 - Inner class holding the context for the TravelCCM Service object.*
- class [TRAVELCCM_Service](#)
- class [CustomerChoiceException](#)

Typedefs

- typedef boost::shared_ptr
 < [TRAVELCCM_Service](#) > [TRAVELCCM_ServicePtr_T](#)

21.2.1 Typedef Documentation

21.2.1.1 typedef boost::shared_ptr<[TRAVELCCM_Service](#)> [TRAVELCCM::TRAVELCCM_ServicePtr_T](#)

Pointer on the [TRAVELCCM](#) Service handler.

Definition at line 38 of file [TRAVELCCM_Types.hpp](#).

22 Class Documentation

22.1 TRAVELCCM::ChoiceManager Class Reference

```
#include <travelccm/command/ChoiceManager.hpp>
```

Static Public Member Functions

- static const
 stdair::TravelSolutionStruct * [chooseTravelSolution](#) (stdair::TravelSolutionList_T &, const stdair::Booking-
 RequestStruct &, const stdair::PassengerChoiceModel::EN_PassengerChoiceModel &)

22.1.1 Detailed Description

Class managing the customer choice model/algorithm.

Definition at line 22 of file [ChoiceManager.hpp](#).

22.1.2 Member Function Documentation

22.1.2.1 `const stdair::TravelSolutionStruct * TRAVELCCM::ChoiceManager::chooseTravelSolution (stdair::TravelSolutionList.T & ioTravelSolutionList, const stdair::BookingRequestStruct & iBookingRequest, const stdair::PassengerChoiceModel::EN_PassengerChoiceModel & iPassengerChoiceModel) [static]`

Choose the travel solution and the fare option within the given list of travel solutions.

The returned pointer will be NULL if no travel solution is chosen (e.g. Willingness-To-Pay too low).

Definition at line 19 of file [ChoiceManager.cpp](#).

The documentation for this class was generated from the following files:

- [travelccm/command/ChoiceManager.hpp](#)
- [travelccm/command/ChoiceManager.cpp](#)

22.2 TRAVELCCM::CmdAbstract Class Reference

```
#include <travelccm/command/CmdAbstract.hpp>
```

22.2.1 Detailed Description

Base class for the Command layer.

Definition at line 11 of file [CmdAbstract.hpp](#).

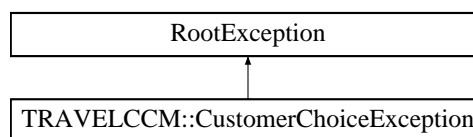
The documentation for this class was generated from the following file:

- [travelccm/command/CmdAbstract.hpp](#)

22.3 TRAVELCCM::CustomerChoiceException Class Reference

```
#include <travelccm/TRAVELCCM_Types.hpp>
```

Inheritance diagram for TRAVELCCM::CustomerChoiceException:



Public Member Functions

- [CustomerChoiceException](#) (const std::string &iWhat)

22.3.1 Detailed Description

TravelCCM specific root exception.

Definition at line 24 of file [TRAVELCCM_Types.hpp](#).

22.3.2 Constructor & Destructor Documentation

22.3.2.1 TRAVELCCM::CustomerChoiceException::CustomerChoiceException (const std::string & *iWhat*) [inline]

Constructor.

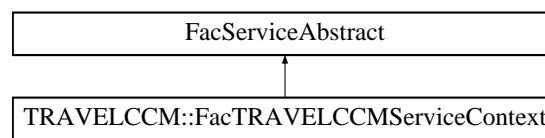
Definition at line 29 of file [TRAVELCCM_Types.hpp](#).

The documentation for this class was generated from the following file:

- [travelccm/TRAVELCCM_Types.hpp](#)

22.4 FacServiceAbstract Class Reference

Inheritance diagram for FacServiceAbstract:



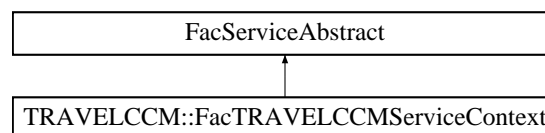
The documentation for this class was generated from the following file:

- [travelccm/factory/FacTRAVELCCMServiceContext.hpp](#)

22.5 TRAVELCCM::FacTRAVELCCMServiceContext Class Reference

```
#include <travelccm/factory/FacTRAVELCCMServiceContext.hpp>
```

Inheritance diagram for TRAVELCCM::FacTRAVELCCMServiceContext:



Public Member Functions

- [~FacTRAVELCCMServiceContext \(\)](#)
- [TRAVELCCM_ServiceContext & create \(\)](#)

Static Public Member Functions

- static [FacTRAVELCCMServiceContext & instance \(\)](#)

Protected Member Functions

- [FacTRAVELCCMServiceContext \(\)](#)

22.5.1 Detailed Description

Factory for Bucket.

Definition at line 18 of file [FacTRAVELCCMServiceContext.hpp](#).

22.5.2 Constructor & Destructor Documentation

22.5.2.1 TRAVELCCM::FacTRAVELCCMServiceContext::~~FacTRAVELCCMServiceContext ()

Destructor.

The Destruction put the `_instance` to NULL in order to be clean for the next [FacTRAVELCCMServiceContext::instance\(\)](#).

Definition at line 17 of file [FacTRAVELCCMServiceContext.cpp](#).

22.5.2.2 TRAVELCCM::FacTRAVELCCMServiceContext::FacTRAVELCCMServiceContext () [inline], [protected]

Default Constructor.

This constructor is protected in order to ensure the singleton pattern.

Definition at line 42 of file [FacTRAVELCCMServiceContext.hpp](#).

Referenced by [instance\(\)](#).

22.5.3 Member Function Documentation

22.5.3.1 FacTRAVELCCMServiceContext & TRAVELCCM::FacTRAVELCCMServiceContext::instance () [static]

Provide the unique instance.

The singleton is instantiated when first used

Returns

[FacTRAVELCCMServiceContext&](#)

Definition at line 22 of file [FacTRAVELCCMServiceContext.cpp](#).

References [FacTRAVELCCMServiceContext\(\)](#).

22.5.3.2 TRAVELCCM_ServiceContext & TRAVELCCM::FacTRAVELCCMServiceContext::create ()

Create a new [TRAVELCCM_ServiceContext](#) object.

This new object is added to the list of instantiated objects.

Returns

[TRAVELCCM_ServiceContext&](#) The newly created object.

Definition at line 34 of file [FacTRAVELCCMServiceContext.cpp](#).

The documentation for this class was generated from the following files:

- [travelccm/factory/FacTRAVELCCMServiceContext.hpp](#)
- [travelccm/factory/FacTRAVELCCMServiceContext.cpp](#)

22.6 TRAVELCCM::FileMgr Class Reference

```
#include <travelccm/command/FileMgr.hpp>
```

22.6.1 Detailed Description

Class filling the TravelSolutionHolder structure (representing a list of classes/travelSolutions) from a given input file.

Definition at line 15 of file [FileMgr.hpp](#).

The documentation for this class was generated from the following file:

- [travelccm/command/FileMgr.hpp](#)

22.7 TRAVELCCM::HardRestrictionModel Class Reference

```
#include <travelccm/bom/HardRestrictionModel.hpp>
```

Static Public Member Functions

- static const
stdair::TravelSolutionStruct * [chooseTravelSolution](#) (stdair::TravelSolutionList_T &, const stdair::BookingRequestStruct &)

22.7.1 Detailed Description

Class implementing the customer choice of cheapest solution.

Definition at line 21 of file [HardRestrictionModel.hpp](#).

22.7.2 Member Function Documentation

22.7.2.1 const stdair::TravelSolutionStruct * TRAVELCCM::HardRestrictionModel::chooseTravelSolution (stdair::TravelSolutionList_T & *ioTSList*, const stdair::BookingRequestStruct & *iBookingRequest*) [static]

Choose the cheapest travel solution and the fare option within the given list of travel solutions.

The fare option must satisfy the hard restriction/constrain such as change fees and non refundable.

The returned pointer will be NULL if no travel solution is chosen (e.g. Willingness-To-Pay too low).

Definition at line 21 of file [HardRestrictionModel.cpp](#).

The documentation for this class was generated from the following files:

- [travelccm/bom/HardRestrictionModel.hpp](#)
- [travelccm/bom/HardRestrictionModel.cpp](#)

22.8 TRAVELCCM::HybridModel Class Reference

```
#include <travelccm/bom/HybridModel.hpp>
```

Static Public Member Functions

- static const
stdair::TravelSolutionStruct * [chooseTravelSolution](#) (stdair::TravelSolutionList_T &, const stdair::BookingRequestStruct &)

22.8.1 Detailed Description

Class implementing the customer choice of cheapest solution within disutility.

Definition at line 22 of file [HybridModel.hpp](#).

22.8.2 Member Function Documentation

22.8.2.1 `const stdair::TravelSolutionStruct * TRAVELCCM::HybridModel::chooseTravelSolution (stdair::TravelSolutionList_T & ioTSList, const stdair::BookingRequestStruct & iBookingRequest) [static]`

Choose the cheapest travel solution and the fare option within the given list of travel solutions.

Fare options which do not satisfy the restrictions of the customer have a disutility for each unsatisfied restriction.

The returned pointer will be NULL if no travel solution is chosen (e.g. Willingness-To-Pay too low).

Definition at line 21 of file [HybridModel.cpp](#).

The documentation for this class was generated from the following files:

- [travelccm/bom/HybridModel.hpp](#)
- [travelccm/bom/HybridModel.cpp](#)

22.9 TRAVELCCM::PriceOrientedModel Class Reference

```
#include <travelccm/bom/PriceOrientedModel.hpp>
```

Static Public Member Functions

- static const
stdair::TravelSolutionStruct * [chooseTravelSolution](#) (stdair::TravelSolutionList_T &, const stdair::BookingRequestStruct &)

22.9.1 Detailed Description

Class implementing the customer choice of cheapest solution.

Definition at line 21 of file [PriceOrientedModel.hpp](#).

22.9.2 Member Function Documentation

22.9.2.1 `const stdair::TravelSolutionStruct * TRAVELCCM::PriceOrientedModel::chooseTravelSolution (stdair::TravelSolutionList_T & ioTSList, const stdair::BookingRequestStruct & iBookingRequest) [static]`

Choose the cheapest travel solution and the fare option within the given list of travel solutions.

The returned pointer will be NULL if no travel solution is chosen (e.g. Willingness-To-Pay too low).

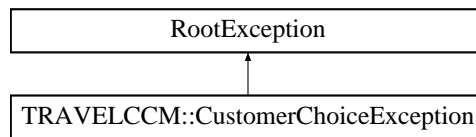
Definition at line 21 of file [PriceOrientedModel.cpp](#).

The documentation for this class was generated from the following files:

- [travelccm/bom/PriceOrientedModel.hpp](#)
- [travelccm/bom/PriceOrientedModel.cpp](#)

22.10 RootException Class Reference

Inheritance diagram for RootException:

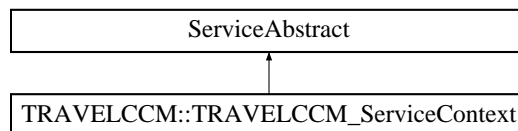


The documentation for this class was generated from the following file:

- [travelccm/TRAVELCCM_Types.hpp](#)

22.11 ServiceAbstract Class Reference

Inheritance diagram for ServiceAbstract:

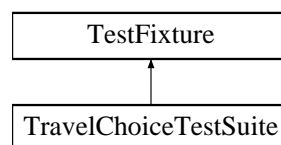


The documentation for this class was generated from the following file:

- [travelccm/service/TRAVELCCM_ServiceContext.hpp](#)

22.12 TestFixture Class Reference

Inheritance diagram for TestFixture:



The documentation for this class was generated from the following file:

- [test/travelccm/TravelChoiceTestSuite.hpp](#)

22.13 TRAVELCCM::TRAVELCCM_Service Class Reference

```
#include <travelccm/TRAVELCCM_Service.hpp>
```

Public Member Functions

- [TRAVELCCM_Service](#) (const stdair::BasLogParams &, const stdair::BasDBParams &)
- [TRAVELCCM_Service](#) (const stdair::BasLogParams &)
- [TRAVELCCM_Service](#) (stdair::STDAIR_ServicePtr_T)

- [~TRAVELCCM_Service \(\)](#)
- void [buildSampleBom \(\)](#)
- void [clonePersistentBom \(\)](#)
- void [buildComplementaryLinks](#) (stdair::BomRoot &)
- void [buildSampleTravelSolutions](#) (stdair::TravelSolutionList_T &)
- stdair::BookingRequestStruct [buildSampleBookingRequest](#) (const bool isForCRS=false)
- const
stdair::TravelSolutionStruct * [chooseTravelSolution](#) (stdair::TravelSolutionList_T &, const stdair::BookingRequestStruct &, const stdair::PassengerChoiceModel::EN_PassengerChoiceModel &iPassengerChoiceModel=stdair::PassengerChoiceModel::PRICE_ORIENTED)
- std::string [csvDisplay](#) () const
- std::string [csvDisplay](#) (const stdair::TravelSolutionList_T &) const

22.13.1 Detailed Description

Interface for the [TRAVELCCM](#) Services.

