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# **Object Storage Fact Book 5.0**

## **Object-Relational Mapping**

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**Barry & Associates, Inc.**

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# Preface

This latest release of the *Object Storage Fact Book* has been expanded to provide more complete coverage of the products in the industry. Release 5.0 includes two volumes: *Object DBMSs*, and *Object-Relational Mapping*. This is the *Object-Relational Mapping* volume.

This volume has a number of sections, each of which includes an introduction explaining what is covered in that section. References to one of the standard textbooks in the field, *The Object Database Handbook*, by Douglas K. Barry, are included. This makes it easier to get an in-depth explanation of the concepts in each of the sections for those readers who need that information.

The tables are organized to correlate to *The Object Database Handbook* so that the user can easily read this book and obtain an in-depth understanding of the concepts of object technology.

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# Introduction

The *Object Storage Fact Book* is the most comprehensive comparison of features for object storage. Aimed at development, production and maintenance concerns, the *Object Storage Fact Book* contains a superset of possible features for products that store objects. It provides data to sort through the complexities of the products so that feature strengths are matched to application needs; this is essential for making an informed product selection. The *Object Storage Fact Book* also accelerates the product selection process because the arduous and time-consuming task of gathering product data is completed for you.

# About Barry & Associates, Inc.

The *Object Storage Fact Book* is published by Barry & Associates, Inc. The mission of Barry & Associates is to provide facts on object DBMS, object-relational mapping, and XML data server products. We do this through consulting, publishing and education. Founded by Doug Barry in 1992, the firm is particularly focused on strategic decision making about these kinds of products.

## Facts about the Market and Industry

Barry & Associates is deeply familiar with products that store objects. Using the facts in this book and our breadth of experiences with applications requiring object storage, we help our clients with an unbiased perspective. Over the last eight years, Barry & Associates has worked with many clients who had many different applications. Over that time period, our clients have chosen a wide variety of products.

When you use Barry & Associates consulting services, you're getting an unbiased point of view. We have no "preferred" products and no financial stake in any of the companies. That means the focus will be on your application needs.

According to Doug Barry, "People often ask me which is the best product for storing objects. The answer is that it depends on your application needs. All of the products have strengths and weaknesses. The challenge is to help you find the product that has the strengths you need and the weaknesses that won't matter." This is accomplished with facts. Barry & Associates helps

clients determine the critical features needed for their application. This is then matched, in an iterative process, to products that have those features in their product.

## Mentoring

It can be hard to get started in an application that uses a DBMS for storing objects. In situations like this, Barry & Associates can provide people to work as a mentor to the group. They can provide direction and information to such a group, giving them pointers to get started and assisting them along the way. Our goal is to help a group get started on their project and help them become specialists quickly. This arrangement can be short or long term.

## Providing Answers

Sometimes people just need a chance to get unbiased answers about the many questions they have about this new technology. It may be that they are at the early stages of considering products or maybe they are not sure how to start.

In situations like these, Barry & Associates offers half to full day roundtable discussions for small groups. The purpose is to provide facts and information in response to specific questions. The structure of these sessions includes a short introductory outline of the basics concepts of products that store objects to create a common baseline for communication. The remaining time is an open question and answer session.

## Product Selection

Through a two-day selection program, Barry & Associates has helped many organizations choose a product or narrow the universe of products down to a manageable list of two or three candidate products.

Barry & Associates has found that its selection model makes it possible to focus on key issues. We use our product and industry background with this selection model to focus your efforts on matching your application needs to product features instead of researching the products and the industry.

On the first day, the group will be guided through an analysis of application database needs and an initial determination of critical success factors is made. During the second day, the critical success factors are verified, an assessment of which products match the application needs is completed and a determination of any extraordinary requirements that require follow-up with vendors is made.

At the end of the second day, you'll have a strong grasp of your application database needs and the products that could meet those needs.

## Implementation Stories

How exactly are these new products being used? Are companies using them in real, mission-critical applications? Are there limitations to the situations

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in which they can be used? As in the introduction to any new technology, there are plenty of myths about products and lots of concern about jumping into the object or object-relational mapping world.

Using an implementation model, Barry & Associates has formally interviewed developers to learn about their experiences. Barry & Associates combines the interview data with its experiences to provide you with a balanced view of how these products are being used.

## More Information

More information on the services that we offer can be obtained by contacting us at the address below or by checking our web page.

# Development Process

## Vendor Participation

The *Object Storage Fact Book* contains details on product features. Many vendors participated this release through a review process. Many provided excellent suggestions for further expansion of the feature listing to provide coverage for all of their products' features. Each vendor was given an opportunity to critique the responses of their competition.

## Companion Book

The *Object Storage Fact Book* has been organized to be used in conjunction with *The Object Database Handbook*, John Wiley & Sons, 1996. This publication is cross-referenced to the book and the terminology is consistent with the book, providing the reader a source for more information on specific topics. The sections in this publication are ordered to match the order of sections in *The Object Database Handbook*. This organization allows more complete specification and explanation while maintaining the concise format and reference utility of this publication itself.

