



# Item ToolKit

---

## Technical Support Notes

### Interacting With Databases

---

Item Software, Inc.  
2190 Towne Centre Place  
Suite 314  
Anaheim, CA 92806

Phone: +1.714.935.2900  
Fax: +1.714.935.2911  
<http://www.itemsoft.com>

---

**Copyright 2006 Item Software, Inc., All Rights Reserved**

The Software Product, any media, printed materials, “online” or electronic documentation, instructional material, or similar materials relating the software are owned by ITEM SOFTWARE and are protected by copyright laws and international copyright treaties as well as other intellectual property laws and treaties. All other matters including use and distribution of the Software Product shall be in accordance with Item Software’s SOFTWARE LICENSE AGREEMENT and/or with the prior written permission of Item Software Inc. The copyright and the foregoing restrictions on the copyright use extend to all media in which this information may be preserved.

This guide may not, in whole or in part, be copied, photocopied, translated, or reduced to any electronic medium or machine-readable form without prior consent, in writing, from Item Software. The information in this guide is subject to change without notice and Item Software assumes no responsibility for any errors that may appear in this document.

Item ToolKit is a trademark of Item Software, Inc.

All company and product names are the trademarks or registered trademarks of their respective companies.

Item ToolKit  
Technical Support Notes  
Interacting With Databases  
Revision JT1

February, 2006

Printed in the United States of America  
Item Software, Inc.  
+1.714.935.2900

## Interacting with Databases

Item ToolKit has native capability to interact with Text, Excel, and Microsoft Access sources of data. Typically this data is used to populate a ToolKit project with system and component information for reliability analysis. All modules of ToolKit support the import and export of all system information.

What is little known is that ToolKit is also able to interact with relational databases, such as Microsoft SQL, mySQL, Oracle, Sybase, etc. This capability is done via the use of an Access database as a “conduit” to/from the relational database server.

This document covers the native and “conduit” methods of interacting with databases external to Item ToolKit. If you need further assistance or would like to see an example, please contact Item Software directly.

## Contents

Native Import .....	3
Optional - Import Conduit Database .....	3
Requirements .....	4
Preparation .....	4
User Steps .....	4
Native Export .....	5
Optional - Export Conduit Database .....	5
Reporting .....	5
Conclusion .....	5

### ***Native Import***

The Import function of ToolKit is used to populate a project, library, or specific system with system blocks and components. It can also be used to populate any other ToolKit module, such as Fault Trees, FMECA, etc. Text or Excel files, and Access databases are all supported natively. A typical use is to import a Bill Of Materials (BOM) for a system to be analyzed.

Accessed via **File – Import** menu selection, the Import Wizard walks you through the process of importing your source files/database into ToolKit.

### **Optional - Import Conduit Database**

However, if your company has component reliability information stored in a central or enterprise database server, you can interact with the data via a “conduit” Access database. Once this conduit has been created, you can use the Import Wizard within ToolKit to draw database information into your project or systems. You may need the assistance of your IT department to initially set this up.

## Requirements

- ❑ Parts Database with reliability parameter data appropriate to the prediction standard being used. Perhaps sourced from ToolKit libraries? The degree of component detail you have in these databases is up to you, depending on how much information you wish to import via your BOMs.
- ❑ Relational database server (MS SQL, Oracle, Sybase, MySQL, etc)
- ❑ ODBC/DSN connection to/from the database server and the client PC where ToolKit is installed.
- ❑ Database Server User login with at least SELECT authority

## Preparation

The Parts Database is populated with General and Physical tables for the components you expect to use. These tables can be direct Exports of ToolKit projects or libraries. The database architecture does not matter... MS SQL, MySQL, etc.

An ODBC connection (DSN) is established on the client PC so it is able to connect to the Parts Database on the database server. DSN contains server, login, and target database information.

The ODBC connection is used to Link Tables within an Access database on the client PC to be used as the import “conduit”. The linked tables are the General and Physical parameters tables for the components in the database.

## User Steps

1. Create a BOM table, populated with Part Number, Quantity, and optionally Reference ID information. (This can be done via Get External Data function in Access to perhaps draw from an Excel sheet.)
2. The following queries can be formed into a single Macro so all functions are performed with only one interaction from you, and are reusable. Item Software can help you creating these queries/macros.
  - a. The BOM lookup query is run, creating a table in the conduit of the General and Physical parameters for the parts found in the database.
  - b. The BOM table copy macro is run to provide both a General and Physical table for ToolKit.
  - c. The BOM Parts Not Found query is run to create a table of BOM parts not found in the database.
3. **ToolKit – File – Import** is used to import the General and Physical parameters for the parts found in the database... using a predefined import template for ease of use.

4. Optional - **ToolKit – File – Import** is used to APPEND the BOM parts not found as Externals... using a predefined import template for ease of use.

The end result is the parts in the BOM being looked up in the database for their General and Physical parameters, then being imported into a ToolKit project/library as usual. Any parts not found in the database can optionally be appended to ToolKit as External.

### ***Native Export***

Exporting is the inverse of the Import process. Any project or system in ToolKit can be exported to Text or Excel files, or Access databases. If you entered the information, or ToolKit calculated it, you can Export it. (**File – Export**)

### **Optional - Export Conduit Database**

Once you have exported the ToolKit system to Access database table(s), use the **Table Export** command within Access to export the table(s) to an ODBC connected database.

### ***Reporting***

Any Report created within the Report Generator of ToolKit (**File – Print Preview – Reports**) can be exported to several different formats, including Text or Excel files, Access databases, ODBC, XML, etc.

Steps:

1. Create a report Template with the columns you wish to export.
2. Select, then Preview the report.
3. Click the **Export** icon, then choose the destination for the report. (Text, ODBC, etc.)
4. If you choose an ODBC destination, a table name will be suggested, that you can change. Click OK, and a table of that name, including the date presented in the report, is created on the ODBC database server.

### ***Conclusion***

The ability to interact with databases is a very powerful function for any application. Yes, there may be some setup time and learning required, but in the end you have a very flexible method to draw information from databases. Once the connections have been made, and perhaps a few queries written, the rest is simply passing data back and forth between the database and Item ToolKit.

Please feel free to contact Item Technical Support for assistance in setting up these environments, or if you have any questions.