Definition at line 33 of file [TRAVELCCM_Service.hpp](#).

22.13.2 Constructor & Destructor Documentation

22.13.2.1 TRAVELCCM::TRAVELCCM_Service::TRAVELCCM_Service (const stdair::BasLogParams & iLogParams, const stdair::BasDBParams & iDBParams)

Constructor.

The init() method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Moreover, database connection parameters are given, so that a session can be created on the corresponding database.

Parameters

<i>const</i>	stdair::BasLogParams& Parameters for the output log stream.
<i>const</i>	stdair::BasDBParams& Parameters for the database access.

Definition at line 36 of file [TRAVELCCM_Service.cpp](#).

22.13.2.2 TRAVELCCM::TRAVELCCM_Service::TRAVELCCM_Service (const stdair::BasLogParams & iLogParams)

Constructor.

The init() method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

<i>const</i>	stdair::BasLogParams& Parameters for the output log stream.
--------------	---

Definition at line 57 of file [TRAVELCCM_Service.cpp](#).

22.13.2.3 TRAVELCCM::TRAVELCCM_Service::TRAVELCCM_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr)

Constructor.

The init() method is called; see the corresponding documentation for more details.

Moreover, as no reference on any output stream is given, it is assumed that the StdAir log service has already been initialised with the proper log output stream by some other methods in the calling chain (for instance, when the

[TRAVELCCM_Service](#) is itself being initialised by another library service such as [TVLSIM_Service](#)).

Parameters

<code>stdair::STDAIR_ServicePtr_T</code>	Reference on the STDAIR service.
--	----------------------------------

Definition at line 78 of file [TRAVELCCM_Service.cpp](#).

22.13.2.4 TRAVELCCM::TRAVELCCM_Service::~~TRAVELCCM_Service ()

Destructor.

Definition at line 94 of file [TRAVELCCM_Service.cpp](#).

22.13.3 Member Function Documentation

22.13.3.1 void TRAVELCCM::TRAVELCCM_Service::buildSampleBom ()

Build a sample BOM tree, and attach it to the BomRoot instance.

Definition at line 170 of file [TRAVELCCM_Service.cpp](#).

References [buildComplementaryLinks\(\)](#), and [clonePersistentBom\(\)](#).

22.13.3.2 void TRAVELCCM::TRAVELCCM_Service::clonePersistentBom ()

Clone the persistent BOM object.

Definition at line 228 of file [TRAVELCCM_Service.cpp](#).

References [buildComplementaryLinks\(\)](#).

Referenced by [buildSampleBom\(\)](#).

22.13.3.3 void TRAVELCCM::TRAVELCCM_Service::buildComplementaryLinks (stdair::BomRoot & ioBomRoot)

Build all the complementary links in the given bom root object.

Note

Do nothing for now.

Definition at line 273 of file [TRAVELCCM_Service.cpp](#).

Referenced by [buildSampleBom\(\)](#), and [clonePersistentBom\(\)](#).

22.13.3.4 void TRAVELCCM::TRAVELCCM_Service::buildSampleTravelSolutions (stdair::TravelSolutionList_T & ioTSList)

Build a sample list of travel solutions.

As of now (March 2011), that list is made of the following travel solutions:

- BA9
- LHR-SYD
- 2011-06-10
- Q
- WTP: 900
- Change fee: 20; Non refundable; Saturday night stay

Parameters

<i>stdair::TravelSolutionList_T</i> &	Sample list of travel solution structures. It should be given empty. It is altered with the returned sample.
---------------------------------------	--

Definition at line 279 of file [TRAVELCCM_Service.cpp](#).

22.13.3.5 `stdair::BookingRequestStruct TRAVELCCM::TRAVELCCM_Service::buildSampleBookingRequest (const bool isForCRS = false)`

Build a sample booking request structure.

As of now (March 2011), the sample booking request is made of the following parameters:

- Return trip (inbound): LHR-SYD (POS: LHR, Channel: DN),
- Departing 10-JUN-2011 around 8:00, staying 7 days
- Requested on 15-MAY-2011 at 10:00
- Economy cabin, 3 persons, FF member
- WTP: 1000.0 EUR
- Dis-utility: 100.0 EUR/hour

As of now (March 2011), the CRS-related booking request is made of the following parameters:

- Return trip (inbound): SIN-BKK (POS: SIN, Channel: IN),
- Departing 30-JAN-2010 around 10:00, staying 7 days
- Requested on 22-JAN-2010 at 10:00
- Economy cabin, 3 persons, FF member
- WTP: 1000.0 EUR
- Dis-utility: 100.0 EUR/hour

Parameters

<i>const</i>	bool isForCRS Whether the sample booking request is for CRS.
--------------	--

Returns

BookingRequestStruct& Sample booking request structure.

Definition at line 301 of file [TRAVELCCM_Service.cpp](#).

22.13.3.6 `const stdair::TravelSolutionStruct * TRAVELCCM::TRAVELCCM_Service::chooseTravelSolution (stdair::TravelSolutionList_T & ioTravelSolutionList, const stdair::BookingRequestStruct & iBookingRequest, const stdair::PassengerChoiceModel::EN_PassengerChoiceModel & iPassengerChoiceModel = stdair::PassengerChoiceModel::PRICE_ORIENTED)`

Choose the travel solution and the fare option within the given list of travel solutions.

The returned pointer will be NULL if no travel solution is chosen (e.g., when the Willingness-To-Pay is too low).

Parameters

<i>stdair::TravelSolutionList_T</i> &	The list of travel solution to choose among.
<i>const</i>	stdair::BookingRequestStruct& The booking request and its context.

Returns

stdair::TravelSolutionStruct* The chosen travel solution. NULL when not found.

Definition at line 366 of file [TRAVELCCM_Service.cpp](#).

22.13.3.7 std::string TRAVELCCM::TRAVELCCM_Service::csvDisplay () const

Recursively display (dump in the returned string) the objects of the BOM tree.

Returns

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 322 of file [TRAVELCCM_Service.cpp](#).

22.13.3.8 std::string TRAVELCCM::TRAVELCCM_Service::csvDisplay (const stdair::TravelSolutionList_T & iTravelSolutionList) const

Display (dump in the returned string) the full list of travel solution structures.

Returns

std::string Output string in which the list of travel solutions is logged/dumped.

Definition at line 345 of file [TRAVELCCM_Service.cpp](#).

The documentation for this class was generated from the following files:

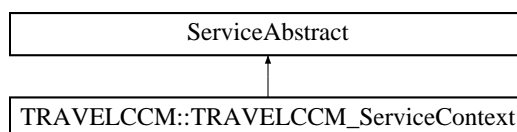
- [travelccm/TRAVELCCM_Service.hpp](#)
- [travelccm/service/TRAVELCCM_Service.cpp](#)

22.14 TRAVELCCM::TRAVELCCM_ServiceContext Class Reference

Inner class holding the context for the TravelCCM Service object.

```
#include <travelccm/service/TRAVELCCM_ServiceContext.hpp>
```

Inheritance diagram for TRAVELCCM::TRAVELCCM_ServiceContext:

**Friends**

- class [TRAVELCCM_Service](#)
- class [FacTRAVELCCMServiceContext](#)

22.14.1 Detailed Description

Inner class holding the context for the TravelCCM Service object.

Definition at line 23 of file [TRAVELCCM_ServiceContext.hpp](#).

22.14.2 Friends And Related Function Documentation

22.14.2.1 friend class TRAVELCCM_Service [friend]

The [TRAVELCCM_Service](#) class should be the sole class to get access to ServiceContext content: general users do not want to bother with a context interface.

Definition at line 29 of file [TRAVELCCM_ServiceContext.hpp](#).

22.14.2.2 friend class FacTRAVELCCMSERVICECONTEXT [friend]

Definition at line 30 of file [TRAVELCCM_ServiceContext.hpp](#).

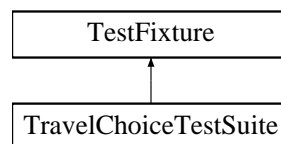
The documentation for this class was generated from the following files:

- [travelccm/service/TRAVELCCM_ServiceContext.hpp](#)
- [travelccm/service/TRAVELCCM_ServiceContext.cpp](#)

22.15 TravelChoiceTestSuite Class Reference

```
#include <test/travelccm/TravelChoiceTestSuite.hpp>
```

Inheritance diagram for TravelChoiceTestSuite:



Public Member Functions

- void [testTravelChoice](#) ()
- [TravelChoiceTestSuite](#) ()

Protected Attributes

- std::stringstream [_describeKey](#)

22.15.1 Detailed Description

Definition at line 6 of file [TravelChoiceTestSuite.hpp](#).

22.15.2 Constructor & Destructor Documentation

22.15.2.1 TravelChoiceTestSuite::TravelChoiceTestSuite ()

Test some error detection functionalities. Constructor.

22.15.3 Member Function Documentation

22.15.3.1 void TravelChoiceTestSuite::testTravelChoice ()

Test the Optimisation functionality.

22.15.4 Member Data Documentation

22.15.4.1 `std::stringstream TravelChoiceTestSuite::_describeKey` [protected]

Definition at line 23 of file [TravelChoiceTestSuite.hpp](#).

The documentation for this class was generated from the following file:

- test/travelccm/[TravelChoiceTestSuite.hpp](#)

23 File Documentation

23.1 `doc/local/authors.doc` File Reference23.2 `doc/local/codingrules.doc` File Reference23.3 `doc/local/copyright.doc` File Reference23.4 `doc/local/documentation.doc` File Reference23.5 `doc/local/features.doc` File Reference23.6 `doc/local/help_wanted.doc` File Reference23.7 `doc/local/howto_release.doc` File Reference23.8 `doc/local/index.doc` File Reference23.9 `doc/local/installation.doc` File Reference23.10 `doc/local/linking.doc` File Reference23.11 `doc/local/test.doc` File Reference23.12 `doc/local/users_guide.doc` File Reference23.13 `doc/local/verification.doc` File Reference23.14 `doc/tutorial/tutorial.doc` File Reference23.15 `test/travelccm/TravelChoiceTestSuite.cpp` File Reference23.16 `TravelChoiceTestSuite.cpp`

```

00001
00005 // //////////////////////////////////////
00006 // Import section
00007 // //////////////////////////////////////
00008 // STL
00009 #include <sstream>
00010 #include <fstream>
00011 #include <string>
00012 // Boost Unit Test Framework (UTF)
00013 #define BOOST_TEST_DYN_LINK
00014 #define BOOST_TEST_MAIN
00015 #define BOOST_TEST_MODULE TravelCCMTest
00016 #include <boost/test/unit_test.hpp>
00017 // StdAir