The material in this publication is primarily covered in Part 3 of *The Object Database Handbook*.

## Evaluation

The development of the *Object Storage Fact Book* involved working with the vendors to ensure that their product features were represented fully. Barry & Associates has spent thousands of hours compiling and evaluating the data. This often required re-working feature descriptions, adding more features and verifying each of the changes with the vendors. The goal of the evaluation process was to provide feature descriptions that allowed a “normalization” of terminology among the vendor products.

# Using the *Object Storage Fact Book*

You can use the *Object Storage Fact Book* in many ways. Here is a standard process for using the book to select a product. A more complete selection model can be found in Chapter 7 of *The Object Database Handbook*. This model was originally developed for object DBMSs, but works equally well for object-relational mapping products. A summary of the model can also be found at <http://www.object-relational.com/select.html>.

## 1. Determine Critical Application Needs

It is important to first determine your application needs. Although this may appear easy on the surface, once you dig into the detail of the features found in this book you may find that your specific needs may be different than you originally anticipated.

## 2. Feature Understanding

The *Object Storage Fact Book* also can be used to provide background on possible product features that you may have not considered. It is important to have a full understanding of the possible features available before you determine features critical to your application needs.

## 3. Determine Your Critical Features

Once you have an understanding of application feature needs, you can use the *Object Storage Fact Book* to determine products that you should investigate further. One way to do this is to determine the features that products must have for consideration; these are your critical features.

## 4. Product Selection

Though the feature comparisons here are quite complete, it is important to discuss your application with vendor representatives before making a product selection. This will ensure that any product concerns that you have are properly covered.



# Notation

When you review the tables, you will see that they contain check marks and sometimes clarification comments. A check mark indicates the feature is in the shipping release of the product. Sometimes comments are included to show the product has a capability that provides a portion or "building blocks" for a particular feature.

Many of these products allow you to add a feature or something approaching a feature by coding methods or using other means. It is best to discuss such "extensions" to their products with the vendors.

# Authors

**Joshua Duhl** has provided analysis of and guidance in the application of object and database technologies for over 12 years. At Stillpoint Consulting, he works with companies using object technology including object databases, tools, application servers, or integrating objects with relational data into Web applications. In addition, he provides strategic marketing consulting to software companies and is an industry analyst associated with International Data Corporation (IDC). Duhl was one of the five original authors of the ODMG-93 object database standard. He has written and presented extensively on the ODBMS and object-relational mapping tool markets, trends, companies, products, applications and issues. Joshua has managed development projects, implemented the first comparative benchmark of object and relational databases, and co-developed one of the first implementations of Object SQL. He can be reached by email at: [jduhl@mediaone.net](mailto:jduhl@mediaone.net).

**Doug Barry** has worked in database technology for over twenty years, with an exclusive focus on the application of database technology for objects since 1987. As principal of [Barry & Associates](#), Doug has focused on helping clients make fully informed decisions about the application of object technology. He emphasizes the need to match product feature strengths to application needs in order to ultimately field a successful product. Doug is also the author of [Object Database Handbook: How to Select, Implement, and Use Object-Oriented Databases](#), published by John Wiley & Sons; the [XML Data Servers: An Infrastructure for Effectively Using XML in Electronic Commerce](#), published by Barry & Associates, Inc.; and was for many years the *Databases* columnist in [Object Magazine](#) and the *ODBMS* columnist in [Distributed Computing Magazine](#). In addition, Doug serves as the Executive Director of the [Object Data Management Group \(ODMG\)](#), a consortium of vendors and interested parties working on object storage standards.

# Product Releases Covered

AZ Software	MTOS	1.0
Infobjects, S.A.	ObjectDRIVER	2.2.1
ObjectFrontier, Inc.	FrontierSuite for EJB Platform	2.0
	FrontierSuite for Standalone Platform	2.0
Objectmatter, Inc.	Visual BSF	2.3
ONTOS, Inc.	ObjectSpark	4.0
POET Software Corporation	FastObjects SQL Object Factory	7.0
Software Tree, Inc.	JDX	2.1
(Open Source Project hosted at Sourceforge)	ObJectBridge	0.3.x
Sun Microsystems, Inc.	Forte for Java	2.0, Internet Edition
WebGain, Inc.	TopLink for Java	3.5
	TopLink for WebLogic	3.5
	TopLink for WebSphere	3.5

Note: ObJectBridge is not developed by a company but by an international OpenSource community. Initial author, architect and maintainer is Thomas Mahler (<mailto:thma@users.sourceforge.net>). The project is hosted by the Open Source mediator Sourceforge (<http://objectbridge.sourceforge.net>).

# Acknowledgments

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ONTOS, Inc.  
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AZ Software  
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