```

```

00018 #include <stdair/basic/BasLogParams.hpp>
00019 #include <stdair/basic/BasDBParams.hpp>
00020 #include <stdair/basic/BasFileMgr.hpp>
00021 #include <stdair/basic/PassengerChoiceModel.hpp>
00022 #include <stdair/bom/TravelSolutionStruct.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 #include <stdair/service/Logger.hpp>
00025 // TravelCCM
00026 #include <travelccm/TRAVELCCM_Service.hpp>
00027 #include <travelccm/config/travelccm-paths.hpp>
00028 >
00029 namespace boost_utf = boost::unit_test;
00030
00031 // (Boost) Unit Test XML Report
00032 std::ofstream utfReportStream ("TravelChoiceTestSuite_utfresults.xml");
00033
00037 struct UnitTestConfig {
00039     UnitTestConfig() {
00040         boost_utf::unit_test_log.set_stream (utfReportStream);
00041         boost_utf::unit_test_log.set_format (boost_utf::XML);
00042         boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
00043         //boost_utf::unit_test_log.set_threshold_level
00044         (boost_utf::log_successful_tests);
00045     }
00046     ~UnitTestConfig() {
00047     }
00048 };
00049
00050 // //////////////////////////////////////
00054 void testTravelCCMHelper (const unsigned short iTestFlag,
00055                          const
stdair::PassengerChoiceModel::EN_PassengerChoiceModel& iPassengerChoiceModel,
00056                          const unsigned int iExpectedPrice) {
00057
00058     // Output log File
00059     std::ostringstream oStr;
00060     oStr << "TravelChoiceTestSuite_" << iTestFlag << ".log";
00061     const stdair::Filename_T lLogFilename (oStr.str());
00062
00063     // Set the log parameters
00064     std::ofstream logOutputFile;
00065     // Open and clean the log outputfile
00066     logOutputFile.open (lLogFilename.c_str());
00067     logOutputFile.clear();
00068
00069     // Initialise the service context
00070     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00071
00072     // Build the BOM tree
00073     TRAVELCCM::TRAVELCCM_Service travelccmService (
lLogParams);
00074     travelccmService.buildSampleBom ();
00075
00076     // DEBUG
00077     STDAIR_LOG_DEBUG ("Welcome to TravelCCM");
00078
00079     // Build a list of travel solutions
00080     const stdair::BookingRequestStruct& lBookingRequest =
00081         travelccmService.buildSampleBookingRequest();
00082
00083     // DEBUG
00084     STDAIR_LOG_DEBUG ("Booking request: " << lBookingRequest.display());
00085
00086     // Build the sample BOM tree
00087     stdair::TravelSolutionList_T lTSLList;
00088     travelccmService.buildSampleTravelSolutions (lTSLList);
00089
00090     // DEBUG: Display the list of travel solutions
00091     const std::string& lCSVDump = travelccmService.csvDisplay (lTSLList);
00092     STDAIR_LOG_DEBUG (lCSVDump);
00093
00094     // Choose a travel solution
00095     const stdair::TravelSolutionStruct* lTS_ptr =
00096         travelccmService.chooseTravelSolution (lTSLList, lBookingRequest,
iPassengerChoiceModel);
00097
00098     // Check that a solution has been found
00099     BOOST_REQUIRE_MESSAGE (lTS_ptr != NULL,
00100         "No travel solution can be found for "
00101         << lBookingRequest.display()
00102         << " within the following list of travel solutions. "
00103         << lCSVDump);
00104
00105     STDAIR_LOG_DEBUG (lTS_ptr->describe());
00106
00107     // Retrieve the chosen fare option

```

```

00108     stdair::FareOptionStruct lFareOption = lTS_ptr->getChosenFareOption();
00109
00110     // DEBUG
00111     std::ostringstream oMessageExpectedPrice;
00112     oMessageExpectedPrice << "The price chosen by the passenger is: "
00113     << lFareOption.getFare() << " Euros. It is expected to
be "
00114     << iExpectedPrice << " Euros.";
00115     STDAIR_LOG_DEBUG (oMessageExpectedPrice.str());
00116
00117     // Check that the price corresponds to the expected one
00118     BOOST_CHECK_EQUAL (std::floor (lFareOption.getFare() + 0.5), iExpectedPrice);
00119
00120     BOOST_CHECK_MESSAGE (std::floor (lFareOption.getFare() + 0.5)
00121     == iExpectedPrice, oMessageExpectedPrice.str());
00122
00123     // Close the log file
00124     logOutputFile.close();
00125
00126 }
00127
00128
00129 // ////////////////////////////////// Main: Unit Test Suite //////////////////////////////////
00130
00131 // Set the UTF configuration (re-direct the output to a specific file)
00132 BOOST_GLOBAL_FIXTURE (UnitTestFixture);
00133
00134 // Start the test suite
00135 BOOST_AUTO_TEST_SUITE (master_test_suite)
00136
00137
00140 BOOST_AUTO_TEST_CASE (simple_hard_restriction_model_test) {
00141
00146     const unsigned int lExpectedPrice = 1000;
00147
00148     BOOST_CHECK_NO_THROW (testTravelCCMHelper
00149     (0,
00150     stdair::PassengerChoiceModel::HARD_RESTRICTION,
00151     lExpectedPrice));
00152 }
00153
00157 BOOST_AUTO_TEST_CASE (simple_price_oriented_model_test) {
00158
00163     const unsigned int lExpectedPrice = 900;
00164
00165     BOOST_CHECK_NO_THROW (testTravelCCMHelper
00166     (1,
00167     stdair::PassengerChoiceModel::PRICE_ORIENTED,
00168     lExpectedPrice));
00169 }
00170
00174 BOOST_AUTO_TEST_CASE (simple_hybrid_model_test) {
00175
00180     const unsigned int lExpectedPrice = 920;
00181
00182     BOOST_CHECK_NO_THROW (testTravelCCMHelper
00183     (2,
00184     stdair::PassengerChoiceModel::HYBRID,
00185     lExpectedPrice));
00186 }
00187
00188 // End the test suite
00189 BOOST_AUTO_TEST_SUITE_END ()
00190
00191

```

23.17 test/travelccm/TravelChoiceTestSuite.hpp File Reference

```

#include <sstream>
#include <cppunit/extensions/HelperMacros.h>

```

Classes

- class [TravelChoiceTestSuite](#)

Functions

- [CPPUNIT_TEST_SUITE_REGISTRATION \(TravelChoiceTestSuite\)](#)

23.17.1 Function Documentation

23.17.1.1 CPPUNIT_TEST_SUITE_REGISTRATION (TravelChoiceTestSuite)

23.18 TravelChoiceTestSuite.hpp

```

00001 // STL
00002 #include <sstream>
00003 // CPPUNIT
00004 #include <cppunit/extensions/HelperMacros.h>
00005
00006 class TravelChoiceTestSuite : public CppUnit::TestFixture
00007 {
00008     CPPUNIT_TEST_SUITE (TravelChoiceTestSuite);
00009     CPPUNIT_TEST (testTravelChoice);
00010     // CPPUNIT_TEST (errorCase);
00011     CPPUNIT_TEST_SUITE_END ();
00012 public:
00013
00014     void testTravelChoice ();
00015
00016     // void errorCase ();
00017
00018     TravelChoiceTestSuite ();
00019
00020 protected:
00021     std::stringstream _describeKey;
00022 };
00023
00024 CPPUNIT_TEST_SUITE_REGISTRATION (
00025     TravelChoiceTestSuite);

```

23.19 travelccm/basic/BasConst.cpp File Reference

```
#include <travelccm/basic/BasConst_General.hpp>
```

Namespaces

- namespace [TRAVELCCM](#)

23.20 BasConst.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 #include <travelccm/basic/BasConst_General.hpp>
00005
00006 namespace TRAVELCCM {
00007
00008 }

```

23.21 travelccm/basic/BasConst_General.hpp File Reference

Namespaces

- namespace [TRAVELCCM](#)

23.22 BasConst_General.hpp

```

00001 #ifndef __TRAVELCCM_BAS_BASCONST_GENERAL_HPP
00002 #define __TRAVELCCM_BAS_BASCONST_GENERAL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007
00008 namespace TRAVELCCM {
00009
00010 }
00011 #endif // __TRAVELCCM_BAS_BASCONST_GENERAL_HPP

```

23.23 travelccm/batches/travelccm.cpp File Reference

23.24 travelccm.cpp

```

00001
00005 // STL
00006 #include <cassert>
00007 #include <iostream>
00008 #include <sstream>
00009 #include <fstream>
00010 #include <string>
00011 // Boost (Extended STL)
00012 #include <boost/program_options.hpp>
00013 // StdAir
00014 #include <stdair/basic/BasLogParams.hpp>
00015 #include <stdair/basic/BasDBParams.hpp>
00016 #include <stdair/bom/BookingRequestStruct.hpp>
00017 #include <stdair/bom/TravelSolutionStruct.hpp>
00018 #include <stdair/service/Logger.hpp>
00019 // TravelCCM
00020 #include <travelccm/TRAVELCCM_Service.hpp>
00021 #include <travelccm/config/travelccm-paths.hpp>
00022 >
00023 // ////////// Constants //////////
00027 const std::string K_TRAVELCCM_DEFAULT_LOG_FILENAME ("travelccm.log");
00028
00032 const std::string K_TRAVELCCM_DEFAULT_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00033                                                         "/ccm_01.csv");
00034
00039 const bool K_TRAVELCCM_DEFAULT_BUILT_IN_INPUT = false;
00040
00044 const int K_TRAVELCCM_EARLY_RETURN_STATUS = 99;
00045
00046
00047 // ////////// Parsing of Options & Configuration //////////
00048 // A helper function to simplify the main part.
00049 template<class T> std::ostream& operator<< (std::ostream& os,
00050                                           const std::vector<T>& v) {
00051     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00052     return os;
00053 }
00054
00058 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00059                       stdair::Filename_T& lInputFilename,
00060                       stdair::Filename_T& lLogFilename) {
00061
00062     // Default for the built-in input
00063     ioIsBuiltin = K_TRAVELCCM_DEFAULT_BUILT_IN_INPUT;
00064
00065     // Declare a group of options that will be allowed only on command line
00066     boost::program_options::options_description generic ("Generic options");
00067     generic.add_options()
00068         ("prefix", "print installation prefix")
00069         ("version,v", "print version string")
00070         ("help,h", "produce help message");
00071
00072     // Declare a group of options that will be allowed both on command
00073     // line and in config file
00074     boost::program_options::options_description config ("Configuration");
00075     config.add_options()
00076         ("builtin,b",
00077          "The sample BOM tree can be either built-in or parsed from an input file.
00078          That latter must then be given with the -i/--input option")
00079         ("input,i",
00080          boost::program_options::value< std::string >(&lInputFilename)->
00081          default_value(K_TRAVELCCM_DEFAULT_INPUT_FILENAME),
00082          "(CSV) input file for the customer choice rule sets")

```

```

00081     ("log,l",
00082         boost::program_options::value< std::string >(&lLogFilename)->default_value
(K_TRAVELCCM_DEFAULT_LOG_FILENAME),
00083         "Filename for the logs")
00084     ;
00085
00086     // Hidden options, will be allowed both on command line and
00087     // in config file, but will not be shown to the user.
00088     boost::program_options::options_description hidden ("Hidden options");
00089     hidden.add_options()
00090         ("copyright",
00091         boost::program_options::value< std::vector<std::string> >(),
00092         "Show the copyright (license)");
00093
00094     boost::program_options::options_description cmdline_options;
00095     cmdline_options.add(generic).add(config).add(hidden);
00096
00097     boost::program_options::options_description config_file_options;
00098     config_file_options.add(config).add(hidden);
00099
00100     boost::program_options::options_description visible ("Allowed options");
00101     visible.add(generic).add(config);
00102
00103     boost::program_options::positional_options_description p;
00104     p.add ("copyright", -1);
00105
00106     boost::program_options::variables_map vm;
00107     boost::program_options::
00108         store (boost::program_options::command_line_parser (argc, argv).
00109             options (cmdline_options).positional(p).run(), vm);
00110
00111     std::ifstream ifs ("travelccm.cfg");
00112     boost::program_options::store (parse_config_file (ifs, config_file_options),
00113         vm);
00114     boost::program_options::notify (vm);
00115
00116     if (vm.count ("help")) {
00117         std::cout << visible << std::endl;
00118         return K_TRAVELCCM_EARLY_RETURN_STATUS;
00119     }
00120
00121     if (vm.count ("version")) {
00122         std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION
<< std::endl;
00123         return K_TRAVELCCM_EARLY_RETURN_STATUS;
00124     }
00125
00126     if (vm.count ("prefix")) {
00127         std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00128         return K_TRAVELCCM_EARLY_RETURN_STATUS;
00129     }
00130
00131     if (vm.count ("builtin")) {
00132         ioIsBuiltin = true;
00133     }
00134     const std::string isBuiltinStr = (ioIsBuiltin == true)?"yes":"no";
00135     std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00136
00137     if (ioIsBuiltin == false) {
00138
00139         // The BOM tree should be built from parsing a customer-choice rule file
00140         if (vm.count ("input")) {
00141             lInputFilename = vm["input"].as< std::string >();
00142             std::cout << "Input filename is: " << lInputFilename << std::endl;
00143         } else {
00144             // The built-in option is not selected. However, no demand input file
00145             // is specified
00146             std::cerr << "Either one among the -b/--builtin and -i/--input "
00147                 << "options must be specified" << std::endl;
00148         }
00149     }
00150
00151
00152     if (vm.count ("log")) {
00153         lLogFilename = vm["log"].as< std::string >();
00154         std::cout << "Log filename is: " << lLogFilename << std::endl;
00155     }
00156     return 0;
00157 }
00158
00159
00160
00161 // ////////// M A I N //////////
00162 int main (int argc, char* argv[]) {
00163
00164     // State whether the BOM tree should be built-in or parsed from an input file
00165     bool isBuiltin;

```

```

00166
00167 // Input file name
00168 stdair::Filename_T lInputFilename;
00169
00170 // Output log File
00171 stdair::Filename_T lLogFilename;
00172
00173 // Call the command-line option parser
00174 const int lOptionParserStatus =
00175     readConfiguration (argc, argv, isBuiltin, lInputFilename, lLogFilename);
00176
00177 if (lOptionParserStatus == K_TRAVELCCM_EARLY_RETURN_STATUS) {
00178     return 0;
00179 }
00180
00181 // Set the log parameters
00182 std::ofstream logOutputFile;
00183 // Open and clean the log outputfile
00184 logOutputFile.open (lLogFilename.c_str());
00185 logOutputFile.clear();
00186
00187 // Initialise the service context
00188 const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00189
00190 // Build the BOM tree
00191 TRAVELCCM::TRAVELCCM_Service travelccmService (
    lLogParams);
00192
00193 // DEBUG
00194 STDAIR_LOG_DEBUG ("Welcome to TravelCCM");
00195
00196 // Check whether or not a (CSV) input file should be read
00197 if (isBuiltin == true) {
00198     // Create a sample Customer-Choice rule object, and insert it
00199     // within the BOM tree
00200     travelccmService.buildSampleBom();
00201 } else {
00202     // travelccmService.parseAndLoad (lInputFilename);
00203 }
00204
00205 // Build a list of travel solutions
00206 const stdair::BookingRequestStruct& lBookingRequest =
00207     travelccmService.buildSampleBookingRequest();
00208
00209 // DEBUG
00210 STDAIR_LOG_DEBUG ("Booking request: " << lBookingRequest.display());
00211
00212 // Build the sample BOM tree
00213 stdair::TravelSolutionList_T lTSLList;
00214 travelccmService.buildSampleTravelSolutions (lTSLList);
00215
00216 // DEBUG: Display the list of travel solutions
00217 const std::string& lCSVDump = travelccmService.csvDisplay (lTSLList);
00218 STDAIR_LOG_DEBUG (lCSVDump);
00219
00220 // Choose a travel solution
00221 const stdair::TravelSolutionStruct* lTS_ptr =
00222     travelccmService.chooseTravelSolution (lTSLList, lBookingRequest);
00223
00224 if (lTS_ptr != NULL) {
00225     // DEBUG
00226     STDAIR_LOG_DEBUG ("Chosen travel solution: " << lTS_ptr->display());
00227 } else {
00228     // DEBUG
00229     STDAIR_LOG_DEBUG ("No travel solution can be found for "
00230         << lBookingRequest.display()
00231         << " within the following list of travel solutions");
00232     STDAIR_LOG_DEBUG (lCSVDump);
00233 }
00234
00235 // Close the Log outputFile
00236 logOutputFile.close();
00237
00238 return 0;
00239 }

```

23.25 travelccm/bom/HardRestrictionModel.cpp File Reference

```
#include <cassert>
```

```

#include <sstream>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/BookingClassKey.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/FareOptionStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <travelccm/bom/HardRestrictionModel.hpp>

```

Namespaces

- namespace **TRAVELCCM**

23.26 HardRestrictionModel.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/bom/BomKeyManager.hpp>
00009 #include <stdair/bom/BookingClassKey.hpp>
00010 #include <stdair/bom/BookingRequestStruct.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/FareOptionStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 // TravelCCM
00015 #include <travelccm/bom/HardRestrictionModel.hpp>
00016 >
00017 namespace TRAVELCCM {
00018
00019 // //////////////////////////////////////
00020     const stdair::TravelSolutionStruct* HardRestrictionModel::
00021     chooseTravelSolution (stdair::TravelSolutionList_T&
00022         ioTSList,
00023         const stdair::BookingRequestStruct& iBookingRequest) {
00024         stdair::TravelSolutionStruct* oChosenTS_ptr = NULL;
00025
00026         // Retrieve the number of passengers
00027         const stdair::NbOfSeats_T& lPartySize = iBookingRequest.getPartySize();
00028
00029         // Retrieve the Willingness-to-Pay (WTP) of the customer
00030         const stdair::WTP_T& lWTP = iBookingRequest.getWTP();
00031
00032         // Browse the travel solution list and choose the cheapest one
00033         stdair::Fare_T lLowestFare = std::numeric_limits<stdair::Fare_T>::max();
00034         for (stdair::TravelSolutionList_T::iterator itTS = ioTSList.begin();
00035             itTS != ioTSList.end(); ++itTS) {
00036             stdair::TravelSolutionStruct& lTS = *itTS;
00037
00038             // Browse the fare options
00039             const stdair::FareOptionList_T& lFOList = lTS.getFareOptionList();
00040             for (stdair::FareOptionList_T::const_iterator itFO = lFOList.begin();
00041                 itFO != lFOList.end(); ++itFO) {
00042                 const stdair::FareOptionStruct& lFO = *itFO;
00043
00044                 // Check if the hard restrictions (change fees, non refundable) are
00045                 // satisfied
00046                 bool lHardRestrictionsSatisfied = true;
00047                 if (lFO.getChangeFees() == true
00048                     && iBookingRequest.getChangeFees() == false) {
00049                     lHardRestrictionsSatisfied = false;
00050                 } else if (lFO.getNonRefundable() == true
00051                     && iBookingRequest.getNonRefundable() == false) {
00052                     lHardRestrictionsSatisfied = false;
00053                 }
00054
00055                 if (lHardRestrictionsSatisfied == true) {
00056                     // Choose the current fare option and the current solution
00057                     // if the current fare is lower than the current lowest fare.
00058                     const stdair::Fare_T& lFOFare = lFO.getFare();
00059                     const stdair::Availability_T& lFOAvl = lFO.getAvailability();
00060
00061                     if (lFOFare < lLowestFare && lFOAvl == true) {
00062                         lLowestFare = lFOFare;
00063                         oChosenTS_ptr = &lTS;
00064                     }
00065                 }
00066             }
00067         }
00068         return oChosenTS_ptr;
00069     }
00070 }

```

```

00060         if (lFOFare < lLowestFare && lFOFare <= lWTP
00061             && lFOAvl >= lPartySize) {
00062
00063             // DEBUG
00064             /*
00065              STDAIR_LOG_DEBUG ("The travel solution (TS) '" << lTS
00066              << "' is chosen because its fare (" << lFOFare
00067              << ") is lower than the lowest fare (" << lLowestFare
00068              << ") and than the WTP (" << lWTP
00069              << "), and because the party size (" << lPartySize
00070              << ") is lower than the availability (" << lFOAvl
00071              << ")");
00072             */
00073
00074             lLowestFare = lFOFare;
00075             oChosenTS_ptr = &lTS;
00076             oChosenTS_ptr->setChosenFareOption (lFO);
00077
00078         } else {
00079             // DEBUG
00080             /*
00081              STDAIR_LOG_DEBUG ("The travel solution (TS) '" << lTS
00082              << "' is not chosen because either its fare ("
00083              << lFOFare << ") is greater than the lowest fare ("
00084              << lLowestFare << ") or than the WTP (" << lWTP
00085              << "), or because the party size (" << lPartySize
00086              << ") is greater than the availability (" << lFOAvl
00087              << ")");
00088             */
00089         }
00090     }
00091 }
00092 }
00093
00094 return oChosenTS_ptr;
00095 }
00096
00097 }

```

23.27 travelccm/bom/HardRestrictionModel.hpp File Reference

```

#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>

```

Classes

- class [TRAVELCCM::HardRestrictionModel](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [TRAVELCCM](#)

23.28 HardRestrictionModel.hpp

```

00001 #ifndef __TRAVELCCM_BOM_HARDRESTRICTIONMODEL_HPP
00002 #define __TRAVELCCM_BOM_HARDRESTRICTIONMODEL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_service_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00012 namespace stdair {
00013     struct BookingRequestStruct;
00014 }
00015
00016 namespace TRAVELCCM {

```

```

00017
00021 class HardRestrictionModel {
00022 public:
00033     static const stdair::TravelSolutionStruct*
00034     chooseTravelSolution (stdair::TravelSolutionList_T&,
00035                          const stdair::BookingRequestStruct&);
00036 };
00037 }
00038 #endif // __TRAVELCCM_BOM_HARDRESTRICTIONMODEL_HPP

```

23.29 travelccm/bom/HybridModel.cpp File Reference

```

#include <cassert>
#include <sstream>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/BookingClassKey.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/FareOptionStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <travelccm/bom/HybridModel.hpp>

```

Namespaces

- namespace [TRAVELCCM](#)

23.30 HybridModel.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/bom/BomKeyManager.hpp>
00009 #include <stdair/bom/BookingClassKey.hpp>
00010 #include <stdair/bom/BookingRequestStruct.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/FareOptionStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 // TravelCCM
00015 #include <travelccm/bom/HybridModel.hpp>
00016
00017 namespace TRAVELCCM {
00018
00019 // //////////////////////////////////////
00020 const stdair::TravelSolutionStruct* HybridModel::
00021 chooseTravelSolution (stdair::TravelSolutionList_T&
00022 ioTSList,
00023                      const stdair::BookingRequestStruct& iBookingRequest) {
00024     stdair::TravelSolutionStruct* oChosenTS_ptr = NULL;
00025
00026     // Retrieve the number of passengers
00027     const stdair::NbOfSeats_T& lPartySize = iBookingRequest.getPartySize();
00028
00029     // Retrieve the Willingness-to-Pay (WTP) of the customer
00030     const stdair::WTP_T& lWTP = iBookingRequest.getWTP();
00031
00032     // Retrieve the restrictions of the customer
00033     // Retrieve the Change Fees of the customer
00034     const stdair::ChangeFees_T& lCustomerChangeFees =
00035         iBookingRequest.getChangeFees();
00036
00037     //Retrieve the Non Refundable of the customer
00038     const stdair::NonRefundable_T& lCustomerNonRefundable =
00039         iBookingRequest.getNonRefundable();
00040
00041     // Retrieve the Disutility of the customer
00042     const stdair::Fare_T& lChangeFeesDisutility =
00043         iBookingRequest.getChangeFeeDisutility();
00044     const stdair::Fare_T& lNonRefundableDisutility =

```

```

00044     iBookingRequest.getNonRefundableDisutility();
00045
00046     // Browse the travel solution list and choose the cheapest one
00047     stdair::Fare_T lLowestFare = std::numeric_limits<stdair::Fare_T>::max();
00048     for (stdair::TravelSolutionList_T::iterator itTS = ioTSList.begin();
00049          itTS != ioTSList.end(); ++itTS) {
00050         stdair::TravelSolutionStruct& lTS = *itTS;
00051
00052         // Browse the fare options
00053         const stdair::FareOptionList_T& lFOList = lTS.getFareOptionList();
00054         for (stdair::FareOptionList_T::const_iterator itFO = lFOList.begin();
00055              itFO != lFOList.end(); ++itFO) {
00056             const stdair::FareOptionStruct& lFO = *itFO;
00057             const stdair::Fare_T& lFOFare = lFO.getFare();
00058
00059             // Check the value of the disutility of the fare option
00060             stdair::Fare_T lFODisutility = 0;
00061
00062             // Check the change fees restriction
00063             if (lCustomerChangeFees == false) {
00064                 const bool lFOChangeFees = lFO.getChangeFees();
00065                 if (lFOChangeFees == true){
00066                     lFODisutility += lChangeFeesDisutility;
00067                 }
00068             }
00069
00070             // Check the non refundable restriction
00071             if (lCustomerNonRefundable == false) {
00072                 const bool lFONonRefundable = lFO.getNonRefundable();
00073                 if (lFONonRefundable == true){
00074                     lFODisutility += lNonRefundableDisutility;
00075                 }
00076             }
00077
00078
00079             // Choose the current fare option and the current solution
00080             // if the current fare with penalties is lower than the current
00081             // lowest fare.
00082
00083             const stdair::Availability_T& lFOAvl = lFO.getAvailability();
00084             const stdair::Fare_T lFOFareWithinDisutility = lFOFare + lFODisutility;
00085
00086             if (lFOFareWithinDisutility < lLowestFare
00087                 && lFOFare <= lWTP
00088                 && lFOAvl >= lPartySize) {
00089
00090                 // DEBUG
00091
00092                 // STDAIR_LOG_DEBUG ("The travel solution (TS) '" << lTS
00093                 // << "' is chosen because its fare with disutility ("
00094                 // << lFOFare + lFODisutility
00095                 // << ") is lower than the lowest fare (" << lLowestFare
00096                 // << ") and because its fare ("<< lFOFare
00097                 // << ") is lower than the WTP (" << lWTP
00098                 // << "), and because the party size (" << lPartySize
00099                 // << ") is lower than the availability (" << lFOAvl
00100                 // << ")");
00101
00102
00103                 lLowestFare = lFOFare + lFODisutility;
00104                 oChosenTS_ptr = &lTS;
00105                 oChosenTS_ptr->setChosenFareOption (lFO);
00106             } else {
00107                 // DEBUG
00108
00109                 // STDAIR_LOG_DEBUG ("The travel solution (TS) '" << lTS
00110                 // << "' is not chosen because either its fare with disutility ("
00111                 // << lFOFare + lFODisutility << ") is greater than the "
00112                 // << "lowest fare (" << lLowestFare << "), or because its fare ("
00113                 // << lFOFare << ") " << "is greater than the WTP (" << lWTP
00114                 // << "), or because the party size (" << lPartySize
00115                 // << ") is greater than the availability (" << lFOAvl
00116                 // << ")");
00117
00118             }
00119         }
00120     }
00121 }
00122
00123 return oChosenTS_ptr;
00124 }
00125
00126 }

```


23.31 travelccm/bom/HybridModel.hpp File Reference

```
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
```

Classes

- class [TRAVELCCM::HybridModel](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [TRAVELCCM](#)

23.32 HybridModel.hpp

```
00001 #ifndef __TRAVELCCM_BOM_HYBRIDMODEL_HPP
00002 #define __TRAVELCCM_BOM_HYBRIDMODEL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_service_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00012 namespace stdair {
00013     struct BookingRequestStruct;
00014 }
00015
00016 namespace TRAVELCCM {
00017
00022     class HybridModel {
00023     public:
00034         static const stdair::TravelSolutionStruct*
00035         chooseTravelSolution (stdair::TravelSolutionList_T&,
00036                             const stdair::BookingRequestStruct&);
00037     };
00038 }
00039 #endif // __TRAVELCCM_BOM_HYBRIDMODEL_HPP
```

23.33 travelccm/bom/PriceOrientedModel.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/BookingClassKey.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/FareOptionStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <travelccm/bom/PriceOrientedModel.hpp>
```

Namespaces

- namespace [TRAVELCCM](#)

23.34 PriceOrientedModel.cpp

```

00001 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00002 // Import section
00003 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/bom/BomKeyManager.hpp>
00009 #include <stdair/bom/BookingClassKey.hpp>
00010 #include <stdair/bom/BookingRequestStruct.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/FareOptionStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 // TravelCCM
00015 #include <travelccm/bom/PriceOrientedModel.hpp>
00016 >
00017 namespace TRAVELCCM {
00018
00019 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00020 const stdair::TravelSolutionStruct* PriceOrientedModel::
00021 chooseTravelSolution (stdair::TravelSolutionList_T&
00022 ioTSList,
00023                     const stdair::BookingRequestStruct& iBookingRequest) {
00024     stdair::TravelSolutionStruct* oChosenTS_ptr = NULL;
00025
00026     // Retrieve the number of passengers
00027     const stdair::NbOfSeats_T& lPartySize = iBookingRequest.getPartySize();
00028
00029     // Retrieve the Willingness-to-Pay (WTP) of the customer
00030     const stdair::WTP_T& lWTP = iBookingRequest.getWTP();
00031
00032     // Browse the travel solution list and choose the cheapest one
00033     stdair::Fare_T lLowestFare = std::numeric_limits<stdair::Fare_T>::max();
00034     for (stdair::TravelSolutionList_T::iterator itTS = ioTSList.begin();
00035          itTS != ioTSList.end(); ++itTS) {
00036         stdair::TravelSolutionStruct& lTS = *itTS;
00037
00038         // Browse the fare options
00039         const stdair::FareOptionList_T& lFOList = lTS.getFareOptionList();
00040         for (stdair::FareOptionList_T::const_iterator itFO = lFOList.begin();
00041              itFO != lFOList.end(); ++itFO) {
00042             const stdair::FareOptionStruct& lFO = *itFO;
00043
00044             // Choose the current fare option and the current solution
00045             // if the current fare is lower than the current lowest fare.
00046             const stdair::Fare_T& lFOFare = lFO.getFare();
00047             const stdair::Availability_T& lFOAvl = lFO.getAvailability();
00048
00049             if (lFOFare < lLowestFare && lFOFare <= lWTP && lFOAvl >= lPartySize) {
00050                 // DEBUG
00051                 /*
00052                 STDAIR_LOG_DEBUG ("The travel solution (TS) '" << lTS
00053                                 << "' is chosen because its fare (" << lFOFare
00054                                 << ") is lower than the lowest fare (" <<
00055                                 lLowestFare
00056                                 << ") and than the WTP (" << lWTP
00057                                 << "), and because the party size (" << lPartySize
00058                                 << ") is lower than the availability (" << lFOAvl
00059                                 << ")");
00060
00061                 lLowestFare = lFOFare;
00062                 oChosenTS_ptr = &lTS;
00063                 oChosenTS_ptr->setChosenFareOption (lFO);
00064             } else {
00065                 // DEBUG
00066                 /*
00067                 STDAIR_LOG_DEBUG ("The travel solution (TS) '" << lTS
00068                                 << "' is not chosen because either its fare ("
00069                                 << lFOFare << ") is greater than the lowest fare ("
00070                                 << lLowestFare << ") or than the WTP (" << lWTP
00071                                 << "), or because the party size (" << lPartySize
00072                                 << ") is greater than the availability (" << lFOAvl
00073                                 << ")");
00074
00075                 */
00076             }
00077         }
00078     }
00079
00080     return oChosenTS_ptr;
00081 }
00082

```

```
00083 }
```

23.35 travelccm/bom/PriceOrientedModel.hpp File Reference

```
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
```

Classes

- class [TRAVELCCM::PriceOrientedModel](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [TRAVELCCM](#)

23.36 PriceOrientedModel.hpp

```
00001 #ifndef __TRAVELCCM_BOM_PRICEORIENTEDMODEL_HPP
00002 #define __TRAVELCCM_BOM_PRICEORIENTEDMODEL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_service_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00012 namespace stdair {
00013     struct BookingRequestStruct;
00014 }
00015
00016 namespace TRAVELCCM {
00017
00021     class PriceOrientedModel {
00022     public:
00030         static const stdair::TravelSolutionStruct*
00031         chooseTravelSolution (stdair::TravelSolutionList_T&,
00032                             const stdair::BookingRequestStruct&);
00033     };
00034 }
00035 #endif // __TRAVELCCM_BOM_PRICEORIENTEDMODEL_HPP
```

23.37 travelccm/command/ChoiceManager.cpp File Reference

```
#include <cassert>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <travelccm/bom/HybridModel.hpp>
#include <travelccm/bom/HardRestrictionModel.hpp>
#include <travelccm/bom/PriceOrientedModel.hpp>
#include <travelccm/command/ChoiceManager.hpp>
```

Namespaces

- namespace [TRAVELCCM](#)

23.38 ChoiceManager.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/bom/TravelSolutionStruct.hpp>
00008 #include <stdair/bom/BookingRequestStruct.hpp>
00009 // TravelCCM
00010 #include <travelccm/bom/HybridModel.hpp>
00011 #include <travelccm/bom/HardRestrictionModel.hpp>
00012 #include <travelccm/bom/PriceOrientedModel.hpp>
00013 #include <travelccm/command/ChoiceManager.hpp>
00014
00015 namespace TRAVELCCM {
00016
00017 // //////////////////////////////////////
00018 const stdair::TravelSolutionStruct* ChoiceManager::
00019 chooseTravelSolution (stdair::TravelSolutionList_T&
00020 ioTravelSolutionList,
00021                     const stdair::BookingRequestStruct& iBookingRequest,
00022                     const
00023 stdair::PassengerChoiceModel::EN_PassengerChoiceModel& iPassengerChoiceModel) {
00024
00025     const stdair::TravelSolutionStruct* oTravelSolution_ptr = NULL;
00026
00027     switch (iPassengerChoiceModel) {
00028     case stdair::PassengerChoiceModel::HYBRID:
00029         // Return the cheapest solution which minimises the fare plus the
00030         // disutility for each unsatisfied restriction.
00031         oTravelSolution_ptr =
00032             HybridModel::chooseTravelSolution (
00033 ioTravelSolutionList,
00034                                     iBookingRequest);
00035         break;
00036     case stdair::PassengerChoiceModel::HARD_RESTRICTION:
00037         // Return the cheapest solution which satisfies the hard restrictions
00038         // such as change fees and non refundable.
00039         oTravelSolution_ptr =
00040             HardRestrictionModel::chooseTravelSolution
00041 (ioTravelSolutionList,
00042                                     iBookingRequest);
00043         break;
00044     case stdair::PassengerChoiceModel::PRICE_ORIENTED:
00045         // Return the cheapest solution
00046         oTravelSolution_ptr =
00047             PriceOrientedModel::chooseTravelSolution
00048 (ioTravelSolutionList,
00049                                     iBookingRequest);
00050         break;
00051     default:
00052         assert(false);
00053         break;
00054     }
00055     return oTravelSolution_ptr;
00056 }
00057 }

```

23.39 travelccm/command/ChoiceManager.hpp File Reference

```

#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
#include <stdair/basic/PassengerChoiceModel.hpp>

```

Classes

- class [TRAVELCCM::ChoiceManager](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [TRAVELCCM](#)

23.40 ChoiceManager.hpp

```

00001 #ifndef __TRAVELCCM_CMD_CHOICEMANAGER_HPP
00002 #define __TRAVELCCM_CMD_CHOICEMANAGER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_service_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010 #include <stdair/basic/PassengerChoiceModel.hpp>
00011
00013 namespace stdair {
00014     struct BookingRequestStruct;
00015 }
00016
00017 namespace TRAVELCCM {
00018
00022     class ChoiceManager {
00023     public:
00031         static const stdair::TravelSolutionStruct*
00032         chooseTravelSolution (stdair::TravelSolutionList_T&,
00033                             const stdair::BookingRequestStruct&,
00034                             const
00035                             stdair::PassengerChoiceModel::EN_PassengerChoiceModel&);
00036     };
00037 #endif // __TRAVELCCM_CMD_CHOICEMANAGER_HPP

```

23.41 travelccm/command/CmdAbstract.cpp File Reference

```
#include <travelccm/command/CmdAbstract.hpp>
```

Namespaces

- namespace [TRAVELCCM](#)

23.42 CmdAbstract.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // TRAVELCCM
00005 #include <travelccm/command/CmdAbstract.hpp>
00006
00007 namespace TRAVELCCM {
00008
00009 }

```

23.43 travelccm/command/CmdAbstract.hpp File Reference

Classes

- class [TRAVELCCM::CmdAbstract](#)

Namespaces

- namespace [TRAVELCCM](#)

23.44 CmdAbstract.hpp

```

00001 #ifndef __TRAVELCCM_CMD_CMDABSTRACT_HPP
00002 #define __TRAVELCCM_CMD_CMDABSTRACT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007
00008 namespace TRAVELCCM {
00009
00011     class CmdAbstract {
00012     public:
00013
00014     };
00015
00016 }
00017 #endif // __TRAVELCCM_CMD_CMDABSTRACT_HPP

```

23.45 travelccm/command/FileMgr.cpp File Reference

```

#include <cassert>
#include <fstream>
#include <stdair/service/Logger.hpp>
#include <travelccm/command/FileMgr.hpp>

```

Namespaces

- namespace [TRAVELCCM](#)

23.46 FileMgr.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <fstream>
00007 // StdAir
00008 #include <stdair/service/Logger.hpp>
00009 // TRAVEL-CCM
00010 #include <travelccm/command/FileMgr.hpp>
00011
00012 namespace TRAVELCCM {
00013
00014 }

```

23.47 travelccm/command/FileMgr.hpp File Reference

```

#include <string>

```

Classes

- class [TRAVELCCM::FileMgr](#)

Namespaces

- namespace [TRAVELCCM](#)

23.48 FileMgr.hpp

```

00001 #ifndef __TRAVELCCM_CMD_FILEMGR_HPP
00002 #define __TRAVELCCM_CMD_FILEMGR_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 #include <string>
00008
00009 namespace TRAVELCCM {
00010
00011     class TravelSolutionHolder;
00012
00013     class FileMgr {
00014     public:
00015
00016     };
00017
00018 };
00019
00020 #endif // __TRAVELCCM_CMD_FILEMGR_HPP

```

23.49 travelccm/config/travelccm-paths.hpp File Reference

Macros

- #define `PACKAGE` "travelccm"
- #define `PACKAGE_NAME` "TRAVELCCM"
- #define `PACKAGE_VERSION` "1.00.1"
- #define `PREFIXDIR` "/usr"
- #define `EXEC_PREFIX` "/usr"
- #define `BINDIR` "/usr/bin"
- #define `LIBDIR` "/usr/lib"
- #define `LIBEXECDIR` "/usr/libexec"
- #define `SBINDIR` "/usr/sbin"
- #define `SYSCONFDIR` "/usr/etc"
- #define `INCLUDEDIR` "/usr/include"
- #define `DATAROOTDIR` "/usr/share"
- #define `DATADIR` "/usr/share"
- #define `DOCDIR` "/usr/share/doc/travelccm-1.00.1"
- #define `MANDIR` "/usr/share/man"
- #define `INFODIR` "/usr/share/info"
- #define `HTMLDIR` "/usr/share/doc/travelccm-1.00.1/html"
- #define `PDFDIR` "/usr/share/doc/travelccm-1.00.1/html"
- #define `STDAIR_SAMPLE_DIR` "/usr/share/stdair/samples"

23.49.1 Macro Definition Documentation

23.49.1.1 #define `PACKAGE` "travelccm"

Definition at line 4 of file [travelccm-paths.hpp](#).

23.49.1.2 #define `PACKAGE_NAME` "TRAVELCCM"

Definition at line 5 of file [travelccm-paths.hpp](#).

23.49.1.3 #define `PACKAGE_VERSION` "1.00.1"

Definition at line 6 of file [travelccm-paths.hpp](#).

23.49.1.4 #define `PREFIXDIR` "/usr"

Definition at line 7 of file [travelccm-paths.hpp](#).

23.49.1.5 `#define EXEC_PREFIX "/usr"`

Definition at line 8 of file [travelccm-paths.hpp](#).

23.49.1.6 `#define BINDIR "/usr/bin"`

Definition at line 9 of file [travelccm-paths.hpp](#).

23.49.1.7 `#define LIBDIR "/usr/lib"`

Definition at line 10 of file [travelccm-paths.hpp](#).

23.49.1.8 `#define LIBEXECDIR "/usr/libexec"`

Definition at line 11 of file [travelccm-paths.hpp](#).

23.49.1.9 `#define SBINDIR "/usr/sbin"`

Definition at line 12 of file [travelccm-paths.hpp](#).

23.49.1.10 `#define SYSCONFDIR "/usr/etc"`

Definition at line 13 of file [travelccm-paths.hpp](#).

23.49.1.11 `#define INCLUDEDIR "/usr/include"`

Definition at line 14 of file [travelccm-paths.hpp](#).

23.49.1.12 `#define DATAROOTDIR "/usr/share"`

Definition at line 15 of file [travelccm-paths.hpp](#).

23.49.1.13 `#define DATADIR "/usr/share"`

Definition at line 16 of file [travelccm-paths.hpp](#).

23.49.1.14 `#define DOCDIR "/usr/share/doc/travelccm-1.00.1"`

Definition at line 17 of file [travelccm-paths.hpp](#).

23.49.1.15 `#define MANDIR "/usr/share/man"`

Definition at line 18 of file [travelccm-paths.hpp](#).

23.49.1.16 `#define INFODIR "/usr/share/info"`

Definition at line 19 of file [travelccm-paths.hpp](#).

23.49.1.17 `#define HTMLDIR "/usr/share/doc/travelccm-1.00.1/html"`

Definition at line 20 of file [travelccm-paths.hpp](#).

23.49.1.18 `#define PDFDIR "/usr/share/doc/travelccm-1.00.1/html"`

Definition at line 21 of file [travelccm-paths.hpp](#).

23.49.1.19 `#define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"`

Definition at line 22 of file [travelccm-paths.hpp](#).

23.50 travelccm-paths.hpp

```

00001 #ifndef __TRAVELCCM_PATHS_HPP__
00002 #define __TRAVELCCM_PATHS_HPP__
00003
00004 #define PACKAGE "travelccm"
00005 #define PACKAGE_NAME "TRAVELCCM"
00006 #define PACKAGE_VERSION "1.00.1"
00007 #define PREFIXDIR "/usr"
00008 #define EXEC_PREFIX "/usr"
00009 #define BINDIR "/usr/bin"
00010 #define LIBDIR "/usr/lib"
00011 #define LIBEXECDIR "/usr/libexec"
00012 #define SBINDIR "/usr/sbin"
00013 #define SYSCONFDIR "/usr/etc"
00014 #define INCLUDEDIR "/usr/include"
00015 #define DATAROOTDIR "/usr/share"
00016 #define DATADIR "/usr/share"
00017 #define DOCDIR "/usr/share/doc/travelccm-1.00.1"
00018 #define MANDIR "/usr/share/man"
00019 #define INFODIR "/usr/share/info"
00020 #define HTMLDIR "/usr/share/doc/travelccm-1.00.1/html"
00021 #define PDFDIR "/usr/share/doc/travelccm-1.00.1/html"
00022 #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"
00023
00024 #endif // __TRAVELCCM_PATHS_HPP__

```

23.51 travelccm/config/travelccm-paths.hpp.in File Reference

Macros

- `#define __TRAVELCCM_PATHS_HPP__`
- `#define PACKAGE "@PACKAGE@"`
- `#define PACKAGE_NAME "@PACKAGE_NAME@"`
- `#define PACKAGE_VERSION "@PACKAGE_VERSION@"`
- `#define PREFIXDIR "@prefix@"`
- `#define EXEC_PREFIX "@exec_prefix@"`
- `#define BINDIR "@bindir@"`
- `#define LIBDIR "@libdir@"`
- `#define LIBEXECDIR "@libexecdir@"`
- `#define SBINDIR "@sbindir@"`
- `#define SYSCONFDIR "@sysconfdir@"`
- `#define INCLUDEDIR "@includedir@"`
- `#define DATAROOTDIR "@datarootdir@"`
- `#define DATADIR "@datadir@"`
- `#define DOCDIR "@docdir@"`
- `#define MANDIR "@mandir@"`
- `#define INFODIR "@infodir@"`
- `#define HTMLDIR "@htmldir@"`
- `#define PDFDIR "@pdfdir@"`
- `#define STDAIR_SAMPLE_DIR "@sampledir@"`

23.51.1 Macro Definition Documentation

23.51.1.1 `#define __TRAVELCCM_PATHS_HPP__`

Definition at line 2 of file [travelccm-paths.hpp.in](#).

23.51.1.2 `#define PACKAGE "@PACKAGE@"`

Definition at line 4 of file [travelccm-paths.hpp.in](#).

23.51.1.3 `#define PACKAGE_NAME "@PACKAGE_NAME@"`

Definition at line 5 of file [travelccm-paths.hpp.in](#).

23.51.1.4 `#define PACKAGE_VERSION "@PACKAGE_VERSION@"`

Definition at line 6 of file [travelccm-paths.hpp.in](#).

23.51.1.5 `#define PREFIXDIR "@prefix@"`

Definition at line 7 of file [travelccm-paths.hpp.in](#).

23.51.1.6 `#define EXEC_PREFIX "@exec_prefix@"`

Definition at line 8 of file [travelccm-paths.hpp.in](#).

23.51.1.7 `#define BINDIR "@bindir@"`

Definition at line 9 of file [travelccm-paths.hpp.in](#).

23.51.1.8 `#define LIBDIR "@libdir@"`

Definition at line 10 of file [travelccm-paths.hpp.in](#).

23.51.1.9 `#define LIBEXECDIR "@libexecdir@"`

Definition at line 11 of file [travelccm-paths.hpp.in](#).

23.51.1.10 `#define SBINDIR "@sbindir@"`

Definition at line 12 of file [travelccm-paths.hpp.in](#).

23.51.1.11 `#define SYSCONFDIR "@sysconfdir@"`

Definition at line 13 of file [travelccm-paths.hpp.in](#).

23.51.1.12 `#define INCLUDEDIR "@includedir@"`

Definition at line 14 of file [travelccm-paths.hpp.in](#).

23.51.1.13 `#define DATAROOTDIR "@datarootdir@"`

Definition at line 15 of file [travelccm-paths.hpp.in](#).

23.51.1.14 `#define DATADIR "@datadir@"`

Definition at line 16 of file [travelccm-paths.hpp.in](#).

23.51.1.15 `#define DOCDIR "@docdir@"`

Definition at line 17 of file [travelccm-paths.hpp.in](#).

23.51.1.16 `#define MANDIR "@mandir@"`

Definition at line 18 of file [travelccm-paths.hpp.in](#).

23.51.1.17 `#define INFODIR "@infodir@"`

Definition at line 19 of file [travelccm-paths.hpp.in](#).

23.51.1.18 `#define HTMLDIR "@htmldir@"`

Definition at line 20 of file [travelccm-paths.hpp.in](#).

23.51.1.19 #define PDFDIR "@pdfdir@"

Definition at line 21 of file [travelccm-paths.hpp.in](#).

23.51.1.20 #define STDAIR_SAMPLE_DIR "@sampledir@"

Definition at line 22 of file [travelccm-paths.hpp.in](#).

23.52 travelccm-paths.hpp.in

```
00001 #ifndef __TRAVELCCM_PATHS_HPP__
00002 #define __TRAVELCCM_PATHS_HPP__
00003
00004 #define PACKAGE "@PACKAGE@"
00005 #define PACKAGE_NAME "@PACKAGE_NAME@"
00006 #define PACKAGE_VERSION "@PACKAGE_VERSION@"
00007 #define PREFIXDIR "@prefix@"
00008 #define EXEC_PREFIX "@exec_prefix@"
00009 #define BINDIR "@bindir@"
00010 #define LIBDIR "@libdir@"
00011 #define LIBEXECDIR "@libexecdir@"
00012 #define SBINDIR "@sbindir@"
00013 #define SYSCONFDIR "@sysconfdir@"
00014 #define INCLUDEDIR "@includedir@"
00015 #define DATAROOTDIR "@datarootdir@"
00016 #define DATADIR "@datadir@"
00017 #define DOCDIR "@docdir@"
00018 #define MANDIR "@mandir@"
00019 #define INFODIR "@infodir@"
00020 #define HTMLDIR "@htmldir@"
00021 #define PDFDIR "@pdfdir@"
00022 #define STDAIR_SAMPLE_DIR "@sampledir@"
00023
00024 #endif // __TRAVELCCM_PATHS_HPP__
```

23.53 travelccm/factory/FacTRAVELCCMServiceContext.cpp File Reference

```
#include <cassert>
#include <stdair/service/FacSupervisor.hpp>
#include <travelccm/factory/FacTRAVELCCMServiceContext.hpp>
#include <travelccm/service/TRAVELCCM_ServiceContext.hpp>
```

Namespaces

- namespace [TRAVELCCM](#)

23.54 FacTRAVELCCMServiceContext.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/service/FacSupervisor.hpp>
00008 // TravelCCM
00009 #include <travelccm/factory/FacTRAVELCCMServiceContext.hpp>
00010 #include <travelccm/service/TRAVELCCM_ServiceContext.hpp>
00011
00012 namespace TRAVELCCM {
00013
00014     FacTRAVELCCMServiceContext* FacTRAVELCCMServiceContext::_instance = NULL;
00015
00016     // //////////////////////////////////////
00017     FacTRAVELCCMServiceContext::~FacTRAVELCCMServiceContext
00018     () {
00019         _instance = NULL;
```

```

00019     }
00020
00021     // //////////////////////////////////////
00022     FacTRAVELCCMSERVICECONTEXT&
FacTRAVELCCMSERVICECONTEXT::instance () {
00023
00024         if (_instance == NULL) {
00025             _instance = new FacTRAVELCCMSERVICECONTEXT();
00026             assert (_instance != NULL);
00027
00028             stdair::FacSupervisor::instance().
registerServiceFactory (_instance);
00029         }
00030         return *_instance;
00031     }
00032
00033     // //////////////////////////////////////
00034     TRAVELCCM_ServiceContext&
FacTRAVELCCMSERVICECONTEXT::create () {
00035         TRAVELCCM_ServiceContext* aServiceContext_ptr =
NULL;
00036
00037         aServiceContext_ptr = new TRAVELCCM_ServiceContext
();
00038         assert (aServiceContext_ptr != NULL);
00039
00040         // The new object is added to the Bom pool
00041         _pool.push_back (aServiceContext_ptr);
00042
00043         return *aServiceContext_ptr;
00044     }
00045
00046 }

```

23.55 travelccm/factory/FacTRAVELCCMSERVICECONTEXT.hpp File Reference

```

#include <stdair/service/FacServiceAbstract.hpp>
#include <travelccm/TRAVELCCM_Types.hpp>

```

Classes

- class [TRAVELCCM::FacTRAVELCCMSERVICECONTEXT](#)

Namespaces

- namespace [TRAVELCCM](#)

23.56 FacTRAVELCCMSERVICECONTEXT.hpp

```

00001 #ifndef __TRAVELCCM_FAC_FACTRAVELCCMSERVICECONTEXT_HPP
00002 #define __TRAVELCCM_FAC_FACTRAVELCCMSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/service/FacServiceAbstract.hpp>
00009 // TravelCCM
00010 #include <travelccm/TRAVELCCM_Types.hpp>
00011
00012 namespace TRAVELCCM {
00013
00014     class TRAVELCCM_ServiceContext;
00015
00016     class FacTRAVELCCMSERVICECONTEXT : public
stdair::FacServiceAbstract {
00017     public:
00018
00019         static FacTRAVELCCMSERVICECONTEXT& instance
();
00020
00021         ~FacTRAVELCCMSERVICECONTEXT ();
00022
00023     };
00024
00025 }
00026
00027
00028
00029
00030
00031

```

```

00035     TRAVELCCM_ServiceContext& create ();
00036
00037
00038 protected:
00042     FacTRAVELCCMServiceContext () {}
00043
00044 private:
00046     static FacTRAVELCCMServiceContext* _instance;
00047 };
00048
00049 }
00050 #endif // __TRAVELCCM_FAC_FACTRAVELCCMSERVICECONTEXT_HPP

```

23.57 travelccm/service/TRAVELCCM_Service.cpp File Reference

```

#include <cassert>
#include <boost/make_shared.hpp>
#include <stdair/basic/BasChronometer.hpp>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/factory/FacBomManager.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <travelccm/factory/FacTRAVELCCMServiceContext.hpp>
#include <travelccm/command/ChoiceManager.hpp>
#include <travelccm/service/TRAVELCCM_ServiceContext.hpp>
#include <travelccm/TRAVELCCM_Service.hpp>

```

Namespaces

- namespace [TRAVELCCM](#)

23.58 TRAVELCCM_Service.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // Boost
00007 #include <boost/make_shared.hpp>
00008 // StdAir
00009 #include <stdair/basic/BasChronometer.hpp>
00010 #include <stdair/basic/BasFileMgr.hpp>
00011 #include <stdair/bom/BomManager.hpp>
00012 #include <stdair/bom/BookingRequestStruct.hpp>
00013 #include <stdair/factory/FacBomManager.hpp>
00014 #include <stdair/service/Logger.hpp>
00015 #include <stdair/STDAIR_Service.hpp>
00016 // TravelCCM
00017 #include <travelccm/factory/FacTRAVELCCMServiceContext.hpp>
00018 >
00019 #include <travelccm/command/ChoiceManager.hpp>
00020 >
00021 #include <travelccm/service/TRAVELCCM_ServiceContext.hpp>
00022 >
00023 #include <travelccm/TRAVELCCM_Service.hpp>
00024
00025 namespace TRAVELCCM {
00026
00027 // //////////////////////////////////////
00028 TRAVELCCM_Service::TRAVELCCM_Service() : _travelccmServiceContext (NULL) {
00029     assert (false);
00030 }
00031
00032 // //////////////////////////////////////
00033 TRAVELCCM_Service::TRAVELCCM_Service (const TRAVELCCM_Service& iService)
00034 : _travelccmServiceContext (NULL) {
00035     assert (false);
00036 }
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```

```

00033     }
00034
00035     // //////////////////////////////////////
00036     TRAVELCCM_Service::TRAVELCCM_Service (const stdair::BasLogParams& iLogParams,
00037                                           const stdair::BasDBParams& iDBParams)
00038     : _travelccmServiceContext (NULL) {
00039
00040         // Initialise the STDAIR service handler
00041         stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00042             initStdAirService (iLogParams, iDBParams);
00043
00044         // Initialise the service context
00045         initServiceContext();
00046
00047         // Add the StdAir service context to the AIRINV service context
00048         // \note AIRINV owns the STDAIR service resources here.
00049         const bool ownStdairService = true;
00050         addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00051
00052         // Initialise the (remaining of the) context
00053         initTravelCCMService();
00054     }
00055
00056     // //////////////////////////////////////
00057     TRAVELCCM_Service::TRAVELCCM_Service (const stdair::BasLogParams& iLogParams)
00058     : _travelccmServiceContext (NULL) {
00059
00060         // Initialise the STDAIR service handler
00061         stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00062             initStdAirService (iLogParams);
00063
00064         // Initialise the service context
00065         initServiceContext();
00066
00067         // Add the StdAir service context to the AIRINV service context
00068         // \note AIRINV owns the STDAIR service resources here.
00069         const bool ownStdairService = true;
00070         addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00071
00072         // Initialise the (remaining of the) context
00073         initTravelCCMService();
00074     }
00075
00076     // //////////////////////////////////////
00077     TRAVELCCM_Service::
00078     TRAVELCCM_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr)
00079     : _travelccmServiceContext (NULL) {
00080
00081         // Initialise the service context
00082         initServiceContext();
00083
00084         // Store the STDAIR service object within the (AIRINV) service context
00085         // \note AirInv does not own the STDAIR service resources here.
00086         const bool doesNotOwnStdairService = false;
00087         addStdAirService (ioSTDAIR_Service_ptr, doesNotOwnStdairService);
00088
00089         // Initialise the (remaining of the) context
00090         initTravelCCMService();
00091     }
00092
00093     // //////////////////////////////////////
00094     TRAVELCCM_Service::~TRAVELCCM_Service()
00095     {
00096         // Delete/Clean all the objects from memory
00097         finalise();
00098     }
00099
00100     // //////////////////////////////////////
00101     void TRAVELCCM_Service::finalise() {
00102         assert (_travelccmServiceContext != NULL);
00103         // Reset the (Boost.)Smart pointer pointing on the STDAIR_Service object.
00104         _travelccmServiceContext->reset();
00105     }
00106
00107     // //////////////////////////////////////
00108     void TRAVELCCM_Service::initServiceContext() {
00109         // Initialise the context
00110         TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext =
00111             FacTRAVELCCMServiceContext::instance(
00112             ).create();
00113         _travelccmServiceContext = &lTRAVELCCM_ServiceContext;
00114     }
00115
00116     // //////////////////////////////////////
00117     void TRAVELCCM_Service::
00118     addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr,
00119                     const bool iOwnStdairService) {

```

```

00118     // Retrieve the Travelccm service context
00119     assert (_travelccmServiceContext != NULL);
00120     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext =
00121         *_travelccmServiceContext;
00122
00123     // Store the STDAIR service object within the (TRAVELCCM) service context
00124     lTRAVELCCM_ServiceContext.setSTDAIR_Service (ioSTDAIR_Service_ptr,
00125         iOwnStdairService);
00126 }
00127
00128 // //////////////////////////////////////
00129 stdair::STDAIR_ServicePtr_T TRAVELCCM_Service::
00130 initStdAirService (const stdair::BasLogParams& iLogParams,
00131     const stdair::BasDBParams& iDBParams) {
00132
00133     stdair::STDAIR_ServicePtr_T oSTDAIR_Service_ptr =
00134         boost::make_shared<stdair::STDAIR_Service> (iLogParams, iDBParams);
00135     assert (oSTDAIR_Service_ptr != NULL);
00136
00137     return oSTDAIR_Service_ptr;
00138 }
00139
00140 // //////////////////////////////////////
00141 stdair::STDAIR_ServicePtr_T TRAVELCCM_Service::
00142 initStdAirService (const stdair::BasLogParams& iLogParams) {
00143
00144     stdair::STDAIR_ServicePtr_T oSTDAIR_Service_ptr =
00145         boost::make_shared<stdair::STDAIR_Service> (iLogParams);
00146     assert (oSTDAIR_Service_ptr != NULL);
00147
00148     return oSTDAIR_Service_ptr;
00149 }
00150
00151 // //////////////////////////////////////
00152 void TRAVELCCM_Service::initTravelCCMService() {
00153     // Do nothing at this stage. A sample BOM tree may be built by
00154     // calling the buildSampleBom() method
00155 }
00156
00157 // //////////////////////////////////////
00158 void TRAVELCCM_Service::buildSampleBom() {
00159
00160     // Retrieve the TravelCCM service context
00161     if (_travelccmServiceContext == NULL) {
00162         throw stdair::NonInitialisedServiceException ("The TravelCCM service has
00163     "
00164         "not been initialised");
00165     }
00166     assert (_travelccmServiceContext != NULL);
00167
00168     // Retrieve the TravelCCM service context and whether it owns the Stdair
00169     // service
00170     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext
00171     =
00172         *_travelccmServiceContext;
00173     const bool doesOwnStdairService =
00174         lTRAVELCCM_ServiceContext.getOwnStdairServiceFlag();
00175
00176     // Retrieve the StdAir service object from the (TravelCCM) service context
00177     stdair::STDAIR_Service& lSTDAIR_Service =
00178         lTRAVELCCM_ServiceContext.getSTDAIR_Service();
00179
00180     // Retrieve the persistent BOM root object.
00181     stdair::BomRoot& lPersistentBomRoot =
00182         lSTDAIR_Service.getPersistentBomRoot();
00183
00184     if (doesOwnStdairService == true) {
00185         //
00186         lSTDAIR_Service.buildSampleBom();
00187     }
00188
00189     buildComplementaryLinks (lPersistentBomRoot);
00190
00191     if (doesOwnStdairService == true) {
00192         //
00193         clonePersistentBom ();
00194     }
00195 }
00196
00197 // //////////////////////////////////////
00198 void TRAVELCCM_Service::clonePersistentBom
00199 () {
00200
00201     // Retrieve the TravelCCM service context
00202     if (_travelccmServiceContext == NULL) {
00203         throw stdair::NonInitialisedServiceException ("The TravelCCM service has
00204     "

```

```

00233                                     "not been initialised");
00234     }
00235     assert (_travelccmServiceContext != NULL);
00236
00237     // Retrieve the TravelCCM service context and whether it owns the Stdair
00238     // service
00239     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext
=
00240         *_travelccmServiceContext;
00241     const bool doesOwnStdairService =
00242         lTRAVELCCM_ServiceContext.getOwnStdairServiceFlag();
00243
00244     // Retrieve the StdAir service object from the (TravelCCM) service context
00245     stdair::STDAIR_Service& lSTDAIR_Service =
00246         lTRAVELCCM_ServiceContext.getSTDAIR_Service();
00247
00252     if (doesOwnStdairService == true) {
00253         lSTDAIR_Service.clonePersistentBom ();
00254     }
00255
00268     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00269     buildComplementaryLinks (lBomRoot);
00270 }
00271
00272 // //////////////////////////////////////
00273 void TRAVELCCM_Service::buildComplementaryLinks
(stdair::BomRoot& ioBomRoot) {
00274     // Currently, no more things to do by TravelCCM at that stage.
00275 }
00276
00277 // //////////////////////////////////////
00278 void TRAVELCCM_Service::
00279 buildSampleTravelSolutions (
stdair::TravelSolutionList_T& ioTSList) {
00280
00281     // Retrieve the TRAVELCCM service context
00282     if (_travelccmServiceContext == NULL) {
00283         throw stdair::NonInitialisedServiceException ("The Travelccm service has
"
00284                                     "not been initialised");
00285     }
00286     assert (_travelccmServiceContext != NULL);
00287
00288     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext
=
00289         *_travelccmServiceContext;
00290
00291     // Retrieve the STDAIR service object from the (TRAVELCCM) service context
00292     stdair::STDAIR_Service& lSTDAIR_Service =
00293         lTRAVELCCM_ServiceContext.getSTDAIR_Service();
00294
00295     // Delegate the BOM building to the dedicated service
00296     lSTDAIR_Service.buildSampleTravelSolutions (ioTSList);
00297 }
00298
00299 // //////////////////////////////////////
00300 stdair::BookingRequestStruct TRAVELCCM_Service::
00301 buildSampleBookingRequest (const bool isForCRS) {
00302
00303     // Retrieve the TRAVELCCM service context
00304     if (_travelccmServiceContext == NULL) {
00305         throw stdair::NonInitialisedServiceException ("The Travelccm service has
"
00306                                     "not been initialised");
00307     }
00308     assert (_travelccmServiceContext != NULL);
00309
00310     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext
=
00311         *_travelccmServiceContext;
00312
00313     // Retrieve the STDAIR service object from the (TRAVELCCM) service context
00314     stdair::STDAIR_Service& lSTDAIR_Service =
00315         lTRAVELCCM_ServiceContext.getSTDAIR_Service();
00316
00317     // Delegate the BOM building to the dedicated service
00318     return lSTDAIR_Service.buildSampleBookingRequest (isForCRS);
00319 }
00320
00321 // //////////////////////////////////////
00322 std::string TRAVELCCM_Service::csvDisplay()
const {
00323
00324     // Retrieve the TRAVELCCM service context
00325     if (_travelccmServiceContext == NULL) {
00326         throw stdair::NonInitialisedServiceException ("The TravelccmMaster
service"

```



```

00327                                     " has not been initialised"
00328     );
00329     }
00329     assert (_travelccmServiceContext != NULL);
00330
00331     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext
00332     =
00333         *_travelccmServiceContext;
00334
00334     // Retrieve the STDAIR service object from the (TRAVELCCM) service context
00335     stdair::STDAIR_Service& lSTDAIR_Service =
00336         lTRAVELCCM_ServiceContext.getSTDAIR_Service();
00337     const stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00338
00339     // Delegate the BOM building to the dedicated service
00340     return lSTDAIR_Service.csvDisplay(lBomRoot);
00341 }
00342
00343 // //////////////////////////////////////
00344 std::string TRAVELCCM_Service::
00345 csvDisplay (const stdair::TravelSolutionList_T&
iTravelSolutionList) const {
00346     // Retrieve the TRAVELCCM service context
00347     if (_travelccmServiceContext == NULL) {
00348         throw stdair::NonInitialisedServiceException ("The TravelccmMaster
service"
00349                                     " has not been initialised"
00350     );
00351     }
00352     assert (_travelccmServiceContext != NULL);
00353
00354     TRAVELCCM_ServiceContext& lTRAVELCCM_ServiceContext
00355     =
00356         *_travelccmServiceContext;
00357
00358     // Retrieve the STDAIR service object from the (TRAVELCCM) service context
00359     stdair::STDAIR_Service& lSTDAIR_Service =
00360         lTRAVELCCM_ServiceContext.getSTDAIR_Service();
00361
00362     // Delegate the BOM building to the dedicated service
00363     return lSTDAIR_Service.csvDisplay (iTravelSolutionList);
00364 }
00365
00366 // //////////////////////////////////////
00367 const stdair::TravelSolutionStruct* TRAVELCCM_Service::
chooseTravelSolution (stdair::TravelSolutionList_T&
ioTravelSolutionList,
00368                     const stdair::BookingRequestStruct& iBookingRequest,
00369                     const
stdair::PassengerChoiceModel::EN_PassengerChoiceModel& iPassengerChoiceModel) {
00370     const stdair::TravelSolutionStruct* oTravelSolution_ptr =
00371         ChoiceManager::chooseTravelSolution (
ioTravelSolutionList,
00372                                             iBookingRequest,
00373                                             iPassengerChoiceModel);
00374     return oTravelSolution_ptr;
00375 }
00376
00377 }

```

23.59 travelccm/service/TRAVELCCM_ServiceContext.cpp File Reference

```

#include <cassert>
#include <sstream>
#include <travelccm/service/TRAVELCCM_ServiceContext.hpp>

```

Namespaces

- namespace [TRAVELCCM](#)

23.60 TRAVELCCM_ServiceContext.cpp

```

00001 // //////////////////////////////////////
00002 // Import section

```

```

00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // TravelCCM Basic
00008 #include <travelccm/service/TRAVELCCM_ServiceContext.hpp>
00009 >
00010 namespace TRAVELCCM {
00011
00012 // //////////////////////////////////////
00013 TRAVELCCM_ServiceContext::TRAVELCCM_ServiceContext()
00014 : _ownStdairService (false) {
00015 }
00016
00017 // //////////////////////////////////////
00018 TRAVELCCM_ServiceContext::
00019 TRAVELCCM_ServiceContext (const TRAVELCCM_ServiceContext&) {
00020     assert (false);
00021 }
00022
00023 // //////////////////////////////////////
00024 TRAVELCCM_ServiceContext::~TRAVELCCM_ServiceContext() {
00025 }
00026
00027 // //////////////////////////////////////
00028 const std::string TRAVELCCM_ServiceContext::shortDisplay() const {
00029     std::ostringstream oStr;
00030     oStr << "TRAVELCCM_ServiceContext -- Owns StdAir service: "
00031     << _ownStdairService;
00032     return oStr.str();
00033 }
00034
00035 // //////////////////////////////////////
00036 const std::string TRAVELCCM_ServiceContext::display() const {
00037     std::ostringstream oStr;
00038     oStr << shortDisplay();
00039     return oStr.str();
00040 }
00041
00042 // //////////////////////////////////////
00043 const std::string TRAVELCCM_ServiceContext::describe() const {
00044     return shortDisplay();
00045 }
00046
00047 // //////////////////////////////////////
00048 void TRAVELCCM_ServiceContext::reset() {
00049
00050     // The shared_ptr<>::reset() method drops the refcount by one.
00051     // If the count result is dropping to zero, the resource pointed to
00052     // by the shared_ptr<> will be freed.
00053
00054     // Reset the stdair shared pointer
00055     _stdairService.reset();
00056 }
00057
00058 }

```

23.61 travelccm/service/TRAVELCCM_ServiceContext.hpp File Reference

```

#include <string>
#include <boost/shared_ptr.hpp>
#include <stdair/stdair_service_types.hpp>
#include <stdair/service/ServiceAbstract.hpp>
#include <travelccm/TRAVELCCM_Types.hpp>

```

Classes

- class [TRAVELCCM::TRAVELCCM_ServiceContext](#)
Inner class holding the context for the TravelCCM Service object.

Namespaces

- namespace [TRAVELCCM](#)

23.62 TRAVELCCM_ServiceContext.hpp

```

00001 #ifndef __TRAVELCCM_SVC_TRAVELCCM_SERVICE_CONTEXT_HPP
00002 #define __TRAVELCCM_SVC_TRAVELCCM_SERVICE_CONTEXT_HPP
00003
00004 // ////////////////////////////////////////
00005 // Import section
00006 // ////////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // Boost
00010 #include <boost/shared_ptr.hpp>
00011 // StdAir
00012 #include <stdair/stdair_service_types.hpp>
00013 #include <stdair/service/ServiceAbstract.hpp>
00014 // TravelCCM
00015 #include <travelccm/TRAVELCCM_Types.hpp>
00016
00017 namespace TRAVELCCM {
00018
00023 class TRAVELCCM_ServiceContext : public
stdair::ServiceAbstract {
00029     friend class TRAVELCCM_Service;
00030     friend class FacTRAVELCCMServiceContext;
00031
00032 private:
00033     // //////////////////////////////////////// Getters ////////////////////////////////////////
00037     stdair::STDAIR_ServicePtr_T getSTDAIR_ServicePtr() const {
00038         return _stdairService;
00039     }
00040
00044     stdair::STDAIR_Service& getSTDAIR_Service() const {
00045         assert (_stdairService != NULL);
00046         return *_stdairService;
00047     }
00048
00052     const bool getOwnStdairServiceFlag() const {
00053         return _ownStdairService;
00054     }
00055
00056
00057     // //////////////////////////////////////// Setters ////////////////////////////////////////
00061     void setSTDAIR_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00062                             const bool iOwnStdairService) {
00063         _stdairService = ioSTDAIR_ServicePtr;
00064         _ownStdairService = iOwnStdairService;
00065     }
00066
00067
00068 private:
00069     // //////////////////////////////////////// Display Methods ////////////////////////////////////////
00073     const std::string shortDisplay() const;
00074
00078     const std::string display() const;
00079
00083     const std::string describe() const;
00084
00085
00086 private:
00088     TRAVELCCM_ServiceContext();
00091     TRAVELCCM_ServiceContext (const TRAVELCCM_ServiceContext&);
00096
00100     ~TRAVELCCM_ServiceContext();
00101
00105     void reset();
00106
00107
00108 private:
00109     // //////////////////////////////////////// Children ////////////////////////////////////////
00113     stdair::STDAIR_ServicePtr_T _stdairService;
00114
00118     bool _ownStdairService;
00119 };
00120
00121 }
00122 #endif // __TRAVELCCM_SVC_TRAVELCCM_SERVICE_CONTEXT_HPP

```

23.63 travelccm/TRAVELCCM_Service.hpp File Reference

```
#include <stdair/basic/PassengerChoiceModel.hpp>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
#include <travelccm/TRAVELCCM_Types.hpp>
```

Classes

- class [TRAVELCCM::TRAVELCCM_Service](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [TRAVELCCM](#)

23.64 TRAVELCCM_Service.hpp

```
00001 #ifndef __TRAVELCCM_SVC_TRAVELCCM_SERVICE_HPP
00002 #define __TRAVELCCM_SVC_TRAVELCCM_SERVICE_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/basic/PassengerChoiceModel.hpp>
00009 #include <stdair/stdair_basic_types.hpp>
00010 #include <stdair/stdair_service_types.hpp>
00011 #include <stdair/bom/TravelSolutionTypes.hpp>
00012 // TravelCCM
00013 #include <travelccm/TRAVELCCM_Types.hpp>
00014
00015 namespace stdair {
00016     class STDAIR_Service;
00017     class BomRoot;
00018     struct BasLogParams;
00019     struct BasDBParams;
00020     struct BookingRequestStruct;
00021 }
00022
00023 namespace TRAVELCCM {
00024     class TRAVELCCM_ServiceContext;
00025
00026     class TRAVELCCM_Service {
00027     public:
00028         // ////////////////////////////////// Constructors and destructors //////////////////////////////////
00029         TRAVELCCM_Service (const stdair::BasLogParams&, const
00030             stdair::BasDBParams&);
00031
00032         TRAVELCCM_Service (const stdair::BasLogParams&);
00033
00034         TRAVELCCM_Service (stdair::STDAIR_ServicePtr_T);
00035
00036         ~TRAVELCCM_Service();
00037
00038     public:
00039         // ////////////////////////////////// Business methods //////////////////////////////////
00040         void buildSampleBom();
00041
00042         void clonePersistentBom ();
00043
00044         void buildComplementaryLinks (stdair::BomRoot&);
00045
00046         void buildSampleTravelSolutions (
00047             stdair::TravelSolutionList_T&);
00048
00049         stdair::BookingRequestStruct
```

```

00156     buildSampleBookingRequest (const bool isForCRS =
00157         false);
00157
00172     const stdair::TravelSolutionStruct*
00173     chooseTravelSolution (stdair::TravelSolutionList_T&,
00174         const stdair::BookingRequestStruct&,
00175         const
00176         stdair::PassengerChoiceModel::EN_PassengerChoiceModel& iPassengerChoiceModel =
00177         stdair::PassengerChoiceModel::PRICE_ORIENTED);
00178
00179     public:
00180         // //////////// Display support methods ////////////
00188         std::string csvDisplay() const;
00189
00197         std::string csvDisplay (const stdair::TravelSolutionList_T&)
00198         const;
00199
00200     private:
00201         // //////////// Construction and Destruction helper methods ////////////
00205         TRAVELCCM_Service();
00209         TRAVELCCM_Service (const TRAVELCCM_Service
00210             &);
00220         stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&,
00221             const stdair::BasDBParams&);
00222
00231         stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&)
00232         ;
00241         void addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00242             const bool iOwnStdairService);
00243
00248         void initServiceContext();
00249
00256         void initTravelCCMService();
00257
00261         void finalise();
00262
00263     private:
00264         // //////////// Service Context ////////////
00268         TRAVELCCM_ServiceContext* _travelccmServiceContext;
00269     };
00270 }
00271 #endif // __TRAVELCCM_SVC_TRAVELCCM_SERVICE_HPP

```

23.65 travelccm/TRAVELCCM_Types.hpp File Reference

```

#include <string>
#include <boost/shared_ptr.hpp>
#include <stdair/stdair_exceptions.hpp>

```

Classes

- class [TRAVELCCM::CustomerChoiceException](#)

Namespaces

- namespace [TRAVELCCM](#)

Typedefs

- typedef boost::shared_ptr
< TRAVELCCM_Service > [TRAVELCCM::TRAVELCCM_ServicePtr_T](#)

23.66 TRAVELCCM_Types.hpp

```

00001 #ifndef __TRAVELCCM_TRAVELCCM_TYPES_HPP

```

```
00002 #define __TRAVELCCM_TRAVELCCM_TYPES_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // Boost
00010 #include <boost/shared_ptr.hpp>
00011 // StdAir
00012 #include <stdair/stdair_exceptions.hpp>
00013
00014 namespace TRAVELCCM {
00015
00017     class TRAVELCCM_Service;
00018
00019
00020     // /////////// Exceptions ///////////
00024     class CustomerChoiceException : public
stdair::RootException {
00025     public:
00029         CustomerChoiceException (const std::string& iWhat)
00030             : stdair::RootException (iWhat) {}
00031     };
00032
00033
00034     // /////////// Type definitions ///////////
00038     typedef boost::shared_ptr<TRAVELCCM_Service> TRAVELCCM_ServicePtr_T
;
00039
00040 }
00041 #endif // __TRAVELCCM_TRAVELCCM_TYPES_HPP
```